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CANADA

MEDICAL JOURNAL.

ORIGINAL COMMUNICATIONS.

Introductory Lecture, delivered at the opening of the Medical Department of the University of McGill College, November 7th, 1865. By R. PALMER HOWARD, M.D., Professor of the Theory and Practice of Medicine.

(Abridged from the author's notes, by FRANCIS W. CAMPBELL, M.D.)

GENTLEMEN,—It has long been the custom at this School for each Professor to introduce to the notice of the Students in a formal introductory, the department of Medical Science which it is his immediate duty to teach and illustrate. It becomes really a difficult matter to find new subjects every year suitable for these introductories, and I shall not make the attempt, but rely upon the generous consideration of the older members of the classes, while I address a few observations to those who begin their professional studies this session. But before beginning those observations, permit me to bid you all, old and new students, welcome to this School. Two subjects have suggested themselves as capable of furnishing topics of profitable consideration on this occasion: 1st. The qualifications of primary importance to the Medical Student of the present day; 2nd. Some suggestions or rules for his guidance during his pupilage. Certainly amongst the most important qualifications of any student of the liberal professions must be ranked a good preliminary general education. The special advantages of such an education to the divine or the advocate may not be exactly those illustrative of its value to the physician, but they are in the main the same; the training of the mental faculties so that they may be promptly and vigorously applied to the acquisition of knowledge, the discovery of principles and laws, and the discrimination between truth and error. The study of Greek or Latin, French or German is useful not alone nor chiefly as conferring upon the student an additional channel through which to acquire information, but as a means of strengthening the memory

developing the analysing and comparing faculties, creating the habit of accurate thought and expression, and disciplining all the mental powers, results of the highest value to the student. The pursuit of mathematical science exerts a similar influence, and more especially cultivates a cautious, systematic habit of reasoning, and of accepting nothing as proven in human knowledge, until it has been weighed or measured, calculated or demonstrated; it tends to produce a logical mind, than which there are few greater acquisitions to the physician. An acquaintance with some of the branches of natural science is of very great value to a student of medicine. When you reflect that heat, light, electricity, motion, which operate universally in inanimate nature, also operate in animated beings —aye, in man himself—you may perceive that a knowledge of their modes and conditions of action must be highly important to the individual who would investigate the functions and phenomena of the human organism. However important a good general education is to the student of divinity or law, I cannot help thinking it is of greater value to the student of Medicine. For not alone has the latter to acquire a knowledge of a larger number of collateral departments of science, as botany, chemistry, comparative anatomy, than the former, but the nature of the subjects he has to investigate, the causes of disease, the actions of remedies, the laws of vital action, &c., are of a more complex and mysterious nature than those great principles of religion, morality and justice which regulate the relations of man with man, and of man with his Maker—relations which form the subject matter of the professions of divinity and law. So valuable to the medical student is the education we are contemplating, that for many years the leading minds in our profession have been advocating a higher standard of attainments from the pupil about to enter upon his professional studies. Indeed the Medical Council of Great Britain has suggested the propriety of compelling every student to possess a degree in Arts or its equivalent before entering the Medical Schools. Some of you may think it will not be a difficult matter to acquire a fair acquaintance with Latin, French, and English literature, mathematics, and moral philosophy, during the four years assigned for your medical studies. But you will find that will be a serious mistake. It can not be done except to the neglect of the latter.

Every day, every period of a man's life, brings its proper engagements: those of yesterday, if unfulfilled, cannot be met to-day, at least they will encroach upon the time due to the engagements of to-day. If you have wasted your opportunities of acquiring that elementary knowledge, and mental training which the educated classes generally obtain at schools, you will find that it cannot be recovered, unless at the cost of neglecting

other duties proper to your present age; and in your case those are clearly a close application to the topics appertaining to the medical curriculum. Whatever differences of opinion may exist about the value of thorough educational training, none can obtain as to the extreme importance of a good grounding in the fundamental branches of medical knowledge, anatomy, physiology, and pathology. It is scarcely necessary that I stop to discuss the value to a medical man of an intimate acquaintance with the several parts, bones, joints, muscles, vessels, nerves, and viscera that make up the human machine; as well might a man undertake to act as engineer, who was ignorant of the parts and principles of the steam engine, as for a man to attempt to perform the duties of a surgeon while ignorant of the anatomy of the human body. It is however a common feeling on the part of the student, and even of passed men, that much of the minute anatomy of the vessels and nerves taught in schools is unnecessary, and of no practical value to the practitioner. This appears to me to be a great mistake, and I am disposed to believe that very much remains to be made out of the minute anatomy of those wonderful organs—the brain and spinal cord, which, once ascertained, the student will be required to learn, and which will supply the explanations of many facts in physiology and pathology not now comprehended. In proof of the value of a thorough knowledge of the distribution of the nerves, two or three circumstances may be adduced. Without it, what correct idea could be formed of those actions of the economy depending upon what is called the reflex function of the spinal system of nerves—say of the acts of coughing, swallowing, vomiting, &c. Without it how trace the mechanism by which a man sneezes when light is thrown upon the drum of his ear, or the retina of his eye, or how indigestible food in the stomach causes closure of the glottis by spasm of its muscles? Physiology, too, the science of the functions, and of the circumstances determining the normal exercise of the functions of the several parts and organs of the body, demands your closest study. For if ignorant of the various circumstances which conditionate the normal exercise of the various functions of the body, how can we hope to determine the rules which shall preserve that body in a state of health, or restore it to health when diseased? I do not mean to say that a knowledge of the functions of an organ, or of the conditions under which it discharges those functions in health, will necessarily enable you to invent means by which it may, when diseased, be restored to health; but I affirm, that were the science of physiology at all perfect, it would enable us to enunciate principles which should, if followed up, very considerably lessen the amount of disease in the world, by preventing its occurrence,

and would give the pathologist a scientific basis upon which to establish the conditions of disturbed vital action, and afford the therapeutist many valuable suggestions as to the means best adapted to restore health. Let it be observed, too, that in disease, it is highly probable that the same vital laws operate as in health, although under different circumstances, and with different manifestations. An intimate acquaintance with the nature, causes, structural alterations, symptoms, and course of the diseases of mankind is a requirement of the physician especially insisted upon at the present day. Without it a man is ignorant of the science of medicine, however practised he may be in the *art* of medicine. Very much has been made out as to the alterations of structure (morbid anatomy), and symptoms characteristic of most diseases, and those departments of pathology have attained a high degree of development. Those which are concerned with the causes and natural course of individual diseases, are still in a very unsatisfactory state of development, and their elucidation is one of the most urgent necessities of scientific medicine in the present day. Did we understand or even know the causes of many serious disorders, how much could we not do, at least toward their prevention, if not cure and removal? But it is especially a practical acquaintance with disease and its treatment that is of importance to the medical student generally in Canada; for in a new and sparsely peopled country like ours, where most medical men are obliged to practice all branches of the profession, comparatively few of us have the opportunity, or means, or I fear inclination to the cultivation of the more abstruse and philosophical subjects of medical science. By a practical acquaintance, I mean such a knowledge as enables its possessor to recognise the presence of disease, differentiate their varieties, appreciate their degrees of severity, specialty of type, and peculiarity of manifestation, arising from diversity of age, diathesis, constitution, &c., and to employ judiciously all the means known to science and experience to cure, retard, and alleviate them. Now the possession of this knowledge implies not only more or less acquaintance with the descriptions of disease furnished in books, and lectures, but a *personal* knowledge of them acquired at the bedside of the sick—the ability to use our unaided powers of observation promptly and correctly, and to enlarge and assist them by the many instruments and physical appliances which the physician of the present day possesses, as the stethoscope, ophthalmoscope, laryngoscope, microscope, thermometer, &c.; a familiarity with the uses and doses of medicine, and with the pathological conditions in which experience has shown that they may be properly administered—as well as a certain amount of skill and facility in the performance of those mechanical offices, which more properly

appertain to surgery. This practical knowledge of disease just described is obviously the bounden duty, and should be the great aim of every man who intends to enter the ranks of the profession of medicine with a view to the exercise of his knowledge in the prevention and cure of disease, and the alleviation "of all the ills to which flesh is heir." The arrest of public attention by the application of statistics to the death rate of different countries, the increasing intelligence of the public, the estimation in which medical science is held, the contributions to the welfare of mankind of that science in the past, and the philosophical spirit which pervades its ranks, have combined to press on the attention of the student of medicine in the present day, a duty which his predecessors, fifteen or twenty years ago, had almost ignored, viz., the prevention of disease. That large class of diseases, with perhaps a few exceptions, known as the zymotic, which comprises all ailments induced by the introduction into the body of a specific material or by defects in the quality or quantity of food, ought to be regarded by the physician and the public as *preventible* affections; and it is unquestionably both a reasonable, and a legitimate pursuit of the scientific physician to endeavour to discover means by which the occurrence of these maladies may be successfully opposed. To this class belong small pox, cholera, plague, remittent, typhus, typhoid, and yellow fever, hospital gangrene, erysipelas, pyemia, and many more diseases which frequently invade whole communities, and carry off hecatombs of victims, despite the well-employed resources of medical science. That *many*, probably *all* of these diseases, may be hereafter prevented, may be inferred from what has long since been done in the case of small pox, by vaccination, and of scurvy by lemon juice—and more recently from the disappearance of typhus fever, hospital erysipelas and gangrene, when opposed by a plentiful supply of pure fresh air and water; indeed the experience of the American and Italians, in the late campaigns, has proved that hospital gangrene may be altogether obviated by placing the wounded in well-ventilated tents. Already preventive medicine has in England "prolonged human life from five to fifty per cent, as compared with previous rates in the same districts." And, since 1840, it has reduced an annual mortality in English towns of 44 in 1000 to 27, and an annual mortality of thirty to twenty, and even as low as fifteen. Preventive medicine is based upon the general hygienic laws taught by physiology, and especially upon particular rules suggested by a knowledge of the causes of disease, so that in urging upon your consideration the claims of preventive medicine, I am at the same time commending to your study, physiology and etiology. I doubt not, from the attention the subject is now receiving from the ablest minds in the profession, that

medical science will make remarkable advances in future, and acquire new claims to the homage of men for the cure of many diseases which have hitherto proved intractable, and for the prevention of others which are in their essence incurable. The only other qualification which the medical student should possess, that I will mention, is the possession of that culture of mind, rectitude of morals, habit of self control, spirit of benevolence and sympathy with human suffering which should exist in a man whose mental and moral faculties have been developed and moulded by a long familiarity with the thoughts and opinions of the good and great amongst the dead and the living, and refined and humanized by every day witnessing the patience and suffering of the sick, and the solicitude and pious affection of their friends.

Adressing myself, as I am mainly to those gentlemen who are here for the first time, it may not be out of place to suggest some rules for your guidance during your student life. First, start with the determination to perform all your duties punctually and regularly; make it a point if possible never to miss a lecture, demonstration or examination, and endeavour to be present punctually at the appointed hour to meet your engagements. You will then soon acquire habits of industry and punctuality, two qualities which almost certainly secure success in life, or at least without which, distinguished success is seldom attained. A determination to do one's duty under all circumstances is perhaps the highest principle of excellence in any character. While in the lecture room or reading in your own rooms, cultivate the faculty of concentrating the mind upon the subject engaging its attention—you will thus be enabled to apprehend a subject more readily, and retain it in your memory more certainly, than if, with a feeble attention, you read or listen. I cannot conceive a more pernicious habit in a student, than paying a slovenly attention to any subject he may wish to master. It is a habit easily formed, but with difficulty conquered. Sir Bulwer Lytton, the great novelist when explaining how amidst many active public duties, he managed to write so much, observes, "I contrive to do so much by never doing too much at a time. As a general rule I have devoted to study not more than three hours a day, and when parliament is sitting, not always that, *But then during those hours*, I have given *my whole attention*, to what I was about." One of the most valuable means of instruction you will find will be a regular attendance on the weekly examinations. Not only do these exercises, if honestly done, oblige a review of the week's work, afford an opportunity of supplying omissions in your notes, or obtaining explanations of subjects you may not have comprehended, but they develope the faculty of promptly producing from the mental storehouse the knowledge it con-

tains at a moment's notice, and of conveying one's ideas in correct language. Not the least valuable office of these frequent examinations is their tendency to cause the student so to examine and sift the subject he is learning, that he seizes its most important and striking features, fixes his attention upon them, and so to speak mentally assimilates them, that they become part of his own mental wealth, which he can expend when a demand is made upon his resources.

