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Original Contributions.

VIRCHOW.*

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HE who is chosen by his colleagues to deliver the opening lecture of the session is apt to view the situation with mixed feelings. At first with pride at being so selected, but as time passes, with growing uneasiness and doubt as to his ability to carry out the task assigned; and he ultimately reaches a point at which he wonders whether they wished to spoil his holidays or only hoped to make their own more pleasant. It is not an easy task to choose a subject for an opening lecture. There is an *embarras des riches* which makes selection difficult. Medicine, with its fascinating past, linked at every point with the history of the development of human knowledge, and its glorious future so full of promise for the human race, is not wanting in many and varied themes for such a lecture.

The lecturer is peculiarly fortunate when the date of his address falls with an epoch in the history of the institution; and in that fortunate position I find myself to-night.

Since the opening of the Biological Department of the University in 1890, each succeeding autumn has seen this theatre filled with ever-increasing crowds of students, gathered upon the first day of the session, to hear the opening lecture. And since that date, the Biological Department has filled a peculiar place in the history of the Medical Faculty and of its students. Here the students begin their work and within its walls the Faculty meets each month during the session.

* An address delivered at the opening of the sixteenth Session of the Medical Faculty of the University of Toronto.

To-day forms an epoch in the history of this institution in that this is probably the last opening lecture of the Medical Faculty to be delivered in this hall. Before the session is finished, we will have moved into the building which is now being erected to the north of this one and by transferring the work of the third and fourth years to it, the last step will have been taken to bring the whole body of medical students thoroughly in touch with University life. It is a step to which the friends of the Faculty and the University have long looked forward; for, although the University has no more loyal alumni than those in medicine, yet the separation of the final years has, to a certain extent, tended to cut them off from the University and its life, and has certainly tended to produce a separation between the men of the first and second and those of the third and fourth years.

At the very outset the founders of the Medical Faculty committed themselves to the position that the study of medicine required a thorough general scientific groundwork, especially in biology, and the erection of this building in 1890 was the first step towards properly providing for this; although for the three years prior to that date good work was done even with the insufficient equipment and cramped accommodation then available. It is peculiarly fitting, therefore, that the biological building should be closely associated with the development of the Faculty.

The effect of this care for the groundwork of medicine by the University authorities, is shown in the standing which its graduates have taken wherever they have gone; and the University herself has profited not only on the prosaic side of increased fees but also on the much more important one of a rapidly-growing body of loyal graduates, scattered from one end of the province to the other—graduates as loyal and perhaps more influential than any other body of her alumni.

For still another reason, it is fitting that the opening lecture in the Faculty of Medicine should be delivered in this building, because the fact that should be deeply impressed on you students who are entering for the first time the study of medicine, and upon you older men who have been engaged in it for a longer period, is that at bottom Medicine is a biological science, and that so long as during your student days or in later life in active practice, you pursue a biological method, in the study of the problems which you may have to face, so long will you be pursuing the study of scientific medicine; but when you drift away from that method, you are drifting towards a false empiricism and quackery. And perhaps, when now the Faculty of Medicine is to a certain extent passing from under the protecting wings of the Biological Department, it may be permitted to refer to one, who more than any other member of the University has directed the development of medical teaching in this country along true biological lines. I refer to the

Vice-President, Professor Ramsay Wright, and I believe that all members of the Faculty will agree with me when I say, that we owe him a very great debt, for the influence which his teaching has exerted upon the breadth of outlook which our students have developed. The students of to-day will hardly realize that the point which was most severely attacked by the enemies of the University Medical Faculty in 1887 was the introduction of general biology in the course and the prominence given to that subject; and now, when entering the sixteenth session, that we may look upon that subject and its influence upon the rest of the curriculum as one of the glories of the Faculty, we must acknowledge that this is owing to the catholicity of spirit of the head of that department.

It is not my intention, however, to adress you to-night on the necessity of a proper biological training as a foundation for medicine; that has been done by other and abler hands than mine; and although it is ever an interesting subject to discuss, the fact is now everywhere admitted and needs no discussion.

To-day, another epoch in the history of medicine has been reached, an epoch which we must all regard with sadness, although it is an epoch which we have all known must soon come. We are to-day, students of Modern Medicine, mourning the father of Modern Medicine, Virchow. Virchow is dead, and with his passing is broken the last link between scientific medicine, which he did so much to establish, and of those older ideas of the first half of the nineteenth century, which he did so much to overthrow. For over fifty years Virchow's mind has dominated our science, and for all time his influence will be felt; it is fitting that on such an occasion we should devote more than a passing notice to the life and work of our great master. I wish this evening, therefore, for a short time to direct your attention to the life of Virchow, and to attempt in some measure to give you an idea of what his life work has meant for Medicine and what a loss Medicine suffers by his death.

In order to properly appreciate his influence, we must first consider, for a moment, the condition in which he found the science when he graduated from the University of Berlin in 1843.

During the first forty years of the nineteenth century great advances have been made, especially in gross anatomy, both normal and pathological; in England the teaching of Hunter had done much to emancipate medicine from the errors of the eighteenth century; in France great progress had been made under Bichat, Laennec, Andral, and Cruveilhier; while in Austria, Rokitansky, one of the greatest, perhaps the greatest, gross pathologist of all time had added immensely to the accurate knowledge of the gross appearance of disease as seen in the autopsy room; but everywhere we find that the mysticism of the eighteenth century dominated ideas, and metaphysical speculations still took the place of careful

observation and experiment. In fact, the history of medicine during the first fifty years of the past century was still the history of the rise and fall of systems and schools. So little did scientific methods affect the interpretation of the phenomena of disease, that Rokitansky, himself the most painstaking and exact of gross pathologists, was the father of that system which was the first to be attacked and overthrown by Virchow, namely, the humoral pathology. It would indeed take too much time to attempt to fully describe the state of medical thought at this period; it would perhaps be difficult for us to appreciate it properly; we have gone so far forward that to-day it is almost impossible for us to go back to the point of view of the physician of 1840, and appreciate the arguments which appeared to him so cogent. The tendencies were all transcendental; there was continually introduced into the arguments the action of a something which might be called the "nervous principle," the "life principle," or the "formative principle," or something else of the kind, to which all sorts of activities were ascribed; indeed Virchow, in the first volume of his *Archiv*, quaintly scoffs at the powers of this formative principle, as described in Lobstein's Pathological Anatomy, in the following words: "Does it not seem as if this Bildungskraft were a free burgher from 'the bloody land of Kentucky, half horse and half alligator,' or a small demon from the days of the Rosicrucians."

In Germany the system which perhaps had the strongest hold on the medical mind was that form of humoral pathology which had been promulgated by Rokitansky, a modification of the pathological views of Andral, the French pathologist. According to this view, the primary seat of all disease was in the blood and, as Rokitansky thought, disease consisted in false mixture of the elements of the blood, chiefly the fibrin and the albumen; to designate this abnormal condition he made use of the old Hippocratic term *crasis*, and classified all diseases into various *crases*. One of his most important crasis, for instance, was that in which he conceived there was an excess of albumen and a deficiency of fibrin; here he placed such widely different diseases as gout, rachitis, typhoid, acute tuberculosis, Bright's disease, cancer, and others equally varied. How strong a hold the humoral pathology had on the minds of men is shown by many terms still used and believed in at the present day, by the laity, such as pure and impure blood, and even the terms hot blood and cold blood; and although no one will gainsay the therapeutic value of brimstone and molasses, yet doubtless, in the minds of the common people, the humoral pathology is responsible for the vigor of its application.

The grave objection to these views and to others of the same period was that they were almost entirely speculative hypotheses, with but the slenderest foundation in the way of observed fact or experiment.

These were the doctrines and theories of disease which Virchow was taught when a student in Berlin, and we doubt not that throughout those years he must have struggled vigorously against them.

We have very few details about his early years of life and study; born in Schivelbein in 1821, a little village in the flat, sandy plains of Pomerania, about forty miles from the Baltic, he attended the village school and afterwards the gymnasium at Coslin. In an anecdote by his friend Schliemann, we see that even at the gymnasium his future originality of mind was foreshadowed in his attitude towards the study of languages, in which he was very proficient; in his home, he had begun to study the classics, under an enlightened teacher, who did not think it necessary that he should memorize grammatical rules, so long as he could translate correctly and write correct exercises; on going to the gymnasium he was under a Greek master who thought that since he could not repeat the rules in Buttmann's grammar his expertness must be due to deceit, and so positive was he of this that he opposed him in his final examination as not possessing sufficient maturity of morals to proceed to the University. However, the opposition availed nothing, and he passed to the University in his eighteenth year in 1839.

During his medical education, Virchow so attracted the attention of his teachers that on graduation in 1843, instead of entering the army medical service for which he was preparing, he was retained in Berlin as prosector under Froriep at the Charite Hospital; very shortly after this he was made lecturer in pathology. This was in the year 1847, and a few months later in conjunction with his colleague Reinhardt, he began the publication of the *Archiv fur pathologische Anatomie und Physiologie und klinische Medicin,* the journal which was to bear the banner of the revolutionary party in medicine. Reinhardt died in 1852, and since that year Virchow has remained sole editor until the day of his death, when the *Archiv* had reached its one hundred and sixty-ninth volume. At first the *Archiv* labored under serious difficulties; the second volume was not complete till 1849, the third not until 1851; from 1852 until 1856 one volume per year was produced, and with the latter year began the regular appearance of two volumes, in 1861 it was again increased to three, and in 1879 to four volumes per annum. The *Archiv* practically represents Virchow's life on the side of pathology; in it we see the gradual development of all those ideas which did so much to clear away the debris of past systems and schools. To the early volumes he contributed enormously; of the fourteen articles in the first volume eight are from his pen, in the next three out of ten, and so on. It was with no uncertain sound that he sketched the needs of Medicine in those early articles, and it was with heavy blows that he

drove home the lessons he had to teach, throughout what might be called the Sturm und Drang period of the *Archiv*.

In his leading article to the fiftieth volume, he indicates what the editors had to face and how they were received; I will quote a portion of it.

"It is difficult at present to realize the boldness with which two young and almost unknown men undertook by the publication of this journal to give a new direction to the science of Medicine. The market was apparently glutted with medical journals, and in Prussia especially a certain number of these bore an entirely official character. These journals appeared under the aegis of high state officials; they received official news, and were subvented in all sorts of ways. It was very far from the minds of the official world of that day to think scientific requirements necessary to ensure the circulation of the periodical press. The editors received so little support, they had so few contributors, and these so weak that they were compelled to print the feeblest and most tedious articles—indeed, articles that had no other merit than that they called the attention of the reader to the writer.

"The one requirement alone that contributions to the medical press should be original (Arbeiten) gave rise at that time to great astonishment. This was the day of so-called practical observation. The busy practical physician believed he had satisfied all claims if from time to time he cast a glance backward over his professional career so rich in experiences, and from it produced for the use and comfort of his colleagues and suffering humanity, a general abstract, in which he ordered and explained his co-called facts according to his favorite system. Autopsy reports were almost as great rareties as in the days of Schenk von Gravenberg (fifteenth century). Microscopic investigation there was none; even clinical histories were only written down from memory, or if they were drawn from the daily journal, it was apparent that, apart from the examination of the pulse, it was rarely a question of the systematic examination of the patient. Therapy moved in its old accustomed channels; venesection stood in the first place; the activity of drugs was esteemed as high as their classification into distinct groups was hard and fast; and people were so much the more contented with their successes, since the humoral pathology, believed in and preached by laity and profession alike in most beautiful harmony, easily explained failures and offered convenient excuses.

"It would certainly be interesting to picture the condition of official medicine as it existed scarcely 25 years ago (Virchow writes in 1870) for the instruction and warning of the medicine of the future. What I have said, however, will show that it seemed rather bold to declare war not only on the existing press, but also on the whole official medicine, in order to bring about

what both held to be useless and impossible, namely, the study of pathological physiology. In the minds of the reigning circles, Hartmann's Theoria Morbi rendered all that was necessary to the clinician and practitioner for the interpretation of symptoms and of the healing process. More than this was evil; unfruitful learning they called it. And when I published an article in my second volume upon the reform of pathological and therapeutic views through microscopic investigation, when I desired that the whole of medicine should move at least three hundred times closer to natural processes, then I appeared to these gentlemen as an out and out unpractical and possibly even dangerous doctrinaire and adventurer."

It was natural that the earliest researches of Virchow should have been directed towards the study of the cells of the body, since less than ten years earlier Schwann and Schleiden had announced the discovery, the one of the animal, the other of the vegetable cell. It was natural, also, that a mind so critical should at once attempt to test the pathology of the humoralists from this standpoint. We find, therefore, that his early contributions to science are largely upon the microscopic characters of blood, both normal and pathological. From these investigations resulted his papers on pigmentation, in which he demonstrates so clearly the two forms of blood pigment which are produced by hemorrhage into the tissues, a chapter upon minute pathological change so complete as practically to close the subject. At this time also appeared the results of his work on that peculiar disease of the blood, leucemia, a name which he himself suggested. The curious gross appearance of the blood in advanced cases of this disease led to a confusion with purulent conditions, and superficial examinations under the microscope seemed to confirm this view; to Virchow we owe the recognition of it as a disease *sui generis* associated with enlargement of the spleen and other symptoms, and entirely distinct from pyemia with which it had been confused.

From these studies he was naturally led to a study of inflammation of the vessels, the results of such inflammatory changes, the formation of thrombi or clots, and the conditions which governed the clotting of blood in the living body. Indeed, the clotting of the blood in the living body had, by a series of false hypotheses, been brought by Cruveilheir to explain the whole question of inflammation. This French pathologist had noted that the first evidence of the inflammation of the veins consisted in a clotting of the blood; and as in inflammations of the organs, the presence of clots could not be demonstrated in the larger vessels, he introduced the hypothetical condition of capillary phlebitis, that is to say, an inflammation and clotting of the blood in the capillaries. It was to be expected that such a hypothesis, unsupported by facts, would attract Virchow's attention, and in his study of thromboses

he directed special attention to the question of the occurrence of clots in the vessels of the lungs; in studying these, in order to determine whether they had arisen primarily in that situation, he was struck by the fact that when found in the lung there was almost always to be found a similar condition in some other part of the body; and finally he was able to demonstrate that a plug resting in one of the vessels of a lung fitted exactly on to a thrombus in a systemic vein; and, in fact, that this plug had broken away from the thrombus and had been carried by the blood current through the right chambers of the heart into the pulmonary vessels, passing from the larger to the smaller until ultimately it was stopped by plugging a vessel too small for its further progress. This condition of secondary plugging he called "embolism," and the plug of coagulated blood he called an "embolus," the condition of the lung tissue as the result of this cutting off of the local blood supply by the embolus we call an "infarct," or a condition of "infarction." Now, as this formation of infarcts of the lung had been one of the strong arguments of the believers in the theory of capillary phlebitis, the whole groundwork of a false hypothesis was cut away at one blow. But Virchow was not satisfied with the simple observation of conditions as found at autopsy; he followed the question up by experiment, and by introducing foreign bodies such as rubber into the circulation of dogs so as to produce artificial emboli, he was able to more fully explain the condition and effects of embolism; but especially these experiments entitle him to be considered one of the pioneers of that experimental pathology which was to do so much for the advance of our knowledge. Although much valuable work was done subsequently upon the subject of thrombosis and embolism by other men, and especially by Virchow's most celebrated pupil, Cohnheim, yet it is marvellous how complete was this first demonstration of the facts.

It is said that during the revolutionary year of 1848, when no doubt Virchow's democratic ideas were as well known and as vigorously pushed by him as his notions upon embolism, he was making an autopsy upon a patient of Schonlein's, who was supposed to have died of cerebral hemorrhage; upon opening up the brain he demonstrated to the latter an embolus plugging the middle cerebral artery, Schonlein turned away with the remark, "O! You see barricades everywhere."

But Virchow's study of emboli led him still further. Noting that sometimes the embolus gave rise to a local abscess, and that this depended upon the condition of the clot from which it had originated, he gained an insight into the whole question of metastasis, which became immensely important when he came to study the development of malignant tumors; at the same time he got a conception of the condition called infection which had immediate bearing on the disease pyemia or blood poisoning.

His investigations into the subject of inflammations turned his attention to the question of the reaction of ordinary tissue cells, whence there resulted a valuable contribution upon the subject of parenchymatous inflammation, opening up a new standpoint, which was most important in the development of his ideas on cellular pathology. In this piece of work he pointed out that the changes which one sees in the parenchymatous cells, *i.e.*, the swelling and increase in numbers of the cells, were simply indications of an abnormal activity of all or certain of the processes of nutrition which ended in degeneration of the cell. In this research the author's attention was especially directed towards the connective tissues, and there resulted the discovery of the connective tissue cell, and of the cells of the bone and cartilage and the demonstration that the cells were all of the same nature, and that the tissues were related tissues. These observations on connective tissue were of the highest importance for Virchow's own development, because they enabled him to clear his mind from the last remaining taint of the humoralists and to understand properly the whole question of cell formation.

Schwann, the discoverer of the animal cell, had propounded a theory for the explanation of the origin of the cell which was entirely based on humoralistic ideas. This was the theory of the blastema; he conceived that the cell originated by a kind of organic crystallization from a plastic material, which he named the blastema, a fluid in fact; that the particles in this fluid became massed together to form the nucleus, and around this the cell protoplasm was deposited by a process essentially similar to crystallization. This blastema theory of Schwann was, as Virchow himself says, the obstacle over which he stumbled.

Not only Virchow, but most of the other younger investigators of that day, accepted the blastema theory, and were looking for facts to support it, and were endeavoring upon this hypothesis to account for the formation of all the different cells of the body. One of the strongest arguments for this view was the occurrence of certain granular cells in those areas, especially inflammatory, where new cells were being formed; besides these granular cells there were found pigment cells, blood-corpuscle holding cells, and others which were taken to be proofs of the origin of these structures from a granular blastema. Virchow was able to show that these cells had acquired the granular character or had become secondarily loaded with the pigment masses or the blood corpuscles. Especially the correct interpretation of the granular cells, the fact that they were degenerating cells, was of the greatest importance. As he says in an article in the hundredth volume, "These investigations have a very great value for the history of a human error; these granular cells were regarded as individual steps in a developmental series, and they had been carefully and accurately placed

in their correct order; no objection could be raised against the order, only unfortunate chance had willed that the series had been begun at the wrong end, and that what were really cells in course of degeneration were thought to be cells in the course of development. The arrangement was right; the chronology was wrong. The opponents of experimental methods, the anti-vivisectionists, should learn from this what difficulties are presented by purely anatomical investigation; and to what gross and long-persisting fundamental errors they may lead."

These researches upon the development of the cells of the body and especially the study of the connective tissue cell in health and disease, and its embryological history, finally led Virchow to see that, nowhere do cells originate from a formless blastema, but that they always result from the division of previously existing cells, and he finally announced the fundamental truth of the cellular pathology in his famous modification of Harvey's dictum, *Omnis cellula e cellula.* It is difficult indeed to overestimate the far-reaching influence of this doctrine, not only for pathology, but for the whole of biology. With its recognition was swept away the whole system of the humoral pathologists and with it a crowd of other speculative hypotheses, and the investigation of disease was able to proceed upon a rational scientific path. By it was settled, or rather should have been settled, the question of spontaneous generation.

During all these years of work Virchow's position as a University teacher was undergoing considerable change; in 1848 he was sent by the Prussian Government to investigate the outbreak of typhus in Upper Silesia, and on his return he published a report such as few governments have ever received from one of their own officials. After a masterly discussion of the history and course of the disease, with its symptoms, pathological findings, and its treatment, he proceeds to discuss the cause of such an outbreak and the remedies to be used to prevent an recurrence.

