

## Technical and Bibliographic Notes / Notes techniques et bibliographiques

Canadiana.org has attempted to obtain the best copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

Canadiana.org a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- Coloured covers /  
Couverture de couleur
- Covers damaged /  
Couverture endommagée
- Covers restored and/or laminated /  
Couverture restaurée et/ou pelliculée
- Cover title missing /  
Le titre de couverture manque
- Coloured maps /  
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) /  
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations /  
Planches et/ou illustrations en couleur
- Bound with other material /  
Relié avec d'autres documents
- Only edition available /  
Seule édition disponible
- Tight binding may cause shadows or distortion  
along interior margin / La reliure serrée peut  
causer de l'ombre ou de la distorsion le long de la  
marge intérieure.
- Additional comments /  
Commentaires supplémentaires:

Continuous pagination.

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated /  
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/  
Pages décolorées, tachetées ou piquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies /  
Qualité inégale de l'impression
- Includes supplementary materials /  
Comprend du matériel supplémentaire
- Blank leaves added during restorations may  
appear within the text. Whenever possible, these  
have been omitted from scanning / Il se peut que  
certaines pages blanches ajoutées lors d'une  
restauration apparaissent dans le texte, mais,  
lorsque cela était possible, ces pages n'ont pas  
été numérisées.

# QUEEN'S MEDICAL QUARTERLY.

VOL. XI, No. 2  
Old Series

JANUARY, 1907.

VOL. IV, No. 2  
New Series.

QUEEN'S MEDICAL QUARTERLY is presented to the Medical Profession with the compliments of Queen's Medical Faculty. Contributions will be gladly received from members of the Profession and willingly published.

BUSINESS MANAGER: W. T. CONNELL, M.D.

This number is issued under the supervision of  
Dr. R. W. Garrett.

Communications to be addressed to DR. W. T. CONNELL, Queen's University, Kingston.

Items of interest or original articles for publication solicited from members of the profession.

Office of Publication—Kingston, Ontario.

## \*LIFE AND WORK OF LOUIS PASTEUR.

A STUDY of the lives of the Masters in Medicine or allied sciences is, and ought always to prove, interesting and inspiring to the student of medicine, and the life of Pasteur when so studied will be found to abound in interest, be highly instructive and full of inspiration, especially to those who possess the true scientific spirit. In the course of my inaugural address, delivered in October, 1896, before the Medical Faculty and students of this College, I stated that "the man to whom more than all others we owe Experimental Medicine is Louis Pasteur. To him we owe our present day science of Bacteriology, for he first indisputably established the microbic causation of many diseases. In fact Pasteur's discoveries have not only widely extended the boundaries of physico-chemical and biological science, but have been the means of practically revolutionizing medicine and surgery." The Life of Pasteur, as presented by his son-in-law, Vallery-Radot, is one of the most interesting and entertaining books it has been my good fortune to read for some time. I cannot hope to present the subject in any such manner as it is found in his volumes, but will attempt

\*Annual Medical Faculty Lecture in connection with the history of Medicine, Convocation Hall, December 5th, 1906.

to shortly sketch for you his life and his work, looking at the latter from the medical view point.

Pasteur was born at Dole, in Jura, in 1822, his father, Jean Joseph Pasteur, being a tanner and an old soldier of the Empire. He was a man of fair intelligence, of sound common sense, fully cognizant of the value of education, and who made every effort to secure to his son that education which had been denied himself. Shortly after the birth of Louis the family settled in Arbois, taking charge of a small tannery there, and here Pasteur attended the local college, passing through from the primary grades. The work done at this college would about correspond to our public and high school courses. According to the accounts of his fellow pupils Pasteur showed no exceptional brilliancy at school. He was but an average pupil, he worked carefully, even if slowly, and gradually mastered his subjects. He carried this careful conscientious system of study throughout his entire life, and it has often been remarked of him that he never affirmed anything of which he did not feel sure and was able to back up by careful reasoning. At school he showed a taste for portrait drawing, but this he did not afterward cultivate. At the age of sixteen he had mastered all that was then taught in the local college, and he went to Paris, but only stayed a few weeks, as he suffered so severely from homesickness that his father had to come and take him home. He then went to the college at Besancon, which was some forty miles away, where he could occasionally see his father, as it was the main market place for the tannery. There were some good teachers in Besancon then, and they awakened in him some enthusiasm for study, and especially for general science. In two years he had taken his "Bachelor es Lettres". The work required for this degree would not more than equal the first two years of our Arts course. His standing was only fair, but his careful conscientious work recommended him to the authorities, and he was retained as a preparatory master and given an opportunity to continue his science work. In his twentieth year he went up for his "Bachelor es Sciences" before the Dijon Faculty and secured it, but was marked "mediocre". His ambition at this time was to enter on the science side of the Ecole Normale, which was an institution at Paris for training profes-

