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CANADA

MEDICAL JOURNAL.

ORIGINAL COMMUNICATIONS.

Valedictory Address to the Graduates in Medicine, McGill College.

Delivered on behalf of the Medical Faculty, at the Annual Convocation, held in the William Molson Hall of the University, on the 3rd May, 1866. By WILLIAM FRASER, M.D., Professor of Institutes of Medicine.

GENTLEMEN,—This day's ceremony forms the climax of your professional studies—admits you to all the privileges and responsibilities of the profession of your choice. It consequently severs the connection which has existed between us as teachers and pupils. On such an occasion it is customary to offer the graduating class a few valedictory words by way of advice. That duty has on this occasion devolved upon me, and for your sakes, I wish it had fallen upon an abler man.

I will however endeavour briefly to point out, in the first place, what you may reasonably expect as the reward of your past labour on entering into practice; and in the second place, the mode in which you are most likely to attain that object.

Few members of our profession realize the princely fortunes so often acquired by those engaged in successful commercial pursuits—and seldom have they conferred upon them those honours that are so frequently bestowed upon eminent lawyers and warriors. On the other hand fewer members of our profession fail to make a fair and reasonable competency, than in either of the professions mentioned. A still greater reward is the usefulness of your services—the high satisfaction derived from the consciousness of being of use—of being able to do a service much in demand—the well doing of which involves great benefits, and averts great evils. There are few offices more appreciated by mankind than those discharged by the medical practitioner. The rewards which you

may therefore reasonably expect from the studies you have gone through and the labours of your prospective practice, are, a fair competency, the satisfaction derived from a sense of the utility of your services, the gratitude of your patients and the respect of the public.

To attain these objects, there are certain fundamental rules of conduct necessary for your self regulation, and due to the public and to the profession.

As regards the first of these—your conduct should be such as is calculated to preserve your own health and command the respect of your fellow men. You whose vocation it is to direct others in the preservation of their health and in the correction of their bodily derangements, are expected to know how to maintain your own. Familiar as you are with those hygienic laws by the observance of which health and life are maintained, nevertheless, I think it right to warn you as young practitioners against the ruinous habit which too many members of our profession acquire, of indulging in alcoholic beverages which is alike injurious to their health and professional prospects. The man who is afflicted with this infirmity can never be relied upon as a medical practitioner, and his best friends will soon cease to employ him, without his being apparently aware of the cause—often attributing their alienation to other reasons. To no class of men is bodily vigour and mental soundness more necessary than to those of our profession—subject as they are to be called upon at all hours for professional assistance in cases the most intricate and dangerous. Therefore shun the cup that inebriates—that blurs the eye and palsies the hand—destroys the intellectual and perverts the moral faculties.

Another point is this. To no class of men is integrity of conduct, truthfulness, dignity and suavity of manner more necessary. A great authority and a good man, Dr. Stokes of Dublin, has lately said in his address on medicine, delivered at the annual meeting of the British Medical Association, held at Leamington, in August last, "That the cause of medicine taken in its broadest sense,—whether as to its social, political, or scientific relations, is to be advanced more by the cultivation of the minds, the morals and the manners of those who are engaged in it, than by all other influences whatsoever." Entirely coinciding with the idea embodied in these great and good words, I commend them to your consideration and practical adoption as a sure way of advancing the profession at large and your individual success.

Before entering on the active duties of the profession, those of you who can afford to do so, should follow the example of the father of medicine, who, after studying at the Asclepion of Cos, travelled into other

countries. In like manner you should visit Europe, to see the practice of its large medical institutions and hear the teaching of those renowned men of Britain, France, and Germany, who have so largely contributed towards the present condition of our profession. It is needless to point out the advantages of such a course, as they are universally acknowledged.

Another duty you owe to yourselves is to keep pace with the rapid progress which rational medicine is making in our time. The man who neglects this will soon find himself outstripped by his cotemporaries and deservedly so. By means of periodicals and new publications, you should keep yourselves well informed of all that is going on in the medical world. For although you have ceased to be pupils you must still continue to be students—indeed your whole life must be one of study, observation and reflection.

There is another rule of conduct to which I desire to refer. Every medical man has often his patience sorely tried by being obliged to listen to long, tedious, and irrelevant histories of the maladies of valetudinarians and of persons labouring under diseases acutely painful or hopelessly incurable. With all such be gentle and forbearing. Remember the intimate relation existing between the physical and mental, and that derangements and diseases of the former often seriously affect the latter. Harsh and overbearing conduct towards invalids is not suitable to the present state of society. It never did any good and therefore serves no end either as regards the patient or physician.

For success in practice depend upon your own merits and the closest attention to business. Whatever your struggles may be, eschew all questionable or charlatanical devices for improving your circumstances by departing from the path of rectitude.

Towards the public your duties are of a special and general character. Prominent among the former is prompt attention to calls for your professional services, and when you have taken a case in hand do your utmost to save life and relieve suffering. In dangerous cases, when you have any doubt as to the correctness of the practice to be followed, hesitate not to call in the assistance of an older and more experienced practitioner.

To the poor be generous of your professional services and kindly in your manner. Although you receive no remuneration from them, your experience will be enlarged and your prospects in many ways advanced by such disinterested and humane conduct.

Let me also remind you of your obligation to be discreetly reticent in all matters coming to your knowledge as professional men.

As respects the public duties which a medical man of the present day is expected to perform, I may particularize disseminating amongst the community amidst whom he practices, a knowledge of those sanitary laws, which have been shown capable, when rightly understood and rigidly enforced, not only of preventing disease, but also of diminishing in severity that which is inevitable. In all climates and under all conditions of life, the purity of the atmosphere habitually respired, a good water supply and drainage are essential to the maintenance of that power of resisting disease, named by Cullen the *vis medicatrix naturæ*. It frequently happens that individuals continue for years to breathe a most unwholesome atmosphere, without apparently suffering from it, and when they at last succumb to some epidemic disease, their death is attributed solely to the latter—the previous preparation of their bodies for the reception and development of zymotic poison being altogether overlooked. That the fatality of epidemics is almost invariably in precise proportion to the degree in which an impure atmosphere has been habitually respired or impure water drunk can be proved by the clearest evidence.

That an atmosphere loaded with putrescent miasmata favours the spread of zymotic poison by inducing an abnormal condition of the blood is beyond all question—nay farther, I am disposed to believe there is ample evidence to show, that in the crowded dwellings of the poor, diseases do in this way originate *de novo*. On the other hand, by proper attention to ventilation, water supply, and drainage, the fatality of Epidemics that formerly terrified the nations may be almost completely annihilated and the rate of mortality in disease in general largely decreased. It cannot be too strongly borne in mind, that the efficacy of such preventive measures has been most fully substantiated in regard to many of the very diseases in which the curvative power of medical treatment has seemed most doubtful—as for example cholera and malignant fevers.

The practical importance of this subject is strikingly illustrated by the following startling facts, brought to light by enquiries prosecuted under the direction of the London Board of Health, viz.: That the difference in the annual rates of mortality between the most healthy and the most unhealthy localities in England, amounting to no less than 34 in 1000, is almost entirely due to zymotic diseases, which might be nearly exterminated by well directed sanitary arrangements. The inevitable mortality, arising from diseases which would not be directly affected by sanitary improvements is 11 per 1000 in those districts which are free from zymotic disease. And the average mortality of all England

in ordinary years, is about 22 per 1000, or just double that to which it might be reduced, so that taking the population of England and Wales (as by the last census) at 20 millions, the average annual mortality must be 440,000, of which 220,000 is inevitable, an equal amount being preventible.

These facts show in the clearest manner the great importance of sanitary reform. In view of the epidemic which has already appeared in some parts of this continent, and which is almost certain to visit this country during the present season. A sense of public duty and a desire to benefit your fellow men, should induce you to take a deep interest in this subject hitherto so imperfectly understood by the majority of the people. By acting thus as preventers of disease you will convince the public of the purity of your motives and the sincerity of your efforts for its welfare.

In order that the profession may advance in all its departments—Sanitary, Medical and Surgical, it is the duty of each of you to record his experience and thus contribute according to your opportunities to its progress. By such work a large experience is made available to the profession at large and the writer is taught accuracy of observation and profoundness of reflection.

With your fellow practitioners cultivate friendly relations, and reciprocate kindly offices. Attempt not to raise yourselves by a brother's fall—nor by wily and unscrupulous insinuations to undermine his reputation and dispossess him of his patient. No man ever raised himself to eminence by such unworthy conduct. Medical etiquette is founded on the same principles, which characterise the conduct of every educated, courteous and honorable gentleman. It has for its basis to do unto others as you would that others should do unto you. And now gentlemen go forth on your mission—your time has come—perform your work faithfully and diligently and you will be sure to reap the reward. For your success and prosperity you have the best wishes of your late teachers, the members of the medical faculty of this university.

Cholera in Canada in 1832 and 1834. By JOSEPH WORKMAN, M.D.,
Medical Superintendent Provincial Lunatic Asylum, Toronto, C.W.

In the April number of the *Medical Journal*, page 479, the following statements are found:

“Cholera in 1832 appeared in Quebec early in the month of June, and almost simultaneously—we believe it was a few hours after—it broke out in the Barracks in Montreal. No personal communication had

occurred between the two cities. In 1834 it appeared in Quebec, Montreal, and Toronto on the same day." As the above statements are most inaccurate, I must beg permission to correct them: and as I was an eye-witness of the two epidemics of 1832 and 1834, and at the time made notes of their progress, the accuracy of which I am certain is beyond question, I trust the readers of the Journal will believe that my only object is the correction of an historical error.

I adopted "*Asiatic Cholera*," as the subject of my "*Inaugural Dissertation*," for the degree of Doctor of Medicine and Surgery, from the *University of McGill College*, in May, 1835; and as the prescribed number of printed copies was presented by me to the Registrar of the University, no doubt my thesis is to be found in the University Library. As I cannot more succinctly present the details than by a literal quotation from this pamphlet, I proceed to transcribe them, from the foot of 8th page onward—viz.

"Towards the South" (from Russia) "we follow cholera into Berlin in August (1831), and into Vienna in September. In October it shewed itself in Hamburg; and while all England was in a state of trepidation and wasting useful time in discussing measures to prevent its entrance, the disease unexpectedly shewed itself in Sunderland. From this place it spread in various directions, and before the close of the winter, it had shown itself in all the principal towns of Great Britain.

In the spring of 1832 it was prevalent in Dublin. In the beginning of April a vessel named the "*Carricks*" sailed from Dublin, with 167 emigrants. Ten days after sailing, one death took place, and during the succeeding fifteen days, thirty-nine more were added to this one. From this time up to the arrival of the vessel at *Grosse Isle*, the quarantine station below Quebec, only five deaths more occurred. The captain reported to the boarding officer "forty-four deaths, by some *unknown disease*." Whatever, at that time, may have been the general opinion, as to the real nature of this "*unknown disease*," no one now thinks of questioning its identity with Asiatic cholera. We have had, since that time, but too many instances, perfectly similar to this, of the appearance of cholera amongst emigrants on board of vessels bound to Quebec; and the awful havoc committed by it, in several of them, has been such as to excite the sympathy of the most heartless. The *Carricks* arrived at *Grosse Isle* on the 3rd of June, and while the vessel was lying there, a female passenger died, after three hours' illness. On the 7th of June a sailor died of cholera in a boarding house in Quebec, and on that evening the steamboat *Voyageur*—left Quebec for Montreal; but in consequence of being *overloaded* with emigrants, the captain was obliged

to put back and to disembark a number of them. Several of the disembarked emigrants were very soon after seized with cholera. The boat proceeded on her way to Montreal, but before arriving at Three Rivers, an emigrant named Kerr, was taken ill, and died before the vessel came into the port of Montreal. Another emigrant named McKee had been seized on the afternoon of the same day (June 9th); he was carried from the boat into a tavern near the wharf.

The dead body of Kerr was exposed to the public gaze during the next day, Sunday 10th, and was visited by great numbers, from mere curiosity. Many persons also went into the tavern to see McKee,—among others a soldier—from the Barracks, in which place cholera appeared that night, and this soldier was amongst its first victims."

Note.—It was stiffly affirmed at the time that neither this soldier, nor any other soldier of the 15th regiment, then in Montreal, had any connexion with the cholera cases at the wharf. After very careful investigation, I discovered the inaccuracy of this assertion; and many years after, Dr. Dewson, now resident at Windsor, and then a student under Dr. Barclay, surgeon of the 15th, assured me that the first soldier who died of cholera in the Montreal barracks, visited the emigrant McKee in the tavern, and assisted in rubbing his body. Truth is sometimes very hard to be reached.

"On the night of Sunday, several cases occurred in various parts of the town. In several of them, communication with the first cases could be traced, but in others no direct connexion could be discovered. On the 11th several other cases occurred, and a continued increase of cases took place until the 19th, when the malady had attained its acme. From Montreal we can trace the disease along the grand travelling routes to the West and South. It appeared at Lachine on the 11th, amongst emigrants on their way to Upper Canada; on the 13th it had arrived at the Cascades—the first case was a person newly arrived from Montreal."