And he does not in the slightest mince his words; he shows that the conditions which gave rise to the famine, and following it the fever, were: First, the stupidity of the whole group of Prussian officials in their bureaucratic methods of dealing with what was an alien Polish population, then the heartlessness of both the aristocracy of birth and of money in the treatment of their tenants and their workpeople, and lastly in the attitude of the Roman Catholic hierarchy, which had kept the peasants in the deepest ignorance. His remedy was characteristic, "Democracy, pure and unalloyed." His suggestion that the education of these people should be begun by giving them Polish schools, and that they should not attempt to Germanize them by insisting on German schools, is of interest at the present day, in view of the troubles that the Government of Germany is still having in this very district. His

return from Silesia was just at the time of the revolution of 1848, and he at once threw himself into the midst of the political struggle over the election of delegates to the German National Assembly, for which he was a candidate. His language in his political speeches at this time must have been most uncompromising, and did not tend to conciliate a government still smarting under the lash of his report upon the typhus epidemic. It is said that on one occasion in referring to the question of heredity, he said that he knew of one exalted family in which the grandfather had softening of the brain, the father hardening of the brain, and the son no brains at all. And this was known to be a reference to the royal family of Prussia. It was natural, then, that he should have been very much a *persona non grata* in official circles, and, as a result, his lecturership in the University was taken from him; this, however, caused such an uproar in University circles, and drew such protests not only from his colleagues, but also from all the medical societies, that the government speedily reinstated him, with, however, greatly restricted powers. Conditions were unsatisfactory, so that when he was offered the newly-established chair in Pathology in the University of Wurtzburg he accepted, and in 1849 left Prussia for Wurtzburg. As Professor of Pathology he remained at Wurtzburg until 1856; throughout this period he contributed extensively not only to his own *Archiv*, but also to other journals, and about this time edited a text-book on Special Pathology, and collaborated with Vogel in one on General Pathology, in which appeared in concrete form the elements of those doctrines which were more fully embodied in his Cellular Pathology.

In the year 1856, Virchow was recalled to Berlin to fill the new Chair of Pathology, his recall being practically forced upon the Government by the medical public opinion of the Capital. He returned but only upon conditions, one of which being that there should be erected an institute for practical research. On his return he found the museum of Morbid Anatomy, possessing only about 1,500 specimens; at his eightieth birthday celebration he was able to state that the new museum recently erected by the Prussian Government at a cost of over 500,000 marks, contained over 23,000 specimens; a very pregnant example of his activity along only one line of pathological work.

In the year 1858 appeared his great work upon Cellular Pathology. This was a course of lectures delivered in the early part of the year chiefly to his colleagues and medical men in the city of Berlin, the full title of the work being *Cellular Pathology as based upon Physiological and Pathological Histology.* I have outlined to you already the investigations which led up to the conceptions embodied in this book. Its success was immediate, and it was at once translated into all the European languages.

The position reached in these lectures is broadly this, that the cell is the unit of the body, in health and disease, that disease of an organ is disease of the cells of that organ, disease of the body, disease of the cells of the body; and that those manifestations which we call pathological are simply abnormal manifestations of otherwise normal processes. In fact, that pathology is simply a branch of the science of biology.

The test of the value of this conception of Virchow's is, that, year by year as new facts were discovered they fell naturally into place, and I can recall no better example of this than the way in which the neuron concept and all our later knowledge of the pathology of the central nervous system has naturally fallen into line with the cellular pathology.

From 1863 to 1867 appeared his work upon malignant tumors under the title, *Die krankhafte Geschwulste.* This was an embodiment of all those studies on tumors and their development, which had appeared at different times in the *Archiv.* His studies upon the origin of the tissue cell had directed him to the proper explanation of the question of histogenesis; his work upon emboli had cleared up the whole subject of the spread of these tumors in the body that is the subject of metastases; and his investigations into the subject of the connective tissue cell, enabled him to separate clearly the carcinomata or epithelial tumors from sarcomata or connective tissue tumors. This great work was unfortunately never completed, and although it contained errors it still remains one of the most exact pieces of investigation which we have upon the subject.

Succeeding years produced longer works upon chlorosis, syphilis, trichinosis, and other subjects, but as time passed his activities on the side of pathology became more critical than productive, owing largely to the fact that his interests had become so extended that he was unable to devote as much time to the exacting work of experimental pathological investigation. His duties as a teacher, however, were ever his first thought, and his museum was watched over and developed with zeal to the very last; in fact, during the last few years of his life, he was accustomed to spend an hour every Sunday in explaining to the public, who were admitted to certain rooms, the meaning and significance of the specimens. Indeed, in his interest in the scientific education of the public, especially of the working classes, he was singularly like Huxley, and like Huxley he devoted not a small portion of his time to this object.

In spite of his separation from the active work of pathological investigation in later years, one sees how closely in touch he remained with it all, when one reads his public addresses, such as the Croonian lecture of 1893 and the Huxley lecture of 1898.

Virchow's mind seems to have been of such a character that he

was compelled to follow out with the same faithfulness the side lines that opened up before him as he did his special work of pathology. And thus we find that his experiences in the Silesian Typhus epidemic not only threw him into the whirlpool of politics, but probably also was responsible for that interest in public sanitation, which in after years proved of such immense importance to the City of Berlin. In the same way his study of cretinism gradually turned his attention to Anthropology, to which science he was so devoted in after life.

I have alluded to his political activities, and certainly these deserve more than a passing notice. In 1862 he was elected as a radical member to the Prussian Diet, and he remained in that chamber until his death, as leader of the radical party and Bismarck's most redoubtable opponent; it is said that when, in 1865, he defeated the Government upon the motion to create a navy, Bismarck was so incensed as to challenge him to a duel, an honor, however, which he declined. His political work took not a small portion of his time, and for many years he was chairman of the finance committee of the house. That he did not find his political activities interfering in his regular scientific work shows what immense powers of concentration he had. However, when remonstrated with once upon wasting his time in politics, he said: "The dates of many of my lectures will prove that even on those days on which important matters claimed the attention of parliament, I have attended to my duties as a teacher. To set at rest the anxiety of my friends, I will add that the silent and often unnoticed labor of the scientist requires more energy and greater effort than the activity of the politician, which is both noisier and more speedily appreciated. The latter avocation has appeared often to be rather a recreation.' In 1880 he was elected to the Reichstag, and remained a member of that body for some years, until in fact he was defeated by a socialist candiate; a commentary upon the fickleness of the electors of Berlin. As a municipal politician he occupied the position of a member of the Berlin Municipal Council for forty years, and during that period he initiated and carried out the whole system of public sanitation, which has made Berlin one of the healthiest cities of the world. The system of sewage disposal by filtration upon the beds of the sewage farm to the north of the city was the scheme to which he devoted his greatest energies, and which he carried through in the teeth of strong opposition; and from the time of its inception until his final illness he made his own special care the health of the work people upon the filter beds. It was with considerable pride, therefore, that he could point to them as as healthy as any other class in the whole population of Berlin. The housing of the working classes, the system of city hospitals, and many other sanitary improvements which have made Berlin so celebrated are due also to his personal interest.

There is yet another side to Virchow's life to which reference must be made. That is to the work which he did in the science of Anthropology. He was apparently led into this by his interest in the pathology of the skull, and especially by his studies on cretinism. But once his attention was attracted to it, he made the subject his own, and his investigations in that science alone would have sufficed to make him famous. As Professor Franz Boas points out, in a recent number of *Science*, the beginnings of his work coincide with the beginnings of modern physical Anthropology in Germany, and no man has done more to shape, guide, and foster this science than Virchow. He took a leading part in the formation of the German Anthropological Society, the Berlin Society, and in the establishment of the *Archiv fur Anthropologie*. In connection with the German Society, he initiated the collection of statistics as to the distribution of the color of the skin, eyes, and hair in Germany. The results of this inquiry, with an extended discussion of the distribution of the different types, was embodied in a report by himself. In the allied subject of Archaeology he also took great interest, and in the year 1879 he accompanied his friend Schliemann to Asia Minor partly to assist him in his excavations at Hissarlik on the site of ancient Troy, but partly also for the sake of the holiday which he needed badly. His interest in the Trojan remains was very great, but it was characteristic of him that he should show even greater interest in the living inhabitants "upon the plains of windy Troy." He found them without medical attendance and with but the crudest notions in regard to the treatment of the prevalent diseases, and he began to prescribe, first for Schliemann's workpeople upon the excavations, and then for the villagers around, until at last his practice became so large that twice a day he had to examine long lines of waiting sick, so that he had little time for Archaeology or rest. In order to enable them to obtain the necessary medicines he taught them the uses of the various medicinal plants that grew in abundance about them. The only reward was the deep gratitude, even veneration, of the people. Schliemann relates that a spring of water which broke out from an excavation which Virchow was superintending was afterwards regarded as of almost miraculous value; it was carefully surrounded by stones, and named the Physician's well.

In connection with Virchow's anthropological work, it is important to touch for a moment upon his supposed attitude towards Darwinism, an attitude which was persistently misrepresented by the opponents of the doctrine of evolution. In 1877, at a meeting of the German Naturalists and Physicians, he took occasion to refer to the doctrine of evolution, chiefly from the standpoint of anthropology. The address was at once taken to be an out and out attack upon the whole doctrine, and was considered of so much importance that the *Times* published it almost in full. As a mat-

ter of fact, the address was directed against the too hasty acceptance of unproved hypotheses, and by any one who knew the history of his early struggles with the older ideas in pathology, Virchow's attitude is easily understood; he was, in fact, ever afterwards extremely conservative towards all hypotheses, and his warning on this occasion was this, against teaching that the doctrine of descent should be taken as a proved fact whilst it was still an hypothesis; what he most feared was that the doctrine of evolution would lead to the spread of socialism among the masses, with the same consequences which the doctrine of the equality of man had in the days of the French Revolution. His language was in places most sarcastic, and the address drew from Haeckel, who was specially attacked, a bitter reply. His strong conservativeness in Anthropology is shown also in his attitude towards the interpretation of the significance of the Neanderthal skull; this famous relic of primitive man presents certain characters which were taken by most anthropologists to indicate a lower mental development than that seen in the later prehistoric crania. Virchow's position was one of reserve; the peculiarities were so strikingly like certain pathological conditions that he thought that judgment should be withheld until other examples were obtained for comparison.

Perhaps more than any other character was the breadth of view which Virchow maintained until the very last. Professor Osler, of Johns Hopkins University, in his address in Medicine at the meeting of the Canadian Medical Association a few weeks ago, took as his text Chauvinism in Medicine; perhaps there has never lived a better example of absence of Chauvinism than Virchow. He was truly a cosmopolitan, and when one reads, for instance, his tribute to Glisson in the Croonian lecture of 1893, or remembers his reference to Lister in the Huxley lecture of 1898, when in the midst of the lecture he turned to grasp the hand of Lister, as he sat on the platform beside him, one sees that for English medicine at least he had a very great appreciation; but the same was true also in regard to French and Italian medicine: he first taught the Italians to appreciate Morgagni as he taught the English to appreciate Glisson. And he ever taught that medicine knows no national boundaries.

In 1891 his seventieth birthday was celebrated; it was a triumph which few men have experienced, but it sank into insignificance before the much greater celebration of his eightieth birthday last October. On this occasion delegates appeared at Berlin from the whole civilized world to congratulate the master. On account of his age, he was not allowed to know anything of the extent of the fete before hand, but was carefully watched and guarded from all fatigue by his friend Waldeyer. The celebration lasted a week, and in spite of his age everyone was struck by his activity and the keenness of his mind.

In a very characteristic article in the December number of

the *Archiv* of last year, he returns thanks for the honors and congratulations that were showered upon him on that occasion. He says in one place, "For the quite extraordinary honors that have been conferred on me, I can do nothing more than repeat my warmest and heartiest thanks. The sense of obligation is too great to permit me to express in words my feelings. And I am now too old to begin new work which could be considered a fit return. I shall not tire in working as long as my powers hold out. But I can promise no more, than that I will endeavor to bring to a conclusion, useful for the world at large, a series of more extensive investigations which I began in my youth." Are we not reminded of Tennyson's Ulysses—

> "How dull it is to pause, to make an end,
> To rust unburnished, not to shine in use!
> As tho' to breathe were Life. Life piled on life
> Were all to little, and of one to me
> Little remains: but every hour is saved
> From that eternal silence, something more,
> A bringer of new things; and vile it were
> For some three suns to store and hoard myself,
> And this gray spirit yearning in desire
> To follow knowledge like a sinking star,
> Beyond the utmost bound of human thought."

Perhaps the most touching incident in the whole celebration is given in the following words from his own article: "One night as I returned late from one of the fetes, I found to my surprise my little street, the Schelling Strasse, illuminated from end to end. I had not had the slightest idea that my neighbors felt so kindly towards me. But the street was filled with children also, many of them quite small, and I had to make my way to my house door through a regular lane of children, and the cries of jubilation of the little ones only ceased when I had disappeared into my house. And now as often as I show myself in the street, the little ones run towards me stretching out their hands and saying, 'Good morning, Herr Virchow.'"

If, in closing, we attempt to sum up what Virchow's influence in medicine has been, we see that it has been far more than the clearing up of our views upon individual pathological conditions, such as thrombosis and embolism, or the histogenesis of tumors, or even the pathology of the cell. It was something very much greater and broader. It was, first of all, the overthrow of the authority of dogma, and the establishment of the authority of observed fact. It was the transplantation of medicine from the barren fields of metaphysical speculation to the fruitful soil of experimental investigation. It was indeed the establishment of a new point of view in medicine, the point of view of medicine as a biological science.

And if in an earlier paragraph I stated that I did not propose this evening to address you upon the need of a biological training in medicine, perhaps I was in error, for what more concrete example could be given than a study of the life of Virchow?

PLEURISY WITH EFFUSION*

BY D. GILBERT GORDON, M.D., TORONTO,

Professor of Sanitary Science, Assistant Professor of Clinical Medicine, Trinity Medical College; Physician Out-door Department, Toronto General Hospital.

An inflammation of the whole or part of the pleural membrane causes the disease we call pleurisy. This inflammation has as its manifestation an exudation. The nature of this exudation determines not only the class to which a particular case belongs, but to a large extent aids us in coming to a conclusion as to its etiology and prognosis, and guides us as to treatment. I am not to concern myself in this paper with that form of pleurisy where the exudation is fibrinous, nor particularly with that which is purulent, but with that variety where the effusion into the pleural membrane is serous or sero-fibrinous.

The rapidity with which this exudation accumulates at times is surprising, a few days in some cases being sufficient time to fill the cavity up to the third rib. When this rapid effusion occurs, the inflammation is generally of the acute type. After all, this rapidity of effusion is not to be wondered at, when we realize the ease with which the liquid may leak out from the dilated capillaries, the edges of the endothelial cells being drawn apart as they are when the membrane is inflamed. Moreover, the absorbing power of a membrane is diminished.

The close relationship existing between a pleuritic effusion and tubercular disease of the lung, makes the closest study of the former not only advisable but necessary.

The cause of the inflammation of this membrane and the cause of the effusion is of the utmost importance to us, and especially is it important to ascertain if we can make up our minds as to whether the case under our consideration is of tubercular origin or not, and in the second place what likelihood is there of it becoming so. The difficulty of determining the presence of the tubercle bacillus in a pleurisy with effusion is often considerable. A patient may be tubercular, yet the pleurisy from which he suffers be non-tubercular in origin; and even when we are certain of the tubercular nature of the affection, the microscopical examination of the effusion gives negative results. Statistics regarding the future of pleuritics in order to be of any value, must extend over a number of years. And at this point, allow me to call attention to the rather strange fact that a pleuritic effusion seems to check temporarily a pulmonary tubercular affection so that a patient may live for years, even

*Read at meeting of the Ontario Medical Association, Toronto, June, 1902.

under circumstances not the most favorable to life. The reason, no doubt, for such delay, is the fact that the atelectatic condition of the lung, produced by the pressure of the effusion, prevents the free distribution in the lung of blood, lymph and air. The difficulty, in fact often the impossibility, of keeping our pleuritic patients under observation renders most statistics useless. Very valuable work has been done in this direction by V. Y. Bowditch. He reports ninety cases under the care of his father for thirty years, 1849 to 1879; of these ninety cases, thirty-two had become tubercular. In the *Boston Medical and Surgical Journal,* 1892, Sears reports a total of 451 cases with 176 deaths from tuberculosis, a percentage of 39. Most writers give the total percentage of deaths from tuberculosis in pleurisy with effusion as about 40. The probability, therefore, is that the percentage is larger. I think we are perfectly safe in assuming that sixty per cent. of pleuritics are tuberculous or become so. Bacteriological examination of the exudation as well as inoculation with it are unsatisfactory, both methods very frequently giving negative results even when we are certain of the presence of tubercle. It has been recently claimed that a microscopical examination of the exudation, as to the number of leucocytes existing in it, will determine the nature of the affection, whether it be tubercular or not, the diagnosis of tuberculosis depending on the number of leucocytes. This, it seems to me, must be uncertain, for although the leucocytosis is increased during tuberculosis, yet it may also be increased in other inflammatory conditions. This test, however, may be of some help.

Now as to the other forty per cent. of our pleurisies. Other infectious diseases are often followed by pleurisy, for example, pneumonia, scarlet fever, typhoid fever and septicemia. The old theory that cold was the most frequent cause of pleurisy is not now tenable, yet I believe in some cases it is the sole and only cause of an attack. In most cases, however, it must act as a predisposing cause only. The diagnosis of a pleuritic effusion is in most cases easy, yet there are cases where it is very difficult. It has frequently been mistaken for pneumonia. We expect to find, when an effusion exists, such physical signs as the following: Diminished or absent voice sounds or breath sounds, while in pneumonia we expect increased voice sounds and harsh breathing. Vincent Y. Bowditch reports four cases of probable pneumonia where the presence of an effusion was determined by aspiration in which marked bronchial breathing and increased voice sounds existed. In one of two cases where I have observed both bronchial breathing and bronchphony I have attributed it to the compressed or consolidated lung beneath, the vibration being conveyed through the fluid, a very necessary condition being the presence of well open bronchi.

Austin Flint, reporting a case of this kind, does not consider the sound as conveyed from the lung the cause. He offers, however, no explanation of the fact.

DeCosta says: "There are, however, exceptional cases of pleuritic effusion, in which bronchial breathing is heard all over one side of the chest. Especially does this happen if pneumonic consolidation accompany the effusion, but even in simple compression of the lung and where the collection of liquid is not extensive, bronchial respiration may be perceived."

Musser and Osler both state that in children the retention of breath sound is the rule.

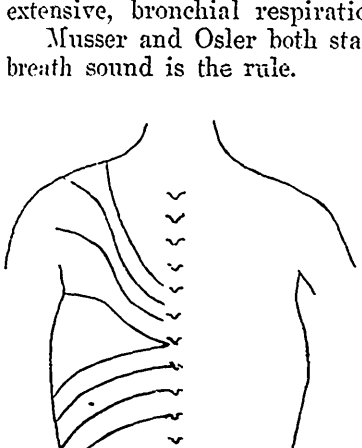

FIG. 1.—Showing curve of dulness from pleuritic effusion (back view).

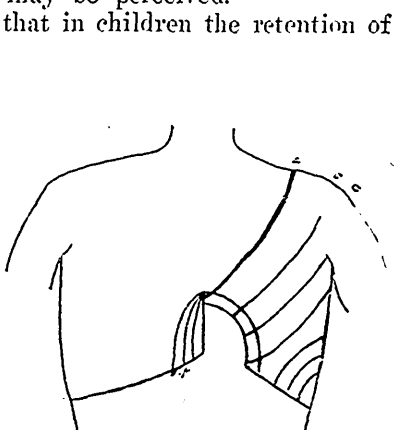

FIG. 2.—*a. b. c.* shows concave lines of dulness from pleuritic effusion. *c. f.* dulness in left-sided effusion (front view).

In the two cases which I have already mentioned, after close observation, I did not consider that the amount of fluid present affected in any way the intensity of the sound, but I concluded that it was due to the open condition of the small as well as the large bronchi, the sound being easily carried through the fluid from the lung beneath. The experiences of many writers differ somewhat from this.

Even though I may appear to be elementary in the following, I purpose to point out how a pleuritic effusion may be differentiated from a pneumonia. Mistakes of this kind we all know have been made, and are still being made.