It is the opinion of many experienced men, as well as of the speaker, that students should commence to "walk" the Hospital from the commencement of their career. Although you will be ignorant of the names and symptoms of the diseases the patients may be the subject of, and will feel perplexed and mystified by the numerous physical signs the attending physician may ask you to listen to, be not discouraged; you will be insensibly educating your eye, ear, touch and powers of observation, and be gradually acquiring a practical acquaintance with the physiognomy of diseases—knowledge you can only gain at the bedside of the sick. Let your visits to the Hospital be daily, and punctual to the hour appointed. A daily attendance is necessary, because the progress of most acute diseases is such that they must be watched almost from hour to hour, if the changes are to be noted. The time spent in the wards should certainly occupy from an hour to an hour and a half at least—for, beside accompanying the physician from bed to bed during his examinations of the patients, the student should return after the visit to examine such cases as he is studying. It is perhaps superfluous to say that while the physician is examining or prescribing or commenting upon the cases, students should not be collected in groups at the end of the wards, engaged in small talk with the nurse, or listlessly looking out of the window, but should be close by the bedside, watching the mode in which the patient is examined, listening to the questions adressed to, and the answers returned by the patient; while looking, they should learn to see; while hearing, they should try to listen. It is not necessary to see a great number of patients daily to gain a practical knowledge of disease. A few cases, carefully studied and closely watched, are infinitely more instructive than a multitude glanced, at and hurried over. When a case terminates fatally, repair to the dead house, and witness, if you may not perform, the examinations of the body. Inspect closely all morbid appearances, and make on the spot a record of them, and at home review them, and see how far they justify the diagnosis pronounced, and the symptoms observed during life. You cannot prize too highly the demonstrations in morbid anatomy. Let me recommend you, if possible, to avail yourself of every one performed during your student life. Take every oppor-

tunity to become dressers and clinical clerks in the Hospital. The summer after your first session will not be too soon, in my opinion, if you have been at all diligent. As dressers, you will learn the minor surgical operations of cupping, bleeding, bandaging, &c., and acquire a dexterity in their performance which practice can alone impart, &c.; and if you neglect the opportunity while students, you will deeply regret it when obliged to set the first fracture, in your own practice. Another duty, not less important, yet apt to be neglected, is the duty of becoming clinical clerks. The careful investigation of the history and symptoms of a sick person the daily examination of the patient, the noting of the symptoms as they vary from day to day, the record of the effect of remedies, is one of the best modes of acquiring information of the disease under observation and the influence of treatment over it. A well reported case of disease I regard as evidence of high qualifications in the reporter. He must have cultivated highly his powers of observing and describing symptoms, and must have attained no inconsiderable acquaintance with special diseases and the action of remedies, and must have acquired much tact in dealing with human character and a judicial mind in the examination of human testimony. I would advise you to endeavour from the beginning of your pupilage to acquire a facility in the employment of the various physical means and instruments—with which modern science has enriched the resources of our art. They are somewhat numerous, but amongst the most important may be mentioned—auscultation and percussion, the use of the microscope, laryngoscope, ophthalmoscope, thermometer, and the application of chemistry to the rough analysis of the blood, urine, expectoration, and other secretions. Wonderful progress has been made in the detection and discrimination of diseases of the heart and lungs since percussion and auscultation were first practised. It is now a matter of history, and moreover you will soon be convinced of the value of these means of investigation in the Hospital, and I trust in this lecture room. The microscope too has established its reputation as a means of detecting the nature of abnormal conditions of the blood and urine, the nature of the matters ejected from the stomach, &c. Of more recent acquisition is the laryngoscope and ophthalmoscope, but their novelty is no measure of their utility. The former has already enabled the practitioner to see diseases of the larynx and wind pipe, whose existence was only dubiously inferred, or not even suspected; and the latter has made known a long list of structural changes in the living eye, which had not even been discovered in the eye removed from the body. Nor is the ophthalmoscope limited in its application to the detection of diseases of the eye, for the interesting fact has lately been determined that it will frequently reveal altera-

tions in the deeper tissues of the eye ball, suggestive, some of them perhaps characteristic, of disease in the kidneys, spinal cord, medulla oblongata or brain, or indicative of some particular *cahexia* as syphilis or chronic Bright's disease, ailments, with the exception of syphilis, which receive the attention of physicians. The apparently commonplace instrument, the thermometer, is just now being employed by the physician, as a means of gauging the severity, foretelling the issue and probable duration of nearly all acute febrile diseases. Within the past few months Dr. Sidney Ringer, well known for his investigations of the temperature of the body in disease, has stated that by means of the thermometer "we can diagnose tuberculosis" (one of the most frequent and fatal morbid processes) "long before the physical signs and symptoms are sufficient to justify such a diagnosis." I might also point out the value of the endoscope, an instrument just introduced, by which the interior of the bladder and urethra may be seen; and which may perhaps be so modified, as to enable us to see the inside of the uterine cavity, and of the rectum high up. I should like to say something of the importance of giving proper care to your health; taking daily sufficient exercise in the open air, selecting well informed and well behaved companions, avoiding debased society, and cultivating good manners, but time will not permit.

(Dr. Howard then briefly gave some of the impressions made upon him during his recent visit to the London Schools of medicine. He alluded to the vast field of observation existing among the numerous large, and well endowed hospitals of the metropolis, many of which he named. He noticed the untiring industry of the Physicians and Surgeons of the Hospital, it being no uncommon thing to be attached to two Hospitals and sometimes, even three, and spoke in terms of admiration of their caution in drawing conclusions, their candour in confessing their ignorance, and their modesty and reserve in the expression of opinion upon vexed questions in science.) He concluded his lecture in the following words: Gentlemen, you are fortunate in being introduced to medicine at this period of her history. She has much to inform you of, many mysteries of nature to reveal to you, many truths to communicate, many hints and suggestions pregnant with future revelations to offer you, and a large storehouse of resources to place at your disposal. Labour now to profit by your advantages, watch every opportunity to render yourselves conversant with her teachings. To gain her confidence, and wield her resources, you must become her devoted, industrious and self-denying followers. You must engage in her service, not for the sole purpose of personal advancement, but with the desire to add to the possessions of her you serve, and above all to render her, through your instrumentality, the benefactor of suffering man.

Remember that in selecting medicine as your pursuit in life you are assuming responsibilities weighter and more important than appertain to any other office, save the priestly. It will be your office to apply the remedies, supplied by the God of nature, for the healing of the sick. You are to be the instrument in His hands of alleviating the sufferings, curing the diseases, and prolonging the days of your fellow man; and as His servants, you are responsible to the extent of your abilities and opportunities for the fidelity, discrimination and success with which you perform your works.

Let a sense of your responsibilities be ever with you during your studentship, and it will stimulate to close, continuous, and persevering study; and you will at some future day be rewarded with the esteem, affection, and confidence of your fellow men—the peace of mind afforded by a clear conscience, and, above all, the approbation of your God.

The Present Epidemic of Cholera—its Origin and Progress. By FRANCIS W. CAMPBELL, M.D., L.R.C.P. London, Member of the Royal Medical Society of Edinburgh.

As this dreaded scourge nears our own land, the interest which has been attached to its progress in more distant regions increases, and with its onward march there comes the conviction that the cities and towns of Canada are not in that condition of cleanliness which the history of the past three months loudly demanded the proper authorities to attain, and, when reached, to maintain with all the power at their command. But upon this subject it is not my intention to enlarge, being foreign to my purpose. To be able to trace the origin of an epidemic disease hitherto, and still so fatal as cholera, is an attainment worthy of not a little labour,—for its origin once reached, the cause cannot be far off. Since the present visitation of the disease a vast amount of information has been collected, and from all I can gather, and I have examined every available means—and they have been pretty extensive—there seems not to be a shadow of doubt but that a holy pilgrimage of the true Mahomedan type was the centre from which the disease radiated. In May of the present year seven hundred thousand pilgrims gathered together at Mecca, and on the hill of Arafat hard by, to celebrate the festival of the *Kurban Bairam*, which extends from the first to the twentieth day of the month. To the superstitious Mussulman Arafat is full of romance; tradition pointing it out as the spot where the first lovers—Adam and Eve—met, after being separated two hundred years for their primeval sin; and the Mahomedan pilgrim does not consider his work accomplished

until he has reached its summit, and performed his devotions there. They arrived at their destination badly clothed, and badly fed, and the larger proportion greatly exhausted by their long and tedious journey. Their food was loathsome, and often putrid, they were huddled together without the slightest attention to cleanliness—their only means of washing being the stinking pools near by. The streets and houses were impregnated with the most noxious gases, emanating from the decomposition of their excrementitious deposits, and their dead thrown carelessly out into the fields, no one being ready or willing to bury them. They were all fantastically ecstatic. Death to them had no terrors, its prevention being looked upon as a curse, and pain borne with joy. In times past this vast multitude has never assembled without being subject to the ravages of some disease, and this spring formed no exception to the rule; but owing to some particular circumstance, the number of pilgrims this year vastly exceeded any previous one. This only increased the liability, from increased filth, to a more virulent form of disease, and hardly had the pilgrims assembled ere cholera made its appearance. This is little to be wondered at, when we consider the condition in which they arrived, and lived during their temporary stay at Mecca. According to an official report upon the cholera epidemic, just presented to the French government by Drouyn de Lhuys, Minister for Foreign Affairs, the offal of a million of sheep and camel slaughtered to supply their demands, was thrown carelessly upon the ground, and decomposing rapidly under a tropical sun, helped not a little to give rise to the epidemic. The fire once lit, what a mass of fuel was ready for consumption. The disease spread rapidly—the thousands of weary human beings became a mass impregnated with the seeds of this terrible disease. Strange to say the fearful mortality of their fellow pilgrims made no impression upon them, and as for medical aid, there was none. Such, then, is beyond a doubt the origin of the present epidemic, and strange to say, the cholera which was so fatal in Canada in 1849 had also a pilgrim origin. It first made its appearance at a place called Tantah on the Delta, in July, 1848. At that time about 160,000 pilgrims from all parts of Egypt and Syria had gathered to celebrate the funeral of a Mahomedan saint. From the same causes that I have previously alluded to, before they dispersed, cholera appeared, and carried off 3,000 of their number. Shortly after the conclusion of the festival, cholera appeared at Alexandria and Cairo, and in the latter end of August the deaths in the latter place were 300 daily. And so was it with the present epidemic; the dispersing pilgrims carried the disease with them. The first reliable intelligence concerning the disease reached England on the 26th of June, by telegraph, which was afterwards con-

firmed. Cholera first appeared in Alexandria on the 11th of May, just eleven days after the commencement of the Mahomedan festival of the *Kurban Bairam*, and was brought thither by a returning pilgrim. The portion of the town in which the first case appeared, was one of the worst, and was inhabited by the very lowest class of Arabs, Greeks and Maltese. From this one case the disease appeared to radiate, the deaths for the first four days not numbering more than one each day. In two weeks the deaths had increased to thirty a day, and in five weeks to one hundred and eighty-three per day. During all this time the sanitary condition of the town was disgraceful, and the water supply, derived from the Nile Canal, was charged with the decomposing matter derived from upwards of seven hundred dead carcasses. During the course of the epidemic in Alexandria, the city was visited by a violent wind storm from the south, called a "chamsin." It began to blow on the 24th of June, and continued till the 6th of July. It was exceedingly oppressive, and was believed by many to intensify the disease. On the third day it came, the mortality rose from one hundred and eighty-three to two hundred and fourteen. It then gradually fell, till, on the last day of the wind, the number of deaths had fallen to 142. As, however, the character of the wind during its prevalence was much the same, the fact that from the third day of its appearance the mortality gradually fell, proves, I think, that the cause of the increased mortality during its first three days was not due to it, but to local causes. Among the European population the disease made little headway, and it is asserted that the better class of Europeans escaped almost altogether, while among the Arabs the disease was very severe. The dwellings of the lower population were very unclean, many of them being occupied by man and beast. This state of things, however, is not confined to Alexandria, for, in truth, the same remark might be made with reference to Montreal—even here, palace and hovel standing side by side. From Alexandria the disease spread to the native villages and towns in the neighbourhood, committing great ravages, especially in Delta, and the towns of Tantah, Mansure, &c. From thence to Cairo, where it appeared early in June, raging for about a month, and then declined. For a time it was believed that the disease would not extend beyond Alexandria and Cairo, but this hope was soon dispelled, for about the middle of July a few cases occurred in Ancona, a seaport situated on the Gulf of Venice. It contains a population of about forty thousand, and, like most old towns, is closely built, badly drained, and ill-supplied with water. I have now shown that by the 12th of July cholera had established itself at four great centres. I have described, so far as I have been able, its origin at Mecca, among the