[*Note.*—This person died at the Coteau du Lac. He was a clergyman, and the father of the wife of one of our present Superior Judges in Western Canada.]

"On the same day, a boatman, direct from Montreal, died of cholera at Cornwall. On the 16th it was at Prescott; the first cases were amongst persons just arrived from Montreal. On the 18th, a boatman from Montreal died of cholera at Brockville. On the 20th it was brought into Kingston. On the 21st the first decided cases occurred at York, now Toronto."

[*Note.*—One of the first, if not the *very* first of the cases in York, was that of Mr. Filgiano, a merchant tailor of Montreal, who left Montreal in order to escape the disease.]

"On the 22nd, a vessel from Kingston, called the "*Massassauga Chief*," loaded with emigrants, arrived in the river, at Niagara; but on account of their being several cases of cholera on board, the vessel was not allowed to come into port. Cholera did not at that time shew itself in Niagara.

Having thus followed the disease sufficiently far to the West, we may next trace it from Montreal towards the South. On account of the obstacles offered to emigrants on the American frontiers, the progress of the disease, in this direction, was neither so regular nor so rapid as we have seen it in passing up the St. Lawrence, in which direction it possessed every facility for its transmission. We find it in Laprairie on the 12th of June, and in St. Johns about the 14th. In several places on the frontiers straggling cases occurred; but, whether from the difficulty of telling truth, or that of ascertaining it, the accounts given by the various papers of its appearance along the grand southern thoroughfare, were of so confused and contradictory a nature, that it is absolutely impossible to follow the disease in this course with any degree of satisfaction. We find it reported in New York, July 4th; but some cases are said to have been observed previous to this date. The first case in Philadelphia, is stated by some to have occurred on the 5th of July; but as a second case did not occur until the 14th, we have strong grounds for rejecting the reality of that on 5th. * * *

"In Montreal it continued to rage with terrific violence till the end of June. In the beginning of July it remitted its violence."

"But before the middle of the month it assumed renewed vigour. Hitherto its victims had principally been from amongst the poor; but its devastations now extended beyond the habitations of the indigent."

"The total number of deaths in Montreal, from the breaking out to the termination of the disease, was upwards of 3000." (The population was then but little over 30,000.)

[*Note*.—One of the worst days the number of interments was 168. In walking down from the mountain between the street leading into the St. Antoine suburbs, from the *Cleghorn* or *Burnside* farm, and the hay-market, I met seven funerals, each of which did not number more than two or three attendants.]

CHOLERA OF 1834.

"During the months of June and July, 1834, some vessels that had cholera amongst the passengers during the passage, arrived at Grosse isle. On the 11th of June a case occurred at this station. The official reports did not mention this fact. On the 6th of July,

several cases occurred at Quebec. On the 11th, two emigrants, ill of cholera, were carried from the steamboat at Montreal to the cholera shed. On the 12th several cases occurred amongst the residents, and on each succeeding day there was a gradual increase. In about three weeks the disease was at the worst; the deaths being about seventy *per diem*. The total number of deaths was about 1,200. In its progress this year from Montreal, the disease deviated little from the laws which it observed in 1832, except that its close adherence to emigrants proved still more incontestably the agency by which it is transmitted from country to country.

The preceding observations were written by me thirty-one years ago from notes taken down during the transpirance of the calamitous occurrences detailed, and while yet all was fresh in my remembrance. My thesis was submitted to the scrutiny of the medical faculty of McGill College, and the lamented and highly gifted Professor Robertson bestowed very close attention on its contents. Neither he nor any other member of the faculty controverted its historical statements, and they were cognizant of all the facts. Very few of the present medical practitioners of Montreal were then on the stage of professional life. Dr. Hall, Dr. David, and several others were, I think, fellow-students in 1832. Dr. Sutherland had hardly commenced his studies. Dr. Campbell arrived from Scotland, I believe, shortly before.

I am certain that the events strictly accorded with my statements of them.

Toronto, 7th May, 1866.

Case of supposed Poisoning by "Coptis Infolia." By W. J. ANDERSON, L.R.C.S.E., Quebec.

ON Wednesday morning, 2nd May, I was hurriedly called on the street, to visit a child in St. Lewis Suburb. On approaching the house, the father informed me that he was afraid we would find the child dead, as it appeared to be dying when he left home for a doctor. I asked if he could assign any cause, when he replied that a sick nurse who resided in the neighbourhood and who had been summoned on the emergency, thought it might have arisen from an *overdose* of the decoction of "Gold Thread," which had been administered half-an-hour previously, for worms.

On arrival at the house we found the child alive, but completely insensible, almost pulseless; breathing barely perceptible, but not stertorous; and the surface of the body cold, but no lividity of the countenance. The mother produced the remnant of the decoction, which had been made with

whiskey—it was intensely bitter. She assured me that she had not given more than a third of a wine glass, or about two dessertspoonfuls, and that within half-an-hour the child had become insensible. She further stated that on the previous morning she had administered about two-thirds of the quantity, without producing any sensible effect. I should also mention that Mrs. Eunght, the nurse, told me that she had immediately, on her arrival, applied vinegar and water to the head, and had poured a tea spoonful of olive oil down the throat.

I at once applied brandy to the head, warmth to the feet and mustard to the pit of the stomach, and mixing a dessert spoonful of mustard in two-thirds of a tumbler of warm water, I proceeded to endeavour to get it swallowed, in the hope that it might produce vomiting, or at any rate to act as a stimulant. I had remarked that all the muscles were relaxed, but when I attempted to open the mouth, to my surprise I found the teeth firmly clenched. On opening the eyelids, I found the pupils widely dilated. I succeeded in getting my forefinger between the jaws behind the teeth, and using some force I was able to open the teeth sufficiently to permit the entrance of the point of a spoon. No difficulty occurred in swallowing, and in a short time the whole contents of the tumbler was swallowed. I had directed an infusion of green tea to be got ready, of which I administered about half a pint by rectum. The mustard not appearing to excite vomiting, I endeavoured to produce it, by tickling the fauces with a feather, but with as much effect as if I had applied it to the sole of my boot. The child, however, did not appear to be worse, and I thought in about forty minutes that the pulse was rallying. I repeated the enema of green tea, and in about two hours from the commencement of the attack, or about an hour and a half after my arrival, the surface of the body began to warm, and at the end of two hours the child opened her eyes, the pupils being still much dilated. At the end of two hours and a half she spoke and asked for a drink, and drank a large tea-cupful of weak tea, but without exciting vomiting. I then went into town to procure some ammonia, and on my return found the child laughing and talking, and only complaining occasionally of the *burning* of the mustard, which I had applied over the stomach; this was immediately relieved by an application of sweet oil. On visiting the child in the afternoon I found considerable reaction had taken place, but diluent drinks and a soap bath removed every unpleasant symptom; she slept well all night and next day was apparently quite well.

The coptis, or gold thread, is a very popular remedy all over this continent, being used by the Indians, and in Canada by the "habitants" as a wash for the mouth in apthous ulcerations, and internally as a vermi-

fuge. It is officinal in the American Materia Medica, and I am told is frequently used by the French Canadian practitioners as a substitute for Quassia.

I brought the matter under the notice of the Medical Society, at the meeting on Wednesday evening; the majority present were French Canadians, who were familiar with the plant, but who had never heard of, or met with any unpleasant consequence from its use. Some of the English practitioners suggested that the child might have been thus affected by the alcohol, but when we consider she was six years of age and in vigorous health, I can scarcely get myself to believe that so small a dose of whiskey, not three drachms, could have produced such complete and protracted insensibility. A medical friend has informed me that he is aware of this fact. A gentleman for a long time connected with the Hudson Bay Company, suffered from the passage of renal calculi and from their passage through the urethra from the bladder. On one occasion his sufferings were remarked by an Indian chief with whom he was transacting business; he inquired the cause, and on being told, immediately went out to an adjoining woody swamp and returned with some "Coptis," which he infused, and at once administered, with the result of producing such thorough relaxation, that the urine flowed in such volume as to carry with it a calculus, which was passed without any suffering. Now, it occurs to me, that if the Coptis is capable of producing such complete relaxation as it must have done in this case, that it is quite possible that it may have been the cause of the unpleasant symptoms in the child. Perhaps some of your readers, many of whom I have no doubt are familiar with the "Gold Thread," may be able to afford some light on the subject.

Quebec, 25 St. Geneviève Street, 4th May, 1866.

Case of Exfoliation of Alveolar Process of Lower Jaw. By D. MACKIE, M.D., Assistant Surgeon 7th Royal Fusiliers.

THE subject of this disease is a bandsman of the Royal Fusiliers; his instrument a trombone. He was admitted into hospital, Feb. 19, with extensive periostitis of the lower jaw, and he attributed the attack to cold he received in his jaw from the metallic mouthpiece of the instrument when playing at one of the rinks on the river a day or two previous. The inflammation for some days was very acute, rendering him quite unable to separate his jaws or to take any solid food. On the 26th the incisors, canines and left bicuspids were evidently loosening, and by

March 3rd, the right canine had fallen out, and there was a considerable purulent discharge from the empty socket. On the 6th a small spiculum of bone was extracted from the socket, while the purulent discharge continued, and at the same time an incision was made at the base of the incisors in front of the jaw, and a quantity of pus evacuated, which had there collected. Next day the left bicuspidæ and the first true molar came away, and the discharge from their sockets was considerable. For three weeks after this, the purulent discharge continued from the three places, and many minute fragments of necrosed bone were detached from from the alveoli of left jaw. By the end of the month the exfoliation had ceased, and there was scarcely any discharge. The incisors and left canine still remained very loose; but he was now able to eat some solid food with the left side of his mouth. He was discharged from hospital on 24th April, the jaw having quite healed up, although the front teeth were still very shaky.

In this case there was no history of syphilis, nor of the use of mercury; and before his enlistment he had been employed in a cotton factory, and never had anything to do with phosphorus.

During the time that he was unable to separate his jaws, his diet consisted necessarily of slops; soup, beef-tea, and such like; and in addition, as soon as the acute symptoms had subsided, wine or porter. As he could not eat potatoes or other vegetables for some weeks, lemon juice was freely given. The antiphlogistic treatment consisted simply of emollient applications and saline purgatives, and the only medicine given after suppuration had commenced, was large doses of Chlorate of Potass, which were continued till the exfoliation had ceased, and the gum had quite healed. After he was able to eat solid food, the lemon juice was omitted; and he was allowed the most generous diet.

NOTE BY DR. ANDERSON.—Having seen this case during its progress, I requested Dr. Mackie to furnish the statement as above; and in addition, I shall only remark, that at one time a question arose as to removal of the teeth from the affected part, and I think it was wisely decided to leave it entirely to nature. I believe the front teeth which have been saved, will in time become pretty firm; but if no other end be attained, they will prove very serviceable in speech.

Quebec, 25 Ste. Geneviève Street, 3rd May, 1866.

PERISCOPIC DEPARTMENT.

 Medicine.

LECTURE ON THE TREATMENT OF CHOLERA,

By Deputy Inspector-General MACLEAN, M.D., Professor of Military Medicine,
at Netley College.

I have felt it to be my duty to speak distrustfully of many methods of treating cholera which have lately been urged on the attention of the profession and the public. Many of them, if you will excuse a homely metaphor, are the cast-off clothes of Indian practitioners brushed up to look like new. "Old Indian" doctors know them well, and make a present of them to their new and complacent wearers without a sigh. Well, gentlemen, I know no "cure" for cholera. What is more, I suspect we are never likely to see one. Nevertheless, I believe we shall in time extinguish cholera as we have, in this country at least, extinguished plague. This is one of the certain triumphs that await the slow progress of sanitation. It is probable that a whole generation of obstructives must pass away before even the initiatory steps in this great movement are likely to be taken. We have sanitary commissions in all the great Presidency towns of India; but they are without the necessary authority to act in an effective way, and, in some instances, very notably in Madras, the whole weight of those in power is exercised to obstruct the efforts of the commissioners for the public weal. We are not very much better off at home. Men ignorant or indifferent in such matters abound in high places, and in almost every municipal body in the kingdom trading selfishness and apathy prevail to the detriment of the public health. It is now time for me to point out what can be done for the benefit of those who are smitten with the disease. Although I know of no cure for cholera, I am quite sure that, by good and judicious management, we can rescue a great many who, without this, would inevitably perish.

1. You will endeavour to secure for your patients the best hygienic conditions possible under the circumstances in which you may be placed. In India, if that be possible, treat your sick in tents, and avoid overcrowding them.*

* Dr. Morehead objects to this, but, as it appears to me, without sufficient reason. When cholera prevails in an epidemic form, the ordinary hospital accommodation is not enough for our purpose, without exposing the sick from other causes to great discomfort and peril, to say nothing of other reasons.

2. It is incumbent on you at the outset of any epidemic visitation to look a little ahead, and so to arrange the duties of your attendants and assistants as not to exhaust their strength and energies in the first few days. I have seen great mischief and confusion result from want of attention to this. The first sufferers who come in under such a system are well cared for; while those who come last are neglected from inability on the part of the attendants to hold out any longer.