In pleuritic effusion the initial chill is less severe; we have no rusty sputum. The ratio between the pulse rate and respir-

ation changes but little, that is, respiration increases more proportionately in pneumonia. The displacement of organs is a most valuable sign of an effusion.

But of all the signs which are of use to aid in diagnosis of pleuritic effusion, those obtained by percussion are undoubtedly the most valuable. If the exudation be small, the dulness will be first obtained behind, the fluid first appearing in the complementary sinus. Should there be as much as two inches of effusion, it will be noticed that the dulness line is convex in shape. This convexity becomes more marked when the effusion is greater. (See Fig. 1.)

The careful percussion of pleuritic dulness while the exudation is still small in quantity, is by far the most important means for its early protection. I believe I am correct when I say that it can always be detected, and that early, if sufficient care is taken.

When pleurisy is suspected, the chest should be carefully watched and examined for the presence of any effusion. The dulness or flatness always takes the S curve first described by Calvin Ellis and Garland. (See Fig. 4.) The shape of this line depends, of course, on the amount of the effusion.

I have found the most satisfactory method of demonstrating this dulness, one carried out thus: Ascertain by light percussion the spot (between the posterior axillary line and vertebral column) where it is thought the exudation reaches, then percuss lightly forward in a horizontal direction to the anterior edge of the lung. In this way the curve of flatness will be very noticeable, also the difference between lung dulness of resonance and fluid flatness will be clearly distinguished. This difference will be still more plainly recognized by firm percussion in the same manner about half an inch lower down.

In a moderate effusion when extending a little above the angle of the scapula, this method gives most accurate information. If with this we find just below the clavicle Skoda's resonance, we are certain of the condition. In a large effusion the flatness will extend over the scapula in an upward direction, down over the shoulder to meet the anterior angle about the third or fourth rib. The downward curve here is concave, not so marked a concavity, however, as is the convexity seen postero-laterally in smaller effusions. I consider the carefully percussing out of this concave line well repays for the trouble it gives, since it is a certain indication of the presence of fluid. (See Fig. 2.) The extremely typanitic note found under the clavicle in this case is entirely different from Skoda's resonance; it is not a lung sound, but is due to the presence of air over a completely compressed lung.

One other valuable percussion sign is the dulness existing in the cardia-hepatic space, which may often be early detected in left-sided effusions. The part over the sternum to the right of

the left parestenal line, extending between the fourth and sixth ribs, is always resonant in a healthy adult. However, in a left-sided effusion this early shows dulness, and this dulness can be detected when the exudation has reached as high as the eighth dorsal vertebra behind. (See Fig. 2.)

The value of the pleuritic friction rub as a means of diagnosis in the early stages of pleurisy is very manifest. Its presence should keep us constantly on the watch for effusion. Generally there is no difficulty in differentiating it from a rale of one kind or another, but at times it is not quite easy. A friction is more of a to-and-fro movement and more jerky than a rale. A fit of coughing does not cause it to disappear as it often does a

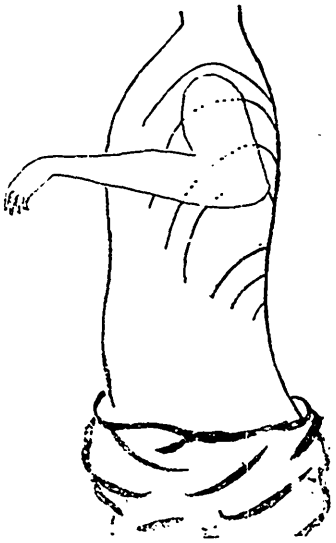

FIG. 3.—Showing curve of dulness from pleuritic effusion (side view).

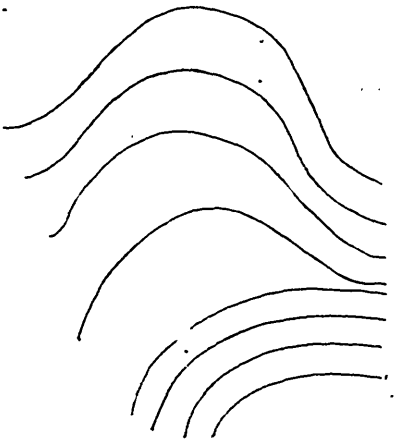

FIG. 4.—Lines of dulness in pleuritic effusion continuous from back to front, showing "Garland's S curve."

rale. Firm pressure with the stethoscope increases the intensity of the friction sound. This sound may be made more apparent by inclining the patient's body and head to the unaffected side, then elevating the arm on the affected side to a horizontal position. This elevation may be repeated two or three times, the patient taking a full breath before each elevation. Kellock's sign for the discovery of fluid in the pleural cavity is considered a valuable one by many. I have had no experience at all with it. The following description is Kellock's own as it appeared in the London *Lancet*: "The observer stands on the left side of the patient and, placing the left hand flat and fairly firmly on the lower part of the thoracic wall just below the niple, percusses sharply either

with the finger of the right hand or with a pleximeter on the ribs of the same side, striking them just posterior to the angles, when, if no fluid be present, a very slight vibration of the rib, which is struck posteriorly, is felt by the left hand in front, but if there be fluid in the pleura, the vibration of the rib is much greater, and if the quantity of fluid be at all considerable, the difference between the sensations experienced by the left hand when examining the sound and affected sides, is most marked."

The treatment of these cases will depend on what conclusion we have come to as to the cause of the pleurisy.

As far as the effusion is concerned, I think a chance should be given it, for some time, to absorb. If, however, it be steadily and rapidly increasing, it should be withdrawn. A blister over the affected part will often aid the absorption. Reasonably free purgation is advisable. Nourishing diet without, however, too much fluid should be given. Perfect rest is important. The observation of this is especially so when we remember the injury sometimes done to the heart in this affection.

The most satisfactory treatment, to my mind, is undoubtedly paracentesis, and as a rule it should be performed early and repeated if necessary.

PLEURISY AS ASSOCIATED WITH TUBERCULOSIS.*

BY JOHN HUNTER, M.D., TORONTO.

In the medical literature of pulmonary diseases, for decades before the discovery of the tubercle bacillus, there are to be found many evidences, if not of an assured faith, at least of a strong suspicion, that there exists a special relationship between pleurisy and tuberculosis—the latter being an exciting or predisposing cause of the former. Clinical experience and pathological research were too strong to allow the very frequent association of these diseases to pass as a mere coincidence.

The discovery of the tubercle bacillus in 1882 gave to bacteriology the mission of establishing the true relationship that exists between these diseases, and the years that have intervened since then have been utilized for this purpose. Three lines of investigation have been systematically followed: (1) Microscopical examination of the exudate in pleurisy—bacilli have been found in the exudate as well as in cultures made from it. It is true that the serous exudate is often sterile, even in cases of assured tuberculosis, but this fact in itself is now looked upon as being suspicious of a tubercular origin since numerous bacteria are to be found in the exudate of pleurisy due to cold, traumatism or other non-tubercular causes. The bacilli are to be found not only when the exudate is serous but also when it is fibrinous or purulent. (2) *Inoculations.*—The results obtained by this test—when a fairly large quantity of the exudate has been injected—have been of the most positive character. Experiments on guinea-pigs have given results such as the following: Where a tuberculous exudate was used, 50 per cent. of positive results were obtained. In cases where the pleurisy was attributed to cold 40 per cent. of the animals became tuberculous. In cases where the pleurisy was evidently due to other causes, *e.g.*, traumatism, pneumonia, etc., the results were negative. In one experiment the inoculations were made from fifty-five cases of pleurisy and 85 per cent. of the animals developed tuberculosis. In fifteen cases of pleurisy in which the tuberculine test was used 87 per cent. of these gave the general and local reaction. (3) *Clinical Evidence.*—Here also the evidence that a very large percentage of the cases of pleurisy are of tubercular origin seems indisputable. In recent text-books on the practice of medicine and in medical journals series of cases have been published, such as these: In fifty-seven cases of pleurisy twenty-one died of tuberculosis within ten years. In one hundred and thirty cases of primary pleurisy 40 per cent.

*Read at the Canadian Medical Association, Montreal, Sept. 1902.

became tuberculous within seven years. In ninety-two cases of pleurisy twenty-three died of tuberculosis within two years; forty-three had either definite tuberculous disease of the lungs or signs suggestive of it, and only twenty-one appeared to be healthy. In a collection of 310 cases of pleurisy 178, or 57 per cent., subsequently developed tuberculosis. In sixteen cases of fatal pleurisy in which the subjects were healthy before the attack, on *post mortem* examination miliary tubercle were found on the pleura in every case. Coming now to personal experience, I am sure I can safely state that every physician present, who has had a number of years in practice, can recall to recollection many cases of primary pleurisy that were soon followed by tuberculosis. How often have we sent away our pleuritic patients with a benediction and an assurance of their complete recovery, only to have them return to us a few months later the victims of tuberculosis and the dupes of a misleading prognosis. If we take all these facts into consideration are we not fully justified in stating that far more than 50 per cent. of all cases of pleurisy with effusion are due to infection by the tubercle bacillus. This conclusion has been arrived at from the writings of such authors as I have been able to consult, from opinions expressed by many of my confreres in Toronto, as well as from personal experience extending over more than a quarter of a century.

Clinical Features.

1. *Primary Tubercular Infection.*—There is often a marked contrast between the physical type of those cases in which the pleura is first invaded by the bacilli, and those when the first manifestations of tuberculosis appear in the pulmonary tissues, the former often presenting the highest type of physical development, whilst the latter are usually wanting in physical stamina. It is quite a common experience when called to attend a healthy looking young man or woman to find symptoms that at once direct attention to the pleura as the seat of the disease. These symptoms may be briefly summarized as follows: The sudden onset of acute pain, which is most frequently located in mid-axilla or mammary region; a short, hacking cough that greatly intensifies the pain. Shallow respirations increased somewhat in frequency; an elevation of temperature from 1 to 3 degrees. This febrile disturbance affects the vascular and digestive functions. Within a few hours, or in some cases at a longer interval, a serous, or more frequently a sero-fibrinous exudate, is poured out into the pleural cavity. The exudate, if serous, may be so limited in quantity as to merely moisten the surfaces of the pleura, or, to form a thin layer, if fibrinous, and thus cause the pleural surfaces to adhere together throughout or in patches. In other cases the exudate, especially when serous, is poured out rapidly and in

such vast quantities as to expand the thoracic walls, compress the lung into a small, compact, airless mass, and displace the heart. The exudate may contain the following constituents: Serum, fibrine, pus, blood, and the various micro-organisms and their products.

The seat of the most acute pain may be very misleading, owing to the nerve supply of the lower portion of the chest extending over the upper part of the abdomen. Many patients have been treated for stomach or liver trouble when the pleura was the actual seat of disease.

The respiratory and cardiac distress are often extreme, when the amount of effusion is very great.

Another interesting feature, especially characteristic of the tubercular cases, is the rapidity with which the pleural cavity, refills after the fluid has been removed. In 24, 48 or 72 hours the dulness may be about as extensive, and all the other symptoms about as well marked as before the removal of the fluid.

The further progress of these acute cases is largely governed by the quantity and character of the exudate. If fibrinous bands have been thrown across from the parietal to the visceral surfaces of the pleura the exudate may be contained in a series of small cavities. If the exudate become purulent the pus may remain encysted, or it may discharge through the thoracic walls, or into a bronchus, or into the peritoneal cavity. If serous or hemorrhagic it may be completely or partially absorbed. If fibrinous the pleural surfaces become adherent. Whilst these changes are going on a very large percentage of these acute cases become affected with pulmonary tuberculosis.

When death takes place during the acute stage it is usually due to either the extreme compression of the lungs or displacement of the heart by the exudate. Other causes of death are exhaustion and septic poisoning from the absorption of the morbid products formed in the exudate by the action of certain bacteria.

2. *Secondary Tubercular Infection.*—Pleurisy is simply a complication of pulmonary tuberculosis in quite a large percentage of the cases ordinarily met with in general practice. In a much smaller percentage of cases the pleurisy is due to tubercular infection in the cervical, lymphatic glands, peritoneal cavity, or elsewhere in the body. In these tubercular subjects the onset of pleurisy as a complication usually intensifies the symptoms present. The pain is more acute and persistent. The patient often complains of "my side being always sore." Cough becomes more irritating and painful, respirations more shallow and frequent; emaciation, exhaustion and mental depression more marked. The temperature, especially if the exudate becomes purulent, assumes the hectic type. The dulness becomes more absolute, the dyspnea and cardiac distress increase with the amount of

effusion. When the exudate is sero-fibrinous and sterile and only in sufficient quantity to exert some pressure, thus restricting the expansion of the lung in which the bacilli have set up inflammatory action, the result may be very beneficial, as in this way rest is afforded to the inflamed lung tissues.

Etiology.—The bacilli or their products can reach the visceral layer of the pleura through the sub-pleural, bronchial or tracheal lymphatic glands, and the parietal layer, from the cervical, vertebral, mediastinal and peritoneal lymphatics. The tonsils and other glandular structures in the mouth and throat can lodge the bacilli and transfer them into the lymph channels. The pleura can be very readily infected from a tuberculous lung. Traumatism may render the pleural tissues much more vulnerable to tubercular infection. In brief, any causes that impair health may be more or less potent etiological factors in predisposing to tubercular pleurisy.

Diagnosis.—The personal experience of all the members of this association, and of those who may read this paper, the ready access to the very full descriptions of the symptoms and physical signs of pleurisy given in the text books, as well as to what has been stated already in the preceding pages, render unnecessary any further discussion under this head. All I wish to add is to emphasize the extreme importance of the physician making a most vigilant search for a possible tuberculous origin in all cases of acute primary pleurisy unless where obviously due to traumatism or other non-tubercular causes. It is not always necessary, or even generally prudent, to acquaint the patient of such a suspicion, but if the physician be governed by it himself it will perform the function of one of the modern powerful electric head-lights in use on the engines on our trans-continental "flyers" that "race with the lightning from ocean to ocean." A strong conviction of a tubercular origin in our cases of pleurisy will not only make us more guarded in our prognosis, thus saving us from the deep humiliation our errors in by-gone days were wont to inflict upon us, but it will throw a bright light far along our line of treatment.

Prognosis.—The results in tubercular pleurisy often bring upon the physician the opprobrium the surgeon is so frequently called upon to endure, when it is facetiously said that "the operation was a brilliant success, but it did not save the patient." The pleurisy may be relieved, but the patient succumb to tuberculosis.

The outlook is not always gloomy. When the disease is confined to the pleural surfaces, and proper treatment carried out, the prognosis is much more favorable than in pulmonary tuberculosis, for serous membranes, such as the pleura and peritoneum, are much less vulnerable to this infection than many of the other

tissues are. In Osler's *Practice of Medicine* it is stated that "the subsequent history of cases of acute pleurisy forces us to conclude that in at least two-thirds of the cases of tubercular pleurisy it is a curable affection." I think when the etiology of pleurisy is better understood we will be able to look forward very hopefully for a still larger increase in the number of absolute recoveries from the effects of this disease.

Treatment.—If the following statements be true, and at present the evidence seems conclusive, (1) that the vast majority of all cases of pleurisy are due to tubercular infection, and (2) that tubercular infection when confined to serous membranes is by far the most curable of all infections from this source, the general principles of treatment are well defined. The patient should be placed in the best possible environment in regard to dryness of soil, elevation, and abundance of pure air and sunshine. No cheaper or better accommodation can be found than a suitable tent, pitched on the southern slope of a moderately high hill. The pain can be relieved by external applications. Some prefer to use ice bags, but most patients find heat—dry or moist—more agreeable. Cough, beyond what may be required to remove serum from the bronchial tubes, should be relieved, as it not only increases the pain, but also irritates the inflamed surfaces. The functional activity of the skin, bowels, and kidneys should be increased. The temperature can be regulated by cold drinks, tepid or cool sponge baths, and by use of antipyretics. Special attention must be paid to the position of the cardiac impulse. Any impairment of the heart's action calls for extreme caution in the use of such depressants as the coal-tar preparations. The judicious use of stimulants and heart tonics is of great importance. The patient should be strictly confined to the recumbent position during the febrile stage, and especially if the heart's action be impaired. The question of diet calls for the most careful supervision. In the febrile stage milk and nutritious broths, and later, as much of the most nutritious food as can be digested. Every possible effort should be made to keep the patient well nourished and his strength maintained. Hunger, fatigue, sleeplessness, in brief, all depressing influences should be most scrupulously guarded against when the patient is able to be out. If there is any pain or soreness about the chest dry cupping or small "flying" blisters may be used. During convalescence deep breathing should be practiced very assiduously. The inflation of rubber bags is a valuable exercise. Change to a more suitable climate should be insisted upon if the progress towards recovery be retarded. A high, dry elevation is desirable, where frequent and deep respiration is a necessity on account of the rarified air.

The question of when to interfere in the removal of the effusion is often a very perplexing one. In many cases, when the fluid is

serous or sero-fibrinous, quite large quantities of it may be more or less rapidly absorbed. When the dyspnea is not urgent, and the cardiac impulse in normal position, it is prudent to wait, although the quantity of fluid may be quite extensive. The restriction of fluids and the use of saline catharties, diuretics, diaphoretics, lung gymnastics, massage, dry cupping and a series of "flying" blister may be tried to help in the absorption of the fluid.

Fowler lays down the following indications for paracentesis: (1) When there are signs of positive intrathoracic pressure; (2) when the following symptoms which usually accompany the above condition are present—a small irregular pulse, and urgent dyspnea palpitation on slight exertion, lividly, or evidence of engorgement, and edema of the opposite lung. These symptoms may, however, be absent in cases accompanied by positive intrathoracic pressure so long as the patient is lying perfectly still. (3) When the fluid has been ascertained to be purulent its removal is necessary in all acute cases.

It may be necessary to remove the fluid more than once, but only a few repetitions can be borne by the patient without impairing his strength.

In aspirating strict antiseptic precautions must be observed. The needle, or the canula—if a trocar be used—should be about one-tenth of an inch in diameter and about three inches long.

The positions usually selected are the interspaces between the sixth and seventh ribs in the mid-axillary line, or between the ninth and tenth just outside the line of the angle of the scapula. The fluid should be withdrawn slowly, and a careful watch kept on the action of the heart and respiratory movements. On the occurrence of urgent dyspnea or faintness the flow should be stopped and stimulants given. When evacuation is complete or sufficient relief given some antiseptic dressing should be securely fastened over the puncture. The evacuation of a purulent exudate belongs to the domain of general surgery.

REPORT OF A CASE OF CLAW-HAND RESULTING FROM COMPOUND FRACTURE OF FOREARM: CURED BY OPERATION.*

BY. H. P. H. GALLOWAY, M.D.

Surgeon to the Toronto Orthopædic Hospital, Orthopedic Surgeon to Toronto Western Hospital, Orthopedic Surgeon to Grac General Hospital, Member of the American Orthopedic Association.

A. B., aged 18 years, when a young child, sustained a severe compound fracture of the right forearm. Firm union, without any bony deformity, was secured; functional recovery was also entirely satisfactory. As the patient grew older, however, he began to experience difficulty in extending the fingers. This trouble gradually increased until finally it became impossible to straighten the fingers, except when the wrist was strongly flexed. The thumb was not involved.

I first saw the patient on July 1st, 1901. A scar on the anterior surface of the forearm opposite the junction of the middle and lower third of the radius marked the point where the bones had protruded when the compound fracture occurred in childhood. This scar was slightly depressed and firmly adherent to the underlying tissues.

When the wrist was flexed (Fig. 1) the fingers could be extended, but as the wrist was gradually brought into line with the arm, and then carried further into full extension, the fingers became fully flexed (Fig. 2), and could not be straightened either voluntarily or by passive efforts. Examination made it quite clear that the difficulty was due to shortness of the flexor tendons of the fingers. The tendons were long enough to permit extension of the fingers when the wrist was flexed, but too short when the distance between origin and insertion was increased by extending the wrist.