sors. After a course of three or more years therein the government would appoint those passing the usual examination or "agregation" to various positions in the local colleges or provincial faculties. (In France, practically, the whole school system is under central government control and appointments to higher grade schools lie largely, or did in Pasteur's time, in the central government). Pasteur, then nearly twenty years of age, came to Paris to take the entrance examination at the Ecole Normale, and stood fifteenth out of twenty-two candidates. He did not enter, but decided to spend a year in further preparation, so as to secure a higher average standing on entrance. He spent this year in general study and attending the "open" or popular lectures then given and which are still given by the Paris professors. It was here that, in listening to the lectures of the noted chemist, J. B. Dumas, he became fired with enthusiasm for this subject and ever after was pleased to call Dumas "Master". At the end of the school year, 1843, when in his twenty-first year, Pasteur again took the entrance examination, ranking fourth. I am certain that the great majority of students would have been content with the rank of fifteenth rather than spend an added year for the honor of taking a higher entrance rank. This in itself gives us a good indication of the character of Pasteur. Thoroughness of preparation, patience in carrying on work and steady perseverance in it, mark him at this time and throughout his later life. It was at this time he adopted as his motto "Laboremus"—"let us work", for Pasteur believed thoroughly in work, and that work was and is the key to unlock the secrets hidden by nature's doors. Probably some of you will have read Prof. Osler's address some few years ago, entitled "The Master Word in Medicine", wherein Osler elaborates on this theme, and I would recommend this to the perusal of any who have not yet had an opportunity of seeing the same.

At the Ecole Normale Pasteur took a special pleasure in the lectures on Chemistry of J. B. Dumas and Balard, the Physics classes of Pouillet, and Mineralogy of Delafosse, though careful not to neglect mathematics and other sciences. Pasteur was successful at the "Agregation" or examination, in 1846, ranking third, but decided to wait and take his degree

of "Docteur es Sciences". It was while working for this that he began to direct his attention to the study of the tartaric acids, especially their crystalline form, as he had decided to make his doctor's thesis on a subject of crystallography. Let me give you Prof. Frankland's (Professor of Chemistry, Mason College, Birmingham,) appreciative description of Pasteur's work on this subject. "The phenomenon which attracted the attention of young Pasteur was the existence of two tartaric acids apparently identical in chemical composition, in chemical properties, in crystalline form, and in fact in every detail excepting alone that the solution of one of these tartaric acids had no effect on polarized light, whilst the solution of the other turned the plane of polarization to the right. Submitting these crystals to the most searching scrutiny, Pasteur found that there were some minute faces on the crystals of the tartrate inactive to the polarized beam, and such importance did he attribute to these little faces that he recognized that their presence relegated the substance possessing them to an entirely different class of objects from that to which belonged the substance possessing them not.

For whilst the crystals of the inactive tartaric acid, which were destitute of these little surfaces, he found were symmetrical, the crystals of the optically active tartaric acid he found were unsymmetrical or disymmetric, as he called it. Now to the symmetric character of the crystals of the one tartaric acid he attributed the inactivity of this tartaric acid to polarized light, whilst with the disymmetric character of the crystals of the other tartaric acid he connected its action on the polarized beam.

In studying these apparently insignificant details, Pasteur found that by crystallizing the inactive tartaric acid in a particular way he obtained two different kinds of crystals, the one set being identical with those of the active tartaric acid already known, whilst the other set were the mirror images of these, and had never been seen by the eye of man before. The young philosopher at once drew the conclusion that if the disymmetry of the known tartaric acid caused it to turn the plane of polarization to the right, the disymmetry of this new tartaric acid would turn it to the left.