3. The next point is to have arrangements made, first, for the disinfection; and, secondly, for the removal of the excretions of the patients. If this be not done, the tents or hospitals, if a large number of patients are under treatment, will soon be filled with bed and body linen saturated with cholera discharges. The attendants, unless prevented, will empty the vessels containing the stools as near to the tents or hospital as they dare. As a disinfectant, Dr. Budd, of Bristol, proposes chloride of zinc; but, whatever the agent, disinfected they should be, and on no account ought the evacuations of the sick to be emptied into the latrines or water-closets used by the healthy. They should be buried in deep pits strongly charged with disinfecting agents. All soiled linen should in like manner be disinfected, and then plunged into boiling water outside the building or tent. The last case of cholera that occurred in the garrison at Malta, in the late epidemic, was that of a woman who had stolen a *chemise*, the property of one who died of the disease. She put on this fatal shirt, probably soiled with discharges, certainly unwashed, and not many days after the death of its former possessor, took the disease, and died. I mention this instructive fact on the authority of a letter from my friend Inspector-General Anderson, principal medical officer at Malta.

4. The next point is to look well to what Sydenham would have called the "constitution" of the epidemic with which you have to do. I have never seen any two exactly alike. At one time you will see the majority of the cases characterised by vomiting, excessive purging of rice-water stools, with distressing cramps; at another, you will find cramps absent. Again, you will observe that there is little purging, but excessive action of the skin; or (most fatal form of all) little purging, vomiting, or exudation from the skin, the sufferers dying almost before there is time for any of the well-known symptoms to be developed—the disease, as Magendie expressed it, "*commencing with death.*" Nothing can more clearly show how futile it is to expect a cure by merely "restraining the evacuations;" for, as I have just explained, the most fatal form of the disease is that in which there are no evacuations at all.

5. When first I went to India it was a common practice to withhold water, especially cold water, from cholera patients. A cruel and pernicious

cious proceeding. The objection was, that it increased vomiting, and so exhausted the sufferer. Following the routine of the day, I have acted in this way; and I was taught by personal experience the folly of this article of prevailing medical belief. When a person has been drained by an hour or two of rice-water purging, the desire for water is urgent—instinctive: the system craves it as the “hart panteth for the water-brooks.” Do not, then, be guilty of the cruelty of withholding water; give it often, and give it *cold*. Hot drinks are not relished by cholera patients. There is no necessity to give large draughts; but let not the fact that a portion of almost every supply is vomited lead you to withhold it entirely. If you have a supply of ice at hand, let your patients have as much as they please. I never saw a cholera patient to whom ice was not grateful.

6. Is it a judicious measure to apply heat externally: to cover your patients up with blankets; to stimulate the surface with counter-irritants, mustard, turpentine, and such like? Well, I have done all these things, and seen others do them again and again. Yet I question whether much is gained by them. I am quite sure that they are very distasteful to nine patients out of ten. But you will say, Patients are not good judges of what is good for them. Perhaps not. Still, I think physicians gain something in many diseases by attending to the instinctive promptings of their patients. I *know* it is so in the matter of drink in cholera; and I *think* in the matter of clothing and external heat we should follow this rule—where they are grateful to the patient they should be used, but, according to my judgment, they ought not to be persisted in if the reverse. I have not seen many cases of cholera in England, but I think I have observed greater tolerance of “blanketing” than in India. In Asiatics, the dislike to anything of the kind in this disease is universal. Mustard poultices are almost invariably applied to the epigastrium in cholera, and also to the calves of the legs. Sometimes they are beneficial; I do not think they can be hurtful.

7. Cramps are best relieved by the use of chloroform, given in doses of five or six minims in a little water; and if vomiting be excessive, a little may be sprinkled on a pad of lint covered with oiled silk or gutta percha tissue, and applied to the epigastrium; or spongio piline may be used for the purpose. I have used chloroform in this way, both externally and internally, very freely, and always with good effect. I have also seen a large dose of an alkali, the sesquicarbonate of soda or the bicarbonate of potash, instantly relieve the spasms, as well as mitigate vomiting.

8. No remedy has been more used, I should rather say *abused*, than opium. Most Indian practitioners have abandoned it as treacherous and

dangerous. I must earnestly caution you against its use. In the stage of collapse, if it is retained, it is, it *must* be, useless. But when reaction sets in, the opium, previously inert, begins to act, and is at once a serious hindrance to the restoration of the secretions, and, if the quantity given has been large, often hastening on cerebral symptoms ending in coma. These are its dangers, without, so far as I know or could ever discover, a single compensating advantage.

9. What of astringents? No class of remedies have been more used in cholera. The great anxiety has ever been "to restrain the evacuations. Yet I am persuaded that the mere purging rarely kills; and, as I have already said, in the most fatal form of cholera there is no purging, or very little. Graves recommended acetate of lead with opium, and this combination has been more used than perhaps any other remedy in cholera. Sometimes capsicum is added by way of a stimulant. Here, again, we are met by the old difficulty: what service can we expect from such combinations during the condition of collapse? Very little, I fear. And what is likely to be the action of large quantities of this powerful sedative during the stage of reaction? Will it aid or embarrass the struggling system? Again, supposing the remedy to be retained and to act, how far do we benefit the patient by controlling the purging? I don't believe that cholera is caused by "hyperæmia of the nervous centres from heat." If this hyperæmia be present, there is something else also, some *materies morbi*, some subtle poison—what, I know not, I do not pretend to know. If it be the case, as so many suppose and as I believe, that this poison is in part at least eliminated in the intestinal canal, how far do we benefit our patient by restraining it? I have ridiculed the attempt to secure this object by mechanical means; will the use of astringent drugs stand the test of argument any better? But then experience has sanctioned them. Alas! I have had much experience, and I am sure that I was more successful, as a rule, when I withheld them. Still, there are cases where some astringent is necessary. Granting that the purging within certain limits is salutary, it may go on to such an extent as to lower the patient hopelessly. In such cases an effort must be made to restrain it. Acetate of lead should then be used, in solution, but without opium. In such cases pernitrate of iron, in full doses, might be tried. My friend Surgeon-Major Mudge, of the Madras Army, made a trial of turpentine in egg emulsion with an aromatic, and in a number of cases found it more than answer his expectations. The sufferers in whom Dr. Mudge tried it were all Asiatics. It does not seem to have caused vomiting or even nausea—the objection to which we might expect to find it open, as turpentine is generally a nauseous medicine. In one epidemic

I found nitrate of silver exceedingly useful as an astringent in excessive purging, particularly, as I noted at the time, in children; some of my native pupils used it extensively during the same epidemic in the great native city of Hyderabad, and with so much success as to gain for themselves considerable reputation. I used it again in the following year, with disappointing results—another proof of the “varying constitution of epidemics.”

10. Calomel has been used to fulfil every indication in turn, according to the peculiar belief of the prescriber. Some give it as a purgative, others as a sedative, not a few “to stimulate the secretions.” I have seen it given as a cure for vomiting. Then we have a pretty numerous class who give it for no reason in particular. Calomel is the trump-card in their hands; so, like good whist-players, “when in doubt,” as men are apt to be in dealing with cholera, they “play trumps”—they give calomel. I have seen it given in every conceivable way, and for every possible or impossible end: in grain doses every hour or half hour, and by heroic practitioners in scruple doses again and again. But, gentlemen, it is the old story. Calomel is of no use during the stage of collapse; but by-and-by, when the powers of life begin to revive again after the shock is over, the first thing the system has to deal with and to dispose of is twenty or thirty grains of calomel. What results? Very often vomiting of that “green paint-looking matter” of which I spoke appears, and you know how hard it is to stop that; or bilious diarrhœa is excited, which soon brings the case to an end. At the best it disturbs the stomach, and interferes with nutrition. At such a time Nature needs the helping hand of the physician to sustain and assist her in the life and death struggle, instead of being searched and goaded by powerful drugs, prescribed no matter with what intention. Called to see a case of cholera a few months ago, I found calomel in combination with opium being “poured in” every hour. I ventured respectfully to ask the reason why; the patient being in a state of collapse, the medicine was accumulating in the stomach like water behind a barrier. “What, I asked, “do you expect will be the action of all this calomel when the barrier gives way, when the functions begin to be restored? The prescriber was not very sure, thought perhaps it might have “a cholagogue action—stimulate the bile.” I might have asked, Is it not conceivable that Nature will do this herself? And why not stimulate the kidneys as well? Why concentrate all your attention on the bile? Is the biliary more in abeyance than any other secretion? and so on. I do not think these are impertinent questions. I recommend you to put them to yourselves when you are tempted in moments of doubt to prescribe as D’Alembert said we sometimes do—

using physic as a strong but blind man uses a club in a crowd, hitting friend and foe with equal impartiality.

11. *Stimulants*, both of a medicinal and alcoholic kind, have been much resorted to in cholera, and very naturally. The prostration of the powers of both circulatory and nervous systems is so extreme that we cannot wonder that strenuous efforts have been made to rouse and to sustain them by the free use of remedies of this class. Yet I think that those who have used them most, if observant and candid men, must admit that they have not answered their expectations; and at least all must allow they require to be given with a cautious hand. They are useful, as I shall presently show, when given at the proper time and in the right way. I do not think they are of any use during the stage of collapse, when at first sight they might appear most appropriate.

We have thus examined the therapeutic value of the remedies that have been most used in cholera. The result is not encouraging. I may say I have tried most of them, and the above is the result of my experience. You will perhaps say—Do you then advise no treatment in cholera at all? Well, I can only say that in the collapsed stage I know no drug worthy of the smallest confidence. Must we, then, abandon our patients to nature, and do nothing? Must we suffer them to die without an effort to save them? My answer is, that efforts of the kind described above are futile; your remedies are either vomited, or if retained, are inert, and if given, as they often are, in excessive quantities, they become a serious source of embarrassment, interfering above all with nutrition. If opium, the preparations of lead, or calomel, have been abstained from, Nature, in the stage of reaction, starts, so to speak, fair, which I am sure is not the case when weighted with one or other, or, as I have often seen, with all the above. Because I objected to bleeding intemperate old soldiers of twenty years' service in tropical and malarial climates, taking blood away to the extent of upwards of a hundred ounces when suffering from peri-hepatitis, I was called the other day "the Micawber of medicine," the gentleman "who waits to see what will turn up." Well, I don't object to the name in the least; I had rather be the "Micawber" than the "Sangrado" of modern medicine. The more I have "waited" upon Nature, the less I have attempted to force her, the more I have found that "something" is pretty sure to "turn up" to the advantage of my patients. Very notably has this been the case in cholera. Some—unfortunately a great many—patients in severe epidemics will die, but such cannot be saved by pouring drugs into them in the collapse of this terrible disease.

Suffer me to recapitulate. Secure the best hygienic conditions possible for your patients; avoid crowding them; give abundance of water to

drink and ice to suck; correct cramps and inordinate vomiting by the internal and external use of chloroform; apply external warmth and extra bedclothes if these are grateful to the patient, but if they make him restless do not press them. If the cuticular discharge is excessive, wipe the patient dry from time to time, disturbing him as little as possible. If vomiting be not excessive, and if the remedy does not excite it, ten drops of the mixture I have recommended in the premonitory diarrhœa may be given from time to time, chloroform being substituted if vomiting be urgent. As soon as vomiting ceases, you must support the patient by proper nutriment. At first I begin usually with thin arrow-root, well boiled, and flavoured with a little aromatic. I give this, commencing with a teaspoonful at a time, giving every now and then a teaspoonful of brandy in it, never over-distending the stomach. Instead of water, I now quench thirst with milk containing a little lime-water, and flavoured, if it be at hand, with a few drops of curaçoa. This may be often given to the patient with a little soda-water. As reaction proceeds, I substitute strong beef-tea, or, better still, essence of meat, using it in the same cautious way—spoonful by spoonful at proper intervals; later still, eggs beat up with little brandy, and flavoured as before with curaçoa, is often relished. The greatest caution is required not to disgust the patient, not to re-excite vomiting, not to over-stimulate, and so to bring on cerebral symptoms during the febrile reaction. When patients are thus carefully nursed, it is seldom that reaction is excessive. Nothing but mischief may be expected from over-anxiety to hasten forward convalescence by too freely pressing food and stimulants on the patient. It requires a great deal of drilling and care to get orderlies and half-instructed nurses to understand this; and many cases go wrong from their over-anxiety to press both on those under their care. In a word, the treatment of cholera may be summed up in two words—*good nursing*. The difficulty is to obtain this when an epidemic rages. The man who in such scenes maintains his presence of mind, preserves order, regularity, and good hospital discipline, and so arranges as to secure to each patient a fair amount of this good nursing, will save a larger proportion of cases than by any other method with which I am acquainted. What I recommend to others I followed in my own case. When struck down by this disease, I took no drugs. I experienced the burning thirst I have described; but instead of tormenting myself by abstaining from fluids, I drank freely of iced soda-water, to my infinite comfort and refreshment. When I vomited, which I did often, I drank again. A faithful servant, my only doctor sat by me, and, when too feeble to do more than express my wants by a gesture, replenished my cup

again and yet again. I vividly remember the resolution then formed, and never since departed from—to do unto others as had been done unto me; never to withhold a cup of cold water from a cholera patient. With daylight came a kind and judicious medical friend, who, instead of goading me with physic, sustained me with food, much in the manner I have advised in this lecture. With the result I had and have every reason to be satisfied and thankful. Dangerous reaction—i. e., high fever, with cerebral symptoms and coma, I have seen; but only when Art, coming not to aid but to thwart Nature, has interfered with her eliminatory processes by the too free use of opium, astringents, and such like remedies. In such cases we must have recourse to free purgation by calomel, apply ice to the head, and restore the action of the skin by the wet-sheet, cold sponging, and the like. When the secretion of urine is long delayed, I have seen good results from the free use of chlorate of potash, and the application of turpentine stupes over the region of the kidneys.