On July 4th, 1901, I performed the following operation: A longitudinal incision 3 1-2 inches in length was made in the middle of the lower part of the anterior surface of the forearm. Through this opening the scar corresponding to the old compound fracture was first thoroughly separated from the tissues to which it was adherent. This, however, produced no effect upon the contraction of the fingers. The flexor tendons of each finger were then carefully examined, and one after another they were lengthened to the extent that seemed necessary. The method employed to lengthen the tendons was that shown in figures 3 and 4. The tendon was transfixed, split longitudinally for 1 1-2 or 2 inches, and the knife made to cut its way out on the radial side at one extremity of the longitudinal incision and on the ulnar side of

*Read before the American Orthopedic Association at Philadelphia, June 7th, 1902.

FIG. 1.—Before operation. With the wrist flexed the fingers could be extended

FIG. 2.—Before operation. When the wrist was extended the fingers could not be straightened

FIG. 3.

FIG. 5.—After operation. Compare with FIG. 2.

the other extremity. The proximal and distal portions of the tendon were drawn past each other a sufficient distance to permit the finger to be straightened while the wrist was extended, and in this position were sutured.

The tendons of the flexor sublimus were chiefly at fault, but in connection with two of the fingers it was necessary to lengthen the tendons of the flexor profundus as well. In all, six tendons were subjected to the lengthening process. The segments of each tendon were united by a single anchoring suture of fine kangaroo tendon, more accurate adaptation being then made with catgut. A sheath was formed as far as possible by bringing together the subcutaneous tissue with catgut. For closing the external wound catgut was also employed, the subcutaneous method of suturing being used. Plain sterilized gauze was the dressing. Finally, the entire hand and forearm were encased in plaster of Paris, with both wrist and fingers in a slightly hyperextended position. Twelve days later the plaster dressing was cut along its radial and ulnar borders, so as to convert it into anterior and posterior splints, and on uncovering the wound it was found soundly healed, with the exception of a portion about three-eights of an inch in length a little above the centre of the line of incision. After employing slight passive motion, the plaster splints were replaced, attempts at voluntary movement being postponed until several days later. At first the fingers were almost wholly paralyzed, but within a week of the first attempt at voluntary motion they could be moved quite freely, and in less than six weeks from the time the operation was performed, the patient could write legibly and rapidly, and could grasp my hand very firmly.

The present condition is shown in Fig. 5. With the wrist in line with the hand the fingers are practically straight, while in regard to function the hand may be said to be perfect. As a matter of precaution, a palmar splint is being worn on the hand at night, to guard against any possible tendency to relapse.

12 East Bloor Street, Toronto.

THE METHODS OF USING ARGYROL*

BY A. C. BARNES, M.D., PHILADELPHIA.

In accepting your kind invitation to read a paper before you, I am deeply conscious of the honor conferred upon me, because many of your members occupy positions equal in honor and eminence with the leaders in modern progressive medicine. The subject I have chosen was selected for two reasons: First, as a body of practical physicians interested in the extremely important question of the treatment of disease, my subject will probably be interesting; second, my paper will be of the nature of an open letter in reply to many inquiries received from physicians in practically every state in the Union.

The original report of my colleague, Dr. Herman Hille, and myself, *Medical Record,* May 24th, 1902, concerning our discovery of a new silver salt was given considerable prominence in the medical press of America and Europe, particularly because of its wide field of application in therapeutics. This salt, now known as Argyrol, is chemically silver vitellin, the principal features of which are, the high amount of silver contained, its easy solubility, its intense penetrative action, and its freedom from the irritating properties possessed by the other silver salts. It is beyond the scope of this paper to deal with the chemical nature of the salt, and those interested therein are referred to our original report.

It is to the clinical applications of argyrol that I would now direct your attention, and more especially to the methods of using the product in inflammatory conditions of the eye, ear, nose, throat, and genito-urinary organs. The methods herein mentioned are those employed in the various clinics in many hospitals, including the University of Pennsylvania, City Hospitals of New York and Boston, Jefferson, Good Samaritan, Berlin Polyclinic, Children's Hospital, Philadelphia, and in some eye and ear infirmaries of several of our large cities, by surgeons whose names and reputations are well known to you: Martin, Thomson, Horwitz, Swinburne, Christian, Lewis, Lederman, Mellor, etc. Most of these surgeons are preparing or have already finished clinical reports embodying their experiences with the salt, which will be published shortly. My paper will be merely a short resume of the methods of using the product now in vogue.

Diseases of the Eye.—Those oculists using argyrol employ it in the conditions formerly treated by silver nitrate or protargol.

*Read by invitation at the 14th Annual Meeting of the Tri-State (Alabama, Georgia, Tennessee) Medical Society, Birmingham, Ala., October 9th, 1902.

The rationale of its use in these diseases is based upon its high proportion of silver, its deep penetrative action, and its entire freedom from irritating properties. For instance: a 20 per cent. solution of argyrol corresponds to about .10 per cent. solution of silver nitrate, yet this strength of argyrol may be dropped in the normal eye without producing irritation or discomfort.

In *purulent conjunctivitis,* a 25 per cent. solution has been found to be the proper strength for routine use. Well-established cases of *ophthalmia neonatorum,* thus treated, will be eradicated in two or three days. In the last ten cases of this affection, treated by Mellor at the University Hospital, one day's use of 25 per cent. solution argyrol suffices to rid the eyes of pus and effect uninterrupted recoveries. The argyrol solution should be dropped in all parts of the conjunctival sac every three or four hours. With treatment instituted early in the disease, corneal complications do not occur.

Gonorrheal ophthalmia is best treated by strengths of 25 to 50 per cent. solutions, according to the stage and extent of the infection. In very severe cases a 50 per cent. solution instillated every two or three hours produces a reduction of the purulent secretion and affords comparative relief from pain.

An ordinary early case of this disease treated with free use of twenty-five per cent. solution every two or three hours will terminate within a few days. For the catarrhal condition of the conjunctiva resulting from gonorrheal ophthalmia, many oculists direct the instillation of a 10 per cent. solution of argyrol three or four times daily; this may be done with perfect safety by the patient at home.

The effects of argyrol in *trachoma* are still unsettled. Gilfillan, of New York, used it at the House of Refuge with indifferent results; Thomson mentions one very pronounced case, in which the lids were so swollen that it resembled ptosis, and in which he obtained great improvement by painting the affected lids with 20 per cent. argyrol solution; this case had been treated with protargol without benefit.

For ordinary *catarrhal conjunctivitis* a 5 or 10 per cent. solution for use by the patient at home three times daily, with the local application of a few drops of a 25 per cent. solution by the attending physician, produces in most instances prompt and permanent benefit; this same method of treatment is employed in blepharitis, blepharo-conjunctivitis, and blennorrhea. The most suitable strength for all-round office use in treating corneal ulcers and the ordinary inflammatory conditions of the eye is 25 per cent.; this strength does not cause irritation or discomfort.

The methods of using argyrol in diseases of the *nose, throat,* and *ear,* are perhaps best illustrated by quoting the experience of Dr. M. D. Lederman, of New York, who has been using it for

four months in his private work and at his clinics at the Manhattan Eye and Ear Hospital, and at the New York Polyclinic. Dr. Lederman states: "I have employed solutions from 10 to 50 per cent. in catarrhal manifestations of the nasal, pharyngeal, and laryngeal mucous membrane; the applications were made with the usual cotton carrier every other day. The advantage this silver salt distinctly demonstrates is its freedom from irritation when applied to sensitive mucous membranes. In acute and subacute *laryngitis,* I have used a 10 per cent. solution, increasing to 30 per cent. without the least unpleasantness to the patient. After two or three treatments the congested appearance of the membrane gradually left, and the voice returned in good volume; I particularly noticed that the harsh and dry sensation produced by silver nitrate was never experienced. The secretion was promptly stimulated by the argyrol solutions, and produced a comfortable feeling of moisture in the pharynx and larynx. In *post-nasal catarrh,* the character of the discharge was influenced by the argyrol solutions (20, 30, and 50 per cent.). The thick plugs of mucus so frequently expectorated in cases of *naso-pharyngitis,* and in *inflammations of the lymphoid tissues* in the pharyngeal vault, become more fluid in consistency, showing the stimulating effect of the drug upon the mucous glands, and thus permitted the re-establishment of the normal function of the membrane, and relieved the annoying symptoms of hacking and dropping in the throat; the same effects were noted from applications to the nasal mucous membrane.

The bland nature of the argyrol solutions was especially observed in cases of so-called "hay fever." Ten and 20 per cent. argyrol solutions, while naturally exciting some sneezing, as would result from any foreign element, seemed to lessen the existing hyperesthesia and retard the excessive flow of secretion; this bleno-static action I believe is due to the deep penetration of the argyrol.

The decided anti-germicidal action of the salt is illustrated by its effects in cases of *chronic purulent otitis media* with osseus necrosis. In these cases I employ a 50 per cent. solution, freely, in the middle ear cavity, without any annoyance to the patient. The purulent character of the discharge is obviously modified after a few treatments, and assumes a mucoid appearance."

In empyema of the antrum of Highmore, Hitschler uses a 50 per cent. solution of argyrol once daily, and note prompt disappearance of the purulent discharge.

Genito-Urinary Diseases.—Dr. Orville Horwitz, Professor of Genito-Urinary Surgery, Jefferson Medical College, treats acute cases of gonorrhea by ordering the hand injection of a 5 per cent. solution of argyrol several times daily, with whatever modifications and additions to treatment the cases may demand.

In acute gonorrhea, Dr. H. M. Christian, Professor of Genito-

Urinary Diseases, Philadelphia Polyclinic, employs a 2 to 5 per cent. solution by injection (by ordinary hand syringe) three or four times daily; the solution is held in the urethra five minutes. If the entire urethra is involved, he employs daily irrigations of 1 to 1,000 solution.

In *chronic posterior urethritis* he makes deep instillations of 5 or 10 per cent. solutions. Of his first forty-eight acute cases thus treated, forty-three showed complete disappearance of gonococci from the discharge within fourteen days; thirty-eight of these patients were discharged cured in from two to four weeks.

In no instance did the injections produce irritation or discomfort.

Dr. G. K. Swinburne, Surgeon to the Good Samaritan Dispensary (the largest genito-urinary clinic in New York) has treated over 400 cases of gonorrhea with argyrol. His methods are as follows: In acute cases he irrigates the urethra daily with a 1 to 1,000 or 1 to 2,000 warm argyrol solution, and follows this by a 2 to 5 per cent. injection. If the patient cannot report daily, he orders the home use of a 2 per cent. injection. He uses argyrol solution for irrigation where formerly he used potassium permanganate or protargol, because of better results and greater comfort to the patient.

In *posterior urethritis* and *cystitis* he makes deep instillations of a 5 or 10 per cent. solution. In chronic cases, and in those requiring sounds, he employs an ointment of 5 per cent. argyrol in lanoline, the ointment being distributed along the urethra by the successive use of several sounds, upon the end of each of which the ointment is placed.

In acute cases of gonorrhea, seen during the first or second day of the attack, he injects a 20 per cent. solution, and has succeeded in aborting the disease.

Briefly stated, the advantages noted in the argyrol treatment of urethritis are: The shorter duration of the disease, the power of the drug to allay the inflammation, the comparative comfort afforded the patient, and the entire freedom of the injections from irritating properties.

Diseases of Women.—In *Specific Urethritis* in the female, Kevin injects a 10 per cent. solution into the urethra and bladder. In purulent conditions of the vaginal mucous membrane, the vagina is douched with 1 to 2,000 or 1 to 1,000 argyrol solution, after which local applications of a 25 to 50 per cent. solution are made through a speculum; these same methods are employed in ulcerations and erosions of the cervix.

Cases of *cystitis* are irrigated with 1 to 1,000 solution, followed by the injection of a 5 or 10 per cent. solution into the bladder, which is retained there for a few minutes and then discharged by urination.

In *obstetrics,* argyrol is probably destined to play an important part because of its usefulness as a prophylactic against *ophthalmia neonatorum.* In several maternity hospitals the instillation of a 1 or 2 per cent. solution into the newly-born infant's eyes is a routine practice.

Other clinical conditions in which the use of argyrol has been suggested, and is being tried, are erysipelas (suggested by Dr. E. B. Gleason, Medico-Chirurgical Hospital, as local applications, 25 to 50 per cent. solution, and certain pathological conditions of the mouth and teeth (suggested by Dr. W. H. Snider, of the University of Buffalo). It is too soon to make any positive statements of the methods or effects of using argyrol in these two latter conditions.

It will be noted in reviewing my paper that argyrol has been used in almost every branch of surgery, but it will be recalled also that silver has been for many years the principal drug in nearly all of these conditions. Silver nitrate is a very valuable remedy, but its chemical nature necessarily endows it with certain drawbacks, viz.: it is irritating, caustic, is chemically changed by the secretions, and is not penetrating much beyond the surface. Argyrol is not chemically changed by the secretions, possesses intense penetrative power, whereby the effects of silver are exerted in the sub-mucous structures (where they are most needed), and may be used in any structure of the body, in almost any strength, without destroying tissue or producing irritation. Furthermore (as all the surgeons mentioned herein have noted and commented upon), argyrol has one very marked property, *i.e.,* its effects in allaying the signs and symptoms of inflammation.

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The Canadian Journal of Medicine and Surgery

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Advertisements, to insure insertion in the issue of any month, should be sent not later than the tenth of the preceding month.

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Editorials.

THE TEARING OFF OF THE SCALP BY MACHINERY.

THE tearing off of the whole, or a considerable portion, of the scalp, as it is ordinarily brought to a surgeon's notice, results from the operation of violent and sudden traction on the cranial integuments of a female, owing to her hair being twisted into a rope while the remainder of her body is fixed by its own weight, or the instinctive efforts of the victim to resist the traction. Probably such an accident would never occur if all female operatives in factories were obliged to wear their hair short; and it may be re-

marked, that from the view-points of safety, and hygiene as well, such a practice would have much to commend it.

Female operatives are sometimes unwilling to take the necessary time to arrange their toilet before appearing on the street. Without waiting for the machinery to stop, they secretly let down their hair, throw it forward so as to remove with a comb the dust and debris which fill the atmosphere of a factory, smooth the hair, and then, by a sudden jerk of the head, throw the hair backwards, so as to twist it into a knot, and it is during this latter movement that the hair is apt to be caught by the rapidly-revolving machinery.

In other instances, an operative, wishing to go by a short cut from one part of a factory to another, passes under the axles or the straps; a misstep throws her near the fly-wheels, cogged wheels, etc., and, without having time to lower her head or withdraw, her hair is caught and twisted by the tremendous force of the moving machinery.

The mechanism by which the scalp is torn off has been studied by Fouchard in the dead body, and he shows that it is produced by a powerful tractive force operating obliquely from before backwards. Hence, under these conditions, the integuments are cut by the prominent bony edges of the supra-orbital arches, the tear through them running in the direction of the nape of the neck. This mode of traction is almost constantly observed in female operatives, who, when their hair has been caught by moving machinery, endeavor to escape by bending the body downwards or by jumping away from the machine. In an accident of this nature the absence of primary pain and hemorrhage in the recipient of the injury has been observed. Contrary to what might be expected, primary pain is not much complained of, and hemorrhage is slight. The absence of pain has been thought to be due to the extraordinary rapidity with which the nerves are torn through. The absence of hemorrhage is said by Fouchard to be owing to the fact that the arteries are subjected to a species of torsion. The vessels are violently stretched, and their coats, having unequal powers of resistance, do not all break at the same instant. The tunica media and the tunica interna, which are not very elastic, break, and shrink back into the lumen of the artery, which is thus stopped, while the tunica externa extends itself like a piece of glass tubing held between two hands in the flame of a lamp, and in tapering out to a fine point, closes the vessel.

From a personal observation the writer of this article can confirm the fact that primary pain and hemorrhage are not observed in an injury of this kind. A girl, sixteen years of age, whose scalp had been torn off by the machinery of a shoe factory, was seen by the writer about twenty minutes after the accident had occurred. She sat on a chair composedly enough. There were a few tears in her eyes, but no other outward manifestations of mental distress or pain were visible. There was some hemorrhage about the nape of the neck, where the torsion of the arteries had not been effective; but the greater portion of the immense wound was bloodless. The white and remarkably thin periosteum of the skull, flecked here and there with a droplet of blood, was exposed to view; her whole scalp lay on the floor. There was no evidence of surgical shock.

It is needless to say that an effort to restore the torn scalp to its former place would be unjustifiable; the greatest antiseptic precautions, and the most perfect disinfection of the injured scalp would not avail to preserve the vitality of tissues, which had been soiled with the grease and dirt of machinery, the dust of the factory, and all sorts of debris. Should such an attempt be made, everything would favor septic suppuration, so that the idea should be abandoned at once.

The surgical treatment of a case of this kind, therefore, resolves itself into: Complete asepsis of the wound, followed by the introduction of skin grafts, when the granulations of the wound are in a suitable condition to receive them, and make them thrive.

Dr. Fochier, a Parisian surgeon, after a preliminary cleansing of the wound with antiseptic lotions, applies without delay the styrax ointment of the French codex, a stimulant antiseptic preparation, which assists powerfully in restoring the vitality of the injured parts. It is somewhat like the resin ointment of the British pharmacopeia. Suitable tonics are also required, and the patient should be placed in good hygienic conditions, so as to enable the organism to resist the invasion of microbes and the effects of their toxins, which would be disastrous. As far as prognosis is concerned, accidents of this nature are less dangerous to life than one would think. Romme says, in *La Presse Medicale,* that with modern treatment they cause a mortality of 8.5 per cent. Everything should be done to maintain the strength and vigor of the patient, and also to keep the wound in a clean

condition. The reparative power of youthful tissues is really extraordinary, and it is preferable to let nature have a fair opportunity to fill up the gap rather than to resort to grafting too soon. On no account should the patient be subjected to the shock of anesthesia in obtaining the material for grafting. It certainly ought to be more satisfactory to all concerned, if the enormous wound should be healed even after fifteen months, rather than that the patient should be made to succumb to injudicious efforts put forth to cure it in half that time. J. J. C.

THE NEW TORONTO ORTHOPEDIC HOSPITAL.

Not a stone's throw away from the Alexandra Gates of the Queen's Park, on the north side of Bloor Street, is situated the new Hospital, surrounded by trees that nod like the old folks they are, and whisper to each other tales of yesterday when such things as Orthopedic Hospitals were unthought of, and shivers run through their branches as the noisy trolleys go by blatantly disturbing their soft crooning, as they bend gracefully before the breeze. Amid such environments rises the handsome three-story brick structure with spacious verandahs above and below, in fact, fitted into and adjusted wherever there is any possible space, adding very much to the imposing outside appearance of the building. Upon entering the main hall, the newness, the swept and garnished appearance immediately impresses one, especially perhaps owing to the whiteness of the walls, which are for about four and a half feet from the floor, finished in the rough, cement and pulpwood forming the plaster, and the remainder of the walls are finished in the regulation smooth-surface white plaster. The bareness of effect is fittingly relieved by a "speaking likeness" in oils of Rev. John Potts, D.D., the President of the Board of Management of the Institution. This creditable portrait is the work of Mr. J. W. L. Forster, and surely never artist's brush caught and transferred to canvas better that gleam of Irish humor "in the tail" of his subject's eye, for, standing at the door of the reception-room opposite, and a little to the left of the picture, one could almost imagine he heard the reverend gentleman in his kindest, most persuasive tones, appealing to the elect ladies on the Board of the new Toronto Orthopedic Hospital to make the institute worthy of its name! And still enough of that half-smile lingers in the eyes

THE NEW TORONTO ORTHOPEDIC HOSPITAL, BLOOR STREET WEST.

to bid welcome to all who enter the portal, or encourage those who perchance linger anxiously awaiting to learn the physician's diagnosis of the case of their loved one.

Proceeding through the hospital, we noticed further i' ...mpleteness in every detail.

Near the entrance on the main floor is the office, fitted up with desks and all office conveniences, and the reception room. Close at hand is the Lady Superintendent's room. There are also on this floor several semi-private wards, with accommodation for six or seven patients, each airy and well lighted.