With infinite pains Pasteur picks out from the mixture the individual crystals belonging to each of the two types, and arranges them in two heaps; each of these heaps of crystals was then separately dissolved in water and the two solutions submitted to polarized light. In accordance with his anticipation, whilst the solution of the crystals of the known form was found to turn the plane of polarization to the right, the solution of the new crystals, the mirror images of the old, was found to turn the plane through precisely the same angle to the left. This might have appeared to many a trivial discovery only, but such was not Pasteur's opinion of it, for rushing from the laboratory in a fever of excitement and meeting a fellow assistant in the corridor he embraces him and exclaims, overcome with emotion, 'Je viens de faire une grande decouverte'. And such in truth it was, although almost his first discovery, and the one which has the least contributed to the general celebrity of its author, it is nevertheless almost impossible to over-estimate its importance, in view of the remarkable fertility of the researches to which it has directly and indirectly given rise."

I need not dilate on the value of these researches to the chemistry of organic substances, but need simply say that this discovery is the basis of the research into the special distribution of the atoms in the molecule, explaining isomerism, etc. But Pasteur's study of the tartaric acids did not end here fortunately. Ordinary tartaric acid is readily fermentable, and Pasteur studied the effects of fermentation of the various tartaric acids and made the remarkable discovery that while the right-handed (to polarized light) tartaric acid readily fermented, the inactive (racemic) acid only partially fermented, the residue being left-handed tartrate which refused to ferment. Thus he established that the atom grouping of the molecule makes a very important difference physiologically, and this has since been widely recognized in many organic substances. From a study of chemical changes effected by fermentation Pasteur was led to study the cause of fermentation itself. At this period fermentation was not looked upon as a biological process, but as a purely physical one, the predominant idea being that of the chemist Liebig, who was at this time (1850-1860) in his zenith. Liebig taught that "the ferment was an extremely alterable organic substance

which decomposed, and, in decomposing, set in motion, by the rupture of its elements, the molecules of fermentable matter". Thus in the ordinary yeasty growth in syrupy solution undergoing fermentation, the change was not due to the vital activity of the yeast, the only influence that the yeast would possess would be that its dead cells, in decomposing, would impart the necessary motion to the sugar molecules to disrupt them and transform them into alcohol. It was recognized by many observers that bacteria, yeasts, moulds, etc., were often found in fermenting and decomposing liquids, but it was held that these were the result of spontaneous generation, having nothing whatever to do with the decomposition, but were simply some of its products.

Now these studies on tartaric acid and its fermentation were spread over a number of years, being taken up when duty permitted. In 1847 Pasteur took his degree of "Docteur es Science", and after acting for some time as an assistant, in 1849 was appointed Professor of Chemistry in the Straasburg Faculty, which position he occupied till end of 1854. It was while at Straasburg that Pasteur worked out fully the relationship of the tartaric acids and began the study of the causes of fermentation. He also married shortly after going to Straasburg the daughter of the Rector or President of the Faculty, and he seems to have been particularly happy in the choice of his helpmate. Early in 1855 he was appointed Dean and Professor of Chemistry in the new Faculty of Science being organized in Lille. This city was the centre of the manufacture of beet root alcohol, and also produced much wine and vinegar, so that it was peculiarly well situated for the practical study of fermentations. Let me point out that the proper control of fermentation processes was, and is, of vast practical importance in the wine, beer, vinegar and other industries, including in our province cheddar cheese-making, and that before Pasteur's time, while much was known practically about methods of fermentation, nothing was known as to reason which caused, say, one brewing of beer to be excellent, while another brewing, fermenting similarly, soured in the cask, grew flat or even became ropy.

∴ Pasteur showed that ordinary fermentative and putrefactive

processes were caused by and occurred only in the presence of certain yeasts or bacteria as case might be. Further, he showed that without these special yeasts, or bacteria, being present and developing, a material, no matter how fermentable or putrescible, did not undergo any change. Again, that, when a fermentation went wrong, it was due to entrance and growth of other and different forms of organisms. The experiments brought forward to prove these points were exceedingly ingenious and convincing. It took but a short time indeed to convince the brewers of the practical value of his findings, and all large breweries are now equipped with a microscope for a study of yeast and detection of its impurities, and, speaking from my knowledge of English breweries, the use of the microscope is a very important item of training for brewers there. I cannot say the same for this country, as certainly, in so far as my knowledge goes, the microscope is not an instrument seen in our breweries. Perhaps if it were more used there would be a better brand, but it gives us bacteriologists a chance to straighten things out.