pilgrims. From this, what places were more likely to be visited from the completeness of their intercommunication than those where the disease did appear, viz., Alexandria, Cairo, and Ancona? About the same time that it made its appearance in Ancona, it also broke out at Constantinople, there being forty-three fatal cases reported on the 13th July. How the disease reached this large and populous centre we are not left in doubt, for it is known to a certainty that the disease was imported from Alexandria, by the man-of-war *Makbiri Surur*, which arrived at Constantinople, and put on shore, on the 28th and 30th of June, twenty-one persons suffering from cholera. They were conveyed to the Turkish arsenal. Up to this time, not a single case of cholera had occurred, and the general sanitary condition of the town was considered good. On the third of July, the first case of cholera occurred among the soldiers at the arsenal, and the number of cases increased daily. On the 16th of July the disease appeared in that portion of the city bordering upon the arsenal, from which the disease spread with great rapidity. The character of the epidemic in Constantinople was very severe, large numbers of the patients dying within the first twelve hours or twenty-four hours. As a rule, premonitory diarrhœa only preceded the real attack a few hours. Many patients who did not succumb to the choleraic attack, had typhoid symptoms supervene, which carried them off. The action of the Turkish Government was very commendable, an extraordinary commission of public hygiene and salubrity being formed. This commission went immediately to work; over-crowded dwellings were emptied, and the inmates ordered into tents and wooden barracks; the inhabitants were instructed by public placards how to protect themselves as far as possible from an attack; temporary cholera hospitals were established, and particular attention was paid to the immediate removal to these hospitals of poor people suddenly attacked in the street. For carrying out these measures, physicians were appointed for every quarter of the city, and numerous assistants were allotted them. Medicines were distributed and food given to the poor. The sale of all fruit and vegetables was prohibited, and lists of all deleterious articles were distributed. In this connection I may state that, owing to the great demand for vegetables among the lower classes, who live in a great measure on a vegetable diet, and the difficulty of carriage, they are nearly always brought into the city in an unripe condition. Being eaten in this state, diarrhœa is not an uncommon complaint. Hence, in all probability, the cause of prohibition. As the disease increased in severity, a perfect panic seized the population; and according to governmental returns (the means of transit being furnished by the government gratituously) over 400,000 persons

quitted the city for the interior. No general work was done, all public institutions were closed; even in the government offices very little work was done. As the mortality increased, so did the panic, and past experience was again verified by the plainly deleterious effect of fear. Many things tended to produce the rapid spread of the disease, when it had once been produced, principal among which was the bad drainage of the city. The only drains are open ditches in the middle of narrow streets, their sluggish contents emptying into the almost stagnant waters of the Golden Horn, the current of the Black Sea passing by the entrance of the port, leaving the water in the harbour almost unchanged. The burying grounds were, beyond a doubt, also a fruitful source of epidemic disease. There are a number of them in every portion of the city; and when I state that, owing to a religious superstition, their dead are seldom interred beyond two feet from the surface, the extent of their influence on an epidemic disease may well be imagined. The arrangements of Turkish houses renders them very unhealthy. All offal and filth is thrown into the street, and what is not consumed by the dogs, remains to be decomposed by the sun, till it becomes a mass of putrefying animal and vegetable matter. On the 8th September the disease was gradually dying out at Constantinople, there being, comparatively speaking, but few cases daily. No official returns of the number of deaths has yet been published, but a Dr. Dickson, writing in the *Medical Times and Gazette*, states that up to the commencement of September 40,000 deaths had taken place, among them being twenty-seven physicians and their assistants, who fell in the midst of their work. In August the mortality rose as high as 1500 daily, and continued at that high figure some ten days. Before I take leave of the epidemic at Constantinople, I would allude to the contagiousness of cholera, a question which has given rise to not a little discussion, and which is yet undecided. My experience when a student, during the epidemic of 1854, leads me to regard it as decidedly a contagious disease. In this connection I would relate an incident which I find in a medical journal, on the authority of an English gentleman who was in Constantinople during the height of the disease. He says, "In one instance the clothes, matresses, &c., of the sick were washed at a fountain, and unfortunately the water-pipe being broken, the foul water communicated with the clean, and in one day sixty persons died at Tatavola, a portion of the city which was supplied by the infected stream." This is a most important fact, and a repetition, so to speak, of what occurred at the Broad street, London, epidemic of 1854. In that case there was a well in Broad street, into which the contents of a sewer had been percolating for months. Of the water of this well hundreds of

persons had been drinking; and, although cholera had been present in other parts of London, there were no cases in St. James', the parish in which Broad street is situated. At last a choleraic patient made use of a privy that was connected, by means of the sewer, with the well, when more than 500 persons, receiving water from that source, were attacked within three days. I have shown that, by degrees, though not in an unaccountable way, the disease had reached and become active at three great centres. At Alexandria, commanding the whole of the Mediterranean Sea, from Tripoli on the east, to Barcelona on the west; at Ancona, commanding the Gulf of Venice, and at Constantinople, commanding the Black Sea. From two of these it spread in a manner which can be traced. From Alexandria it was conveyed to Gibraltar, and the little island of Candia; and from Constantinople it moved round the shore of the Black Sea, making its appearance on the south-eastern coast at Trebizond, at all of which places it raged with great severity. The first case occurred at Gibraltar on the 28th August, and was of a mild type. The disease gradually increased in severity and fatality till the 18th September, when over one hundred fatal cases had occurred—many of them being convicts. In fifty-six days the mortality was 380, a heavy list for a population of 24,000, including the garrison. The largest mortality in one day was twenty-four. The disease appeared at Malta early in August, and the last case on the 3rd October. The population of the island is computed at 120,000. 1871 persons were attacked, the total number of deaths being 1150; the percentage being 61.44. These statistics do not include the military, 200 of whom were attacked—140 of whom died. In the Island of Goza, near Malta, the disease appeared about the same time that it did in Gibraltar, and up to the 3rd October, when it was rapidly disappearing, it had attacked 476 persons, and destroyed 225, the mortality being at the rate of 47.26 per cent. It is a fact worthy of note, that while cities in communication with Alexandria—as Constantinople, Smyrna, Ancona, Gibraltar, Malta, &c.,—suffered from the disease, Sicily, Greece, and the Barbary States (which prohibited intercourse) have escaped the dreaded infliction.

At Marseilles the cholera appeared on the 11th September, and from that period to the 17th, 108 deaths had occurred. A large staff of physicians and apothecaries were appointed by the authorities to give immediate attention to the poor, and large bonfires were lit to disinfect the air, according to the fashion of olden times. In this place the outbreak varied in intensity, and on the 21st of October it was gradually disappearing. At Toulon it appeared on the 6th September, and at last accounts was still present. From Marseilles the cholera was conveyed to

Paris by means of a traveller who, almost immediately on his arrival in the French capital, was seized with the disease, which terminated fatally, in that portion of the city known as Montmartre. This was about the 22nd of September, and from that day till the 1st October forty cases occurred, with twenty deaths, most of them being in that portion of the city where the first case occurred. On the 28th of October the number of choleraic cases admitted daily to all the hospitals had risen to 250. On the 21st October the Emperor visited the cholera patients in the Hôtel Dieu, passing an hour in their midst. On the 23rd the Empress visited several hospitals, following the example of her husband. Thus the disease has steadily increased, and we have yet to hear of its decline. The persons attacked have been principally the poorer classes, living in crowded localities, though the servants of several rich families have been attacked. Owing to the secrecy of the French Government, it is very difficult to get details of the epidemic. The disease has appeared and is still present at the following places in France: La Seyne, Nimes, Montpelier, Arles, &c.

Southampton being in direct communication with the Mediterranean by means of the mail steamers, and only four days' sail from Gibraltar, where these steamers call, it is a wonder that cholera did not appear sooner there than it really did. The first case occurred on the 26th September, being that of a labourer, who had been engaged cleaning a cess-pool, and terminated fatally in thirty-six hours. This was followed by another on the 28th, the patient, a robust man, being in perfect health previously; this one also ended fatally in nine hours. The authorities, being fully alive to their duty, took energetic means to prevent the spread of the epidemic, and, although the disease still continues in the city, the cases are not very numerous. For the week ending October 21, the number of deaths from cholera was only three; one of the fatal cases was that of the health officer of the town, who fell a victim to his close attention to the sanitary condition of the city. About the 1st of October the disease appeared at Bitterne, about three miles from Southampton, seven cases having occurred in the practice of Dr. Osborne. Four of these died, two recovered, but regarding the termination of the other one, I have been unable to find any record. Three cases occurred in the practice of other physicians. At the time of the outbreak there was a marked tendency to diarrhœa all over the district of Bitterne. At Shoaling Common, four miles from Southampton, two fatal cases occurred before the 3rd of October, but I believe no others have been observed. At Epping, in Essex, a singular outbreak of cholera occurred about the end of September and first week of October—the disease being confined to one household, or those in immediate relation with it. A Mr. Groombridge,

from near Epping, with his wife, had been complaining for some time of being "out of sorts," Mrs. G. having suffered somewhat from diarrhœa. They consulted a London practitioner, to whom they stated that the water of the well, which constituted almost their entire supply, had an unpleasant odour, and nauseous taste. On examination it was found to contain sulphurretted hydrogen, with a considerable quantity of organic matter. On further examination it was discovered that there was a leakage from the cess-pool of the house into the well, about two feet six inches from the surface. On their way home, Mr. and Mrs. Groombridge passed through Southampton (where cholera was present), stopping over two days. Here, doubtless, the specific poison was taken into the system. Before reaching Epping she (Mrs. G.) was seized with diarrhœa, and pain in the stomach. She reached home on Monday, September 26th; and, on the following day, a medical man was called to see her. The symptoms were not urgent, being simply those of diarrhœa in a modified form. On the 28th September, the third day after she left Southampton, the symptoms suddenly increased, vomiting and rice water evacuations being present. She was treated with small doses of calomel and opium—two grains of calomel with half a grain of opium—to which was added an effervescing ammonia saline. The treatment gave much relief, the character of the evacuations being changed to a dark, slimy appearance. On September 30 she was considerably improved when, a little after ten, her daughter, aged seven years, was seized with cholera. The first symptoms were vomiting and purging, and at noon the evacuations were of the rice water character. Collapse came on late in the afternoon; and, a little past seven o'clock in the evening, she breathed her last—somewhat less than nine hours from the attac A farm servant living in the house was also seized the same day, t, after a severe struggle, recovered. On the 2nd of October, early in the day, another daughter of Mr. Groombridge was attacked, as was also the housemaid; but though the symptoms were severe, they both recovered —the girl dying a week after, of a supervening attack of typhoid fever. The treatment consisted of ten minims of dilute sulphuric acid, ten minims chloric ether, and five minims of tinct opii, in water, frequently repeated. Both suffered subsequently from typhoid fever. On the evening of the same day, at nine o'clock, one of the medical gentlemen in attendance upon the cholera patients was seized with the disease, and died in ten hours. For a few days it was thought the worst was past, no new cases occurring, but on the 6th October there was a fresh outbreak, when Mr Groombridge, one of his labouring men named Riley, Mrs. Parsell, (the mother of Mrs. Groombridge), and Master Charles Groombridge,

were seized with the prevailing epidemic. Mr. Groombridge sank in about ten hours; Riley sank on the following day, the 7th; Mrs. Parsell recovered from the choleraic attack, but suffered subsequently from typhoid fever, and died on the 14th, from asthma; the only one that recovered of the four attacked being young Mr. Groombridge. The treatment of all these cases was sulphuric acid, chloric ether, and opium A woman who laid out the body of Riley was taken with the disease a few hours after completing her task. In this case all the usual symptoms were soon present—the cramps being very severe. Under four grain doses of calomel every three hours, the rice water stools changed to dark feculent. She died in sixteen hours from the attack. On the 9th. Mrs. Groombridge, the first of the family seized, and who had recovered from the cholera symptoms, from mental anxiety (due to her husband's death), became prostrate, and died on the 10th. This sad outbreak conveys a most instructive lesson. Mr. and Mrs. Groombridge, while journeying home, stayed over at Southampton, just about the time of the outbreak in that town. As she was seized with diarrhœa on the subsequent journey, and with choleraic symptoms soon after arriving at Epping, a fair supposition is, that the poison was taken into the system during their stoppage at Southampton. The subsequent outbreak is clearly traceable to the matter of the choleraic stools entering the cess-pool, and from it through the leak into the well, from which all in the house derived their supply of water. It thus became a virulent intestinal poison. There has not been any other cases at Epping, which fact renders the outbreak still more interesting. The Groombridge house stood high, and half a mile from any other dwelling.