The first floor is given up to private wards, and is elegantly finished and furnished in oak. Adjoining these wards is a parlor in oak, with oriel windows, specially designed as a reading-room for the occupants of the private wards. These wards open by French windows on to verandahs over ten feet in width, providing a pleasant and dry promenade. A number of these rooms have been taken in charge by philanthropic friends, who have assumed all responsibility for the furnishing and sustaining of them, among these generous donors being Mrs. (Judge) Macdougall and Mr. Harry Hees, and the Berean Bible Class of Central Methodist Church. Facing West is a bright room set apart for the housekeeper. In this is a large cabinet, in which it is intended to keep all the linen and bed clothing for use in the hospital until it has been thoroughly prepared for use and distributed among the various wards, when it passed under the direction of the head nurse.

On the next flat is the public ward, where there is accommodation for twenty-two public patients, for whom are provided just the same sanitary conveniences as for the patients in the wards below. Mrs. Geo. A. Cox and Mrs. T. Eaton have donated the furnishings for two of these wards, which are bright and comfortable, and fitted up in the most approved style. Connected with this floor is a roof garden, 20 by 40 feet, where the patients go for exercise or for a sun bath as they may desire, there being accommodation for either walking, sitting, or reclining.

The equipment for operative surgical work is the very latest and best. The room is 20 by 24 feet, and is floored with terazza. The walls are composed of a marble dado with coping for six feet, with hard finish wall above to the full height of fifteen feet. The room is lighted with west and north windows provided with luxfer prisms, and will be fitted up with metallic seats to accommodate

sixty students. Off the main operating room is a suite of rooms: the Surgeon's dressing-room, the sterilizing room, with cabinets for storing hospital supplies, the anesthetic room, the recovery room, where patients are kept while recovering from the anesthetic, and a second operating room for cases that have become infected, it being the object to maintain the main operating room in a thoroughly aseptic condition. All these rooms, with the exception of the recovery room, are floored with the terazza. A special heater in the basement supplies hot water for the operating room at high pressure.

The heating of the entire house is by steam, and in the private wards, sitting-rooms, etc., gas grates are also provided. The kitchen is equipped very thoroughly with many things very suitable for hospital service, such as a full set of granite ware, a movable table, with closets underneath, a broom closet, a fruit room, and a cold storage room, with a stand for cereals, in which the drawers move on rollers, with a marble top for a pastry board. Adjoining are nurses' dining-rooms and pantries, with every convenience. The laundry is supplied with the Troy laundry apparatus, steam-heated mangle, patent drying room, disinfecting washer and centrifugal extractor.

In connection with the hospital is a dispensary for out-door patients, where the services of the hospital staff will at certain hours be at the disposal of the poor, who are able to take treatment without becoming residents of the hospital. In the yard are a number of tents, in which patients are housed for whom life in the open air is a valuable aid in treatment. These tents accommodate about twenty patients, while the building provides accommodation for seventy-five more. The building and equipment has cost about $40,000.

We heartily congratulate Dr. McKenzie and Dr. H. P. H. Galloway upon the magnificent success of the undertaking, of which years ago, when they spoke of the project, it was regarded by many as only such stuff as dreams are made of; to-day the reality rises a monument to the steadfastness of purpose and untiring energy of its progenitors. W. A. Y.

THE PROPORTION OF DOCTORS TO POPULATION IN CANADA AND CANADIAN CITIES, AND IN CERTAIN COUNTRIES AND CITIES OF EUROPE.

CANADA, according to the official census of 1901, had a population of 5,369,666. We have made inquiries to ascertain the number of doctors practising in the different provinces and the North-West Territories, and learn that, all told, they number 5,417. That is to say, that for every 991.07 persons in Canada there is one doctor, or for every 10,000 persons, 10.09 doctors. From statistics compiled by ourselves, we state that for every 10,000 inhabitants in Manitoba there are 13.49 physicians; 12.07 in British Columbia; 11.4 in Ontario; 10.41 in Nova Scotia; 9.43 in the North-West Territories; 8.54 in Quebec; 8.07 in Prince Edward Island; 7.33 in New Brunswick. Toronto, the capital of Ontario, has 20.06 physicians per 10,000 of population; Montreal, the most populous city of Quebec, has 10.75. We have been induced to make these calculations, as a matter of interest in connection with the medical history of Canada, and in order to establish comparisons between this country and the older countries of Europe. Recent statistics showing the proportion of doctors to population in different European countries appear in an article by Prinsing, published in *Centralblatt fur Alg. Gesundheitspflege*, t. xxi., 1902, fasc. 5-6, p. 218. They show that, for every 10,000 inhabitants, there are 5.1 physicians in Germany, 4.1 in Austria, 2.8 in Hungary, 6.3 in Italy, 6.1 in Switzerland, 3.9 in France, 7.1 in Spain, 5.2 in Belgium, 6.1 in England, 5.6 in Ireland, 7.7 in Scotland, 6.4 in Denmark, 5.3 in Norway, 2.7 in Sweden, and 2.7 in Russia in Europe. Scotland, therefore, holds the European record for the greatest number of doctors in proportion to population. In succession come Spain, Denmark, and Italy. France, on the other hand, occupies one of the lowest places, viz., 3.9. Among the European capitals, Paris is least favored by the sons of Esculapius, as there are but 9.7 physicians for 10,000 population in that city.

On the other hand, London has 12.8, Vienna, 13, Berlin 14.1, Brussels 14.7, Budapest 16.4, and Madrid 24.4. Statistics of this kind, while supplying food for thought, still leave the mind

unsatisfied as to the reasons which make for undue development of our profession in some countries or cities, and its mediocre number in others. However, one fact is patent: There is a larger proportion of doctors in Canada than in any country of Europe. The only European city surpassing Toronto in the relative number of its doctors to population is Madrid. That doctors should be numerous in Madrid is reasonable enough; for, as Ford says in his handbook published forty years ago, "The subtle air of Madrid, which will not extinguish a candle, puts out a man's life. . . . . No wonder, according to Salas, that even the healthy of those born there live on physic." Modern hygiene has probably ameliorated some of the conditions which make for a large mortality in Madrid; but the mortality of that city was said by Chanter Evely (1890) to be over 34.0.

Neither a large mortality, nor a considerable morbidity, are noted in Toronto, so that these can not be the determining factors of our large medical population. Accepting the figures of the Dominion census of 1901 (208,040) as the true population of Toronto, the mortality for that year in Toronto was 17.06 per 1,000 of population. If we take the police census of the same year (about 220,000), the mortality would be less. One reason for the large number of doctors in Toronto is that there are three medical faculties in this city, which require the services of about one hundred physicians. Besides, several consultants and specialists, whose services are in demand throughout Ontario, reside in this city. Above all, however, Toronto is a model city—a centre of education and culture, and doctors appreciate the *utile dulci* in their homes as well as other men.

Provinces and Territories.	Population.		Physicians.
British Columbia....	177,272	.....	214
Manitoba.....	254,947	.....	344
New Brunswick.....	331,120	.....	243
Nova Scotia.....	459,574	.....	476
Ontario.....	2,182,947	.....	2,500
P. E. Island	103,259	.....	90
Quebec.....	1,648,898	.....	1,400
N. W. Territory....	158,940	.....	150
Unorg. Territory....	52,709		
Canada.....	5,369,666	.....	5,417

Cities.	Population.		Physicians.
Montreal.....	267,730	.....	471
Toronto.....	208,040	.....	430

HOSPITAL FIRE BRIGADES.

UNDER the caption, "Female Nurses as Fire Lassies in Bellevue," is a little skit in an American contemporary. It seems the eighty-four nurses in Bellevue Hospital, New York City, are receiving a course of instruction so as to be able to take an active and efficient part in case of fire in that institution. Heretofore the attendants and laborers employed in the hospital have been the only ones to turn out when the fire whistle blew. Under the new regulations it is a case of house doctors, male and female nurses, officers, clerks, internes, *et al.* The women nurses will also be made equally responsible for the removal of patients to places of safety. The young women in the classes of the training school for nurses are rather rebellious, and, if they dared, would decline to learn the new accomplishment of rushing for "hook ladder and axe"—"every time that horrid whistle blows."

How distressing if such a rule should be made in the Toronto General Hospital; it certainly would grieve gentlemanly and considerate Dr. Charley O'Reilly, and likewise dignified Miss Snively, to have to impose such a strenuous task upon the dainty Dollies in their service: but, on the other hand, its "up to" Toronto General, under its never disappointing Superintendency, to take the lead, in every detail, in Canada, and stand, as ever, first in peace, in war, and in the hearts of the profession. But, when the first drill of the fire brigade occurs, composed of the entire staff of the Toronto General Hospital, may we and our camera be sitting on a reel!

W. A. Y.

EDITORIAL NOTES.

The Disinfection of Books by Means of a Spray of Formalin.—A reliable, cheap, and easy method of disinfecting books which have been contaminated with bacilli tuberculosis has long engaged the attention of medical experimenters. That infectious diseases may be disseminated by the means of books has been for some years recognized as a fact. Young wrote on this subject in the *Sanitary Record,* 1898. Knopf, of New York, in 1900, wrote of the danger of tubercular infection caused by books, which had been used by phthisical patients. One source of danger mentioned

by him was the habit indulged in by a phthisical patient of turning over the pages of a book with his fingers which had been moistened with his own saliva. Knopf mentioned another source of infection: Coughing or sneezing by a tubercular patient, by which bacteria-bearing droplets from the mouth or nose are projected into the air of an inhabited space. Experiments have been recently made by Barbe, of Paris (*La Presse Medicale,* Aout 23, 1902), which appears to demonstrate that formalin may be successfully employed in disinfecting books which have been contaminated with the sputa of tubercular patients. The books were suspended from wires in an air-tight box. He shows that the simple exposure of a contaminated book to the vapors of formalin placed in a cup (5 grams of formalin per cubic metre) in an air-tight box will not suffice to destroy the bacilli tuberculosis in the book. Instead of allowing formalin to evaporate slowly from a cup in a box, Barbe inserted the tip of a Richardson atomizer through a hole in the bottom of the box, and sprayed a solution of formalin of a strength similar to the one used in his first experiment over the books. The mode of vaporizing the antiseptic was thus made rapid and instantaneous, quite different to the slow method of vaporizing formalin from a cup. Experiments made on guinea pigs are quoted to prove that vaporizing formalin from a cup in a box did not destroy the bacilli tuberculosis in the books treated, while, on the other hand, complete success attended the use of the spraying process. The author says: "The disinfection of books is easy. A box suffices for a few books; a cupboard will be required for a library, in which a hundred books are returned every day. In the latter case any air-tight cupboard, of a sufficient size, provided with wires, from which clippers for holding the books could be suspended, would answer. A hand-spray atomizer, however, would not be large enough for such a cupboard. He recommends a formogenic autoclave, placed outside the cupboard with the delivery tube arranged so that it can be introduced through one or several openings in the side of the cupboard. The Barbe method of disinfecting books appears to be easy of execution, cheap and reliable, and we cordially recommend it to all whom it may concern.

The Metric System in America and Canada.—It is suggested by Harold Cox, in the *London Times,* that the introduction of the metric system into English-speaking countries would be hastened

by impressing on the public mind the fact that traditional names and quantities need not be abandoned. In France, after more than a generation of struggle, the simple device was adopted of defining the livre as half a kilogram, and the work was done. To-day the word livre is constantly used all over France, but everybody knows that a livre is exactly 500 grams, or half of one kilogram. This step was taken in Germany before any general attempt was made to introduce the metric system. When the Zollverein was established, the pfund was made exactly equal to half a kilo, and thus the way was prepared for the rest of the metric system. In Germany the word pfund is invariably used in preference to halb-kilo. Certain English weights and measures approximate closely to convenient metric equivalents. The pound avoirdupois is very nearly equal to half a kilo, the cwt. to 50 kilos, the ton to 1,000 kilos. By introducing these names, we give the mind something to take hold of. "Metric pound" at once suggests a weight like a pound, whereas kilogram suggests nothing at all. Other links that might be used with advantage are: The metric inch (25 millimetres), the metric hand (10 centimetres), the metric chain (20 metres), the metric pint (one-half litre). Inasmuch as a decimal coinage exists in the United States and Canada, the introduction of the metric system of weights and measures into these countries is beset with less difficulty than in England. It would certainly facilitate the introduction of the metric system into North America if traditional names should receive a present legal value in legislation. For instance, a simple declaratory Act might be passed at the next session of the Canadian Parliament, providing that wherever the phrase metric pound is used in a contract of sale, it shall mean 500 grams, and so on. Who will start the ball rolling? We commend this reform to the careful consideration of our American cousins, hoping that they may be daring enough to cast aside the shackles of antiquity, and introduce a reform in English weights and measures, retaining at the same time some of the forms of the old-time usage.

Acidified Alcohol in the Treatment of Wounds which are Expected to Unite by the First Intention.—As the results of experiments made at the surgical clinic of Naples, Dr. Gaetano recommends acidified alcohol in the treatment of wounds in which union by the first intention is expected. The alcohol he uses has

a strength of 70 per cent., and contains 20 drops of acetic acid to 100 grams of alcohol. The following prescription nearly represents Gaetano's formula:

℞ Acid Acetic fort .....mℳ XL.
Spt. Rectificati 70 per cent..... ℥ viss.
M. Sig.: For local use in dressing sutured wounds.

This is a very different preparation from one which we saw credited to Dr. Gaetano recently in a New York contemporary, viz.: "a 20 per cent. alcoholic solution of acetic acid." To obtain union of a wound by the first intention, Gaetano sutures it with catgut, which has been wet with acidified alcohol. After suture, the wound is bathed with the same liquid, in which are also steeped the gauze compresses which are to be put over it. An ordinary dressing is placed over all. The dressing is changed every second day, being bathed on each occasion with acidified alcohol. After six days the catgut sutures are removed, but the wound is covered as long as occasion may require with gauze compresses wet with acidified alcohol. Gaetano states that, in addition to its antiseptic power, this preparation possesses the very great advantage of making the wound as dry as possible, which in itself makes germ invasion unlikely.

The Continued Presence of Typhoid Bacilli in the Urine of Patients Convalescent from Typhoid Fever.—During recent years several authorities, viz., Petruschky, Mark W. Richardson, F. Neufeld, Chantemesse, and others, have drawn attention to the persistent presence of Eberth bacilli in the urine of persons who had recovered from typhoid fever. This phenomenon is of sufficient importance to demand the serious attention of sanitary authorities and physicians, and may serve to explain unexpected outbreaks of typhoid fever, traced to localities in which cases of that disease were not known to exist. The following instance is very instructive: Busing (*Deut. Med. Wochenschr.* 1902, No. 25, p. 433) reports the case of a German soldier, who had contracted typhoid fever at Takou during the late Chinese war. He went into hospital October 10th, 1901, and was discharged as convalescent December 7th of the same year. Three weeks after that date he sailed for Germany. An examination of his urine showed the presence of virulent typhoid bacilli up to May 10th, 1902. This bacteriuria was not accompanied by any clinical symptoms, and the patient thought he was in good health. Busing thinks that a

typhoid patient ought not to resume his ordinary occupation until it has been proven by bacteriological tests that typhoid bacilli are not present in his urine. J. J. C.

Ontario Medical Council Elections.—The Ontario Medical Council elections are coming on apace; but from present appearances they will not cause a great deal of excitement. In number 11 Division (Toronto, west of Yonge Street) Dr. A. A. Macdonald will again be a candidate. We trust that the Doctor, who has since his election done such good work as representative on the Council, will be returned by acclamation. There is no question about it that he has been of the greatest assistance to the profession, more especially, perhaps, in connection with Dr. Roddick's bill, recently passed, as also in committee work, and in assisting to raise the medical standard in this Province. Toronto, east of Yonge Street, will be contested by Dr. C. J. C. O. Hastings and Dr. E. E. King. Dr. Hastings has always been known as modest and retiring. He is a man with brains, and we trust his friends will recognize in him "a good thing, and push it along." As for Dr. Edmund E.—well! he can speak for himself.

The Illness of Dr. L. L. Palmer.—The profession of Toronto have felt keenly the illness of Dr. L. L. Palmer. The doctor was some weeks ago operating upon a patient in order to remove some nasal polypi, and accidentally scratched one of his fingers. The result was an attack of septicemia and severe constitutional infection. He has been under the care of Dr. Stevenson and Dr. G. A. Peters, who have done everything in their power to lessen their patient's suffering. We trust that the Doctor will recover, and before long be his genial self again.

A Further Addition to our Staff.—We are much pleased to announce that Dr. Andrew R. Gordon, of Toronto, has joined our staff, and will from this date be sub-editor of the department of Pediatrics. Our readers can confidently look forward to some good practical notes on this subject.

Three Doctors in View.—The McGill medical faculty has three men in view for the chair of hygiene rendered vacant by the death of Dr. Wyatt Johnston: Dr. Balfour, of Edinburgh, Dr. Abbott, of Philadelphia, and Dr. Westbrook, of Minneapolis.

PERSONALS.

DR. M. M. CRAWFORD, of Toronto, has been appointed a coroner for the County of York.

DR. ARTHUR SMALL has removed, with his bride, to Chicago, where they will reside in future.

CONGRATULATIONS to Drs. Watty Thompson and W. H. Alexander, both of Toronto, on their recent marriages.

DR. J. A. TEMPLE expects to move into his new handsome residence on Bloor Street West about December 20th.

WE are glad to know that Dr. James Thorburn, sr., has almost recovered from his recent prolonged illness, and is again able to be out.

DR. CHARLES O'REILLY, of the Toronto General Hospital, was elected Vice-President of the Hospital Medical Superintendents of America at a recent meeting of that Association in Philadelphia.

THE attention of our readers is called to page xvi., where they will notice that a static machine of the very latest model, belonging to the late Dr. Martin, can be picked up away below cost.

DR. A. J. HARRINGTON has moved into his handsome new house on Bathurst Street. He is, however, just as modest as ever over it all. Andrew enjoyed two weeks' shooting the latter part of last month.

DR. CRAWFORD SCADDING is the most recent addition to the army of automobilists, having lately purchased a $1,000 auto. on the other side of the line. We understand that he took, the other day, a trip to Whitby, Ont., and made the distance in a phenomenally short time.

DR. CHARLES SHEARD lectured before the Women's Art Association on October 11th, his subject being "Education and Moral Development in Relation to Art." Dr. Sheard is truly a man of many parts—

> "A wise physician skilled our wounds to heal,
> Is more than armies to the public weal."

DR. G. CARVETH has decided to continue the private hospital at the corner of College and Huron Streets, started by his sister, Dr. Annie Carveth, who has since returned home. Dr. Carveth has fitted up his private wards in an up-to-date and most comfortable manner, and is prepared to take in cases from members of the profession, who desire to give their patients both home comfort and at the same time good hospital accommodation, still continuing to attend them themselves.

Items of Interest.

Polk's Medical Register.—The eighth revised edition of this well-known work is now under way, and will appear in due time. Send for descriptive circulars, and do not be deceived by imitators. Polk's Medical Register and Directory has been established sixteen years. R. L. Polk and Co., Publishers, Detroit, Mich.

Marine Hospital at Pittsburg.—Bids for a site for the Marine Hospital which Congress has authorized in Pittsburg were recently opened at the Treasury in Washington. As the maximum expenditure for site and buildings is $125,000, most of the bids are too high for consideration. The specifications prescribed that the plot of ground should not be less than one acre or more than four acres. Surgeon-General Wyman expresses his belief in the great need of such a hospital in Pittsburg, where rivermen, having served two months or more, may be treated at the expense of the Government. Many of these men now have to be sent for treatment to the Marine Hospital at Cincinnati.

Opening of Trinity College.—At the opening of Trinity Medical College's thirty-second session Dean Geikie presided. With him on the platform were: Rev. Provost T. C. Street Macklem, LL.D., of Trinity University; Dr. Nevitt, Dean of the Women's Medical College, and Dr. Mitchell, Assistant Superintendent of the Toronto Asylum. Rev. Prof. Clark of Trinity was unable to be present. An address of welcome was given by the Dean, who spoke of the past successes of the college and the bright prospects which lay before it in the future. Rev. Provost T. C. Street Macklem, LL.D., on behalf of Trinity University, expressed its heartiest congratulations to the college on the occasion, and good wishes for a prosperous future. Prof. Geo. A. Bingham, M.D., C.M., delivered the opening lecture. After referring to the great importance of preventive medicine, he gave an historical outline of the development of medical knowledge.