Note.—Since the above lecture was delivered, I have seen and read with pleasure and profit Dr. George Johnson's "Notes on Cholera." This able physician has been led to much the same conclusions as to the action of most drugs in cholera as are expressed above. Dr. Johnson puts more faith in the action of purgatives than I can do; for, like every known class of drugs, they have been freely used in India. I sincerely trust that Dr. Johnson may never see so many cases of cholera as I have done; but I cannot help thinking, should it be otherwise, that he will see cause to believe with me that, in a vast majority of cases, there is quite enough purging without artificial aid. Still, for my own part, if again smitten by cholera, let me rather fall into the hands of a *purging* than an *astringing* physician—one who thinks he does you service by retaining what Nature is so solicitous to expel from the system.—*London Lancet.*

NOTES ON CHOLERA BY DR. JOHNSON.*

The appearance of Dr. G. Johnson's unassuming little volume will, we trust, be the means of calling the serious attention of the profession to the terrible subject of the Cholera. For a time this destroyer has ceased its ravages in Europe, and our shores have so far escaped its visitation. But who will assure us that this present year will pass away and leave us still unmolested? The history of former epidemics justify us only too well in anticipating that, before many months are passed, medicine may be again trying conclusions with the enemy here within our very doors.

* Notes on cholera; its Nature and Treatment. By George Johnson, F.R.C.P., etc. London: 1866.

Dr. Johnson's book, therefore, comes opportunely. It will lead us to ask ourselves whether we are prepared to do battle with this fearful disease; whether we have any fixed method of encountering it; whether the experience of former epidemics has taught us lessons which may help us now; whether (as heretofore) we are still to proceed in treatment by the rules of the barest empiricism; or whether theory has anything to offer us as a guide amidst so much darkness. He who has followed the dealings of our French and Italian brethren in the treatment of cholera during the past six months, and has read the suggestions of our countrymen on the subject, will, we think, agree with us that, in the all important matter of treatment, we are very much where we were when the disease first visited Europe. But more than this. If we have attained to no positive knowledge of a treatment of the disease, it would appear that neither are we able to decide whether our remedies are simply negative or actually injurious in their effects. Is it not indeed true that our present dealing with the cholera—our search for a remedy for it—is very much of the same kind as are the proceedings of a chemist who indiscriminately throws into his crucible any variety of substances which first come to hand, and hopes, therefore, by some happy accident to tumble on a great discovery? Let any one read the divers methods—the in some cases opposing methods—of cure adopted by estimable practitioners; let them reflect upon the thousands of different remedies, the infinite number of cures, boasted of by legitimate members of the profession; let any one conscientiously make himself master of what the abundant pages of medicine can tell him on this score, and we are sure he will agree with us, that our preparedness to meet another advent of cholera is not a thing to boast of. We are proud of being a practical people, not over given to theory; but we are sadly apt to forget that in the application of medicine to the cure of the disease, no one of the helps on which we rely is more likely to deceive us than the one on which we rest ourselves so lovingly and so firmly, the *prop* experience. We forget that the wise Father of Medicine taught how fallacious in medicine experience is—*experientia fallax*; how difficult a right judgment of things; how easy to draw false conclusions, and to make the *post* stand for the *propter*. We are apt to laugh at theories in medicine; but we believe it would not be hard to show that the very greatest advances in the practice of medicine have arisen not from the lessons of mere empiricism, but have followed upon a change of theory. Buckle has a very remarkable observation on this point. He tells us:

“There is no well authenticated case on record of any theory having been abandoned because it produced dangerous results. As long as a

theory is believed, men will ascribe its evil consequences to any cause except the right one..... Every practical change may, by careful analysis, be shown to depend in the first instance on some change of speculative opinions."

Every one who has read the history of medicine, must admit that there is at all events great truth in Buckle's remark which is quoted by Dr. Johnson; and, doubtless, as an illustration of his own exposition of the pathology of cholera.

Dr. Johnson comes before us with a new theory of cholera; and, if his theory be right, it follows that the generally accepted practice—what we might call the "orthodox" treatment of cholera—is founded on a completely erroneous basis, and is therefore itself completely wrong. And Dr. Johnson has a right to be heard in this matter. No man more so; for he has long and carefully studied the question upon which he writes; and he is an accomplished observer; and has put his theory to the test of a large practical experience, and still finds it a good theory.

Dr. Johnson, first of all, clears the ground by proving the fallacy of the ordinarily accepted theory of cholera; viz., that the collapse attending it is the result of purging and vomiting. Loss of blood-serum (as it is argued) produces collapse. Arrest the flow of serum by opium, etc., and you will prevent the collapse. Now this Dr. Johnson utterly denies; and his statements require refutation at the hands of those who adopt the serum-arresting and astringent practice. If he be right, their practice is assuredly prejudicial to life.

He proves his case in this way. In the first place (he argues), there is no direct relation between the loss of fluids and the degree of collapse in cholera; rather do they stand in an inverse ratio to each other: for experience shows that the most rapid and fatal collapse is attended with little or no purging or vomiting. Then, again, the symptoms attending the collapse are not such as mere loss of the fluids of the body would produce: blueness of skin and other signs of obstructed breathing; absence of syncope; remaining muscular power; and remarkable rapidity of recovery, as if from suspended animation by drowning, are not the signs of loss of blood or of its equivalent. Neither is the influence of treatment such as we should expect of it, if the popular theory of collapse were true. Alcoholic stimulants, Dr. Johnson asserts, increase the symptoms of collapse. "They have been given," he says, "freely and boldly; and the result has been that, in the stage of collapse, they are not only useless, but positively injurious."

No doubt the striking temporary benefit produced by injections of hot water into the veins of cholera-patients has gone far to confirm the theory

that the collapse results from loss of water. But this explanation, Dr. Johnson says, is erroneous. The benefits attending the water-injections result from this—that the heat relaxes the spasm (above spoken of) of the small pulmonary arteries, and so allows a freer temporary circulation of blood through the lungs; and confirmatory of this is the fact, that no such good effect is produced by merely tepid water injections. Thus, in truth, the results of this mode of treatment, which seem, at first glance, to upset Dr. Johnson's theory, are, in reality, confirmatory of it.

Again, the effects of venesection in the hands of those who have employed it in cholera, are exactly the reverse of what they should be if the popular theory were true. Instead of producing syncope, it strengthens the pulse, and removes the faintness and debility. The experience of the highest medical authorities in India attests this fact. As to purgatives, indisputable records show that recoveries from collapse have occurred when both purging and vomiting have been encouraged by emetics and purgatives. And on this point, Dr. Johnson throws out a challenge which requires an answer from those who oppose his theory :

“ I defy you to shew me,” he says, “ a single case of recovery from collapse, in which the intestinal discharges have not continued, in a greater or less degree, while the symptoms of collapse were passing off.”

Now, if the popular theory and practice were correct, surely the very opposite of Dr. Johnson's assertion should be the case.

The issue is here clearly stated. *If Dr. Johnson be right, the popular practice—the astringent and alcoholic treatment of collapse of cholera—is founded on a false theory, and is a deadly and destructive treatment.*

But, if the collapse be not the consequence of loss of serum (as popular error teaches), what is its true cause? Now here, in the answer to this vital question—vital truly to the patient, because of its direct bearing on practice—comes the theory of Dr. Johnson. It is this. The best observers of the bodies of cholera patients who died during collapse have noted, as uniformly and constantly present, those appearances which indicate arrest of the pulmonary circulation, that is, arrest of the blood in the small branches of the pulmonary artery before it reaches the capillaries: the left cavities of the heart empty; the right cavities and pulmonary artery distended; the minute tissue of the lung anæmic, pale, and dry.

Moreover, it is a fact, that the symptoms which we should naturally expect to represent such an abnormal condition of organs are the very symptoms which actually attend the collapse of cholera—viz., little or no pulse; the blood sometimes not even flowing from a cut artery; shrinking of the features; sinking of eyeballs; etc.

We may, therefore, start from this point, *that the partial arrest of the blood in the lungs in the collapse of cholera is a demonstrated fact.* That this arrest does not result from the thickening of the blood through the loss of its water, is proved by this, that the collapse is a sudden event; that it passes off whilst the loss of water is still going on; and that the worst cases of collapse are those in which there is neither purging nor vomiting—*i. e.*, where there is but little loss of blood-serum.

But what then causes the arrest of pulmonary circulation? Dr. Johnson maintains that the cause is to be sought in the contraction of the muscular coats of the pulmonary arteries, induced by the irritative action of morbid matter in the blood. And he adds, that the thickened condition of the blood is the consequence, not the cause, of the arrest of the pulmonary circulation; and argues it out in the following way. The stream of blood through the lungs being greatly lessened, the supply of oxygen is also necessarily lessened, and in a corresponding degree. Hence, in the collapse of cholera, there is defective oxygenation of blood and tissues; and we note its obvious results in coldness and blueness of the surface of the body, diminished amount of expired carbonic acid, and almost (though never complete) suppression of bile and urine.

To this last statement, touching the cause of the suppression of bile and urine, we would call special attention. We believe it is entirely Dr. Johnson's own; and certainly his explanation seems conclusive. He argues: Bile, urine, and carbonic acid are products of oxygenation; therefore, suppress oxygenation, and, *pro tanto*, you suppress the formation of these compounds. And he explains the fact which has been noticed, of the secretion of milk continuing in nursing mothers when suffering from cholera, by a simple chemical theory: that the constituents of milk—oil, sugar, caseine—require no oxygen for their formation.

The thickening of blood, therefore, is a consequence of defective aëration. It always occurs when respiration is impeded, as in pulmonary and cardiac diseases, and during the cold stage of ague. Dr. Dundas Thomson found the blood of a patient suffering from some affection of the bronchial mucous membrane thicker with excess of solids than any cholera-blood he had ever examined. Moreover, whenever reaction sets in, the blood becomes rapidly thinner; or, in other words, whenever the blood begins to flow freely through the lungs—*i. e.*, when its due oxygenation is re-established. And it is worthy of note, that this thinning of the blood under improved aëration will go on even though the diarrhoea may continue. Bile also then appears in the stools, as the result of the oxygenation of blood-constituents which have accumulated during the collapse.

Purging and vomiting, Dr. Johnson not unreasonably concludes, are the natural cure of cholera. They are efforts of nature to be rid of the blood-poison. The worst and most deadly cases of cholera collapse are those in which neither vomiting nor purging occurs. Nature attempts to throw off this poison through the intestinal mucous membrane, just as she attempts to throw off the poison of small pox by the skin. To interfere with the purging, therefore, is to interfere with the process of cure—to assist in retaining the poisonous element within the body, or within the digestive tube, and thereby probably to produce diarrhœa, excite fever, and increase the risk of collapse. Moreover, experience approves this view, by showing that the astringent practice is an injurious practice. Dr. Johnson affirms statistically that, under the astringent treatment, fewer patients recover from cholera than they do under that treatment which has for its object the elimination from the bowels of the poisonous secretions poured out into them.

Now it is to the consideration of the value of the theory of Dr. Johnson of cholera collapse that we would call the attention of the profession, because we verily believe, with Mr. Buckle, that no failure in treatment will ever bring men to see the error of any treatment, so long as they have full belief in the theory on which that treatment is founded. Dr. Johnson proves the error of the "orthodox" theory of collapse; and he substitutes for it another theory, which, to say the least of it, has undoubtedly remarkable claims, upon scientific grounds, to the consideration of the profession. We may truly say this of it, that there is perhaps no instance in which the theory of a disease, founded on physiological and pathological facts, more strikingly explains the symptoms and dictates the course of treatment. We therefore think that the profession is greatly indebted to Dr. Johnson for thus enforcing upon their attention at this moment so vital a question. He offers us a pathological theory which suggests a truly scientific treatment of cholera. To oppose the excretory efforts, he asserts, is the same thing as applying cold to the burning skin of scarlatina. Recovery, on the contrary, is favoured by the use of means which facilitate the escape of the morbid secretions. Emetics, mild purgatives, and diluents are the means suggested by this theory, which knows nothing of specific cures or chemical antidotes. By this means Nature is aided in her efforts at cure; and we, at all events, if we do not cure the patient, do not impede his chance of cure. Dr. Johnson argues: The old heating method of treating small-pox, which compelled the patient to breathe an atmosphere charged with the poisonous exhalations from his own skin, was suggested by an erroneous theory. The treatment of epidemic diarrhœa and cholera by opiates and

astringents is also an offshoot from an erroneous pathological theory; and now that the theory in question has been shown to be untenable, it necessarily follows that the mischievous practice which has been based upon it has become indefensible.