Thus far the metropolis (London) has escaped the epidemic, although the returns of the Registrar General, for the week ending November 4, note four deaths from cholera. On a closer investigation of them, we find that the symptoms were not those of true Asiatic cholera, but a more aggravated form of diarrhœa.

Up to the present time (Nov. 18) we have not heard of any cases of cholera on this continent, although the public was greatly excited by the arrival of the steamship *Atlanta* at New York, on the 2nd instant, from London, via Havre, having had, during the passage, some sixty cases of cholera—fifteen of which proved fatal. The *Atlanta* had on board forty-eight cabin and 500 steerage passengers—the latter principally Germans. Among the former, the disease did not appear, it being entirely confined to the steerage passengers. On her arrival at New York, the vessel was ordered back to quarantine, where all the sick were at once removed to a floating hospital, and the remainder placed in well

ventilated quarters, no communication on any pretence being allowed with the city. After her removal to quarantine, and up to date, only two fresh cases have occurred, and the probability is, that, for the present, the disease has been stayed. It now depends upon the strictness and length of time that quarantine is observed, whether the disease will be prevented altogether from effecting a landing on this continent.

Thanks, then, to the admirable and stringent regulations adopted by the New York quarantine authorities, the disease has been confined to the *Atlanta*. Had it reached the city, it would have found it well prepared for its reception, for, if I read correctly, New York is indeed in a fearfully filthy condition. But not alone of New York, I fear, can this be said. By letter and otherwise I have heard that, at least many places in Canada West are ripe for cholera, should, unfortunately, it be conveyed there. Of Montreal it would seem almost idle to write a word. No one blessed with good eyesight, and a good nose, could possibly fail to notice daily in his travels, the filth and decaying vegetable matter which abounds on every hand, in back lanes, and even in crowded thoroughfares; slaughter-houses, reeking with putrifying matter, impregnating the air with the most abominable stench, are not uncommon, but exist in the midst of densely populated districts; pig styes, the filthiness of which surpasses description, are in certain sections to be found, several in every street; while, in cellars and hovels, man and beast often occupy the same room. Could one-half of the population have an insight into the scenes witnessed and places visited by a physician in general practice, there would be such a weight brought to bear on the city authorities that they would be compelled to move in the matter. But now, though danger is staring us in the face, that worthy body allow a report of the health committee, presented nearly three months ago, to lie on the table, no action whatever being taken in the matter. This report contained many excellent suggestions, the non-adoption of which throws upon the shoulders of the city council a most grave responsibility. I wish they could appreciate it; but I fear the history of the past will be what we will have in the future: for, strange as it may seem, there is no subject upon which it is so difficult to rouse public attention as that of the sanitary condition of a city.

I have thus, in as brief a manner as possible, endeavoured to trace the origin and progress of the present epidemic of cholera. There has been no lack of material from which to gain information, my chief difficulty being the amount of matter I had to consult, and a very limited time in which to do it. Nor will, I trust, this investigation be destitute of profit, for it proves that the disease originated among a mass of unclean men,

brought together under circumstances favourable to its propagation. Whether something may not be done in the way of preventing these large pilgrim gatherings, in the past so fertile a source of disease, will doubtless be a subject of investigation by the sanitary commission proposed by the French Government. An investigation of the progress of the disease proves that in the majority of instances it travelled from one coast town to another by a ship or steamer, and from a coast town to an inland town by a person going from the former to the latter, in both instances the germs of the disease being conveyed thither. From all the facts, there can be no doubt of the correctness of the following deductions, drawn by the *Medical Times and Gazette*, that cholera requires,

1. A centre of pollution for its cradle.
2. A ship for its transport.
3. Cities and towns properly prepared for its reception and development.

Traumatic Tetanus, treated by Acupuncturation. By JAMES ALEXANDER GRANT, M.D., F.R.C.S., Edinburgh. M.R.C.P., London, &c.

In this section of Canada, tetanus is by no means an uncommon disease. In Ottawa City, during a practice of twelve years, ten cases have come under my personal observation, and all of a traumatic character. Nine were treated with the various remedies of the day, without favourable issue, death taking place in seven cases during the height and intensity of the disease, and in two, death appeared to result from exhaustion during the decline of the disease. In an able article on tetanus, by Campbell De Morgan (Braithwaite's Retrospect, part 39, p. 65,) the opinion is freely expressed, that "all we can do is to enable our patient to weather the storm by giving him as much strength as possible, and not adding fuel to the flame by all sorts of applications and internal remedies, which have over and over again signally failed." Such was the opinion of the great Hunter, and such could not fail to be the impression made on the minds of those who have considered the various methods of treatment from time to time adopted for the relief of this disease. In the following case, having failed to counteract the disease by ice to the spine and cannab. indic internally, as a *dernier ressort*, I had recourse to acupuncturation on either side of the spinal column, from the occiput to the sacrum. The beneficial influence was so rapid and marked, that I considered the facts should be noted, so that this simple method of treatment might be tested.

W. Hunton, æt 37 years, of moderate stoutness, regular habits, and

generally in the enjoyment of health. Engaged as an operative in a saw mill. July, 16th, 1865, while in the act of rectifying some portion of machinery, he received a wound from a circular saw, over the right frontal eminence, and a small portion of the bone was denuded of its periosteum. The injury was attended to immediately, and at the expiration of two weeks, healed without any difficulty. On the fourth day after the accident, the orbicularis palpebrarum of the right eye became contracted, and on the eighth day the muscles of the jaws and neck became more or less rigid. July, 26th. Stiffness of the jaws became so much worse, that he was unable to open his mouth more than half an inch, and he experienced great difficulty in swallowing. July, 27th. Removed to the city and came under my charge. Tetanic expression of the face very marked, skin cool, pulse 80 and full, urine voided in normal quantity, high coloured, abounding in lithates, sp. gr. 1.020, bowels confined, sleep disturbed for several nights; complains of stiffness in the neck and back, extending to the muscles of the chest and abdomen; able to walk about his room at a slow pace, could talk moderately distinctly but with some difficulty. At this time there was no spasmodic action of the muscles of the back or abdomen (opis or emprosthotonos); croton oil and colocynth were given. On the following morning (July 28) there was trismus; the mouth firmly closed, bowels acted freely during the night, skin cool, pulse 85 and feeble. Muscles of the face unaltered, masseters and buccinators rigid. During sleep moderate relaxation occasionally took place, at which time the cheeks were frequently bitten, when spasmodic action set in. To avoid this, the patient placed a small piece of stick between his teeth. The intellect was quite clear.

Ordered R. extract. cannab. indic. alchohol, gr. xxiv.

Alchohol dilut..... ℥ j

A drachm given every two hours, in a tablespoon full of water, also pounded ice to be applied to the spine. Beef tea to be given freely. 9 p.m. Ordered calomel, gr. ij, pulv. opii, gr. ij. July, 29th. 9 a.m. There had been a few hours sleep, and the patient had swallowed about two pints of beef tea. In all important points the symptoms continued the same until August 1st, when he grew much worse. The forehead became wrinkled, the muscles of the neck, chest, and abdomen, became very tense, the trunk was slightly arched backwards, and the muscles on either side of the spine were very rigid. Those of the arms and legs were unaffected. The sternocleido-mastoid appeared thrown forward, and the interspace was deep and well defined. The skin frequently became bathed with perspiration, and the respiration difficult, owing to the inability to expand fully the thoracic walls, from the rigidity

of the proper respiratory muscles. Clonic spasms came on about every two hours, giving rise to great pain at the scrobiculus cordis; skin cool; pulse 90 and feeble; pupils natural, acting readily to light, and the intelligence was unimpaired; bowels relieved by an enema of warm water. 9 p.m. Much in the same state. The abdomen feels hard, and he complains of an increased pain in the back since morning.

Ordered chlorydone gtt. xx, in an ounce of water. The mixture continued every three hours, and ice to the spine as formerly.

August 2nd, 9 a.m.—He passed a restless night, but slept at intervals, about three hours towards morning.

Skin warm and moist; pulse 85, soft; the extreme tip of the tongue only can be protruded. He had several severe spasms during the night. The mixture to be continued, also the wine and beef tea.

8 p.m.—Much in the same state, excepting that his urine is voided with some difficulty; acid reaction, unaffected by heat or nitric acid, and on standing for some hours, deposits a considerable quantity of lithate of ammonia; ordered morph. acet. gr. $\frac{1}{2}$.

August 3rd, 1 a.m.—Much worse, his jaws closed and expressive of great suffering. He had frequent spasms affecting both the arms and legs, and could not articulate, without considerable difficulty, each effort being attended by a spasm. His respirations were hurried, and at times the whole body became quite stiff, the extremities becoming extended to their utmost and the soles of the feet quite concave. The extremities being cold, hot bricks were applied; sinapisms over the heart, and the wine and beef tea given freely. The difficulty of swallowing was so great that liquids could only be taken in very small quantities; pulse 100 and small. Mixture discontinued. At this time, Dr. Beaubien of the General Hospital visited him in consultation. Ordered morph. acet. gr. $\frac{1}{2}$

9 a.m.—He had frequent severe spasms during the balance of the night, and only slept at very short intervals. Bowels relieved by a castor oil enema, otherwise there was not any favorable change to be observed. At this stage of the disease, finding the prospect of recovery becoming more unfavorable, I resolved, to have recourse to acupuncturation. Three (number nine) needles were forthwith inserted into the muscles of the neck, on either side, and within an inch of the spinous processes of the cervical vertebra. The needles were separate from each other longitudinally, fully an inch. Prior to this operation the muscles of the neck were firm and rigid, and a perfect inability to rotate the head upon the shoulders. The needles were inserted with difficulty, owing to the great tension of the muscular structures. Very slight pain was experienced

during the operation. No sooner had they been inserted than the poor man cried out "Thank Providence," I have got relief. The needles were removed after one minute. He was then able to move his head laterally with considerable ease, owing to the most marked reduction of the muscular tension. The needles were removed with much greater ease than they were inserted. The power of deglutition was now also increased. Having observed the marked improvement after the first operation, the needles were inserted each day in the rigid muscles of the cervical, dorsal, and lumbar region.

August 6th, 9 a.m.—Passed a good night, experienced very little pain in any part of the body; the countenance cheerful, and he enjoys his beef-tea and wine and arrowroot. The jaws have relaxed fully two inches, and he can swallow with freedom. The paroxysms sometimes are felt, but at long intervals, and so slight as to cause very little uneasiness. From this date he continued to improve without an unfavorable indication, the rigidity of the various muscles rapidly giving way under this treatment.

August 22nd.—He returned home almost perfectly well, only complaining of the weakness resulting from the marked severity of the attack. I have since learned that he enjoys his usual vigour of mind and body. Drs. Macdonell, Beaubien, Graham, and Reill, and several medical students witnessed the very satisfactory effects of this mode of treatment. Having frequently given immediate relief in cases of sciatica, by acupuncturation, I was induced to test the effect of needles in tetanus, doubtful as to any beneficial influence being exerted thus, in a disease, the various phenomena of which are said to depend upon an "*unnatural excitability*" of the spinal cord. However, in this disease, every hint is of more or less value, more particularly owing to its intractable nature, in the treatment of which "almost every expedient and every medicinal resource that ingenuity or skill could devise, has been tried, but in vain; for a remedy that has appeared to produce good effect in one instance, has totally failed in another under similar circumstances."

Should this method of treatment prove beneficial in other cases of tetanus, it would likely be that class in which lesion of the spinal cord is either not present, or present only in a very slight degree. In tetanus, according to Bowman, under the microscope, the primitive fasciculi exhibit the characteristic signs of extreme contraction, and a closer approximation of the transverse striæ than usual. Just in proportion as muscular relaxation took place, the insertion of the needles became more painful, which circumstance led me to infer that the pressure exerted by tetanic muscular rigidity on the minute nervous filiments, which cross

the fibrillœ in loops, might account for the reduction of sensation, during the first acupuncturation.