It took years, however, and the aid of Prof. Tyndall's decisive experiments, to break down the opposition that was brought to uphold the old doctrine of spontaneous generation. Let me give you a translation of Pasteur's own conclusions on this matter:—"No, there is to-day no known circumstance which permits us to affirm that microscopic beings have come into the world without germs, without parents like unto themselves. Those who hold that they do have been the plaything of illusions, of experiments badly made, tainted with errors which they have not known how to perceive, or which they have not known how to avoid. Spontaneous generation is then a chimera".

These researches marked out Pasteur as a remarkably acute observer with great clearness of mind. His writings are marked for their lucidity of expression, and in the debates produced by them in the French scientific societies Pasteur proved himself a keen controversialist, absolutely fair to his opponents, but demanding of them proofs of their statements, not mere words. "You say much but prove nothing", was his only reply to one opponent who endeavored to drown his demonstrations in a torrent of words.



Pasteur's work on fermentation and putrefaction set many other investigators to work, and amongst these the one to whom surgery owes so much, viz., Lister. Many men had previously pointed out that there was a close resemblance between fermentative processes and infectious disease, and, when Pasteur proved that fermentation depended upon the vital activity of microbes, Lister began to study wound secretions and had no difficulty in detecting numerous bacteria in these discharges. As Pasteur had shown that the microbes of fermentation were present in the air and surroundings of the fermentable material, Lister concluded that these wound bacteria were in like manner derived from the air and surroundings of the patient, and he then set himself the task of preventing the entrance of bacteria, or preventing their development in the wound. We do not employ to-day the exact system Lister devised, as it has been greatly improved upon with our more exact knowledge of the life history of the wound infecting bacteria, but our present methods are a direct outcome of his. The antiseptic and aseptic system of wound treatment has, with anæsthesia, made modern surgery, and proved one of the greatest blessings and boons to suffering mankind. One can only form some adequate idea of the value of Lister's work when it is remembered that the average mortality from the general run of operations ran from twenty to fifty per cent., and from the saying of the French surgeon, Vulpian, "The merest pin prick is an open door to death". Lister always attributed his basic ideas to Pasteur, freely crediting him with the honor, as witness the following extracts from his address at the Pasteur Jubilee in 1892 :—"Truly there does not exist in the entire world any individual to whom the medical sciences owe more than they do to you. Your researches on fermentation have thrown a powerful beam which has lightened the baleful darkness of surgery, and has transformed the treatment of wounds from a matter of uncertain and too often disastrous empiricism into a scientific art of sure beneficence. Thanks to you, surgery has undergone a complete revolution, which has deprived it of its terrors and has extended almost without limit its efficacious power".

Pasteur's studies on fermentation, begun at Lille, were

continued by him on his transfer to Paris in 1857 as Dean of Scientific Studies in the Ecole Normale, which position he held till 1867, when he became professor of chemistry at the Sorbonne. In 1865 Pasteur entered upon another phase of work which was destined to be of great practical importance and a stepping stone to very important discoveries in the causation of infectious diseases in animals and man. At the request of the Government Pasteur began the study of phebrine, or silk worm disease, which was completely destroying the silk industry of France, the annual loss running over twenty million francs. Pasteur and his assistants spent nearly five seasons (only the worm hatching seasons could be spent in study of this disease) in the study of the causes and prevention of phebrine and, incidentally, another disease, which occasionally broke out, called flachery. By this time Pasteur, who had very early found the cause, worked out the life history of the parasite and laid down the rules which, when followed, would secure worm broods free from infection. He found that the presence of the parasite was manifest by the development of a peculiar corpuscle in the bodies of the moths, and that the eggs laid by these moths were always more or less infected, depending upon the number of corpuscles in the moths. Pasteur, after the moths had emerged from the cocoons and had mated, placed each female on a piece of linen, where it laid its eggs. The moth was then pinned up in a corner of the same square of linen, where it dried up, and later in the season the dried moth was moistened in a little water, ground up in a mortar, and the paste examined microscopically for corpuscles. If any were found the seed was burnt. The microscopic examination proved a very simple matter, requiring the use of only moderate power lenses, and the method of examination could be learned by any average individual. The success of his system was immediate and earned for him the gratitude of all engaged in silk industry.