Such, we believe, is a correct exposition of what we must venture to consider the most valuable and original work which this publishing season has added to medical literature — *British Medical Journal*.

EMPHYEMA OF THE LEFT PLEURAL CAVITY; CURE EFFECTED IN A NOVEL MANNER.

On August 2nd, 1862, Mr. J. B. Malcolm was called to see a man, aged 26, who had been ill for a fortnight, and had been attended by a club doctor. The man was suffering from a violent cough, with little sputa, and great difficulty of breathing. On a careful examination, Dr. Malcolm diagnosed extensive inflammation of the left pleura, with effusion into its cavity. He treated him in the usual manner; but although the cough became less frequent and troublesome, and the febrile symptoms began to subside, the breathing became not less difficult, and the extensive dulness on percussion of the side increased instead of decreasing. About the end of August, after a violent fit of coughing, the poor fellow expectorated a quantity of pus, and continued daily to do so; but still there was no real improvement. In fact, all the symptoms began to be worse. He continued to suffer from night-sweats. The sputa smelt more and more disagreeably, and what little appetite he had was failing. The click of the aortic valve was clearly to the right of the sternum, and on measuring the respective sides of the chest, Mr. Malcolm found the left about three inches more in bulk than the right. On August 31st, after consultation with Dr. McGrath of Castlemaine, it was decided not to risk tapping, but to trust to nature. Day by day the symptoms became more urgent. It was manifest that the entire of the enlarged pleural cavity was filled with pus; also that there was an outlet from it, leading through the upper and front part of the lung, was equally apparent. The patient could remain for any length of time only in the sitting posture, but if he desired to rest he first leaned forward for a short time, and in this position he expectorated profusely. Afterwards he could lean backwards and rest for an hour or so without coughing or spitting. The idea occurred to Mr. Malcolm of turning the man upside down and allowing the pus to escape through the opening which the progress of the disease had already made, and which seemed to be a safe and sure means of exit. The patient was simply made to hang his head downwards over the front

of the bed, he being meanwhile held for fear of his falling, when about a quart of horribly offensive pus ran out of his mouth. This simple plan being followed night and morning, perseveringly but cautiously, the pus was gradually drawn off, the heart began to return towards its normal position, the lung to expand, and the appetite to improve. On Sept. 22nd, every bad symptom was gradually disappearing, except a slight cough, with a moderate expectoration which was no longer offensive. On October 21st he drove over to Mr. Malcolm's residence (twelve miles) a wonderfully improved man. The heart had regained nearly its natural position. The side had fallen in very little.—(*Australian Med. Journal.*)

Surgery.

THE ANÆSTHETIC SPRAY PRODUCER.

When the toy for diffusing eau de cologne in fine vapour over the skin, in the form of spray—which some time ago found its way into our drawing-rooms—first came before me, it struck me at once that it might possibly be applied to the production of local anæsthesia; and I set to work to try its applicability in this respect. I was soon afterwards assisted largely in my labours by taking advantage of Siegle's apparatus, with the hand-ball spray-producer invented by my valued friend, Dr. Andrew Clarke, and supplied by the manufacturers, Messrs. Krohne and Sesemann, of Whitechapel-road.

With this apparatus I set myself to determine the degree of cold that could be produced by the vaporisation of all the known volatile liquids, and I determined the fact that the intensity of the cold produced, held a definite relationship to the boiling-point of the fluid used; the rule being that the lower the boiling point the greater was the amount of cold exhibited. In these inquiries I employed a very delicate thermometer, directing the spray upon the bulb from half an inch to an inch and a half from the point of the jet. By these means I learnt that with rectified sulphuric ether I could bring down the thermometer within 10 degrees Fahr. of zero, and that by directing the jet on the skin I could produce a certain definite and marked degree of local insensibility, but not sufficient for surgical purposes.

I next got Mr. Krohne to construct for me a hollow cylinder of thin metal, six inches long and three inches in diameter. In the circumference of this cylinder was a chamber one-eighth of an inch in diameter for containing ether. The ether communicated with a tube which was joined to an air-tube, as in Siegle's apparatus, and the centre of the cylinder was filled with ice.

and salt mixture. In this way the ether was reduced to zero, and when vaporised gave spray which brought down the thermometer six degrees below zero, and produced on the skin such entire insensibility that I could pass a needle through the part without sensation. On the 11th of December, 1865, I applied this process for the first time on the human subject for an operation. The patient was a lady, who required to have five front teeth extracted. I had previously administered chloroform to this lady for a tooth extraction, but the inhalation had produced so much irregularity in the action of the heart and other disagreeable symptoms that I considered it inadvisable to repeat chloroform, and she herself was only too ready to give the local measure a trial. The extraction was performed by my friend, Mr. Peter Matthews. On directing the ether spray first at a distance and then closely upon the gum over the first central incisor on the left side, we observed, at the end of fifty seconds, that the gum had become as white as the tooth itself, and quite insensible. I then directed the vapour upon the tooth for twenty or thirty seconds more, and on the patient intimating that she did not feel, I suggested to Mr. Matthews to proceed. He extracted a very firm tooth without the slightest expression of pain. The process being continued in the same manner, he extracted three other teeth with the forceps. The fourth gave way, and had to be removed by the lever; but in all cases the result was equally good. Not a drop of blood was lost; there was no painful reaction; and the healing process proceeded perfectly. Our patient, who was exceedingly intelligent, was specially requested to note every step of the operation, such as the applying of the forceps, the insertion of the blades beneath the gum, the loosening process, and the removal. She told us that in two of the extractions she felt nothing; that in one it seemed as though the jaw altogether were being pulled downwards, but without pain; that in another she was conscious of a kind of wrench or loosening, but without pain, and that the introduction of the lever was attended with a momentary dull ache, just perceptible. On the whole, the process was quite as painless as when she took chloroform.

On December 13th, I applied the local anæsthetic to the same lady for the further extraction of nine teeth, Mr. Peter Matthews again operating. The results were equally good with the first seven; at which point, unfortunately, the apparatus partly ceased play. At the eighth tooth pain was felt, and at the ninth, the apparatus being out of play, the operation caused great pain. We regretted this much, although it gave us the information of the perfect action of the process when no mechanical obstacle interfered with it. The reason why the apparatus stopped

play was very singular, and could hardly have been foreseen. It arose from the condensation of water derived from the air in the air tube, and from the blocking up of the fine jet with a little portion of ice.

In the next step of research I got Mr. Krohne to make for me an apparatus with two spiral tubes, one the air tube, the other a tube for ether; and I immersed these spirals in a closed chamber filled with ice and salt. The degree of anæsthesia at first produced was most intense, and Mr. Spencer Wells was good enough to allow me the opportunity of applying the process in a case where an operation was required for closing a perineal rupture. Unhappily the apparatus, from the very same cause as before, ceased to yield a current; water condensed and became frozen in the air-tube. The apparatus itself was also found to be too cumbersome for practical purposes; I therefore, in this trial, failed to obtain any result.

By this time I had been led, very reluctantly, to the fact that the use of ice and salt for reducing the ether was a failure when the plan came to be tried in practice, nor could I see any ready way of preventing the difficulties that were brought before me. Added to these difficulties there was another, which has always attended my friend, Dr. Arnott's plan, viz., that of getting the ice and salt readily for operation. To succeed, therefore, it was requisite to dispense with ice and salt altogether.

In considering how this object could be achieved, it occurred to me that if a larger body of ether than is supplied by Siegle's apparatus could be brought through the same jet, by mechanical force, in the same interval of time, and with the same volume of air, a proportionate increase of cold must necessarily be produced. The theory was one of pure physics, admitting even of arithmetical demonstration, and running parallel with the lessons which had been taught me with respect to the cold produced by liquids having different degrees of boiling point. The theory was put to the test at once, and proved correct to the letter. By driving over the ether under atmospheric pressure, instead of trusting simply to capillary action—or to suction, as in Siegle's apparatus—the spray evolved brought the thermometer within thirty seconds to four degrees below zero—the result that was desired.

Ascertaining this truth, I instructed Messrs. Krohne and Sesemann to construct a very simple apparatus.

The apparatus consists simply of a graduated bottle for holding ether; through a perforated cork a double tube is inserted, one extremity of the inner part of which goes to the bottom of the bottle. Above the cork a side tube, connected with a hand bellows, pierces the outer part of the

double tube, and communicates by means of the outer part, by a small aperture with the interior of the bottle. The inner tube for delivering the ether runs upwards nearly to the extremity of the outer tube. Now, when the bellows are worked, a double current of air is produced, one current descending and pressing upon the ether forcing it along the inner tube, and the other ascending through the outer tube and playing upon the column of ether as it escapes through the fine jet. By having a series of jets to fit on the lower part of the inner tube, the volume of ether can be moderated at pleasure; and by having a double tube for the admission of air, and two pairs of hand bellows, the volume of ether and of air can be equally increased with pleasure, and with the production of a degree of cold six below zero.

By this simple apparatus, at any temperature of the day, and at any season, the surgeon has thus in his hands a means for producing cold even six degrees below zero; and by directing the spray upon a half-inch test-tube containing water he can produce a column of ice in two minutes at most. Further, by this modification of Siegle's apparatus he can distribute fluids in the form of spray into any of the cavities of the body—into the bladder for instance, by means of a spray catheter, or into the uterus by a uterine spray catheter.

When the ether spray thus produced is directed upon the outer skin, the skin is rendered insensible within a minute; but the effects do not end here. So soon as the skin is divided the ether begins to exert on the nervous filaments the double action of cold and of etherisation; so that the narcotism can be extended deeply to any desired extent. Pure rectified ether used in this manner is entirely negative; it causes no irritation, and may be applied to a deep wound, as I shall show, without any danger. I have applied it direct to the mucuous membrane of my own eye, after first chilling the ball with the lid closed.

I have now employed this mode of producing local anæsthesia in four cases on the human subject, The first case was the extraction of a tooth from a lady, the operation being performed by my friend and neighbour, Dr. Sedgwick, on January 24th of this year. On the 29th of the same month I used it again on the same lady, for the extraction of three very difficult teeth, Dr. Sedgwick again operating. The results were as satisfactory as in the previous case, where the ice and salt ether apparatus was used.

I have used the apparatus also in connection with my friend, Mr. Adams, who had a case at the Great Northern Hospital of deep dissecting abscess in the thigh of a young woman. In the abscess there was a small opening, which just admitted the director. I first narcotised

around this opening, and the director being introduced, Mr. Adams carried his bistoury nearly an inch deep and one inch in the line of the director. I then narcotised the deep-seated parts, and enabled him to cut for another inch and a half in the same direction. The director was then placed in the upper line of the abscess, the process was repeated, and the incision was carried two and a half inches in that direction. The patient was entirely unconscious of pain, and after narcotising the whole of the deep surfare, Mr. Adams inserted his fingers and cleared out the wound without creating the slightest evidence of pain.

Afterwards in the case of a lacerated wound, six inches long, in the arm of a boy, who had been injured with machinery, I narcotised while six sutures were introduced by Mr. Adams. The first needle was carried through without the anæsthetic, and caused expression of acute pain; the remaining eleven needles, after a few seconds' administration of the ether spray, were passed through painlessly. The twisting of the wire sutures gave no pain.

These results are so interesting that I make no apology for bringing them at once before my Medical brethren. I wish it to be distinctly understood that at the present moment I only introduce the method here described for the production of superficial local anæsthesia. It is, I believe, applicable to a large number of minor operations, for which the more dangerous agent chloroform is now commonly employed—I mean such operations as tooth extraction, tying nævus, tying piles, incising carbuncles, opening abscesses, putting in sutures, removing small tumours, removing the toe-nail, dividing tendons, operating for fistula, removing cancer of the lip, and other similar minor operations which I need not mention. The process may also be applied to reduce local inflammation.

In course of time, and guided by experience and the advancement of science, we may, however, expect more. If an anæsthetic fluid of negative qualities, as regards irritation of nerve, and which has a boiling point of 75° or 80° , can be obtained from the hydro-carbon series, the deepest anæsthesia may be produced, and even a limb may be amputated by this method. It may also turn out that certain anæsthetics may be added to the ethereal solution with advantage, such as small quantities of chloroform, or some of the narcotic alkaloids, if they could be made soluble in ether. A solution of morphia and atropia combined, if they could be diffused through ether, which at present seems impossible, could thus be brought into action so as to cause deep insensibility. In operating on the extremities it would be good practice to stop the current of warm blood by making pressure above on the main artery.

Reaction from the anæsthesia is in no degree painful, and hæmorrhage is almost entirely controlled during the anæsthesia.

One or two precautions are necessary. It is essential, in the first place, to use pure rectified ether; methylated ether causes irritation, and chloroform, unless largely diluted with ether say one part in eight—does the same.