Editor's Note.—We received the above interesting paper from Dr. Grant as we were going to press. As the Dr. expressed a wish that it should appear in the November number of the journal, we put it in hand immediately. After the form was made up, we received another note from the Dr. stating that it had already appeared in the columns of the London *Medical Times and Gazette*. We deem this explanation necessary, as the paper is found in our Original Department.

REVIEWS AND NOTICES OF BOOKS.

Hand Book of Skin Diseases for Students and Practitioners. By THOMAS HILLIER, M.D., London, Member of the Royal College of Physicians, Physician to the Skin Department of University College Hospital. Philadelphia: Blanchard & Lea. Montreal: Dawson, Bros. 1865.

It is a somewhat singular fact that, generally speaking, there is a lack of knowledge among practitioners concerning skin diseases. Various reasons contribute to this result, principal among which however is a lack of literature upon the subject. This want is being gradually met, and we are confident that the work before us is calculated to give the student and the practitioner a large amount of valuable information. It is a thoroughly practical treatise, and embraces all the latest discoveries of continental dermatologists. One feature of the work, especially worthy of notice, is the simplicity of the treatment recommended. There is no unnecessary multiplicity of remedies, and especial care is taken to impress upon the reader the necessity of studying the diseases of the skin, in connection with other diseases—of which not unfrequently the skin disease is but a symptom. The work contains a number of drawings, illustrative of the microscopic appearance presented by the hair and cuticle, when affected by vegetable growth.

The Physician's Visiting List for 1866. Blanchard & Lea, Philadelphia. Montreal: Dawson Brothers.

It seems almost needless to do more than acknowledge the receipt of this little work, so indispensable to every physician. No one who has used it would be without it for twice its cost; but to those who do not make use of it—and we know several—we can recommend it in the strongest terms. It is arranged for twenty-five, fifty, and even seventy-five patients a day.

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Surgery.

OVARIAN TUMOUR; OVARIOTOMY; DEATH FORTY HOURS AFTERWARD, FROM SHOCK OF COMMENCING PERITONITIS.

The tumour before you I removed from Bridget M., æt. 26 and ten months, who was admitted into the hospital Aug. 9th, 1865. The patient was unmarried. She first noticed a movable tumour in the left iliac region, about the size of a hen's egg; her menses continued to appear regularly until four months ago; since then she has had no appearance. Her general health has been uniformly good. The tumour remained almost stationary until six months ago, when it began to grow very rapidly, but more particularly within the last two months. On her admission the abdomen measured in circumference at umbilicus 40 inches; ensiform cartilage to umbilicus 8½ inches. Between anterior superior spinous processes 18 inches. From median line to left anterior spinous process 10 inches. From median line to right anterior spinous process 8 inches. From umbilicus to left anterior superior spinous process 10½ inches. From umbilicus to right anterior superior spinous process 9½ inches.

There was considerable effusion in the abdominal cavity, but the tumour could be readily moved from side to side, and by pressing its under surface, it could be elevated a considerable distance, showing the pedicle to be of some length, and showing no attachments to the neighbouring organs. The tumour presented indistinct fluctuation, and was irregular, of firm consistence, and nodulated as the disease was rapidly advancing. The immense distension of the abdomen produced such a great amount of distress, and the weight of the tumour being more than the patient could well carry, she desired the operation. Much appeared to be in her favor,—youth, good health, single tumour with a long pedicle, and no adhesions.

Thursday, Aug. 17, 1865. *Operation.* Assisted kindly by Drs. Agnew and Wilson. Drs. Pancoast and Meigs were present. I commenced the operation by making the usual incision of four inches immediately below the umbilicus; a large quantity of abdominal fluid was drained off, when the tumour appeared at the wound. The large ovarian draining trocar was introduced into the tumour, but the contents were so thick and tenacious, resembling soft soap, as to be unable to pass through the canula, an incision was made into the tumour, and the con-

tents squeezed out. The walls of the cyst were very thick, in some places of almost cartilaginous hardness. It was found impossible to get the tumour through the wound, which was enlarged above and below some three inches, when I introduced my hand, and readily turned the mass out. The pedicle was found to be very broad, and running all along to the fundus of the uterus, involving the whole of the broad ligament, and the tumour was cut away, the pedicle being secured by passing two long pins (at the suggestion of Dr. Pancoast) through it, being retained outside of the incision, which was then closed by six superficial and three deep sutures. Only a few ounces of blood were lost, and the contents of the belly little disturbed. A flannel bandage was then applied, and the patient put to bed. The reaction was very good, and for twenty-four hours the patient slept and had no pain, and seemed perfectly comfortable. She then had a slight chill, abdominal pain, and rapid collapse followed, forty hours after the operation.

Post Mortem. No hemorrhage, and no effused blood or contents of the cyst in the cavity of the abdomen, a very slight quantity of serum was present, and some lymph; free diffused peritonitis; right ovary healthy. The tumour is before you, and is a non-malignant proliferous cyst, the solid portion weighing thirteen pounds, the fluid portion ten pounds, exclusive of the peritoneal effusion, which amounted to at least ten pounds, making the entire mass weigh some thirty-five pounds.

CASE OF LARYNGITIS, WITH ŒDEMA OF GLOTTIS—LARYNGOTOMY —RECOVERY.

(Under the care of Mr. HULKE.)

The following case forcibly illustrates the efficiency of Sylvester's method of artificial respiration. The extreme exhaustion of the patient induced Mr. Hulke to prefer laryngotomy as being generally attended with less bleeding; here, however, the bleeding was very profuse. The patient cannot discontinue the tube. Mr. Hulke thinks this more frequent after laryngotomy than after tracheotomy, and attributes it in part to the disturbance of the mechanism of the larynx by the tube.

A woman, aged about twenty-six, while under Mr. Moore's treatment in Regent Ward, for disease of the uterus, was seized with acute laryngitis. At half-past eleven o'clock on the fourth night Dr. Thompson sent for Mr. Hulke, in Mr. Moore's absence, to consult respecting the necessity of bronchotomy. She lay speechless, semi-conscious, making shallow, feeble, hissing inspirations, at long intervals. Scarcely any air entered the lungs. Her pulse, about 120 per minute, could hardly be

felt. Her features were pallid and dusky. Laryngotomy was rapidly performed with a scalpel. Black blood welled up very profusely for several seconds on dividing the crico-thyroid membrane, but it ceased to flow on putting in the tube. Much viscid mucus and a little blood were immediately coughed out from the trachea. She became pulseless, and ceased to breathe. A few of Sylvester's acts were followed by a few weak spontaneous inspirations. Natural respiration again ceased, and Sylvester's method was again successful. This happened thirty times between twelve and four o'clock a. m., when natural respiration was permanently reinstated. Directly after the insertion of the tube in the larynx, beef tea and brandy were thrown into the rectum; and this was repeated hourly. At eight o'clock, a. m., respiration easy; pulse stronger, 120. She had swallowed a few teaspoonfuls of brandy and water. The supervention of pneumonia made her recovery doubtful for several days, but she rallied under the free exhibition of stimulants. The tube was removed on several occasions, but each time, after a few hours, when the opening had become contracted, her dyspnœa was so great that it had to be resumed, and she is still obliged to wear it.—*Medical Times and Gazette.*

Medicine.

BRONZING OF THE SKIN FOR SEVEN YEARS—DEATH—AUTOPSY DISEASE OF THE SUPRA-RENAL CAPSULES.

(Under the care of Dr. Gull.)

The great interest of the following case is the long duration of the disease, and the fact that the disease of the supra-renal capsules was predicted five years before death. No doubt whatever was manifested before the autopsy that there would be found a certain kind of disease of the capsules. Whatever relation there may be betwixt bronzing of the skin, or rather the disease of which bronzing of the skin is the most striking feature, and the disease of the capsules, it is a fact that from the existence of the one the other is often correctly predicted.

William J. was admitted under Dr. Gull's care, September 26th, for morbus Addisonii.

He was first admitted under Dr. Gull's care, November 22nd, 1860. The case was then recognised as one of morbus Addisonii. At that time the patient said that the darkening of the skin had been noticed *two years* before. For several months before his admission it had not increased. He had lost flesh very much; was extremely feeble; complained of pain in his limbs; at one time had sickness every morning. Sometimes his

sight was dim after he first rose. He had had hæmoptysis and cough, with puriform expectoration. The physical signs of phthisis were not decided. The face was "of a brownish tinge," and the lips were of a brownish hue at the point where they touched. The upper extremities were paler. The abdomen was very dark. The legs were less dark than the thighs.

After this he was repeatedly admitted into the Hospital. He had a disease of the left foot, which gave him much pain at the time.

He was admitted for the last time September 3rd, 1865. He was then very brown; the nipples especially were tinged; also, the lower extremities, and particularly the legs. He was not emaciated.

Autopsy by Dr. Hilton Fagge.—The left lung was healthy, except a slight cretaceous nodule. The right lung at the apex was puckered, and contained chalky grains, scattered throughout its tissue. Lower down in the posterior border of the inferior lobe was some recent tubercle, which showed no tendency to break down.

Supra-renal Capsules.—They were small and contracted. The right was firmly adherent to the liver, seeming about to be imbedded in its tissue. It was everywhere hard, and on section showed a quantity of fine white tissue, as well as calcareous matter. The left was so imbedded in fat, and attached by fibres passing through the fatty tissue, that its outline could not be defined. It also formed a hard mass, and contained calcareous matter, which, however, was mixed with a viscid fluid, contained in the interior of the capsule, and which escaped during removal of the organs.

The bones forming the left ankle joint (the tibia and the astragalus), as well as others of the tarsal bones, were soft, and easily cut by the knife. On the section they presented either a yellow (fatty) or a red appearance. None of the joints themselves were found to be in any way diseased. The ankle joint was healthy.

CONTAGION—THE PASSAGE OF GERMINAL OR LIVING MATTER FROM ONE ORGANISM TO ANOTHER.

By Lionel S. Beale, M.B., F.R.S.

Although the subject of *contagion* may seem to have little connection with inflammation, I find that the consideration of the properties of living pus leads me into the discussion of the nature of contagious diseases, and I shall therefore venture to make some remarks upon this most interesting subject.

Of the Vitality of Pus.—The vitality of the germinal matter of pus is

exceedingly great. Pus multiplies very rapidly, and certain forms may be carried from one living organism to another, without being destroyed —without losing their vitality. It is most interesting to notice that the faster the pus grows the more varied the conditions under which its life may still be carried on. Certain conditions which would have destroyed the life of the germinal matter of an epithelial cell may not destroy that of a pus corpuscle; the pus corpuscle may indeed flourish under conditions which would render the existence of the germinal matter of a normal cell quite impossible; and this power of existing under various conditions seems to increase as the multiplication of the mass of the germinal matter of the pus corpuscle proceeds. The capacity for living and growing under a variety of different conditions may proceed to such an extent that germinal matter originating in the organism of an animal may grow and multiply in that of man, and *vice versâ*. And we know that certain contagious diseases originating in animals may pass to man, and it is not improbable that some of those emanating from the human subject may be communicated to animals.

As I have stated before, this power of living is so remarkable that the pus corpuscles, or portions of the pus corpuscles, may be transmitted through the air without loss of vitality. It is in this way may be explained, I think, certain phenomena known in connection with the propagation of purulent opthalmia and other diseases in which pus is carried from one person to another. The pus corpuscles produced on the surface of the conjunctiva, or, rather, the minute offsets from them, may be transported through the air, or by clothes, etc., and, coming, into actual contact with a conjuctiva properly prepared by morbid processes for the supply of nutrient matter to these corpuscles, they grow and multiply. In this way pus corpuscles, or portions of pus corpuscles, perhaps not the fifty thousandth or the hundred thousandth part of an inch in diameter, may be transferred from one organism to another. Allied facts may be observed with reference to the propagation of gonorrhœal pus; and I venture to infer that the poison of syphilis is really germinal matter, which passes in a living state from the infected to the sound organism, and grows and multiplies in it. Many of the highly important facts recently discovered by Prof. Boeck support this view.

Certain living particles which have directly descended from the living or germinal matter of the tissue or fluids of an unhealthy organism may be transmitted in a living state to a healthy organism, and, being there supplied with proper pabulum, grow and give rise to the production of new particles like themselves; and although the nutriment material may be somewhat different, yet they grow and multiply, as they are capable

of living under a variety of different conditions. The action of vaccine lymph is, I think, due to the growth and multiplication in the vaccinated person of living particles which existed in the lymph taken from the vaccine vesicle. Nor is there good reason for denying the possibility of such living particles retaining their life when imperfectly dried, since we have the striking fact that many of the lower organisms retain their life, although desiccation has been carried to a very considerable extent. We know that complete dessication cannot occur without producing the death of any living particles; but comparative dessication may actually occur, and the small amount of living matter remaining may be sufficient to induce the changes with which we are familiar.