Admission to the Approaching International Medical Congress.—The Paris *Semaine Medicale* for some reason is opposed to the International Congress and observes that one does not need to be much of a prophet to foresee that the approaching International Medical Congress at Madrid is already stillborn. It is not a medical congress, but a congress of physicians, druggists, dentists, veterinarians, midwives, professors of all kinds, and of all branches and journalists on the lay press. The offensive regulation in

regard to acceptable members has been given in full in these columns as also the amendment sent out in the last communication from the committee of organization—pages 90 and 716. The *Semaine* continues: "What physician, scientist or conscientious practitioner, seeing the dignity of the profession thus assailed, will consent to take part in such a congress? What truly high-class medical journal will open its columns to the report of such a heterogeneous collection of communications from men foreign to the profession?"—*Med. News.*

Physiology and the Gospel of Hustle.—From Chicago comes the proposal that the suburban dweller shall breakfast upon a trolley dining car in order that he may save the half hour (or is it only ten minutes in Chicago?) lost in breakfasting at home. By this plan the coming millionaire jumps out of bed and, boarding the trolley car, finds that his previously-ordered breakfast is ready for him, and by the time he has eaten it he is landed at his office ready for business. But the physician and the ordinary human ruminant must in amazement ask, Why have any home at all? What is the use of marriage and children, all the old-fashioned ways, and all the ridiculous old things such as health, religion, ethics, poetry, love, peace, and the rest? Why not have meals served in the office, and supply one's self with a patent desk which, at the end of the business day, by the push of a button, is transformed into a bed? If sleep is slow in coming under such circumstances, "the hypodermic man" is at the command of the telephone. When digestion fails, as it is likely to do after a few years of machine-feeding, chemistry will probably supply all foods in a predigested state, and any way by that time the "pile" will have been made. It is not added that perhaps by that time the great physiologist, Death, my have an important question to ask. —*Amer. Med.*

The Canadian Casualty Co., Limited.—During the past six weeks a number of medical men have been appointed to office as referees of the new Canadian Casualty Co., which has begun operations. It is understood that the directors of the new accident company, who are all well-known business men, have decided to enter practically every field of accident insurance, and as a result of this decision the operations of the company will be quite extensive, covering, as they will, every form of accident. Among the public men who will be on the Board, is the Honorable R. P. Roblin, M.P., Premier of Manitoba, and the daily papers the other day announced the election to the Board of Mr. H. M. Bate, of the firm of H. N. Bate & Son, Ottawa. Mr. Bate is President of the Russell Company; Vice-President of the Metropolitan Loan & Savings Society; a Director of both the Gatineau Bridge Co. and the Royal Victoria Life Assurance Company, and is Chairman of the Ottawa Improvement Commission. The Company will carry on business in boiler insurance, and under the recent legislation of the Ontario

and Manitoba Parliaments, making boiler inspection compulsory, an exceedingly profitable business for it in this line is assured. The Company has a share capital of one million dollars, and its general manager is Mr. A. G. C. Dinnick, whose offices are at 24 Adelaide Street East, of this city. The stock of the company can be commended as a safe investment, and should prove exceptionally attractive to medical men.

So-Called "Christian Science."—While it is totally incomprehensible to the practical, hard headed, common-sense individual that any one should pursue such an intangible chimera as "Christian Science" with such sublime faith as to depend upon it in the presence of serious bodily illness, certain it is that the disciples of this vicious religious monomania are increasing in number and temporal power, and that it is no longer safe to entirely ignore it as a menace to the health and well-being of the community. Both the medical and secular press have devoted considerable attention to the subject, largely in the way of ridicule, but the most powerful, logical, and altogether unanswerable argument we have yet seen is comprised in a series of short lectures by Rev. Andrew F. Underhill, of St. John's Episcopal Church, Yonkers, N.Y., entitled, "Valid Objections to So-called Christian Science." Realizing that their interests are identical with those of the medical profession, and that the enemy of one is the enemy of both, the Arlington Chemical Company is anxious to do its part in relegating this absurd cult to the limbo of oblivion, where it may rest peacefully side by side with the many foolish fads that have preceded it. Appreciating the force of the argument referred to, and being convinced that it will place in the hands of the physician a well-forged weapon wherewith to combat such a subtle and dangerous enemy, the Arlington Chemical Company has obtained the permission of the author to reprint these lectures in booklet form and distribute them to physicians. If any of our readers have been overlooked in the mailing, a request to the above Company will bring a copy.

Dr. Schomberg Elliott, who has been absent from Toronto for some time, in the Old Land, has returned to the city and settled at 28 Grosvenor Street with his daughter.

Among the applicants for the chair of Medical Jurisprudence in Toronto University are: Dr. W. J. Wilson, Dr. E. Herbert Adams, Dr. John Caven, Dr. R. J. Wilson, and Dr. W. J. Greig.

Correspondence.

The Editor cannot hold himself responsible for any views expressed in this Department.

To the Editor of THE CANADIAN JOURNAL OF MEDICINE AND SURGERY.

DEAR SIR,—The active staff of the Girls' Home were obliged to resign in a body during the past month, owing to a disagreement with the Board of Management, after repeated efforts on their part to come together. The action of the Board was such that no self-respecting medical practitioner could consent to act further under prevailing arrangements.

Members of the profession proposing to seek appointment on the home staff would act in their own as well is in the Profession's interest, if they would call upon me before accepting such appointment.

Yours very truly,

D. J. GIBB WISHART,

Senior Member of the late staff.

DEATH OF DR. BERTRAM SPENCER.

THE sudden death occurred last month of Dr. Bertram Spencer, of eight East Bloor Street. For two years Dr. Spencer has not been in robust health, the result of a severe attack of blood poisoning. An unfortunate fall while attempting to board a street car caused a deep wound on his forehead. At first the injury was not considered serious, but soon erysipelas developed and death resulted. Deceased was born in Torquay, Devon, Eng., where his father still resides. He served as a midshipman for seven years in the English navy, and at an early age came to this country and settled in Toronto. He attended what was then known as the medical faculty of Toronto University, and graduated in 1879. The following year he returned to Europe, and became a member of the Royal College of Surgeons of England. On returning to Toronto he took up practice and soon became widely known. He had a large practice. Dr. Spencer was a member of the College of Physicians and Surgeons of Ontario, and occupied the position of Professor of Medical Jurisprudence in Toronto University. He was also on the staff of the General Hospital, and a coroner. In politics he was a staunch Conservative, and he attended All Saints' Church. He was about forty-five years of age. He is survived by his widow, who is a daughter of Mr. Nichol, of Guelph. The funeral was very largely attended by the city physicians.

The Physician's Library.

BOOK REVIEWS.

Les Difformites Acquises.—De L'appareil Locomoteur. Pendant L'enfance et L'adolescence Par Le DR. E. KIRMISSON. Paris: Masson et cie., Editeurs, 1902.

In 1898, Dr. Kirmisson gave the medical world a valuable and comprehensive work on the Surgical Diseases of Congenital Origin. The present is a companion work on the Acquired Deformities of Infancy and Adolescence, and is worthy to take rank with the former.

The work divides itself naturally into four parts: 1. Deformities consequent upon osseous or articular tuberculosis; 2. Those resulting from rickets and other developmental affections of the skeleton in childhood and adolescence; 3. Deformities following and due to affections of the nervous system, such as infantile hemiplegia; 4. Deformities resulting from traumatism and inflammation, such as osteomyelitis and syphilis.

This constitutes, not only an orderly and logical scheme, but also a comprehensive one for the presentation of the subject. We have long been familiar with the fact that rickets and tuberculosis cause many of the affections which call for orthopedic treatment. But it will be a surprise to many to learn how large a percentage of remedial deformities and disabilities are consequent upon affections of the nervous system.

The work is rendered more practical and valuable because of its omissions. No attempt is made to give methods of treatment or to describe an apparatus simply to make the book historically complete. Its valuable pages have been employed for the record of such methods of treatment and such apparatus as have proved their worth by their record of success.

While the space which is permitted will not allow any detailed examination of the principles of treatment advocated, yet one can scarcely allow the opportunity to pass without commending the thoroughly modern and logical views of the author. It is a point that may well be illustrated by his recommendations for the curative treatment of scoliosis. He describes this treatment as: *a.* Carried out by braces for correcting patients' attitude; *b.* Prolonged recumbency; *c.* Orthopedic treatment by means of apparatus and exercises for correction of the deformity. The author gathers together, with a very slight exception, the best that has ever been accomplished for the treatment of these cases. The exception

referred to is found in his not attaching sufficient weight to the more improved methods of auto-suspension together with the employment of force, used at right angles to the spine while the patient is suspended. The methods of suspension which pull upon the arms, either through the hands grasping a bar, or by means of a strap passing under the shoulders, are not capable of accomplishing much good. Muscles, which pass from the vicinity of the shoulders to the pelvis, carry the weight of the pelvis and lower extremities, and do not permit the spine to bear that weight. Patients endure, without complaint, not only the weight of the body in suspension by straps passing under the chin and occuput, but will also allow a greatly increased extending force, by having dumb bells or other weights strapped to the feet. Thus suspended, patients may be allowed to swing back and forth through an arc of twenty to thirty feet with great advantage. While thus suspended, but not swinging, a girth may be made to pull at right angles to the spine with a force equal to that of the patient's weight, thus employing the strongest powers which may be employed at the greatest mechanical advantage. The writer having followed this method for several years has found no accident or ill resulting therefrom.

Quite logically the author puts his ban upon mechanical braces in the treatment of scoliosis.

No book has been published in recent times, dealing with orthopedic subjects, that is more fresh and practical than this last volume of Kermisson. B. E. M'K.

Nothnagel's Encyclopedia of Practical Medicine—American Edition. *Diphtheria.* By WM. P. NORTHRUP, M.D., New York. *Measles, Scarlet Fever, and German Measles.* By PROFESSOR DR. TH. VON JURGENSEN, Professor of Medicine in the University of Tubingen. Edited, with additions, by Wm. P. Northrup, M.D., Professor of Pediatrics in the University and Bellevue Medical College, New York. Handsome octavo, 672 pages, illustrated, including 24 full-page plates, three of them in colors. Philadelphia and London: W. B. Saunders & Co. Canadian Agents: J. A. Carveth & Co., Toronto. 1902. Cloth, $5.00 net; Half Morocco, $6.00 net.

This volume is the third of the series of English translations of Nothnagel's system. It differs from the others in not being wholly a translation. The article on diphtheria has been contributed by Dr. W. P. Northrup, the editor of the volume, and takes up the first 192 pages. This departure from the rule was rendered necessary on account of an engagement entered into by the German author to publish a translation of his article separately from the series. While we cannot say, until the German author's translation is examined whether the English reader has suffered by the substitution, we can say that Dr. Northrup's article is

quite worthy of the place it has been given in the work. Dr. Northrup has, for many years, devoted much attention to the study of diphtheria, and the fact of his close association with O'Dwyer in the development of intubation lends added interest and importance to the article.

The author gives a brief history of the growth of our knowledge of the disease, and then deals exhaustively with the etiology. The Klebs-Lœffler bacillus is accepted as the specific cause, and the pseudo-diphtheric bacillus is discussed at length, and the difficulty of distinguishing it freely acknowledged. Under the heading of pathology he fully considers the pathological anatomy. It would have been more correct to have so named the section. The treatment is very fully discussed. He gives a full analysis of the voluminous literature on antitoxin, and presents a strong endorsation of the efficacy of the treatment. The chapter on intubation is, of course, full and exceedingly well illustrated by skiagrams, photographs, and drawings, showing all stages in the process of introducing the tubes. The relative merits of tracheotomy and intubation are impartially discussed, especially in view of the author's large share in perfecting the latter. The remainder of the volume is contributed by Von Jurgensen on the Acute Exanthemata—scarlet fever, meacles, and German measles. The translation is madq by Dr. Northrup, who makes many additions to render the work more valuable to English-speaking readers. The volume is brought up to date, reference being made to literature appearing up to the end of 1901. In this brief notice two points may be referred to: First, the possibility of the occurrence of two or three of these acute diseases simultaneously in the same person; and secondly, the doubt thrown on the existence of German measles as a separate disease. The "fourth disease" is also discussed, but its individuality is left an open question. The volume is very creditable to the publishers, the print being large and clear, but it is to be regretted that the result is somewhat marred by the strong "pipe-clay" odor of the paper. A. M'P.

A Treatise on Diseases of the Anus, Rectum, and Pelvic Colon. By James P. Tuttle, A.M., M.D. Professor of Rectal Surgery in the New York Polyclinic Medical School and Hospital; Visiting Surgeon to the Almshouse and Workhouse Hospitals. With 8 colored plates and 338 illustrations in the text. New York: D. Appleton & Co. 1902.

This is an extensive treatise on the subject of diseases of the anus, rectum, and pelvic colon, of 961 pages. Following the method of introduction which is customary nowadays when writing a monograph, the author gives a somewhat exhaustive account of the embryology, anatomy, and physiology of the parts concerned. This does seem to us unnecessary, in view of the fact that so many

excellent descriptions are now at hand in current works on these subjects. We must commend, however, very heartily the section on malformations of the anus and rectum, which is excellent; it is a most complete summary of such abnormalities, and we have added thereto a description of the appropriate methods of treatment applicable under the individual conditions of this character which arise. The illustrations of this section, too, are well done, and form here, as they do elsewhere in the book, a most helpful guide to a clear understanding of the author' descriptions and meaning.

The chapters on such common conditions as fissure, fistula, hemorrhoids, and stricture, are well written, and will prove most valuable to the practitioner who is anxious to gain information regarding the most modern and efficacious methods of their treatment. Thus the manner of dissecting out a fistulous tract *in toto* is clearly described, and is properly advocated as a method which is clearly the ideal one in dealing with such troublesome conditions. After an exhaustive discussion of the various methods of dealing with piles, the author favors the clamp and cautery as being the most generally applicable, and speaks of it in the following terms: "On account of its applicability to all varieties, the ease and celerity with which it can be applied, and its uniformly good results, the clamp and cautery easily stands first among the operations for hemorrhoids.

In the section of prolapse of the rectum the author mentions various means which have proved useful in the various degrees of procidentia recti which occur, and we are glad to note that full reference is made to the ingenious method of dealing with such conditions which has been devised and successfully carried out by Dr. G. A. Peters. Dr. Peters' method is lucidly described and the steps of the operation indicated by two well executed wood cuts. The other sections of this work, including that on tumors and on wounds, partake of the general excellence of the whole book, which we heartily recommend as a valuable guide to the practitioner who has to do with he surgery of these regions.

The book is printed in clear type on good paper, and the plates and wood cuts are of the highest order. We therefore congratulate the publishers on their part of the work. A. P.

The Force of Mind, or the Mental Factor in Medicine. By ALFRED T. SCHOFIELD, M.D., M.R.C.S., etc.; Hon. Physician to Friedenheim Hospital; author of "The Unconscious Mind," "The Springs of Character," etc. Philadelphia: P. Blakiston's Son & Co. Canadian Agents: Chandler Massey, Limited, Toronto and Montreal. 1902. Cloth, $2.00.

The author examines carefully into the causes for the widespread professional apathy observed for the study of the subject

of the influence of the mind over the body. One writer whom he quotes cites the following four reasons for the unpopularity of the subject: (1) Want of instruction on the subject in medical schools. (2) The difficulty of study without teachers or text-books. (3) The uncertainty of the utility of the knowledge when acquired. (4) The dread of being thought singular or old-fashioned. Investigations in this department of study have not kept pace with the steady advancement along those lines, which admit of practical scientific demonstration. "To talk of the patient's spirits in a case of phthisis when the bacillus swarms in the sputa, seems to savor of 'idle words.' What folly to speak of mind influences in typhoid fever when the enteric ulcer can be seen, post mortem, in the pathological theatre. We can catch and stain and double stain the microbes of many infectious diseases; what nonsense it seems, then, to talk of fear as a casual factor."

The author makes out a strong argument why the individual should be considered as an organic whole, partly physical and partly psychical, instead of being studied only as a part which always happens when the mental factor is disregarded. He then proceeds to show that, as the action of the mental factor in disease is unconscious, it cannot be recognized as mental by those who limit the mind to consciousness. The word mind must, therefore, be extended to include all psychic action. In that part of the work which deals with the action of the mind in curing disease, and the varieties of mental therapeutics, the author gives evidence of the most careful research, and, though absorbed in his subject, he is always clear and fair. Altogether, this little work of three hundred pages is full of interest to every practitioner who is anxious to understand the mental factor in disease.

N. H. B.

The International Text-Book of Surgery. In two volumes. By American and British Authors. Edited by J. COLLINS WARREN, M.D., LL.D., F.R.C.S. (Hon.), Professor of Surgery, Harvard Medical School; and A. PEARCE GOULD, M.S., F.R.C.S., of London, England. Second edition, thoroughly revised and enlarged. Vol. I.: General and Operative Surgery. Royal octavo of 965 pages, with 461 illustrations and 9 full-paged colored lithographic plates. Vol. II.: Special or Regional Surgery. Royal octavo of 1,122 pages, with 499 illustrations, and 8 full-paged colored lithographic plates. Philadelphia and London: W. B. Saunders & Co. 1902. Cloth, $5.00 net; Sheep or Half Morocco, $6.00 net. Canadian Agents: J. A. Carveth & Co., Toronto.

Since the first edition of "The International Text-Book of Surgery" was published, about two years ago, considerable changes have taken place in several departments of surgery, rendering it a necessity for almost rewriting the work. In no branch have

such advances been made as in Military Surgery, recent wars having taught us many important lessons. The editors of this work, which, at the time of its first appearance, received so hearty a welcome, have gone over their several departments with great care, as it is their desire to keep The International Text-Book ever abreast of the times, and make it a true and faithful exposition of everything that is latest and best in the art of surgery. We have gone through the chapters on Military and Naval Surgery with care, and find that the authors have brought their work in reality right down to the present day, and have given their readers the benefit of the experience gained by the many surgeons who were actively engaged in the field in South Africa. We have also been interested in the chapters devoted to the Surgery of the Spleen, a subject which has in the past been almost entirely overlooked. We are quite safe in saying that the second edition of "The International Text-Book of Surgery" is one of the most complete, lucid and up-to-date expositions of our present knowledge of surgery as a study, and is a work not only for practitioners, but for students as well. The adding of quite a number of half-tones and lithographic plates to the second edition adds materially to its value.

The Principles and Practice of Gynecology. For Students and Practitioners. By E. C. Dudley, A.M., M.D., Professor of Gynecology North-Western University Medical School; Gynecologist to St. Luke's and Wesley Hospitals, Chicago; Fellow of the American Gynecological Association; Corresponding Member of the Societe Obstetricale et Gynecologique de Paris; Fellow of the British Gynecological Society; one of the founders of the Congres Periodique International de Gynecologie et d'Obstetrique; Ex-President of the Chicago Gynecological Society. Third edition, revised and enlarged. With 474 illustrations, of which 60 are in colors and 22 full-page plates in colors, and monochrome. Philadelphia and New York, Lea Bros. & Co. 1902.

Professor Dudley's work on gynecology is well known to the profession, as it has already passed through two editions. The third edition, like its predecessors, is eminently practical. It appears to have been carefully revised by the author. The illustrations, which are numerous, will be valuable in any case, but particularly to practitioners who have not had the opportunity of witnessing the various steps of the operations described in the text. We learn that, although a large amount of new matter has been added to the third edition, the size of the original work has not been much exceeded.

The author very fully describes an original plastic procedure to straighten the anteflexed cervix uteri. He considers it a great

improvement on the posterior divisions of the cervix uteri introduced and practised by Marion Sims and his followers. He states "In seven cases the indication was prolonged sterility. In three of these cases normal parturition has taken place."