While Pasteur had been honored by many learned societies already, besides receiving the ribbon of the French Legion of Honor, the Government now voted him an annuity of twelve thousand francs for his services. About this time, in 1868 to be precise, the German University of Bonn gave Pasteur the

degree of M.D., *honoris causa*. This was the only medical degree ever possessed by Pasteur, and he did not retain it long, but sent it back, like a true patriot, after the Franco-German war.

In 1877 Pasteur was asked by the government to take up the study of anthrax or splenic fever. This disease was one of serious moment in many departments of France, destroying from ten to fifty per cent. of the sheep, and often attacking cattle, horses, pigs, and even man at times. Pollender and Davaine in 1849 and 1850 had detected rods in the blood of sheep dead of anthrax, but had not comprehended the value of their discovery. Davaine again, in 1863, after Pasteur's publications on fermentation, had re-examined sheep dead of anthrax and now claimed the rods to be the cause of this disease. Pasteur in his investigation rapidly confirmed Davaine's results and set himself to work to study the life history of the bacterium. He was able to secure cultures of the bacterium and after many generations showed that these cultures were able to transmit the disease. He showed that the bacterium was a spore-bearer, and that the sanious discharges during the illness of the animal, and the bodies of animals, were the source of soil infection, the spores persisting in the soil, the animals being infected by ingesting spores through abrasions of the digestive tract. The prophylaxis of the disease at first looked somewhat hopeless owing to the extensive soil infection, but a little later a discovery made in pursuing a study of a disease of fowls made Pasteur endeavor to provide a vaccine for the disease. Let us consider what this discovery was. In 1879 Pasteur undertook the study of chicken cholera, an acute epidemic fowl disease, and soon detected the causal bacillus, and was able to secure cultures and with them reproduce the disease. In this work (Pasteur at first used only liquid media) some flasks of culture were overlooked and allowed to lie unused for some weeks. Some fowls were inoculated from them, and to Pasteur's surprise these fowls recovered. These fowls were then inoculated with fresh active virus and proved refractory. In his address, when as Dean he opened the Faculty of Science at Lille in 1855, Pasteur made use of the phrase, "chance only favors the mind which is prepared". Pasteur's

mind seized the facts presented by the above experiment. He had prepared a vaccine, or attenuated virus, for chicken cholera, and he hastened to confirm this observation. Could vaccines be prepared for other diseases? Could they be prepared for anthrax? Pasteur soon found that the age of anthrax cultures did not cause any alteration of their virulence. This he attributed, and rightly so, to their being spore-bearers. Various methods were tried, when it was found that cultures grown at 108.5°F. did not form spores, while the bacillus itself grew. Inoculation of cultures kept at this temperature for some days gave only a slight reaction, and, when this inoculation was repeated, using for the second inoculation cultures grown for a shorter period, it was found that sheep were then quite refractory to inoculation of virulent bacilli or to the natural disease. This discovery was immediately put into use on a large scale and was found to work out perfectly, so that vaccinated flocks were now immune. This system is to-day employed in all anthrax infected countries, including our own.

Pasteur next turned his attention to rouget, or swine erysipelas, and was soon able to discover its cause and prepare a vaccine against this disease. As one of the rewards for his services in checking the spread of diseases of animals, Pasteur's annuity from the Government was in 1884 increased to twenty-five thousand francs per year.