The Nature of the Poison of Contagious Fevers.—I think the above general views may be extended to fevers, which, I believe, are due to the passage from one body to another of living particles. These living particles consist of germinal matter, and have descended from the germinal matter of the organism itself. Many have attributed diseases of this class to the introduction into the body of a very low form of vegetable organism. But it is very doubtful if the growth and multiplication of vegetable germs can proceed in the circulating fluids of a living body, without causing death in a very short time; for the conditions favourable to their existence and multiplication are incompatible with the life of the germinal matter of the higher tissues. The germination and multiplication of very low vegetable or animal organisms in man and the higher animals are an indication not only that the death of the tissue has taken place, but that it is passing into a state of decomposition. It is true that bacteria have been detected in the blood of patients during life, but hitherto only in cases shortly before death, and at a time when the blood in which they grew and multiplied was no longer fit for nourishing the tissues, and was itself passing into decomposition. Millions of bacteria exist in the softened outer portions of the fibrinous clot of an aneurismal sac, and, therefore, in such close proximity to the blood, that it is almost certain that, from time to time, some pass into the current of the circulation; but if this were the case they would be destroyed, or else so altered that they would cease to multiply. For, before multiplication could take place, changes must have occurred in the composition of the blood which would render it incapable of supporting the life of its owner.

Many of these contagious maladies have been regarded as different species of "foul air" diseases. They are commonly termed *zymotic* or *fermenting diseases;* but no one has shown that these poisons originate in air, or that they really are of vegetable origin. Nor is it probable

that they are a species of animal—a sort of parasite, as some have supposed. Nor, there is good reason to believe, would such poisons have ever arisen if man had known the exact conditions necessary to ensure a healthy state of existence. Man has produced these pests himself, by establishing, without due care, artificial conditions of existence, in which over-crowding, dirt, and terribly diminished supply of air play no unimportant part. Nor let us conclude too hastily that these are *necessary* visitations. The results of scientific observation and practical experience tend to show that such scourges are preventible. Not only so, but there is much to convince us that many of these diseases are not only fostered and propagated, but actually caused, in the first instance, by ignorance, obstinacy, and indolence in domestic management.

The above considerations seem to me to lead to the conclusion that the *materies morbi* concerned in the propagation of various contagious diseases is not a low form of animal or vegetable organism, but germinal matter, which was originally derived from that which exists normally in the higher organisms. The living germinal matter forming the *materies morbi* of contagious diseases bears somewhat the same relation to the normal germinal matter of the blood, lymph or tissues, that a pus corpuscle does. Like pus, it results from the too rapid growth of the germinal matter. It is much to be regretted that the question cannot be definitely put to the test of experiment, but it will be admitted by all that the conditions which are favourable to the propagation of these contagious diseases are the very conditions which we should imagine would be favourable to the maintenance of the vitality of such masses of living matter as are supposed to be the active agents. If it were possible to produce this class of diseases in frogs or newts, I would almost undertake to make out the nature of the morbific agent as well as the changes which take place during the course of the disease; but as our observations are necessarily limited to man and the higher animals, in which minute investigation is remarkably difficult, much that I shall say will be but conjecture, although my conclusions are supported by many considerations.

It is not to be supposed that any one unacquainted with physiology would believe that a terrible and fatal malady could arise from the introduction into the body of a minute germ weighing less than the $\frac{1}{10,000}$th of a grain; but to those familiar with *vital* phenomena many facts will at once occur which afford considerable support to such a doctrine. The multiplication of bacteria and low animal and vegetable organisms, so very minute and transparent that they are scarcely visible even under a

power magnifying 3000 diameters,—the subdivision of pus and mucus corpuscles which may be *seen* under the microscope,—not to mention the wonderful powers residing in the infinitesimal amount of matter constituting the spermatozoon, are facts which must at once destroy the validity of objections grounded upon the minuteness of the particles of living matter supposed to be the active agents.

The origin, formation, transmission, and effects of the different contagious poisons which affect man and animals will, no doubt indeed, be regarded as *mysterious* and *inexplicable* by those who support the dogma that living things, like lifeless ones, are influenced by physics and chemistry only. But those who study the phenomena of living beings from a more general point of view, will see that these phenomena fall into the same category as many other actions and changes peculiar to living beings. By attentively studying effects we may reasonably hope to learn something of the nature of the forces concerned in their production; but if we adopt the arbitrary dictum that all the phenomena of living things are due to physical and chemical changes only, we shall not be likely to progress very far in such an inquiry as the present one.

The Vitality of the Poison of Contagious Diseases.—The fact of the poison of contagious diseases retaining its activity for some time after it has been detached from the organism in which it was produced, is not, as would at first, perhaps, appear, opposed to the view that this poison is living germinal matter directly descended from normal germinal matter; for certain kinds even of normal germinal matter retain their vitality for some time after they have been removed from the organism in which they were produced. I have demonstrated that the cells of the liver and other epithelial cells retain their vitality after they have been transferred to a glass slide, and a piece of skin and some other tissues may be detached, and their temperature very much reduced, without destroying their life; for if they be replaced in their proper position they reabsorb nutriment material, and again become an integral part of the organism from which they had been removed; proving that the masses of germinal matter retained their vitality during the whole time they were separated —or they may be even removed from one organism and made grow upon another organism of the same kind. As is well known, parts of the body may be exposed to extreme cold for a considerable time, so that sensation is destroyed and the circulation stagnates, without the death of the germinal matter of the tissues taking place; and as is well known, the death of many textures of the body does not occur until many hours after the cessation of the heart's action and respiration.

But there is a still stronger argument. We have the positive fact that pus will live for a considerable time in urine, and therefore we are quite justified in assuming that other kinds of germinal matter allied to pus, and capable of living under a still greater variety of conditions than pus, would retain their vitality in urine, fæces, and other excretions, as numerous facts establish in the case with regard to some forms of contagious matter. As we have positive evidence that minute particles of pus may pass through the air, or remain on sponges, clothes, etc., for many hours, without their vitality being destroyed, is it not reasonable to assume that the living matter of contagious diseases, supposing it to be allied to pus, should retain its vitality under the same, or under yet more adverse conditions? Does not this view receive confirmation from our experience with regard to the conditions which are favourable to the propagation of contagious fevers? A warm, moist atmosphere, small close rooms, with curtains, carpets, and plenty of clothes, rags, etc., so arranged as to cause air to be pent up in confined spaces with very slow interchange,—are the circumstances which favour the spread of contagion; and a disposition to prevent currents of air from finding their way into every part, or into any part of an apartment, is a mental characteristic of many of those who are too often sufferers from the worst forms of contagious diseases; while has not experience taught us that the converse of all this almost certainly prevents the spread of contagion, destroys the active material, or renders its assaults perfectly harmless? And would not free change of air, washing, frequently shaking of clothes, extreme cold, dryness, or a very high temperature, be likely to destroy the vitality of such particles of living matter as I suppose to be the active agents in the propagation of contagious disease?

It is not probable that the particles of germinal matter grow and multiply when removed from the living body. Multiplication could not take place as they are passing through the air; nor is it likely that their process could occur in particles attached to dry clothes. But the question whether such particles may grow and multiply in moist substances, as in excrementitious matters, remains open. It would be most interesting if pus, or any allied form of germinal matter, could be caused to multiply artificially, and the fact would doubtless excite much highly valuable speculation; but at present the experiments instituted for the purpose of determining this question have not afforded satisfactory results. No doubt multitudes of the germs of many contagious diseases are very frequently coming in contact with us; but, instead of multiplying at the expense of our nutrient juices, they die and become harmless. But, as is well known, there are conditions of the system which are favourable to

the growth and multiplication of such disease-producing germs, and it is for us to ascertain exactly what these conditions are. There is much hope that we may learn how men may be enabled to resist contagion, or be protected from its influence, and that we shall even be able either to extirpate the contagious poison, or even to confine it within a certain area. Moreover, the circumstances adverted to in this paper render it almost certain that if every disease-producing germ in existence could be destroyed at once, new ones—perhaps not of quite the same nature as those now existing, but very closely allied to them—would be generated. Although a state of society in which such care would be taken of the public health as would entirely prevent the production of disease-producing germs is theoretically conceivable, it is practically impossible that such a state could be established in the present condition of the civilised world.—*Medical Times and Gazette.*

ON THE TREATMENT OF ARTICULAR RHEUMATISM BY SUBCUTANEOUS INJECTIONS OF SULPHATE OF QUININE; WITH RESEARCHES ON THE HYPODERMIC ABSORPTION OF THIS DRUG.

Translated from the *Bulletin de Thérapeutique* for THE MEDICAL PRESS.

BY ISAAC ASHE, M.B., T.C.D.

An important question in therapeutics is that of the absorption. In spite of its capital importance—in spite of the many labours directed towards throwing light upon it, this question is still enveloped in obscurity and uncertitude depending on the difficulty of analysing and discriminating all the causes which influence the intimate penetration of medicaments into the organism. We have gained some steps in seeking more rapid routes than those of digestion. Absorption, rendered more direct and more prompt, has been simplified. Withdrawn from manifold influences, therapeutic effects have manifested an exactitude and a precision hitherto unknown. Amongst new methods, that of subcutaneous injections has already rendered great services, and its sphere enlarges every day. Many months ago we gave ourselves up to investigations on the hypodermic absorption of sulphate of quinine. Some interesting experiments having been made in this direction, and recently related in scientific journals, I think it my duty to set forth the results I have obtained up to the present time. These results are not identical with those shown by other observers who have engaged in the same subject. The difference arises from the conditions under which we have experimented and the different ends we have had in view. Most drugs administered by the digestive tube produce effects which vary according to the state of the

channels of absorption as they are in a more or less favourable condition. A great portion of a drug is often eliminated, and, to confine ourselves to sulphate of quinine, it is certain that a portion of this valuable agent in general traverses the digestive tube without having had any other effect than that of causing irritation. When medical men have given up the administration of this drug by the mouth, they have had no better success in giving it by the rectum. All have remarked that the acidity necessary to obtain its solution and absorption is a serious inconvenience; it produces a local irritation, the result of which frequently is the expulsion of the injection. Besides we must take some account of the fact that sulphate of quinine absorbed by the rectum is rapidly eliminated; and even when its absorption has been certainly accomplished, the drug only occasions very transient physiological phenomena.

It acts but very little on the eyes and ears, its action is of short duration. Moreover, when we prescribe it as an injection in intermittent fever, we must give it an hour nearer to the occurrence of the fit than when we introduce it by the upper route. But sulphate of quinine is a remedy of such importance that we must not allow ourselves to be deterred by the want of tolerance for it in the digestive track. When the two routes of which we have just spoken have been, as it were, forbidden it, other modes of absorption have not failed to be discovered for it.

By means of rubbing in, fomentations, blisters, it has been attempted to cause sulphate of quinine to pass through the skin, by leaving it sufficiently long in contact with it. This method has rendered some service, particularly with children. Finally, when all other modes of causing absorption seemed exhausted, a new path was opened; the hypodermic method was invented. A physician of Smyrna, Dr. W. Schachand, introduced sulphate of quinine under the skin. More recently, M. Desoignes communicated to the Royal Medico-Chirurgical Society of London a great number of cases treated favourably by this means in Tuscany. But in all cases which we have become acquainted with through the journals, the experimenters have attempted the treatment of intermittent disorders.

For the first time I have attempted, under the auspices of M. Bourdon, to apply subcutaneous injections of the sulphate to the treatment of articular rheumatism. The results have been most satisfactory, and I have no hesitation in publishing them in order that, joined to those of other experimenters, they may be of use to establish rules for the administration of this drug, no less precise than those already laid down for narcotics.

In the cases with which our research has been concerned, it was nearly

always articular rheumatism that we had to combat. Frequently the drug has been administered from the first by the hypodermic method, but for the most part we had recourse to this means in consequence of the intolerance of the sulphate by our patients, when we had endeavoured to cause its absorption, first by the stomach and afterwards by the rectum.