We accept Professor Dudley's statement, but are unable to judge of the value of this operation from experience. The Marion Sims operation gives excellent results in dysmenorrhea caused by anteflexion. J. J. C.

The Theory and Practice of Infant Feeding, with Notes on Development. By HENRY DWIGHT CHAPIN, A.M., M.D., Professor of Diseases of Children at the New York Post-graduate Medical School and Hospital; Attending Physician to the Post-graduate Willard Parker and Riverside Hospitals; Consulting Physician to the Randall's Island Hospital. With numerous illustrations. New York: Wm. Wood & Co. 1902. Canadian Agents: The Chandler Massey Limited, Toronto and Montreal.

Some of the most difficult cases with which the medical practitioner has frequently to deal, especially during the warm months, are those of infantile disorders due very often to incorrect feeding. How many times in a day will a doctor, when he asks the mother what diet she has been giving her child, meet with the answer, "Oh, anything at all, just what is on the table"? If mothers only knew what frequently, permanent, injury they do their offspring by using so little care as to the character of the diet, humanity as a whole would be benefited. Dr. Chapin in this book appeals to his readers, not by advising certain forms of treatment for each and every ailment, but by showing "the fundamental principle of growth, nutrition and digestion and then leave it to the physician to apply those principles." One of the most instructive chapters is that dealing with Proprietary and Infant Foods. The author says in this connection, "From a nutritional standpoint, those foods by themselves are almost without exception inferior to the best grades of condensed milk. When used with cows' milk, however, many of them are effective diluents, especially those containing baked flour. In cases of indigestion, they sometimes prove helpful, but as a steady diet for an infant they should not be used unless along with a liberal amount of fresh milk. Dr. Chapin divides his work into four parts, the first dealing with the underlying principles of nutrition, part two with raw food materials, part three with practical feeding and part four is devoted to the growth and development of infants. The book is very practical and in advance of many only recently published.

Massage, and the Original Swedish Movements. By KURRE W. OSTROM. Philadelphia: P. Blakiston's Son & Co. Canadian Agents: Chandler Massey, Limited, Toronto.

This work, which in twelve years has reached its fifth edition, is written for the purpose of giving more detailed and exact direc-

tions for the performance of massage, and the various exercises which are included under the head of Swedish movements than have hitherto been found in any book published on these interesting and important subjects. Mechano-therapeutics have of late years received much attention, and no practitioner who has studied their action can doubt their exceeding value in very many forms of disease. It is a most unfortunate fact that massage has, through certain unprincipled persons, both professional and lay, suffered much discredit in the eyes of the public, and also of the profession, so that any book written to establish a useful and scientific method of treatment in disease by means of massage must warmly commend itself to the members of the medical profession. Mr. Ostrom's book must go a long way towards reinstating massage in its proper place, as one of the best means towards certain ends, when used with due precaution and scientific knowledge of its action in modifying diseased conditions. The illustrations are very numerous and good, giving great assistance to the correct understanding of the text. It is to be hoped that a great number of medical men may be found sufficiently interested in these subjects to read this book, and to give a fair trial to the principles contained in its pages. We congratulate Mr. Ostrom upon his good work, and wish him success in his efforts to place massage and similar therapeutical measures upon a higher and more scientific basis.

J. H. L.

The Practical Medicine Series of Year-Books. Comprising ten volumes on the year's progress in Medicine and Surgery. Issued monthly. Under the general editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume VII.: Materia Medica and Therapeutics, Preventive Medicine, Climatology, Forensic Medicine. Edited by Geo. T. Butler, Ph.G., M.D., Henry F. Favill, A.B., M.D., Norman Bridge, A.M., M.D., and Harold M Moyer, M.D. Pp. 270. June, 1902. Cloth, $1.50. Volume VIII.: Pediatrics and Orthopedic Surgery. Edited by W. S. Christopher, M.D., John Ridlon, A.M., M.D., and Samuel J. Walker, A.B., M.D. Pp. 231. July, 1902. Price, $1.25. Volume IX.: Anatomy, Physiology, Pathology, and Bacteriology. Pathology, Edited by W. A. Evans, M.D., M.S., Professor of Pathology, College of Physicians and Surgeons, Chicago. Bacteriology, edited by Adolph Gehrman, M.D., Professor of Bacteriology, College of Physicians and Surgeons, Chicago. Pp. 212. August, 1902. Price, $1.25. Chicago: The Year-Book Publishers, 40 Dearborn Street.

The present volumes are fully up to the high standard of the earlier issues. The selections have been judiciously made, and give one a good resume of the year's work. The selections in

Volume VIII. deserve especial mention, on Heredity, Nutrition, and Infections. In the section on Orthopedic Surgery there are several good plates from Goldthwait's and Freiberg's articles. One hundred and forty-five pages of Volume VII. are devoted to Therapeutics. In Preventive Medicine, Tuberculosis takes a prominent place. In Volume IX. the selections are short and well arranged. This volume covers a very large field, and will be found especially interesting to the Pathologist and Bacteriologist. W. J. W.

The Diseases of Infancy and Childhood. Designed for the use of Students and Practitioners of Medicine. By HENRY KOPLIK, M.D., Attending Physician to the Mount Sinai Hospital; formerly Attending Physician to the Good Samaritan Dispensary, New York; Ex-President of the American Pediatric Society; Member of the Association of American Physicians and of the New York Academy of Medicine. Illustrated with 169 engravings and 30 plates in colors and monochrome. New York and Philadelphia: Lea Brothers & Co. 1902.

The above is a late addition to the literature on Pediatrics—a field of medicine more carefully tilled of late—a volume of 675 pages, nicely bound and of good material.

While literature from many tongues has been utilized, the work is evidently, as the author says in his preface, based upon his individual experience, a decided recommendation. It is anything but verbose; it is concise, and perhaps a little dogmatic, not a bad fault, especially on the subject of treatment. The arrangement of the book is excellent, with a very complete table of contents, and a carefully prepared index. The study of the diseases of the Gastro-Enteric Tract is, in our mind, open to criticism, especially in the matter of nomenclature and tendency to view these conditions from a symptomatic standpoint, rather than from that of analytical study of physiological and pathological conditions.

The work is fresh, and you feel it to be intensely practical and of excellent merit, and bears the stamp of clinical work.

A. R. G.

Encyclopedia Medica. Under the general editorship of CHALMERS WATSON, M.B., F.R.C.P.E. Volume XI.: Pp. 550. Sciatica to Syncope. Edinburgh: William Green & Sons. 1902.

This volume contains several articles of merit, though none are of special excellence, and a few are, unfortunately, rather disappointing. In several instances there is too much condensation for the articles to be either reliable for reference or interesting to read. These remarks are especially applicable to the section on diseases of the stomach and duodenum, which is condensed into sixty pages. The wisdom of attempting so much in such limited

space is questionable. In the literature at the end of the section with one exception, the references are confined to British authors, the much better work done on this continent and in Germany being quite ignored.

The article on Small-pox by E. W. Hope is well illustrated, and should carry conviction to the antivaccinationists. The free distribution of the illustrations should be the best aid to securing universal vaccination. James S. Collier's article on the spinal cord is excellent, especially in view of its brevity, as is also that by a H. Tubby, on the Surgical Affections of the Cord and Spine. He does not regard lumbar puncture with much favor, as it is so unreliable, a view quite in accord with experiences of the reviewer, who obtained sterile fluid in four cases of cerebro-spinal meningitis, the diagnosis being proved by autopsy in two of them. While this volume is not up to the standard of its predecessors, yet many of the articles are good, and the volume as a whole will be found useful for reference. A. M'P.

A Text-Book of Materia Medica, Therapeutics, and Pharmacology. By GEORGE FRANK BUTLER, Ph.G., M.D., Professor of Materia Medica and Therapeutics in the College of Physicians and Surgeons, Chicago; Medical Department of the University of Illinois; Medical Superintendent of Alma Sanitarium, Alma, Michigan; Member of the American Medical Association, Illinois State Medical Society, Chicago Medical Society, Chicago Pathological Society, and Chicago Society of Internal Medicine; Fellow of the Chicago Academy of Medicine, etc. Fourth edition, thoroughly revised. Philadelphia and London: W. B. Saunders & Co. 1902. Cloth, $4.00 net; Sheep or Half Morocco, $5.00 net. Canadian Agents: J. A. Carveth & Co., Toronto, Ont.

We have found the third edition of Dr. Butler's work a useful and instructive work of reference, particularly in matters relating to certain drugs, viz., the newer synthetics. We notice with pleasure that, in the fourth edition, the chapters on organotherapy, and serum-therapy, have been considerably enlarged and revised.

It is a well written, concise text-book, suitable for students of medicine and also adapted to the requirements of the practitioner as well. J. J. C.

Small-pox: How it is Spread and How it may be Prevented. Drawn from the facts of the Warrington Small-pox Epidemic of 1892-93. By JAMES WALLACE, M.A., M.D., Aberdeen. London: Henry J. Glaisher, 57 Wigmore Street, Cavendish Sq. W. 1902.

In any attempt to combat the ravages of a disease like small-pox, it is of the greatest value and the most reliable and safe guide

to have data and statistics of previous outbreaks before us, that everyone may be allowed to judge for himself upon these premises. The author of this book has carried out this idea, and has laid before his readers a full description of the investigation in all its bearings of the epidemic which occurred in Warrington in 1892-93, and concerning which Dr. T. D. Savill, as Medical Officer of the Royal Commission, reported most completely. This is a most valuable condensed history of the information given in the report of the Royal Commission, and is a work which to anyone interested in this subject cannot fail to be of value. A. J. J.

The Diseases of Infancy and Childhood. For the use of students and practitioners of medicine. By J. EMMETT HOLT, M.D., LL.D., Professor of Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York; Attending Physician to the Babies' and Foundling Hospitals, New York; Consulting Physician to the New York Infant Asylum, Lying-In Hospital, Orthopedic, and Hospital for the Ruptured and Crippled. With 225 illustrations, including 9 colored plates. Second edition, revised and enlarged. New York: D. Appleton & Co. 1902.

Holt's "Diseases of Children" is a book known to nearly all practitioners of medicine, and certainly to all of those who take special interest in Pediatrics. It has been always looked upon as a really scientific work, and one to be safely consulted on any branch of infantile disease. It can be said of Holt what cannot be said of some other books on diseases of children, *e.g.*, that it is practical, and, what is very important, has been written for the every-day use of the busy practitioner. The second edition brings the volume up to a very high standard, having been to a large extent rewritten. The chapters on milk and infant-feeding, a subject which of late years has come to the front so much, are full of interest, thoroughly practical, and alone are worth the price of the entire book.

The Medical Students' Manual of Chemistry. By R. A. WITTHAUS, A.M., M.D., Professor of Chemistry, Physics, and Toxicology in Cornell University Medical College, New York. Fifth Edition. New York: William Wood & Co. 1902. Canadian Agents: The Chandler-Massey, Limited, Toronto.

The present edition of this standard text-book contains several improvements on former editions. Less space is devoted to the details of technical processes, and more is given to a consideration of the general principles upon which the science of chemistry is based. More space than formerly is also given to physiological chemistry. This is a decided improvement. In the past too much of the medical student's time has been devoted to the study

of mineral chemistry, and far too little to the consideration of the composition of the more important fluids of the body, and the nature of the chemical changes which occur in those fluids.

The publishers have done their part well. The book has a neat appearance, and is well printed. This edition is sure to be even more popular than its predecessors. A. E.

A Manual of Practical Anatomy. By the late PROF. ALFRED W. HUGHES, M.B, C.M. Edin., F.R.C.S. Edin.; F.R.C.S. England; Professor of Anatomy King's College, London; Examiner in Anatomy Royal College of Surgeon's, England; Examiner in Anatomy Univesity College of South Wales. Edited and completed by ARTHUR KEITH, M.D., Aberdeen, F.R.C.S. England; Lecturer on Anatomy London Hospital Medical College; formerly Hunterian Professor Royal College of Sur. ons of England. In three parts. Part III.: The Head, Neck, and Central Nervous System; illustrated by 12 colored plates and 204 figures in the text. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1902. Canadian Agents: The Chandler Massey, Limited, Toronto and Montreal.

Part III., devoted as it is to the Head, Neck, and Central Nervous System, is fully up to the preceding volumes, if it does not in some ways surpass them. The different plates, in colors, of the dissections of the neck, as also those of the interior of the brain, are among the best we have seen in any work. Dr. Hughes' Manual of Practical Anatomy is without doubt a valuable contribution to the literature upon this subject, and should be found of great use, especially to those who are teachers in the dissecting-rooms of our colleges.

International Clinics. A Quarterly of Illustrated Clinical Lectures and especially prepared articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose, and Throat, and other topics of interest to students and practitioners; by leading members of the medical profession throughout the world. Vol. II. Twelfth Series. Philadelphia: J. P. Lippincott & Co. Canadian Agent: Charles Roberts, 593a Cadieux Street, Montreal.

This volume is an improvement upon the first, which was issued some little time ago. It contains articles by four men living in the British Isles, ten on the Continent of Europe, and eleven in the United States. Many of these articles are unusually good, being written by thoroughly good men, and containing very valuable material. The illustrations are very well got up, and are very interesting, particularly those in a paper by Dr. Kelly, of Johns

Hopkins, on "Nephrectomy." The biographical sketch of eminent living physicians, by Dr. Hinsdale, is devoted to a description of the daily life of Dr. John B. Murphy, of Chicago, whom we all know so well by reputation. A. J. J.

The Diseases of the Throat, Nose, and Ear. By CHARLES P. GRAYSON, M.A., M.D., Lecturer on Laryngology and Rhinology in the Medical Department of the University of Pennsylvania; Physician in charge of the Department for Diseases of the Nose and Throat in the Hospital of the University of Pennsylvania. Philadelphia and New York: Lea Brothers & Co. 1902.

There has, in the last few years, been such a flood of books on diseases of the throat, nose, and ear, and many of such excellence, that it seemed impossible for any new book on the subject to have sufficient merit to justify its appearance. Yet I am confident that anyone who reads it will agree with me that he has found a book worth having. For good common sense, conciseness, and easiness of reading it has but one rival, and that an English work, McBride. This book pleases me, and will, I believe, please you.

J. M. M.

The Principles and Practice of Bandaging. By GWILYM G. DAVIS, M.D. Philadelphia: P. Blakiston's Son & Co. Canadian Agents: Chandler Massey, Limited, Toronto.

This little manual on the principles of bandaging is written for the use of students and beginners in the study of medicine, and also those entirely uninstructed in that profession. The language employed in describing the various applications of the bandage is completely free from technical terms, and can be understood by the merest beginner. Naturally, in a work of this description there can be nothing very new or original, but the instructions given for the use of the roller bandage, the tailed bandages or slings, and the handkerchief bandages, are all that can be desired, and must prove a reliable and useful guide to all anxious to acquire skill in neat and effective bandaging. The book is well illustrated from original drawings by the author. J. H. L.

Cramer's Manual on Negative Making. The Cramer Dry Plate Co. (Ltd.), St. Louis, Mo. Eastern Depot, 32 East 10th Street, New York.

It will pay any physician, who is interested in photography, to send for a copy of this manual, as it is full of interest. The G. Cramer Co. will gladly send it for the asking, and there are thousands of medical men who are camera fiends and who would find many a useful hint within its pages.

Selected Articles.

LOCAL TREATMENT OF CHRONIC GASTRIC CATARRH—A CLINICAL LECTURE.

BY J. M. G. CARTER, M.D., Sc.D., PH.D.,

Professor of Clinical and Preventive Medicine in the College of Physicians and Surgeons, Chicago; Fellow of the American Academy of Medicine, etc.

Local treatment may be applied in any stage of chronic gastric catarrh; but it must be varied somewhat in the different stages The grade of inflammation, its character and persistence, likewise may require some modification of the treatment.

First stage.—During the incipiency of chronic gastritis, local treatment is not so essential, except in bacterial cases, but is beneficial. It serves to modify the congestion when that is increased, and often allays dyspeptic symptoms even when they are more marked than usual. The use of warm water (105) with bicarbonate of sodium (3 per cent.) for washing out the stomach is frequently very valuable to remove the tenacious mucus usually adhering to the gastric mucous membrane, in this condition, and interfering with the proper mixing of peptic fluid with the food. The patient may drink a glassful of the solution before meals, or it may be introduced into the stomach through the tube. If the tube is used, the stomach should be filled before allowing any reflow. The cold douche with water at 80 to 60 degrees is sometimes more grateful and helpful than the hot douche (110 to 125 degrees). A continuous effect may be secured by using a double tube and permitting the inflow and outflow to progress simultaneously; but care should be taken to keep the stomach distended sufficiently to have the solution come in contact with the entire gastric surface. The soda solution dissolve the mucus and the stream washes it away. Weak soap-suds may be used with the tube for the same purpose. More satisfactory in many instances is the use of a solution of hyd.ozone. A glassful (fl ℥ iii.) of a two or three per cent. solution may be given half an hour before meals. If used as a douche with the tube a 5 or 6 per cent. solution is not too strong, and two quarts the minimum amount. These douchings may be given one to six or seven times a week, according to the requirements of the case, and are frequently all the treatment this stage of chronic gastritis demands, except what changes are necessary in the diet.

Second stage.—The inflammatory process is fully developed in the second stage, and while there may be weeks or months when there is little if any suffering, the treatment should be persistent. The cleansing of the gastric mucous membrane must be systematic and thorough. This is best accomplished with a solution of green soap or a 5 or 8 per cent. solution of hydrozone, introduced with the double tube. After first filling the stomach, inflowing and outflowing streams ought to remain about equal or the outflow may exceed the inflow, the distention of the stomach may be maintained by retarding the reflow when necessary. This process can be beneficially accomplished by driving the solution into the stomach under increased air pressure; but when the proper apparatus for this method is not at hand the siphoning method with the single tube does very well. For home treatment, or when the tube cannot for any reason be used, a solution may be made for drinking. For this purpose a 2 or 3 per cent. solution of hydrozone is prepared. The patient may take a glassful (8 oz.) half an hour before meal time. He should lie down at once, remain five minutes on the back, then turn on the right side where he must remain during the remainder of the half hour. While the patient is on the back the solution comes in contact with every portion of the gastric mucous membrane, and turning to the right side facilitates the emptying of the stomach. By this process the offending mucus is dissolved and carried away, and the organ is put into a proper condition to digest food. The use of hydrozone has the additional advantage of checking the growth of the bacteria, and probably exhibits greater antiseptic properties than any other agent that can be used in the stomach with the same degree of safety. In obstinate cases this cleansing ought to precede every meal.

After the stomach is cleansed it should be treated with soothing, stimulating, and healing applications. There are many preparations which can be so used, some of the best of which are glycerole of bismuth and eucalyptol, the essential oils, and glycozone. Boric acid in 2 or 3 per cent. solution as a wash with the tube is sometimes very valuable. The other agents mentioned may be used with a nebulizer, by means of which a vapor impregnated with the medicines can be passed into the stomach through a tube, the double tube being preferable. If it is not convenient to use a nebulizing apparatus, the glycerole mentioned, and especially glycozone, may be administered by the mouth. In many cases, in fact the latter mode of administering these agents is more desirable. These remedies encourage healing, and materially enhance the patient's prospects of recovery. This is especially true in bacterial cases. When hydrozone has been given before meals, as already suggested for cleansing purposes, glycozone may be administered in teaspoonful doses after meals with very satisfac-

tory results. This line of treatment is frequently so successful that cases are temporarily relieved and possibly often a cure effected, particularly if the general treatment has been judiciously carried out.

If, for any reason, glycozone cannot be employed, the essential oils may be used. The oils of anise, pepperpint, cubebs, and tar may be combined and used with a nebulizer as previously suggested. Although benefit may be derived from the administration of this combination, I prefer glycozone treatment. The use of hot water, 120 degrees or more, and the employment of cold water, 80 to 40 degrees F., may give very happy results in certain severe cases.