The *modus operandi* of this process is exceedingly simple. It acts at first merely by extracting force, and afterwards, when the nervous filaments are exposed, by preventing the conveyance of force through them. To be plain, sensation means the conveyance of force or motion from the extreme parts to the brain. The motion is communicated by the blood in the form of heat: it is communicated to the nervous filaments, and by them is conveyed to the sensorium. This is passive sensibility. When we irritate a nervous fibre, as by a cut, we communicate more motion rapidly along that fibre and cause pain. This is active or exalted sensibility. To remove sensibility, therefore, we must adopt one of three processes: we must remove or render inert the sensorium; we must stop the evolution of force generally by arresting oxidation of blood; or we must rob the body locally of its force beyond that with which it is constantly being renewed. We see the first of these processes in action in cases of pressure on the brain, as from injury or effusion of blood; we see the second whenever we produce general anæsthesia by charging the blood with chloroform or other analagous anæsthetic; and we see the third when, by means of extreme cold, we rob the local part of the force that has been brought to it by the blood.

The problem of local anæsthesia will consequently be quite solved when by a rapid process we can exhaust the natural force of a part as fast as such force is evolved in the local structure; and especially when with this we can combine the action of a substance which for the moment controls, as by compression, the conducting power of nerve matter. These two latter objects are to a large extent carried out by the method I have described above.

THE PRINCIPLE OF THE PROCESS.

The principle of the new anæsthetic process consists in directing on a part of the body a volatile liquid having a boiling point at or below blood heat, in a state of fine subdivision or spray, such subdivision being produced by the action of air or other gaseous substance on the volatile liquid to be dispersed.

When the volatile fluid, dispersed in the form of spray, falls on the human body, it comes with force into the most minute contact with the

surface upon which it strikes. As a result there is rapid evaporation of the volatile fluid, and so great an evolution of heat force from the surface of the body struck, that the blood cannot supply the equivalent loss. The part consequently dies for the moment, and is insensible as in death; but as the *vis a tergo* of the body is unaffected, the blood, so soon as the external reducing agency is withdrawn, quickly makes its way again through the dead parts, and restoration is immediate. The extreme rapidity of the action of this deadening process is the cause of its safety. The process can suspend life without causing disorganisation; if I may use the expression, it produces syncope of the part—temporary death—but not necessarily destruction. When we produce general anæsthesia we virtually extend this mere local action to the body altogether—*i. e.*, we check the evolution of force at the centre, and produce an approach to temporary death of the whole of the organism.

THE INSTRUMENT.—IMPROVEMENTS.

In my original paper, I described simply the single dispersion-tube. Since then, I have made a large number of tubes to answer various powers and purposes. I have a tube in which there is a bulb enlargement at the end with perforated side, or side and central jets. This tube is exceedingly useful for the cavities of the body, such as the vagina or rectum. It distributes the fluid in the same manner as a syringe with several perforations at its point. In practice, I find that the dispersion of the fluid delivered from one fine tube by a series of jets is not so efficient, proportionately, as when it is delivered by one jet; the fluid, that is to say, requires a certain degree of concentration to ensure success.

In order to multiply the anæsthetic producing power, I have other instruments constructed which may be called compound. In these cases the bottle holding the volatile fluid either receives a common central tube of large size communicating with a number of terminal jets, or each terminal jet has a separate jet running into the fluid. By this means I have a brush of jets, which may be circular, or long, or flat, as required. For this compound tube a six ounce containing bottle for the fluid is necessary, and additional bellows power. The present small hand bellows will only work a compound jet of two elements with efficiency. I have tried various plans to do away with the hand bellows. I have used carbonic acid compressed into an iron bottle, and have applied the gas in its escape so as to act in the same manner as the air from the bellows. The apparatus complicates, and the pressure of gas cannot be so nicely regulated. I have modified this plan also by trying to get force by generating carbonic acid gas at the time; also by generating hydrogen from

zinc and dilute sulphuric acid, and using the pressure of the gas as the distributing agency,

Again, I have tried water pressure, as in the common gas holder; and I think in the dentist's room this plan would succeed well, if the preliminary expense were no obstacle. But taking all in all the hand ball bellows are as yet the most practical and most ready; they carry in the pocket, and one can go with them to the patient and commence anæsthesia at once—a great consideration. In many small operations, requiring only one or two strokes of the knife, the whole may be done painlessly, while the patient thinks the preparations are merely being made—much, of course, to his gratification.

Several suggestions for the improvement of the jets offer themselves for consideration; the fish-tail gas-burner, the Argand burner, the conservatory water engine, and many other mechanical contrivances similar in kind will occur to every one as worthy of imitation, and as quickly as they can be made they will be produced and tested.

THE FLUID TO BE USED.

I still continue to use absolute ether for operations, and now, as Mr. Robbins has produced an ether of specific gravity 0.720 of negative effect on the tissues, and having a boiling point of 92° Fahr., a better fluid can hardly be demanded. Many other fluids have been suggested by various readers of my original paper—viz., methylic ether, amylene, monochlorinated chloride of ether, pure chloric ether, nitrite of ethyle, a volatile hydrocarbon derived from the manufacture of portable gas, chloroform, rectified turpentine, and numerous compounds and mixtures. As regards these I may state that they have all been under my careful consideration, but that as yet none of them, taking their qualities all in all, are equal to absolute ether. Some are open to rejection at once from their boiling point being too high; others are unpleasant, and would not admit of being used in operations on the mouth or teeth; others cause irritation of skin; others in their pure state are so extremely volatile that they could not be kept in the surgery for any length of time—this is specially the case with methylic ether and nitrate of ethyle, both promising substitutes for ether; lastly, a body too volatile would somewhat affect the operator during the operation if it were diffused in the pure state.—Nitrite of ethyl is open to this objection not so much as the nitrite of amyl would be, but to some extent.

In time we may, perhaps, by experiment, get a compound volatile mixture which, being as negative as absolute ether in its effects on the body, shall boil a few degrees lower.

Before leaving this topic, let me state that the mere alteration or change of the volatile fluid used is no change of the principle of the present anæsthetic process. Ether itself is only a local anæsthetic on being employed according to this principle. This is important to be borne in mind, otherwise a principle may become confounded with a detail, and every fluid with a low boiling-point and the other physical qualities, as I have described them, for producing insensibility will be dubbed a local anæsthetic. By a slip of the pen, indeed, this error was committed in the *Medical Times and Gazette* of last week, a short leading article having been headed "Kerosolene a Local Anæsthetic." Kerosolene—a body very impure, unpleasant, and of unsteady but low boiling-point—when applied by my method acts like ether, because it resembles ether physically. But kerosolene is no anæsthetic *per se*, although it would serve as a substitution agent for one part of the anæsthetic process, in the same manner, and in none other, as an earthenware bottle would take the place of the graduated glass bottle in which the volatile liquid is commonly retained.

Dr. F. D. Fletcher, of Southport, has suggested to me the employment of liquid carbonic gas, and, as will be seen by last week's *Medical Times and Gazette*, Sir James Simpson has had carbonic acid in view for some years. I believe the first physiologist who actually tried to apply the reducing agency of carbonic acid for the production of anæsthesia was the late Dr. Snow. He went to great trouble and expense to experiment on the gas in the solid state, and he applied it in that state to his own skin. Singularly enough, the insensibility produced was slow and imperfect, but the worst feature was that slough was always produced on the part where the acid had been applied. Snow, therefore, gave up the effort, convinced that carbonic acid in the solid form could never be made applicable in actual practice, and that if it could it would not be a safe agent.

I myself moved for a time in a similar direction by using carbonic acid in the liquid form. Mr. Robbins supplied me with the gas reduced in a three-pint iron bottle under pressure. When the stop-cock was opened and the carbonic was liberated through a fine jet, an intense cold was produced; but I utterly failed in attaching a conveying tube that would be applicable for operations. The pressure, in a word, was unmanageable, and for ordinary practice, dangerous. In one experiment, while the jet was being directed on the back of my hand, the nozzle of the tube became set free, and, being projected with violence, injured me severely. I, therefore, like Snow, gave up carbonic acid as a body that would not submit to guidance, and as impossible to use in surgical practice.

We need not, fortunately, trouble ourselves on this subject. I have shown that by the dispersion of fluids of low boiling points we can get a

degree of cold which answers the required purpose without employing fluids or gases under pressure. If we want more than absolute ether, chemistry can furnish us with fluids which boil even at below 70° Fahrenheit, which fluids, dispersed as vapour, would fill the purpose of carbonic acid with only one disadvantage—that of being difficult to keep in store during many months of the year.

THE PRACTICE.

In effecting local anæsthesia by my process the surgeon, according to the nature of the case, may either produce entire blanching of the surface to be operated on, or may stop short of that extreme result, and only induce a superficial anæsthesia. In my first experiments, made with the ordinary ether of the shops, I employed the second form of anæsthesia alone, and even now when a mere puncture through the skin or mucous membrane is required, I still resort to this method, reserving the extreme action for cases where deep-seated parts have to be divided.

For producing the deep anæsthesia with superficial whiteness it is necessary to use absolute ether, and to direct the spray in brisk current at a distance of about an inch from the part. To induce the less determinate condition the ether may be diluted. This may be done by mixing alcohol with the ether, or better still chloroform. Two mixtures of this kind are very useful; one contains six parts of ether and two of chloroform, the other seven of ether and one of chloroform. In using pure ether, or the mixture, differences of time are required. To cause insensibility with the simple fluid—ether—from fifteen to fifty seconds only are necessary. To produce insensibility by the mixture of ether and alcohol, or of ether and chloroform, from four to five minutes are demanded. The sensation felt by the patient also differs. When pure ether is used little if anything is felt until the moment when the part becomes white: then there is a sharp, pricking, burning sensation. When the compound or mixture is used, the sensation, very prolonged by comparison, is that of numbness and aching. On the whole, I have found patients generally prefer the more rapid procedure.

The nature of the operation will, to a large extent, determine the method to be resorted to. For opening an abscess, for incising a small carbuncle, for tying a nævus, or removing very small tumours, for applying nitric acid; and for operations of a similar kind, the mixture of ether and alcohol, or of ether and chloroform, answers every requirement. I should myself also use the mixture in an operation for hernia, because the tissues would not be rendered hard, and the dissections could be carried on with delicacy. But for deeper operations, such as removal of the nail,

of portions of bone, of fingers, and the like, the complete action of the anæsthesia requires to be brought into play. For teeth extraction the pure ether also answers best—it acts rapidly and deeply, and there is no great accumulation of fluid in the mouth. By practice, the two degrees of action I have named may be obtained by the employment of ether alone: I mean, the degree of anæsthesia from the spray of absolute ether can be determined by the distance from the part at which the spray is directed: by removing the jet three inches from the part, a moderate effect is produced, nearly equivalent to the dilution of seven parts of ether with one of chloroform. The condition of the patient generally ought likewise to be considered. Aged and weak people become anæsthetic very readily, and for them the milder process is most applicable.—*Medical Times and Gazette.*

MEDICAL NEWS.

Professor Brande, D.C.L., F.R.S., the veteran chemist died at Tunbridge Wells, England, on the 11th February, at the ripe age of eighty years. He was an ardent lover of chemistry, and when quite young was introduced to Sir Humphrey Davy, as “a boy fond of chemistry,” This introduction led to an intimacy which continued till the death of Sir Humphrey. Brande’s work on Chemistry has been in the hands of the profession almost from generation to generation. At the time of his death he was engaged editing a Dictionary of Science and Art three parts of which only have appeared.

Sir Dominick Corrigan, the Irish Medical Baronet, has lost his eldest son, Capt. Corrigan of the 3rd Dragoon Guards, He died in Melbourne, Australia, where he had gone from India on sick leave.—The entire value of the estate of Dr. Valentine Mott of New York, was \$400,000.—The cholera conference was opened at Constantinople on the 13th of February.

The following paragraph, which we copy from the *Medical Times and Gazette*, will be read with pleasure by Dr. Nicoll’s many friends in Montreal. Dr. Nicoll served with his regiment, which was stationed in this city from January, 1862, to September, 1864. “The election of a medical officer to the charter house has been decided in favour of Charles A. Nicoll, Esq., Battalion Surgeon, Grenadier Guards. There were originally eighteen candidates, one of whom did not go to the poll. Amongst them were two army surgeons, one retired militia surgeon, one or two physicians, and the rest were general practitioners. The appointment has for many years been considered the great prize for the general practitioners of the vicinity.”

Canada Medical Journal.

MONTREAL, MAY, 1866.

CANADA CENTRAL BOARD OF HEALTH.

PRESCRIPTION FOR CHOLERA.

The following prescription, recommended by the Central Board of Health for the Province, is kindly forwarded to us to-day by the President, Dr. MacDonnell, from Ottawa city, where the Board is sitting, and we publish it in the assurance that any remedy emanating from that body will be thankfully appreciated by the public at the present time:

OTTAWA, April 28, 1866.