We must take the opportunity of remarking that, practically, the method now under consideration ought not to be employed unless in cases where the digestive tube has undergone changes or is refractory, or in those where the state of the patient requires that the drug should produce a rapid effect. There is no doubt but this method furnishes excellent results in dangerous forms of intermittent fever, where it is so important to interfere in a prompt and certain manner; in fact in these cases the stomach often rejects the sulphate, and even where it retains it a fatal paroxysm often supervenes before sufficient absorption can have taken place.

The questions which we have endeavoured to answer are simply these: —1st—In certain cases where the digestive absorption of sulphate of quinine is insufficient or may produce evil results, is it possible to administer this drug without inconvenience by the hypodermic method? 2ndly —What relation ought to be established between the doses usually employed for internal administration and those which we should inject under the skin, in order to obtain as nearly as possible the same physiological phenomena.

One cannot with perfect impunity introduce into the cellular tissue a solution rendered acid to augment the solubility of the drug it contains; but the inconveniences which have been shown to exist are so trifling that they cannot set this method aside.

Our observations show that in spite of the comparatively enormous doses we have used local inconveniences are rare and unimportant. Still we must not overlook them; we even made some attempts to avoid them, and without doubt they will be of less frequent occurrence.

As regards our doses, our results are somewhat different from those of other experimenters, which results from the fact that our design was not to seek the means of curing some disorder by the use of the sulphate, but to obtain definite physiological effects identical with those which all practitioners have experienced from the administration of the sulphate in doses of from ten to thirty grains in the twenty-four hours. We have followed up these investigations by some researches on absorption and elimination.

The bibasic sulphate being only slightly soluble cannot be employed in this method of procedure; a much larger quantity of vehicle than one can inject leaves it still diluted only, not dissolved.

We have used the neutral sulphate which is formed when we treat the bibasic sulphate with a slight excess of acid, and the acid we at first employed was the sulphuric, without, however, overlooking the inconveniences that its irritating action might give rise to during absorption, owing to which it was necessary any sensible excess of acid beyond that which was indispensably necessary to effect the transformation.

The first solution we used had the following composition :

Bibasic sulphate of quinine, gr. xv;
Sulphuric acid, gtt. iii. to v.
Distilled water, ʒ iiss.

The sulphate had not always the same composition, and sometimes five drops of acid were necessary to obtain the same degree of solubility that was in general produced by three drops. Further, the too energetic action of the sulphuric acid, the difficulty of managing it, and the danger which might have resulted from a trifling inexactitude in the management of the dose, determined us to try the use of another acid, and we had recourse to the tartaric. M. Claude Bernard led us to make this substitution, because in his numerous experiments this eminent physiologist had always found that vegetable acids are better borne by the system than the mineral. The formula to which we finally gave the preference is as follows :—

Bibasic sulphate of quinine, gr. xv.
Tartaric acid, gr. viii.
Distilled water, ʒ iiss.

The instrument we used is well known, a little syringe in a graduated glass fitted to a perforated needle.

We varied the seat of the injections without inconvenience, generally puncturing the parts alongside of the vertebral column, sometimes the thighs or the arms.

During the first months of this year many rheumatic cases have been treated in the hospitals of Paris, and it appears from the official reports on prevalent maladies that rheumatism during this period was of unusual obstinacy. We shall not discuss the utility of the drug in rheumatism; its beneficial effects are almost universally admitted ever since the beautiful experiments of M. Briquet revived this valuable but disused mean of treatment. We have observed that in cases where the subcutaneous injections were administered, the recovery has been at least as prompt as in those in which it was similarly given by the ordinary methods; yet we must say in favour of these injections that in nearly all the cases in which they were used the patients were in the worst condition; all suffered from derangements of the digestive tube that would have been rendered

worse by the administration of the sulphate by the mouth; many exhibited symptoms of intolerance of the drug and vomited it; some had rheumatic complications of the utmost gravity.—*Dublin Medical Press.*

ON THE TRANSFUSION OF BLOOD.

Dr. Panum, on the above subject, has come to some important conclusions. Defibrination of the blood, he says, exerts no particular influence over the excretion of urea. The fibrine is quickly reproduced, and, in fact, becomes normal again in forty-eight hours. The fibrine again exercises no influence on the restoration of vital manifestations—a fact which proves that this substance is only a secondary product of tissue-formation, and not, as has been hiterto held, a body presiding over their formation. Hence, therefore, defibrinated blood must be held as infinitely superior to non-defibrinated blood when used for injections; because, by its use, the danger resulting from the injection of clots is avoided, and because defibrinated blood is more highly charged with oxygen than ordinary venous blood. Healthy human blood should always be employed; because, spite of experiments which always show that in animals the blood of an allied species may be used, there is always danger of its undergoing decomposition. The fibrinated blood may be preserved in ice, and warmed when employed in injections; but fresh blood is always preferable. When the case is urgent, there is no need for heating the blood to the temperature of the body; nor is there any danger in injecting large quantities of blood into the vessels. The surgeon should not wait until the last moment before he proceeds to the injection; because the operation is not in itself dangerous, if all due precautions be adopted in its performance.—*Brit. Med. Journal.*

Midwifery and Diseases of Women and Children.

A CLINICAL LECTURE ON THE STUDY OF CHILDREN'S DISEASES.

Given at the Hospital for Sick Children by CHARLES WEST, M.D., Physician to the Hospital.

GENTLEMEN,—A very wise and good man, to whom I owe much of whatever I have learned of my profession—Dr. Latham—makes somewhere the remark that he was struck at the outset of his career with how, in a large hospital, knowledge was continually running to waste for want of some one to gather it. He says, too, that this which struck him then, struck him even more forcibly in after years;—the old experience, in

short, "*Ars longa vita brevis*," which is realised more and more as the shadows lengthen and the day goes down.

I feel it specially with reference to this hospital, because here, or in inquiries such as its wards suggest, my time and thoughts and energies have been engaged for the past five and twenty years, and I rejoice to see you here to-day, Gentlemen, because in some of you I trust that I may find fellow-labourers—men already schooled by previous study, and who will be able as well as ready to gather for the common benefit some of that knowledge which will otherwise be but too likely lost.

But I am glad, also, to see others here, who as yet are but imperfectly trained, because, while they have much to learn, they have come here to one of the best places in which to learn it, since disease may here be studied in the simplest forms.

It has been recommended by some most fitted to give advice that the student of Medicine should begin with the diseases of the eye, since through its transparent coats, as through a glass, the various processes of disease and recovery may be seen transacted, and "many of the little wonderful details in the nature of morbid processes may be learned, which, but for the observation of them in the eye, would not have been known at all." The ophthalmic wards of a hospital must, indeed, be revisited at a later period for the sake of the special knowledge to be obtained there; but they may well be visited at first for the elementary teaching which they afford.

Somewhat in the same way you may come at two periods of your career to the study of children's diseases. *First*, to observe disease in its simplest conditions; then *later*, to investigate the peculiarities of symptoms which result from the tender age of your patients, and the modifications of treatment which on that account may be required.

First, I said, to study disease in its simplest form. The chemist who analyses a substance submits to its various processes in order to remove from it all extraneous matters, and then applies to it tests to determine its real nature. This which the chemist does, however, is very difficult indeed in the investigation of disease. Pure pathology is the doctrine of disease unmodified by the intervention of disturbing causes from without or from within. To this in adult age we scarcely ever attain. The body even in apparent health yet tends imperceptibly to decay. We study disease in its influence on parts already damaged. The follies of youth, the vices of maturer age, the anxieties of business, the failure of hope, all leave their impression on the body, diminish its reparative powers, and render the different organs inapt to do their duty, so that almost all disease appears in a complicated, scarcely ever in a simple form.

Care, too, which sits at the bed's head of a grown person, does much to retard recovery and to complicate disease. "Is your mind at ease?" said his physician to poor Goldsmith on his death-bed, observing how his pulse outbeat the frequency for which his bodily ailment would have accounted. In childhood there is little or none of this; no regret for the past; no dread of the future. The present is the world in which little children live; pain past is almost forgotten; and this mental tranquillity contributes in no small degree to their recovery.

But I will no longer occupy you with insisting on things with which a little time spent here will make you quite familiar. I will rather take a hasty survey of some of the cases which are now in the hospital, or which have been here so recently that many of you have had the opportunity of seeing them. I select them very much for the illustration they furnish of the unsolved problems which I want some of you to try to answer.

A little boy, aged 19 months, was admited into the hospital on the fourth day of an attack of pneumonia of both lungs. His respirations were 60; his pulse beat 148 in the minute. There was dulness at the base of both lungs, especially of the right; fine crepitation was heard below both scapulæ. I scarcely need add that the child seemed very ill. He was drowsy, but at the same time restless. He was very hot, and his skin dry. He had some cough, but not very much. A mustard poultice was applied to the back and the chest. A little ammonia was given with small doses of ipecacuanha; beef tea and wine for food.

In the night the distress and restlessness were extreme, until relieved by spontaneous vomiting; but on the afternoon of the fifth day the child was already better; the respiration had fallen in frequency to 44; and there was slightly improved resonance of the chest. Improvement continued. On the ninth day the respiration had fallen to 21, and the pulse to 124; percussion yielded an almost natural sound; and some largish crepitation was the only evidence remaining of the dangerous illness.

Now here the recovery took place speedily and decisively, and in a way in which one could not refer it to the remedies employed. Nor is this a solitary case; it is one of many to which attention has of late years been especially called, which raise the question as to when and how far an expectant treatment may be adopted in inflammation of the lungs. It suggests to you the importance of determining the period of pneumonia at which spontaneous improvement is most likely to occur, the circumstances which in any given case justify you in expecting it, and those which, on the other hand, render its occurrence doubtful. Further, there remains the important question whether, though recovery would take place independent of treatment, it yet occurs sooner, or is more complete if treatment is adopted than if the case is let alone.

A girl 7¼ years old was admitted with the following history: Nine months before, she suffered from severe pain in her limbs, which yet did not constantly keep her in bed; but she was up every morning, and then as afternoon came on grew worse and went to bed. During much of this time her heart beat very much, and at the end of a month, when the pains in her limbs had already ceased, she suffered so much from her heart that she was confined to bed for six weeks. When better she attended for some months as an out-patient, but six months after her illness began her legs swelled, her breath became short, and at length she came for admission here.

The heart's impulse was visible in the fourth, fifth, and sixth interspaces; the apex beat in the sixth interspace, one and a half inch outside the nipple line. The upper dulness limit reach to the third rib, and the inner to a finger's breadth to right of the sternum. The oblique diameter of the heart was five and three-quarter inches, the transverse five, the longitudinal three and three-quarter inches; while, as you can now see for yourselves, there is a very manifest bulging of the whole heart's region. There was a prolonged wheezing systolic murmur heard at the apex, which diminished rapidly in loudness towards the base; the second sound was inaudible at the apex, but clearly heard at the base of the heart.

I am not going to trace this child's history in detail. She got relief from treatment, went out much better in three months, but soon came back in a state of great distress, for now pericarditis had come on. For some time she seemed likely to die, but once more got better, and you see her now eighteen months after the rheumatism in which her sufferings began.

Now, here you have a case of heart disease, with enormous dilatation of the organ, succeeding to a comparatively slight attack of rheumatism. Each year adds to the child's sufferings, from which she will find rest only in an early grave.

Why is this so? Why does even a very small amount of valvular disease tend in some instances to produce a large amount of dilatation?

It is not an invariable occurrence. So little, indeed, is it invariable, that Dr. Latham notices the probable existence of some compensating power in the young heart by which atonement is made for the effects of valvular disease: "a certain *protective* power possibly inherent in the growing heart, whereby it can accommodate its forms and manner of increase to material accidents, and so suppress or counteract their evil tendencies."

But why is this sometimes? Why not always? Why not often? Is this happy issue rarer now than formerly, and if so, can it be that the

change in practice which recent years have brought with them—the abolition of depletion, the disuse of mercury, have rendered the cure of rheumatic affections of the heart less complete than formerly? Or is it only—and this I apprehend to be the case—that our diagnostic skill and pathological knowledge have outstripped by far her therapeutical resources, that we discover the ills which we are impotent to cure?

A strong looking well-made girl, 10 years and 9 months old, began to suffer causelessly from chorea three weeks before admission into the hospital. There was no history of rheumatism in her family, nor had she herself presented any rheumatic symptoms, though there was a weak systolic bruit audible at the apex of her heart, which persisted, but did not increase either in extent or in loudness during the whole of her illness. The choreic movements were at first limited to the left arm, but they increased rapidly in spite of treatment, so that a month after admission the child was compelled to be placed in a bed padded all round, on account of the violence of her movements, while deglutition was very imperfect, and speech almost abolished.