Third stage.—The condition referred to here is one of atrophy. The functions of absorption and motion may be fairly well performed. The chief difficulty, then, is with the digestion of proteids. The local treatment has two objects mainly, although a third is sometimes in mind. The first object is the removal of debris and foreign material. The second is the cleansing of the mucous membrane and the destruction of micro-organisms and their removal, in order that the intestines may not receive bacterial products from the stomach. The third object sometimes kept in view in the local treatment by douching is a degree of stimulation of the functions of motion and absorption and the tonic effect to the gastric walls which follow those washings. The first object is accomplished by the use of sterilized water or a 2 per cent. solution of sodium bicarbonate. Either tube may be used. The second object is effected by douching the walls with a green soap solution or a solution of hydrozone. The latter agent in 5 per cent. solution, as directed above, gives very pleasing results. The third object may be secured by using hot or cold water for the douche.—*American Therapist.*

100 State Street, Chicago.

SEPTICEMIA AND THE CURETTE

BY H. PLYMPTON, M.D.

To attempt to break up an old-established custom in any line of life is at best a thankless job, and one likely to call down harsh criticism upon the head of the daring iconoclast.

To attempt to uproot old prejudices existing in favor of a certain line of practice in surgery, and diametrically oppose such practice, is to invite from some adverse criticism of the harshest kind. The only recompense for this is a logical refutation of, or concurrence in, the argument advanced, on the part of other members of the profession.

This latter is what I hoped for, and if I provoke a discussion, or start a line of thought in the minds of half of the readers of this article, I shall have achieved all I started out to do.

Curetting the uterus to remove fragments of after-birth or other debris has been taught in our medical schools from time immemorial, and it is firmly fixed in the receptive and retentive mind of every medical student that the first move following any such abnormal uterine condition, is to cleanse the uterus by means of the curette.

That the organ should be thoroughly and aseptically cleansed admits of no argument, but that the work should be done with the curette I deny most emphatically.

The majority of cases of death following the decomposition of fetus or placenta in utero, are caused by the use of the curette, and I hold that septicemia may be avoided if a more rational procedure be resorted to.

The condition of the uterus containing septic matter is one of great congestion; the thickened walls being coated internally and over the os with a thick, brown, tenacious mucus.

The congestion is active, and therefore the more dangerous in the event of the admission of septic matter into the circulation.

If the curette is used, denuding the walls of their protective covering, an immediate vaccination takes place with a septic virus, septicemia following in an incredibly short space of time (chemical metamorphosis is marvellously rapid in the circulatory system) and death quickly ensues.

If without using the curette we can remove the septic matter from the uterus without disturbing the mucus covering, and enable the uterus of itself to expel the coating, we shall have taken a long step forward in the treatment of this class of uterine cases.

The uterus, by reason of its congestion, may be made to perform a self-cleansing act by exciting the exudation of the serum of the blood into its cavity, thereby washing itself out, and expelling all septic matter instead of absorbing it.

This process of exosmosis is induced by a properly combined alkaline solution at a temperature above 100 degrees, and a strict avoidance of bichloride, carbolic acid, formaldehyd, or any antiseptic of an acid reaction or astringent nature, which would coagulate the fibrine and albumen of the blood. My method of procedure is as follows:

First, the gentle removal of whatever fragments are lying in the uterine cavity, by means of forceps, care being taken not to tear from the walls any adherent piece.

Second, the gentle flushing of the uterine cavity with the alkaline solution (110 degrees), the reservoir containing the fluid being not more than two feet above the level of the hips.

If the flushing could be continuously administered for a few

hours (say two or three), the conditions would be more speedily reduced to normal, but the discomfort of the position of the patient (on a douche pan) prevents this, and a flushing once every two hours with one quart of solution is about the limit of treatment.

For flushing the uterus, I use a small dilating uterine douche, and as there is plenty of room for the escape of fluid and fragments there is no danger of fallopian colic or salpingitis.

The first flushing is frequently followed by contractile pains, and expulsion of any previously adherent pieces, together with much of the mucus. A tablet of—

Ext. Cannabis Indica.....gr. ¼
Ext. Ergotin.....gr. ½

every hour till desired effect is produced will contract uterus and alleviate pain.

The bowels should be moved freely, both by enema and cathartic. During the interval between douches, the patient should be kept on her back, with the hips sufficiently raised to permit the retention in the vagina of as much of the alkaline solution as it will hold.

The rapidity with which this treatment will reduce temperature, relieve pain, stop vomiting, and remove offensive odor, is marvellous to one who has not tried it. Sometimes two flushings are sufficient to cleanse the uterus thoroughly, vaginal douches being all that are needed subsequently to complete the work.

Uterine congestion is speedily relieved, and the uterine discharge changes from brown, thick, bad-smelling mucus, to a thin, transparent one, accompanied or followed by more or less of a flow of blood.

A reduction in the frequency of the flushings is desirable as soon as a tendency to return to normal conditions begins to be observed, as it frequently will within twenty-four hours. Then simple vaginal douches every three hours, with an occasional uterine flushing, if symptoms indicate it.

The action of exosmosis (and endosmosis, for there is every reason to believe in the absorption of some of the fluid) is what is desired to relieve the existing congestion, as in a bronchitis, pneumonia, congestion of kidney, congestion of any mucous membrane, etc., and is the most rational means of restoring to normal condition.

I do not wish to be understood as decrying the use of that most valuble instrument, the curette, but only the abuse of it, to wit: Its employment under such conditions as make it practically a sharp weapon loaded with septic matter, dangerous beyond the poisoned arrow of the Malay, or the fang of the cobra, and utterly opposed to our modern ideas of antisepsis.

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GOUT AND ITS TREATMENT.

THE *Therapeutic Gazette* says: "There is no class of disease of which we know so little in respect to their etiology and pathology as those which are classed as diathetic, or in other words, dependent upon some disorder in the nutritional processes which we call metabolism. Because of this ignorance, the use of all our remedial measures for this class of cases is to a great extent empirical and unsatisfactory, and the exhaustive studies of the last few years made by Garrod, Haig, Luff, and others, while seeming to promise far more satisfactory knowledge of these diseases, have not advanced as far as the practical clinician and therapeutist desires. That the disease, gout, does depend upon faulty metabolism, and that as a result of this fault uric acid is formed in the body in excess, is proved, but the causes of the faulty metabolism are undiscovered, and therefore our methods are chiefly devoted, aside from diet, to its relief rather than the cure of the malady. It is not our intention at this time to attempt to discuss the very important question of the pathology or pathogeny of gout; on the one hand we find the nervous origin urged, and on the other that an accumulation of uric acid is the factor to be combated. Much of Haig's suggestive work, however, is based on hypotheses which do not seem to us to be founded upon fact, and certain of his experiments, accurate in themselves, are equally hypothetical in origin. If, as he claims, uric acid in excess is the cause of the attacks of gout, we should have, theoretically, a most sovereign remedy in salicylic acid, but as a matter of fact it very often fails, and a decision to its anti-gout powers is to be sought, therefore, more in clinical observation than in experiment.

"About this point opinions differ most essentially, some clinicians asserting that the salicylates are most efficient, and others teaching that they are futile. Thus Germain, See, and Jaccoud believe them superior to colchicum, whereas Sir Dyce Duckworth, Barclay, Ebstein, and Lecorche, believes the salicylates less valuable. It is evident at once in studying this matter that we must divide it into two parts, namely, as to the value of the salicylates in the acute attack, and as a remedy for the condition between the attacks and for the cause of the attack. In respect to the attack, Duckworth reports that he has tried sodium salicylate in a considerable number of cases of acute gout, and finds it very inferior to colchicum. He has, however, seen it do great good in a few cases in which colchicum failed, but he cannot predicate which will be benefited. Ebstein thinks that under the salicylate treatment the manifestations of the attack simply shift from joint to joint. Lecorche asserts that while salicylate of sodium often

relieves the pain of gout it does not shorten the attack, nor does it prevent subsequent attacks, although he asserts that its use in full doses of one to one and one-half drachms, increases the elimination of uric acid in the urine, and Henry Soullier asserts that the salicylates are the best remedies if the kidneys are intact."

Many medical men have expressed themselves very favorably indeed as to the therapeutic action of Vichy (Celestins) water taken regularly, not only during, but subsequent to the attack of gout. This natural alkaline water undoubtedly acts as an eliminant of uric acid from the blood, and has been pronounced by many as having almost curative properties. It has to be taken regularly, however, to have any permanent effect. Care should be used that patients get the genuine article in bottles, not syphons.

The following formulæ have also been recommended:

℞ Quin. sulph. .... ℥ j
Syrup. simplicis }
Syr. aurantii flor. } .....āā ℥ ij
Acid. citric..... ℥ ij
Aquæ destil ..... ℥ vj
M. Sig.—Ten drops in an ounce of water, to which are added twenty grains of bicarbonate of sodium, to be taken while effervescing.

℞ Tincturæ colchici seminis..... M. xv
Magnesii carbonatis..... gr. vj
Magnesii sulphatis ..... ℈ ss
Aquæ menthæ piperita.....q. s. ad ℥ j
Fiat haustus. Sig.—Repeat according to circumstances.

EXPERIMENTS WITH ADRENALIN.

Elsberg, in American Medicine, gives a very comprehensive report of a series of experiments with adrenalin chlorid as an addition to solutions for local anesthesia. He says: "Adrenalin chlorid, which is the active blood-pressure raising principle of the suprarenal gland recently discovered and investigated by Dr. Takamine, is now on the market as an amorphous crystalline powder, or in the form of a 1-1000 solution. It is a powerful astringent, so that a drop of a 1-10,000 solution will blanch the conjunctiva in from 30 to 60 seconds.

"Elsberg has been carrying on a series of experiments with this new drug, and finds that if a drop of a 1-1000 solution be injected under the normal skin, a slight burning sensation is felt, but no anesthesia occurs. Within one minute an area of skin about two inches in diameter becomes blanched, and almost bloodless, and remains so from six to twelve hours. The same effect will be observed if a 1-5000 to 1-15,000 solution be used, but with these weaker solutions the blanching appears only after a few minutes and disappears after three to six hours. After the

blanching of the skin disappears the tissue apparently returns to its normal condition. No deleterious effects, such as sloughing or subcutaneous ecchymosis ever followed these injections. In the course of the investigations cocain and eucain solutions, containing adrenalin in the proportion of 1-5000 to 1-20,000 were used. It was found that the anesthetic properties of the cocain and eucain were preserved, while the adrenalin caused the same blanching of the tissues as previously observed, which extended one to two inches beyond the area infiltrated.

"In performing minor operations under cocain, to which 1-5000 to 1-20,000 adrenalin had been added, only the larger vessels bled when cut across. The smaller vessels were contracted so tightly that no blood could escape from them, and therefore there was no oozing. It was unnecessary to sponge off the wound a single time during an operation. The healing of the wound was not interfered with in any way. Upon theoretical grounds it was expected that secondary hemorrhage would take place in from three to twelve hours, as the effect of the drug passed off. This, however, has not been the case in the thirty cases operated upon. Experience with the drug is still small, and what will be the result in operations upon larger wounds remains to be determined.

"For small operations the addition of adrenalin chlorid is of distinct advantage, in that it raises the blood-pressure and overcomes the depressing effect of the cocain, at the same time it entirely does away with the oozing of blood from the wound."

In genito-urinary work the writer has used adrenalin. It checks hemorrhage, but in several cases it was followed by secondry hemorrhage, rather free. Its use is now limited to circumcision in very young infants, and it is there applied in very weak solution when the open method is used.

PHYSICAL CULTURE AND REMEDIAL TRAINING.

Miss Phipps (niece of Miss Chreiman, London, England), has opened, at the corner of Spadina Avenue and College Streets, Toronto, a School of Physical Culture and Remedial Training, and has the pleasure to invite the kind co-operation and advice of members of the profession of medicine, and all other residents who are interested in making health understood as the only natural and right condition of existence.

Miss Phipps has been upon Miss Chreiman's staff for several years, taking finally entire direction of the practical work of the Hygienic Exercise Classes, also of the dancing as taught by Miss Chreiman's teachers.

Miss Chreiman will, if possible, be with Miss Phipps, and very

pleased to give any information that may be desired. Miss Chreiman was a founder in England of much of the work now well-known on both sides of the Atlantic, as may be seen by the following extracts:

"The excellent system of gymnastics for girls, recently established by a lady (Miss Chreimen) in various parts of London, is all that can be desired. . . . . With half the care which mothers spend in dressing and decking-out their children, often in unsuitable clothing, they might, with a little help from their medical advisers, prevent most of the deformities which mar the physical beauty, comfort, and health of their offsprings; and no time seems more appropriate than the present for directing the attention of medical practitioners, and through them of parents, to the means of attaining these objects."—*The Lancet,* Sept. 16th, 1902.

"We have no doubt that the system elaborated by Miss Chreiman is of great use in developing the muscular and respiratory systems of growing children; and not only so, but in encouraging a grace of pose and movement which the art of the *costumiere* can never impart. We were forcibly reminded of the well-known words of Pope, as we watched the evolutions of the class. 'True ease,' he says, 'comes from art, no chance, as those move easiest who have learnt to dance.' In the days of Queen Anne dancing was perhaps the nearest obtainable approach to 'scientific gymnastic exercises.' Dancing then did not consist in turning round on the tips of the toes a greater or less number of times in the minute, but was an exercise for the public performance of which much serious and private practice of complex manœuvres and attitudes, calling into play a great variety of muscles, was necessary."—*London Medical Journal.*

"A most interesting demonstration of gymnastics for girls—by the pupils of Miss Chreiman's classes—was given on the 5th inst. at the Town Hall, Kensington, under the auspices of the National Health Society. Lord Brabazon was in the chair, and a very large assemblage of members of the society and their friends were present. Various exercises, gymnastic dances and vocal marches were gone through with great precision and grace by the young athletes, and Lord Brabazon expressed a wish that such training could be extended to School Board children. Dr. Farquharson, M.P., W. Woodall, Esq., M.P., and others, addressed the meeting; letters were read, expressing sympathy with the endeavor to physically educate and develop our growing girls—the future wives and mothers of England."—*The Medical Times.*

EXHIBITS OF PHARMACEUTICALS, ETC., AT THE CANADIAN MEDICAL ASSOCIATION CONVENTION AT MONTREAL.

Chandler & Massey, Limited, Toronto and Montreal.—Chandler & Massey, Limited, had a magnificent exhibit at the Montreal meeting, comprising most of their numerous lines. A beautiful instrument cabinet of their own manufacture, filled with a complete line of instruments, formed one of the most attractive features of this exhibit.

Another attraction, much admired, particularly by hospital surgeons, was one of their improved invalid and fracture beds, finished in nickel. As the late Mr. Lawson Tait observed, "There is no article in ordinary life-long use with which we are so closely related, with which we spend so much of our time, which we occupy with such affectionate readiness, and leave with such affectionate regret, as our bed." And with the Chandler & Massey bed the construction is such that the patient can be afforded every possible comfort in the way of position and conveniences. Microscopes, microscopical goods, dressings, and ligatures were also arranged tastily and with the view of attracting the physician. A section which seemed to draw a great number of physicians, surgeons, and students, was the book counter, where one found the very latest in medical literature. The exhibit was in charge of Mr. A. P. Watts, of the Toronto House.

H. K. Wampole & Co.—It was said of the recent meeting of the Canadian Medical Association, which convened in Montreal a few weeks ago, that it surpassed, in point of attendance and interest, any previous one. The same may be said of exhibits made by the manufacturing pharmacists. Prominently among these was the very large and attractive display made by Henry K. Wampole & Company. This exhibit was so arranged as to show in detail their well-known special preparations, also their very comprehensive line of pharmaceutical products, including Pulverous Pills, Compressed Tablets, and Tablet Triturates, Chocolate Coated Tablets, Dispensary and Hypodermic Tablets, Granular Effervescent Salts, Soluble Medicated Bougies, and Elastic Gelatin Capsules, Medicinal Elixirs, Syrups, Wines, and Solutions, also Fluid Extracts, and Effervescent Lithium Citrate Tablets.

The most recent production from the laboratory of this firm in Toronto is that of Hydrogen Peroxide (ozogen) which made a specially bright showing in its four sizes. This should be of

interest to the medical profession, since it has all the qualifications required by the pharmacopeia. The commercial advantage of being manufactured in Canada (thus avoiding increased price by reason of duty) should also be another recommendation in favor of this product.

The beauty and largeness of this exhibit gave evidence of the magnitude of the very largely increasing business of Messrs. Henry K. Wampole & Company, in the Dominion of Canada.

Deimel Linen Mesh.—The Deimel Linen exhibit was in the most prominent part of the Hall. It was draped with the Dr. Deimel Linen-Mesh, winter and summer weights, from the ceiling down to the counters and to the floor. Even the sign of the firm, nine feet long, was made of Dr. Deimel's linen mesh, the letters being cut out of heavy, unbleached linen-mesh towelling, were laid upon a background of snowy white linen-mesh of which the Dr. Deimel underwear is made. The exhibit consisted of the following articles: Dr. Deimel's linen-mesh Abdominal Supporters; Dr. Deimel's linen-mesh Suspensories; Dr. Deimel's linen-mesh Dressings in Lee's Breakable Tubes, in glass box jars, and in air-tight cartons, and the Dr. Deimel underwear garments. Mr. Francis Deimel, the manager, is to be congratulated upon the attractive exhibit made at the Canadian Medical Association meeting.

Radnor Water Exhibit.—In one corner of the exhibit hall, under the charge of Mr. J. B. Giles, was an exhibit of Radnor Water, where registering physicians were courteously treated to frequent and copious libations of this popular mineral water. Of Radnor, the *Medical Press and Circular*, of London, says: "Radnor is a pure, natural mineral water, of an agreeable taste, and mixes well with the most delicate wines. From the point of view of organic purity it leaves nothing to be desired."

Charles E. Frosst & Co., of Montreal, showed their different pharmaceuticals arranged on shelves tier above tier, in a manner that attracted comment from the visitors. The goods this firm are pushing most now include Pinocodeine (Frosst), Elixir Digitalin Co. (Frosst), Ferrogen (Frosst), compressed tablets of Urotropin, 7 1-2 grs. each, granular effervescent Urotropin, Heroin, Salol and Lithia, and combinations

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Gilmour Bros. & Co. had a very "tasty" stall, on which was arranged their different pharmaceutical preparations, including

Johnson & Johnson's plasters and absorbent cottons, Mercauro and Arsenauro, as made by Roome, Parmele & Co., Horlick's food, which they served up to the visitors in the form of ice cream, as also several other preparations well known to the profession.

The Lindman Truss.—At the top of the hall, a good-looking gentleman of no mean proportions was to be seen, no less a personage than Bernard Lindman, of truss renown. Lindman banks all on his truss, and no wonder, as it is a good one, and has given satisfaction almost wherever used.

J. A. Carveth & Co., of Toronto, had a large display of W. B. Saunders & Co.'s books, the interests of the firm being looked after by Mr. McFadyen.

HYDRO-THERAPY.

Archibald E. Garrod, in Allbutt's System, in speaking of the treatment of rheumatism, says: "Great benefit is frequently derived from mineral water treatment, and brine baths, such as may be taken at Proitwich, Nantwich, and a few other places in this country, and at various places on the continent, are especially serviceable." Mentioned first of the Muriated-Saline Waters of North America by Herman Weber, in Vol. I., Allbutt's System, is the St. Catharines Wells, page 322, 1898.

Sodium Chloride plays an important part in the animal economy, by furthering the processes of absorption and excretion. Externally chlorimated waters in baths increase the excretion of urea, there is an increased consumption of oxygen, and there is increased excretion of carbonic acid. The functions of the skin are stimulated in consequence of the action of sodium chloride on the peripheral nerves. When the waters are administered internally their action in those cases with gastric and hepatic torpidity is most efficacious. All cases of the so-called uric acid diathesis are benefited by the use of these waters, the water and its salts furthering the oxidation of uric acid and having a certain solvent influence on formations of this substance.

At the Welland, in St. Catharines, we have a convenient and suitable place for the administration of the waters of this famous well, together with careful diet and the use of massage and electricity in suitable cases.