The following members of the Central Board of Health, considering it prudent that the public should be supplied with a remedy to be used in the diarrhoea preceding cholera, until the services of a physician can be procured, think the "Medical Field Companion," so generally used in the British army in India, may be safely employed. The following articles enter into its composition:

Oil Aniseed, Oil of Cajeput, Oil of Juniper—of each half a drachm; Sulphuric Ether, half an ounce; Strong Sulphuric Acid, seven drops; Spirits of Wine, twenty-three drops; Tincture of Cinnamon, two ounces: mix.

Ten drops in a table spoonful of water, to be taken every quarter of an hour, until medical services can be procured, or until relief is obtained.

(Signed,) R. L. MACDONNELL, M.D., President; JOHN R. DICKSON, M.D., J. A. GRANT, M.D., Secretary; CHARLES G. MOORE, M.D., W. T. AIKENS, M.D.

We take the above from the *Montreal Gazette* of May 2nd, 1866; and we must say, if this is pretended to be an official act on the part of the Central Board of Health, that we have never met with a more glaring act of official ignorance. The remedy above mentioned is recommended and used by the army medical authorities as a powerful diffusible stimulant, to promote reaction both in cases of cholera and diarrhoea. It is not given

to check diarrhœa, as is pretended by the above; but after the diarrhœa has done its work and the patient is sinking exhausted, the above prescription is resorted to, but not under the name of the Medical Field Companion. The Companion of that name is a box with compartments, the dimensions of which are, length 13 inches, breadth $6\frac{1}{4}$ inches, and depth $8\frac{1}{4}$ inches: the contents are medicines, pills, powders, and surgical appliances; such as, rollers, lint, plaster, sponges, needles, thread, a razor in case, shaving soap, and a graduated horn cup; the whole to weigh eleven and one quarter pounds. With regard to the above remedy we would refer our readers to Dr. Aitken's work on the Science and Practice of Medicine, fourth edition, vol. 1, page 665. "To promote reaction in cholera and diarrhœa, the following formula has met with most universal approval in this country and in India. So highly is it valued, indeed, that it is ordered to be always in store, and in readiness in the 'Medical Field Companion' of the army when on the march." We may mention that Dr. Aitken is the Professor of Pathology in the Army Medical School; the article "Cholera" in his work will repay perusal. But coming back to this "Prescription for Cholera," heralded with full official dignity as emanating from the Central Board of Health for the Province of Canada, is it a fact that *this is* the recommendation of this very eminent body? We have recently received several letters on the subject requesting us to deny that it is the recommendation of the Board of Health of the Province, but that the gentlemen whose signatures are attached to the document, are alone responsible. We cannot do better, in conclusion, than quote a paragraph from the letter of one of our friends. He says: "I am very anxious to see the name of the Board, and my name clear of what I hold as the ridicule of recommending a *nostrum*. A *cholera mixture* is to me what would be a *typhus mixture*, a *small pox mixture*, a *phthisis mixture*;—just as good outwardly as inwardly as Perry Davis' Pain Killer, Bristol's Sugar Coated Pills, Mrs. Winslow's Soothing Syrup; and a thousand of the like. I regard all formula as dangerous, and that the medical adviser of a family is the only one to prescribe compound drugs or medicines." This last observation we most fully endorse; and if families are anxious to keep in their houses medicines to be used in cases of emergency, let them have the common civility to apply to their physician if they have confidence in his knowledge and honesty; *if not*, then can they run after the recommendations of the five members of the Central Board of Health for the Province of Canada; or Dwight's Cholera Mixture or Dixon's Blackberry Carminative, or Hamlin's Remedies for Cholera, or the whole category of trash to be had at any of our drug stores for ready money.

MCGILL UNIVERSITY, MONTREAL.

FACULTY OF MEDICINE.

M.D., C.M., HOLMES MEDAL EXAMINATION, SESSION 1865--66.

This prize is given by the Medical Faculty of the University, and is to perpetuate the memory of the late Professor A. F. Holmes, M.D., LL.D., It is the highest honour given in this Faculty and is awarded by special written examination to the competitor who shall take the greatest number of marks. Members of the graduating class can alone compete and those only who shall have prepared a thesis of sufficient merit in the estimation of the Faculty to entitle him to that privilege. The special examination extends over two days. The theses this year were considered so very excellent that twenty-two names were handed into the Dean of the Faculty as entitled to compete for the medal. The successful candidate was George Ross, M.A., of Montreal. We may mention that Dr. Ross graduated with honour in the Faculty of Arts of McGill University. The following were the questions in the various Branches.

FRIDAY, APRIL 27TH.

NOTE.—This Medal, founded by the Medical Faculty, is open for competition to those members of the graduating class who have undergone successfully their final examinations, and whose inaugural theses are deemed respectively worthy of 100 marks or more, the maximum number of marks for any thesis being 200. Complete answers to all the questions are equal to 400 marks (50 for each branch) making the total number obtainable 600.

ANATOMY.—2 TO 3 P. M.

Examiner..... W. E. SCOTT, M.D.

1. Describe the perineal fascia, having reference to the anterior or urethral portion of the perineum; mention the parts contained between the superficial fascia of the perineum and the deep or triangular ligament; give the origin, course and distribution of the internal pudic artery.

2. Name the muscles of the anterior tibial region, and give the relations of the anterior tibial artery.

3. Give the origin, extent, division, relations and branches of the subclavian arteries.

CHEMISTRY.—3 TO 4 P. M.

Examiner..... W. SUTHERLAND, M.D.

1. What is the formula of urea? give the calculation whereby the percentage of its nitrogen is established, and what volume of this gas is equal to a grain of urea.

2. What is the colour and the composition of the precipitate produced by sulphydric acid with each of the following substances:—arsenious acid, oxides of antimony and cadmium, peroxides of tin and iron?

3. Describe the manner of preparing the pure and dilute cyanhydric acid: what are its properties, what the mode of estimating its strength in any specimen, and its tests in a case of fatal poisoning by it?

MATERIA MEDICA, 4 to 5 P. M.

Examiner..... W. WRIGHT, M.D.,

1. Specify the adulterations of iodide of potassium, and state how they are known.

2. Mention the actions of digitalis in medicinal doses; also the morbid states of the body, and of special organs, as the heart, brain, &c., in which it would be indicated, as well as those in which it should not be administered.

3. Give the officinal preparations according to the British Pharmacopœia; firstly, of Barbadoes aloes; secondly, of Socotrine aloes, and name their constituents.

INSTITUTES OF MEDICINE.—5 TO 6 P. M.

Examiner..... W. FRASER, M.D.

1. What are the functions of the spinal cord as an independent nervous centre?

2. State the different channels through which nutritious and other matters can be absorbed into the blood, and the elaboration which some of them undergo in their transit.

3. Give the composition of bile, the physiological origin of its elements, and the purposes served by it in intestinal digestion.

SATURDAY, APRIL 28TH.

THEORY AND PRACTICE OF MEDICINE—2 TO 3 P. M.

Examiner..... R. P. HOWARD, M.D., L.R.C.S.E., &c.

1. Explain the modes in which the several causes of Bright's disease act, and give illustrations of each; describe the morbid appearances in the several stages of the "large white kidney," and the characters of the urine in that variety and in the "contracted kidney."

2. What are the conditions favourable to the development of zymotic diseases? Give in detail those specially operative in the development of cholera.

3. Describe the more important differences observed in the course and termination of chronic Phthisis; state the principles which should guide the physician in selecting a climate for the subjects of the disease, and explain the circumstances in which he should not recommend travelling.

CLINICAL MEDICINE AND MEDICAL JURISPRUDENCE—3 TO 4 P.M.

Examiner.....D. C. MACCALLUM, M.D., M.R.C.S. LOND.

1. Mention the different pathological changes in the kidney which give rise to albuminuria, and state also the physical and microscopical characters of the urine, and the general symptoms attending each.

2. What are the diseases that may be mistaken for neurotic poisoning? Describe the principal features of each, and state in what particulars each disease differs from poisoning.

3. Give the characteristics of blood stains, the methods of detecting them by the iron, nitrogen, and albumen, which they contain, and describe the characters of the stains with which blood stains may be confounded.

SURGERY AND CLINICAL SURGERY—4 TO 5 P.M.

Examiners..... { GEO. W. CAMPBELL, A.M., M.D., &c.
R. CRAIK, M.D.

1. Give the symptoms and causes of compression of the brain produced by injury. Under what circumstances should the trephine be employed, and when should we abstain from operating; and are there any cases where operative interference is proper without serious symptoms?

2. Give the symptoms and treatment of the different forms of iritis.

3. Give the diagnostic characters of infecting and non-infecting chancres, with the treatment applicable to each class.

MIDWIFERY—5 TO 6 P.M.

Examiner.....A. HALL, M.D.

1. How would you distinguish between the corpus luteum of pregnancy at full term, and one of an ordinary catamenial period?

2. How would you distinguish between accidental and unavoidable hemorrhage?

3. Under what circumstances are the operations of version and embryotomy required, and what is the smallest antero-posterior diameter through which a living child has been extracted.

ANNUAL CONVOCAATION, MCGILL UNIVERSITY.

Second Day.

The Annual Convocation of this University was held in the William Molson Hall, on Wednesday, 2nd May, for conferring Degrees in Arts, and on Thursday, May 3, for conferring Degrees in Medicine and Law.

The proceedings were opened with prayer by the Reverend the Vice Principal.

The minutes of the last year's Convocation were then read by W. C. Baynes, Secretary.

George W. Campbell, A.M., M.D., Dean of the Faculty of Medicine, announced that the number of students in attendance, during the past session, was 178, as follows:

From Canada East	93
Canada West	72
New Brunswick	3
Prince Edward Island	2
Nova Scotia	3
Newfoundland	1
United States	4

The number of students who have passed their primary examination for the M.D., C.M. Degree, which includes Anatomy, Chemistry, Materia Medica, Institutes of Medicine, and Botany or Zoology is 39; as follows:

John R. Smallwood, Montreal, C. E.; Emery Allard, Belœil, C. E.; Albert Roy, St. Hyacinthe, C. E.; James O'Leary, Kamouraska, C. E.; George Dickinson, Ottawa, C. W.; Richard King, Peterborough, C. W.; Richard S. Markell, Osnabruck, C. W.; Clinton Wayne Kelly, Kentucky, U. S.; Wm. McCarthy, Henryville, C. E.; James Howard, St. Andrews, C. E.; John M. Wanless, Montreal, C. E.; Peter A. McIntyre, Charlottetown, P. E. I.; Wm. H. Fraser, Perth, C. W.; Edward K. Patton, Quebec, C. E.; Robert L. McArthur, Martintown, C. W.; Francis L. Howland, Arcona, C. W.; David M. Cassidy, Montreal, C. E.; Donald McDiarmid, Newington, C. W.; John Vicat, Montreal, C. E.; Lafontaine B. Powers, Port Hope, C. W.; John S. Proudfoot, Chatsworth, C. W.; Henry McGowan, Kingsey, C. E.; Edward J. C. Roberts, Fredericton, N. B.; Wm. B. Malloch, Ottawa, C. W.; Clarence R. Church, Merrickville, C. W.; James W. Oliver, St. Catherines, C. W.; John A. S. Macdonald, Charlottetown, P. E. I.; John Brandon, Warwick, C. W.; Wm. Grant, Williamstown, C. W.; Charles O'Reilly, Hamilton, C. W.; Edmund Paradis, St. Denis, C. E.; John Gillies, Morristown, C. W.; James A. Nesbitt, Hemmingford, C. E.;

John Madill, Essex, C. W.; W. Dougan, St. Catharines, C. W.; Arch. McLean, Port Sarnia, C. W.; John Bell, M. A., Kingston, C. W.; Hy. Harkin, Montreal, C. E.; Calixte Ethier, St. Joseph, C. E.

The following are the names of students presented for the Degree of M.D., C.M., their residences and the subjects of their theses :

Geo. Ross, M.A., Montreal, C.E., Asiatic Cholera; Samuel Campbell, Glengarry, C.W., Pneumonia; Alexander Falkner, Lancaster, C.W., Croup; Edmund C. Walsh, Montreal, C.E., Excision of Joints; Edmund Longley, Waterloo, C.E., Arterial Hemorrhage; William Fuller, London, C.W., Nutrition; John McCurdy, Chatham, N.B., Fatty Degeneration; Thomas D. Laney, Owen Sound, C.W., Pleuritis; James A. Knowles, Cookstown, C.W., Some of the Causes of Disease; John Corsan, Milwaukie, U.S., Evils of Tight Lacing; Julius Leavitt, Melbourne, C.E., Function of Plants; Charles E. Hickey, Williamsburgh, C.W., Carcinoma; James B. Hall, Montreal, C.E., Asiatic Cholera; Rufus S. Parker, Newport, Nova Scotia, Stricture of Urethra; Alexander R. Ferguson, Williams-town, C.W., Hydrophobia; Alexander Anderson, Georgina, C.W., Scrofulous Ophthalmia; Chas. H. Cooke, Mount Pleasant, C.W., Chloroform; Wm. Wakeham, Quebec, C.E., Treatment of Mania; Alex. C. Savage, Ottawa, C.W., Typhus Fever; James Hayes, Simcoe, C.W., Anesthetics; Philip Burrows, Ottawa, C.W., Pneumonia; Ben. F. Burch, Fort Covington, U.S., Dyspepsia; Emery Allard, Belœil, C.E., Cholera; John Bell, M.A., Kingston, C.W., Acute Rheumatism; James O'Leary, Kamouraska, C.E., Hysteria; Jonas J. G. Harvey, Brockville, C.W., Tetanus; James C. Irvine, Montreal, C.E., Peritonitis; Chas. S. Parke, Quebec, C.E., Pneumonia; George Duncan, Montreal, C.E., Abortion; Thomas Gendron, Beauport, C.E., Hernia; Ben. S. Wilson, Roslin, C.W., Typhoid Fever; John Adsetts, Assist. Surg. R. Artillery, Quebec, Delirium Tremens; Jas. T. Halliday, Vernonville, C.W., Circulation of Blood; Charles E. Graham, Ottawa, C.W., Acute Rheumatism.