She remained in the hospital for three months; at the end of which time she was almost well, and was sent into the country. She was submitted to very varied treatment, but without benefit, and her eventual improvement was spontaneous. For a time she improved in the country, but at the end of two months returned with a relapse of all her symptoms, though their severity was far less than on the former occasion. In this instance medicine seemed just as unavailing as before. The child began spontaneously to improve at the end of one month, was well at the end of two months, and has, I believe, since continued so, though the time is yet too short to feel sure of the permanence of her recovery.

Here, again, are several questions which await an answer. Why is the first attack of chorea almost always the most severe? Why is there no definite relation between the severity of chorea and the severity of the heart affection, and why is the heart sometimes quite unaffected, even though the chorea is very severe? Lastly, why is the heart affected at all, since the assumption of its rheumatic character, though true to a certain extent, is yet by no means always tenable?

Further, what clear indications can be laid down for the treatment of chorea besides the two furnished by the existence of constipation on the one hand, and anæmia or debility on the other, and the combined use of purgatives and tonics which they suggest?

Zinc and antimony, strychnine and belladonna, shampooing and sulphur baths, have all been used in the treatment of chorea. When is the one right, when the other, or in what combination are they best employed?

In what combinations? for I would not have you fall into the error into which the prevalent folly of homœopathy may imperceptibly lead you of supposing, that in order to act at all each remedy must be employed alone. He is the best physician who knows best not only what remedies to use but in what combinations; as the skilful general trusts not to his infantry alone, nor alone to his cavalry, but gains his victory most surely and most quickly by using different troops in combination; or,

> "As many arrows loosed several ways
> Fly to one mark."

Two more cases, and I have done for to-day. One is in the hospital now, the other recently left.

A boy, 8¼ years old, was always a backward child, and while teething had three attacks of convulsions. Three months since he seemed causelessly languid for a fortnight; and then he was suddenly seized with vomiting. For six weeks together the vomiting returned daily for every other day. It was associated with an increased languor, and, by degrees, with drowsiness, and with pain in the occiput, which, though constant, became sometimes so severe as to make him scream aloud. A month after the commencement of these symptoms he was first observed to squint, and at the end of two months he had a fit which lasted for half-an-hour. In the ensuing month these fits returned six times. The vomiting ceased after the first fit, but the other symptoms continued, and became associated with pain on any movement of the limbs, and three weeks before his admission into the hospital it was first observed that his pupils were dilated, and that he had lost the power of sight.

He was a pale, thin child, with a peculiarly wretched expression of countenance; absolutely blind—his right eye looked straight forwards, his left inwards, and both were in a state of constant motion. He had complete power over his limbs. His headache was not constant? his appetite was good, and he did not vomit during the fortnight that he remained in hospital. Nothing, however, seemed for a moment to amuse or please him, and he was allowed to go home all the more readily that his case was not one which held out much prospect of benefit from treatment.

What was this case? There was no family history of tubercle, nor did the boy present any appearance of it. Still the spmptoms are not those of any acute inflammatory disease, and I should be disposed to imagine that they were due to the gradual development of some tumour (and these tumours are almost always tuberculous), which, arising at the base of the brain, had by degrees increased until by pressure on the optic nerve it

had abolished the power of vision. And here it may remain stationary, though more probably it will continue to grow until it causes death either suddenly by some outpouring of blood from the vessel of the base of the brain, or, more slowly, by the production of inflammation, or by effusion into the ventricles consequent on pressure on the veins of the Galen.

Here is, lastly, another case, somewhat obscure indeed, but yet less so, I take it, than the preceding one:—

A girl, 8½ years old, whose father and two of her brothers had died with symptoms of brain disease, had suffered for a fortnight from troublesome cough, when she seemed unusually heavy, was attacked by violent sickness with headache, and sank speedily into a state of stupor, which continued with intervals, during which her mind wandered, and she rambled in her talk for thirty-six hours. At the end of this time consciousness returned, and the child sat up in the bed, and showed some gleams of cheerfulness, but the pulse, which had been irregular during the state of stupor, still continued so, and the head was held somewhat retracted. Pain in the head and some retraction of it continued, though the child was well enough to be up, and moved about the ward.

She left by her mother's wish in a fortnight, and at the end of another fortnight she returned, much emaciated, complaining of pain which was now referred more to the ears than to the head, of pain also in the neck and in the right shoulder, towards which her head was inclined.

On this occasion she remained in the hospital four weeks. During this time she grew thinner and thinner, her skin became harsh, her abdomen retracted and tender to the touch, and her head was still drawn back as before. Auscultation now found the breathing weak everywhere, but especially so at the apex of the left lung, and percussion there was obviously dull. There was no vomiting however. The bowels once constipated, had now became regular, the complaints of headache were less constant, and the pulse had lost its irregularity. General tuberculosis was advancing; the mischief in the brain, I suppose, was stationary.

What is the import of this sudden development of the signs of cerebral disease, and what of their spontaneous passing into abeyance? If we could learn to answer these inquiries aright we might possibly do something to arrest disease, even though we were unable to effect its cure. Here, then, is another problem which I leave for your consideration.

But, say you, you came here to be told what I do know, and I have talked to you almost entirely of what I do not know, and that is not the

object of a lecture, the purpose of which should be to impart positive knowledge.

Gentlemen, it is not quite so. The acquisition of knowledge implies an active, not a passive state, and to this it was my object to excite you. It is when you seek as for riches, and search as for hid treasure, that you gain it; so at least said the man wiser than other men, and who himself wrote of all things, from "the cedar of Lebanon to the hyssop that groweth on the wall."

You have come to the study of Medicine furnished far differently from those who, like myself, entered on it more than thirty years ago. It is but right that you should turn these advantages to good use. We are, indeed, as has been well said, like people standing together on a hill, which I have climbed before you, and I, to whom the landscape is in some measure familiar, may say to you, look here and look there, and you will see this and that. But further, I say to you, the objects there are indistinct to me; but you have perspective glasses of higher power than mine; turn them in this direction or in that, and you may with patience discern clearly what I can see but partially, or, with my imperfect instrument, perhaps cannot see at all.

If you visit the wards of this hospital I may, too, do some of you this service, that I may point out to you what is worth the seeing, and may help to guard you from the dangers of the young student,—that of playing with the instrument itself, vain perhaps, of his dexterity in its use, or of turning it thoughtlessly on trifling things, not worth the investigating.

You must not forget that it is your duty, as it is mine, to map out the country for the use of yourselves and of future travellers, to seize its great features, which may serve as landmarks, and not to waste your time on some quaint tree or curious rock which lies quite out of the path along which you have no journey.

"Nisi utile esi quod agimus vana est glora nostra" should be your motto, though in a different and a lower sense, indeed, from that in which it was employed by the inspired penman some eighteen hundred years ago.

Canada Medical Journal.

MONTREAL, NOVEMBER, 1865.

AN APPEAL.

The present number of the *Canada Medical Journal* has been delayed from several causes; but chief of all, the want of original matter to lay before our readers.

When we assumed the management of this journal we determined to exclude from its pages everything of a personal nature, which is always uninteresting to the majority of readers, and is calculated to injure the character of our profession. In doing this we have followed the course adopted by those perodicals published in the mother country, many of which are devoted exclusively to the advancement of the science and art of medicine and surgery.

We may perhaps have given offence, as many letters have been received from various parts of the province, complaining of unprofessional conduct, but of which we have taken no notice. We are desirous that this journal should be a means of communication between the members of our profession, and the repository of valuable matter. As an evidence of the worth and practical bearing of many of the papers which have appeared in our Original Department, we may state they have been deemed of sufficient interest to be copied into the pages of most of the leading periodicals at home and in the neighbouring republic.

To our friends and supporters we must again appeal for aid, literary aid, for without it the printer cannot employ his type. Surely there should be sufficient material in Canada to enable us to keep our journal going. If the profession here are so sparing of their views, so reticent, fearful of criticism, or some other imaginary bug-bear, we will conclude it is an evidence that we have become an unwelcome guest, and therefore will begin to consider the necessity of relinquishing our task. But we cannot believe that thus early in our career we are to to be neglected, unsupplied with literary food. Brethern, we languish, we starve, with all the keen appetite of continued abstinence and unimpaired digestion. We call upon you to sustain us with contributions, without which the character of our journal must depreciate; in fact we will, if still neglected, cease to be.

THE PRESENT SESSION.

By the time our November number reaches our readers, the session of all the Medical schools and colleges in Canada will have commenced, and students will be fairly entering upon their winter's work. To them we would commend the following words, uttered by George Pollock, F.R.C.S., England, at the introductory lecture of the St. George's Hospital Medical School, for the session 1865, '6. "But of all points, let me impress you that *this* is the most important—*the study of disease at the bedside.* If you shun or neglect the wards; if you are indifferent accurately to watch the phases of disease by the bedside; if you neglect to see to cases, to record their symptoms and treatment, to follow them in their convalescence, or track them to the *post mortem* room, and there enter into your case book the dealings with death; you can never attain to a position in your profession, to command the confidence of the public, to gain the respect of your professional brethren, or place yourself in a position of authority. Your range of observation must be the wards, where disease may be studied; and the chamber, where after death dissection discloses its ravages." These words of advice given to the students of St. George's Hospital, London, are applicable to students all the world over. Too little attention is, beyond a doubt, paid by the majority of students to the cases which fill the wards of an hospital, and how many, day after day, but too literally "walk the wards," the practical lessons drawn by the clinical teacher barely entering their brain. Upon every student who reads those lines, we would impress with all the power we can employ—the vast, the inestimable importance of paying the closest possible attention to clinical teaching, and, as far as possible, taking brief notes of cases. This gives the student a habit of being methodical, and will prove of great use in his professional career. Observation is a faculty, without the exercise of which the medical man will find his diagnosis in hundreds of cases an up hill work. By closely following the hospital wards, the student has this faculty constantly brought into play—it is expanded, sharpened. With half the trouble, a keen observer is able to bring to the surface signs which may have escaped the attention of others, with whom the faculty has lain dormant. Various reasons may have induced the student of medicine to enter a friend's study—principal among which is, we hope, "love of his future profession." Without this impetus, much he will find dull and dreary, and though at the end of his college term, he may find himself with his diploma in his pocket—yet the practice of his profession will not have any charms for him. At best it has many rugged paths, which, to such

an one, will not fail to be densely filled with thistles. But to the true devoted lover of medical science, the study of it is a privilege, and he counts trials as but naught in the prosecution of his glorious purpose. Disappointments may befall him, difficulties may rise up before him, but in proportion as all these appear, his determination to succeed only becomes the stronger, and in the end they look as if indeed they had been blessings in disguise. The prizes open to our profession are not many, but everyone has before him an opportunity to place himself in a respectable position in life. Our profession is a progressive one. As a science it is still inexact, and as an art it is still imperfect; and although the past century has seen wonderful progress made towards bringing it to perfection, much still remains unaccomplished. Every student, every medical man has an opportunity of giving his quota towards the common cause. Once more we would impress upon students the great importance of the profession they have chosen, urge their especial attention to clinical teaching, and wish them all possible success in the prosecution of their labours.

HOMŒOPATHIC MEDICINES.

Dr. Taylor, the celebrated chemist, in his testimony before the Select Committee of Parliament on Chemists' and Druggists' bills, in reply to questions in relation to the practice of the homœopaths, said:—They say that aconite is in the globules, but I have never found any trace of it; I have been told our chemistry is not refined enough to trace it; we go to the hundred-thousandth, they put in the millionth. The globules consist of sugar and starch. I believe the homœopaths use tincture of aconite. In one instance I detected a strong dose of morphia in medicine prescribed by a homœopathic practitioner. Six powders were made up—three contained sugar of milk, and three contained morphia and calomel. In examining the homœopathic powders, I found in some of them upward of a grain of morphia. They do not always, as they profess, use homœopathic doses. The powders were numbered to be taken on certain nights, and in every other powder there was sugar of milk, and in every other powder morphia and calomel.

Miss Garrett has successfully passed her examination at the Apothecaries Hall, London. The *Medical Times and Gazette* hopes she may long enjoy the pre-eminence of being the sole female representative of English medicine. — The Sir Ashley Cooper Prize of £300, for 1865, is for the best essay on "Pyemia." — There were 2238 persons killed by lightning in France between the years 1835 and 1863.