The following gentlemen passed their examination, but are not of age. Their Degrees will be conferred next meeting of Convocation :—

William Gardner, Beauharnois, C.E., Valvular Heart Disease; Patrick Robertson, St. Andrews, C.E., Scarlet Fever; David M. Cassidy, Montreal.

The Medical Faculty prizes consist, first, of the Holmes Gold Medal, founded by the Faculty in honour of their late Dean, and two prizes in Books, for the best Primary, and best Final Graduation Examinations.

2. The Holmes Gold Medal is awarded to the Student who, being of the Graduating Class, and having passed the Final Examinations, shall have prepared a Thesis of sufficient merit in the estimation of the Faculty to entitle him to compete, shall take the highest marks in a special examination for the Medal.

George Ross, M.A., Montreal, was the successful competitor for the Medal.

William Gardner, Beauharnois, C.E., gained the Prize for the best examination in the final branches, and Clinton Wayne Kelly, Kentucky, U.S., for the best examination in the Primary branches.

Professor's Prize in Clinical Medicine, John McCurdy.

Prize in Natural History, Botany—O. H. Clarke and A. A. Henderson.

PRACTICAL ANATOMY—DEMONSTRATOR'S PRIZES.

Senior Class—For general excellence as practical anatomist and for punctuality of attendance, prize awarded to Mr. A. E. Spohn. Students who deserve honorable mention as good practical anatomists—Messrs. W. H. Fraser, C. W. Kelly, L. B. Powers, T. G. Roddick, and J. Quarry.

Junior Class—The prize is divided between Messrs. Octavius H. E. Clarke and Thomas J. Alloway. Both these gentlemen deserve credit for their care and painstaking in this department of their studies. Students of the first year, who deserve mention for diligence and attention, are Messrs. G. J. Bull, A. L. Wilson, F. D. Lucas, and C. J. Hamilton.

Students who have passed the examinations in Natural History :

BOTANY.

Class 1st.—O. H. E. Clarke, A. A. Henderson, G. F. Bull, W. H. Howitt, F. J. Tuck, W. Cherry, and A. E. Spohn.

Class 2nd.—A. Renfret, F. A. L. McNab, T. J. Alloway, W. McFarlane, W. P. Buckle, J. Campbell, T. Wilson, J. Pridham, C. J. Renfret R. A. D. King, and J. McFie.

Class 3rd.—A. Harkness, F. Hall, T. Archer, J. A. Whyte, A. Garneau, A. Gillatly, D. D. McBain, C. Dansereau, J. H. Wye, T. de Grosbois, D. Fraser, J. Stinson, J. Stewart, A. L. Wilson, W. Cruise, R. Spenser, A. Tanguay, and A. V. Clement.

ZOOLOGY.

Class 2nd.—T. A. Rodger.

Mr. Ross was then called forward, and received the Holmes Gold Medal, the Chancellor expressing a hope that he might prove as good a man and as devoted to science and the duties of his profession as the late Dean of Faculty, whose name the medal bore.

Dr. Ross, we may also mention, was Chapman Medallist of the year in which he graduated in the Faculty of Arts.

The Dean of Faculty then delivered the prizes to the prize-men.

The Graduates were then called up, and having made the required declaration, received formally the Degree of M.D., C.M.

Dr. Hickey then delivered the valedictory on behalf of the new Graduates.

Professor Fraser then delivered a very excellent parting address on behalf of the Faculty to the new graduates.

After the proceedings of the Law Faculty, the Convocation was addressed by the Vice-Chancellor, who alluded with gratification to the steady increase in the number of students attending the University, especially in the Arts Faculty, the largest percentage of increase being in that Faculty. In proof of the advantage of thorough preparatory studies in competing for professional eminence, he alluded to the fact, that the medallists of this year of the two professional Faculties, had both graduated in arts, taking medals in that Faculty also.

The proceedings were closed with the benediction, pronounced by the Rev. Professor Cornish, and the Convocation adjourned.

COLLEGE OF PHYSICIANS AND SURGEONS, C.E.

SEMI-ANNUAL MEETING HELD AT MONTREAL, 8th AND 9th MAY, 1866.

IN presenting the following report, we must state that the Secretary for the District of Montreal, Dr. Peltier, has afforded us every facility in obtaining the necessary information. The minutes of the October meeting, held in Quebec, have not been laid before our readers because we have been unable to obtain them. They were received in Montreal, we believe, some three weeks ago, but we are forced to decline their publication as the time has passed by.

The semi-annual meeting of the College of Physicians and Surgeons of Lower Canada was held on the 8th and 9th of May, at the Mechanics' Institute of Montreal, for the purpose of examining Candidates for License, and Students to the study of medicine, and for general business concerning the profession at large.

The following Governors were present:—Drs. Chamberlin, Sewell, Brigham, Marmette, Smallwood, Tétu, Dufresne, Charbonneau, Badeau, Dubé, Lavoie, Landry, Hamilton, Gilbert, Weillbrenner, Blanchet, Tassé, Robillard, Gibson, Rottot, Michaud, Howard, A. G. Fenwick, Worthington, Boyer, Russell, Ross, Robitaille, Scott, Jackson, Tessier, Boudreau, G. E. Fenwick, and Peltier.

Dr. Chamberlin, the President, at 10 a.m., precisely, took the chair. The Secretary for the District of Montreal was requested to read the minutes of the October meeting, which were duly approved on motion of Dr. Landry, seconded by Dr. Jackson.

Dr. Peltier laid before the meeting several subjects concerning the College, amongst which, a petition from the Medical Convention of St. Hyacinthe District, begging for protection against unlicensed practitioners, and the consideration by the Board of a Medical Tariff prepared by them.

It was then proposed by Dr. Sewell, seconded by Dr. Smallwood: That the petition now read be referred to a Committee of five, to consist of Drs. Dufresne, Tassé, Gilbert, Worthington, Lavoie, A. G. Fenwick, with a request to report thereon at the next meeting of the College.

Moved by Dr. Gilbert, seconded by Dr. Hamilton: That the Committee to be appointed for the purpose of petitioning the Legislature for extending the powers of the College in reference to the establishment of a Benevolent Fund, for regulating the sale of poisons, and to give the College the power of conferring Fellowships, shall consist of the following gentlemen: Drs. Ross, Peltier, Smallwood, Robillard, Tassé, Marsden, and Howard.

Proposed by Dr. Smallwood, seconded by Dr. Scott: That Drs. Marsden, Landry, Russell, Peltier, Rottot, and Robillard, be the Committee for the revision of bye-laws.

Moved by Dr. Blanchet, seconded by Dr. Tessier: That Alfred Gauvreau Belleau, M.D., licentiate of four years' standing, be admitted a member of this College. Both Committees from Montreal, and Quebec, severally named to examine and report on the advisability of a better method of examination, came to the conclusion to postpone the consideration of the question to the October meeting. It was then moved

by Dr. Landry, seconded by Dr. Gilbert : That a Committee, to consist of Drs. Landry, Marsden, and Russell, be requested to prepare a report thereon.

Proposed by Dr. Howard, seconded by Dr. Landry : That in prospect of the not improbable importation of Cholera into this Province, at no remote period, a Committee be named to collect information and facts respecting the circumstances of its appearance, diffusion, progress, extent, mortality, methods of treatment, and upon the several other matters of scientific interest connected with the disease.

That, with that object, a *circular* containing a series of questions constructed on the model of those issued by the College of Physicians of London in 1849, but modified and extended as may appear wise to the Committee, be distributed amongst the members of the College, and Profession generally, and that all members of the Profession, and especially all Physicians to Hospitals and other Public Institutions who may acquire a large experience of the disease, be respectfully invited to co-operate with the Committee in procuring all reliable information on a subject of such extreme importance to mankind.

Proposed by Dr. Tessier, seconded by Dr. Sewell, that the following be the Committee : Drs. Peltier, Smallwood, and Howard, to prepare the questions ; and that Drs. Landry, Von Iffland, and Marsden, co-operate with the above gentlemen in collecting the information.

The college then resolved itself into committees for examination.

The following gentlemen, bearers of diplomas of McGill University, duly received their license :

Drs. Emery, F. Allard, James O'Leary, Edmond C. Walsh, William Wakeham, Charles S. Parke, Edmond Longley, Henry A. Mignault, J. Clarke Irvine, also J. Leman, L.R.C.S.E., R. C. Clarke, L.R.C.S.I., and David Green, L.R.C.S.I.

The following gentlemen, students from the School of Medicine and Surgery, Montreal, and Laval University, Quebec, after examination duly received the license of the college, viz :—

Messrs. Constant Loiseau, Marcellin Perras, Alcidas Archambault, H. Ladouceur, G. Leroux, J. Montmarquet, A. Laviolette, A. Thibeault, G. J. Roy, F. X. Bernier, A. Gervais, E. A. Caron, L. Lafontain, Ed. Hetu, L. Lafard, G. Grezier, A. Artois, P. B. Lahaye, C. Sampson, A. Dechamps.

The following gentlemen were after examination duly licensed as druggists, viz :

Messrs. J. Aitken Harte, J. T. Tuck, R. Spencer, J. Pridham, J. E. Davignon, J. Bowen, W. H. Laroche.

The following gentlemen were admitted to the study of Medicine :

Messrs. A. F. Dame ; J. B. Commeault, L. Mitigny, A. Duval, G. Madore, J. B. Laporte, W. Dick, J. B. Bosseau, C. Gingras, A. Robitaille, L. N. Levasseur, F. Davignon, L. Guest Labarre, S. Martineau, L. Corbeil, H. Héroux, E. Gauvreau, E. Laterrier, Ignace Chauret, Ant. Deslages, Onesime Giasson, Noah Pratt, W. Dignan, J. Bergeron, J. B. Ouimet, W. Murphy, H. Russell, and E. H. Roulcau.

The following gentlemen were admitted to the study of Pharmacy, viz: Messrs Serafino Giraldi, and W. B. V. Thompson.

The meeting then adjourned at seven o'clock p.m., until the following morning.

May 9th, 1866. The meeting assembled at 9 a.m., for the purpose of continuing the examinations, as several of the gentlemen above named had not been examined the previous day, time not permitting. Several accounts were submitted and ordered to be paid, amongst which Lelievre and Angers for legal advice. Drs. Scott and Smallwood were appointed auditors of accounts. The business of the college being concluded, the President ordered the names of those governors present to be taken. They were as follows:—

Drs. Chamberlin, Landry, Russell, A. G. Fenwick, G. E. Fenwick, Dubé, Robillard, Charbonneau, Boudreau, Dufresne, Blanchet, Tessier, Gilbert, Howard, Smallwood, Rottot, Tetu, Boyer, Werthington, Weibrenner, Lavoie, Scott, and Peltier.

Errata in our last.—The concluding paragraph on the treatment of Hypermetropia, on page 448 should read as follows: ***“ if a patient has a total hypermetropia equal to $\frac{1}{10}$, and a manifest hypermetropia of $\frac{1}{30}$, his latent hypermetropia ($\frac{1}{10} - \frac{1}{30}$) would equal $\frac{1}{15}$; one fourth of $\frac{1}{15}$ is $\frac{1}{60}$; this added to $\frac{1}{30}$ ($\frac{1}{30} + \frac{1}{60}$) equals $\frac{1}{20}$. We would therefore prescribe at first, 20 inch convex spectacles, which we would afterwards change successively for +18, +16, &c., &c.

The Editors of the *Dublin Medical Press and Circular* will please accept our apologies for not giving them credit for two articles which appeared in our February number. It was an omission which we regret, and which we will in future do our best to guard against. We are firm believers in giving credit to every journal for whatever we may select from their pages; and thank the *Medical Press and Circular* for drawing our attention to the fact.

NOTICE TO CORRESPONDENTS.

Dr. Paton, Bowmanville. If he wishes his paper to appear in our columns, it will have to be sent to us, postage paid. We do not pay for original communications, as we receive barely sufficient to pay the printer. Twelve copies of the Journal containing the paper sent, are allowed to subscribers who forward a communication. In case the person sending a paper for publication not being a subscriber, he is not entitled to receive extra copies unless paid for at the usual rate. Dr. Paton's paper can be read before the Medico-Chirurgical Society of Montreal by his sending it to the secretary.

If “Medicus” will forward us his name we will with pleasure insert his communication.