In 1880 Pasteur's attention began to turn to rabies or hydrophobia in dogs. His first results were unsatisfactory, but in 1883 and 1884, being able to give more attention to the investigation, he discovered that the virus is present particularly in the medulla of rabid animals, but did not yield to his methods of cultivation, nor could he discover anything by microscopic examination. He found, however, that he could transfer the disease by inoculation of animals with the saliva, but more certainly with the medulla of a rabid animal, and that inoculation with the latter under the dura mater was almost always successful. As Pasteur himself put it, "Since this unknown being is living we must cultivate it; failing an artificial medium we will use the brain of living animals". By inoculating the fresh medulla under the dura of rabbits and passing from rabbit to rabbit, the activity of the virus increased till the rabbits in-

variably died on the seventh day, thus Pasteur secured his fixed or strong virus. He also found that on drying the cord in a sterile cool atmosphere over caustic potash the virus in such cords gradually weakened, so that cords dried for fourteen days no longer gave rise to disease when inoculated. This, you will see, is somewhat along the same lines as the attenuation of the cultures of chicken cholera by keeping the culture. Pasteur then tried the effects of repeatedly inoculating dogs with medulla, beginning with cords dried fourteen days, and day by day using cords dried one day less, till finally the fresh active medulla was used. The dogs then proved refractory even to subdural inoculation or to bites by known rabid animals. Pasteur had conquered this disease in so far as rendering animals refractory, but rabies is a rather uncommon disease, and it would be out of the question to attempt to stamp out rabies by immunizing all animals. Pasteur's next step was to find if he could, after an animal was bitten, render it refractory to the disease, just as when one is exposed to small-pox one gets at once (or should get) vaccinated to prevent the development of the true small-pox. Pasteur found that this method succeeded in protecting such animals from becoming rabid when inoculations were started shortly after the bite. The next step was of course inevitable; would this method succeed in protecting the human subject when bitten. Pasteur soon had an opportunity to put the matter to the test, for early in 1885, almost before his experiments on the protection of dogs were complete, a young Alsatian boy, badly bitten, was brought to him with a request that he do what he could. After consultation with some medical colleagues, and with their approval, Pasteur, with much concern, undertook the task and gave the boy the inoculations; rabies did not develop. Some months after another patient came to him, of his own free will, who had been bitten five days previously. This patient also received the inoculations and remained free from the disease. Thus was firmly established in human medicine the first instance where along purely experimental lines a vaccine was worked out for a disease, and this as a discovery must take equal rank at least to Jenner's discovery of vaccination against the small-pox.

One can note the orderly sequence of Pasteur's work here, building up a good foundation and thereon rearing a superstructure perfect, because experimentally tested in all its parts. As Woodhead so well remarks, "He grudged no labor, spared no time nor energy in filling in the gaps in each stage of the work as he advanced, and never took a step forward till he was perfectly certain of the solidity of the ground on which he rested. This it is that makes his work so reliable and assures to it a permanence that can be hoped for the work of but few".

The immediate outcome of the rabies work of Pasteur, in so far as he was personally concerned, was the organization of a service for the prophylactic treatment of those bitten by rabid animals, and to this Pasteur and his assistants devoted their energy for some years. As an immediate outcome, too, there was instituted a public, in fact, international, subscription for the erection of an institute for rabies and for infectious diseases generally of man and animals. Over two and one-half million francs were subscribed, and in 1888 this institute, known as the "Pasteur Institute", was opened with much eclat. Pasteur was now sixty-six years of age, and in his address at the opening of the Institute makes this a matter of regret. "Alas, mine is the bitter grief that I enter it, a man vanquished by time, deprived of my masters and even my companions in the struggle". But Pasteur knew that he was building not for the present alone but for the future, and his pupils have indeed increased their master's and their own fame. Let me but mention Duclaux, Roux, Metchnikoff, Yersin, Haffkine, Calmette, Widal, Chantemesse and Nocard as names known in all countries to students of scientific medicine.

While Pasteur's own active labors were over he still took an active interest in the work of the Institute and had the pleasure of seeing the assured success of his treatment of hydrophobia, together with the wonderful growth of institutes of bacteriological research the world over, more especially those of Germany, where the elaboration of technical details alone have marvelously advanced bacteriological science. In 1892, in his 70th year, there was organized an international Pasteur Jubilee, at which Lister was the main British representative, and indeed shared with Pasteur the honors of the occasion. Let me ex-

tract a few more sentences from Lister's address on this occasion, as expressive of the debt medicine owes to Pasteur. "Medicine is not less indebted than surgery to your profound and philosophic studies. You have raised the veil of mystery which had throughout the foregoing centuries covered infectious diseases. You discovered and demonstrated their microbic nature. Thanks to your initiative, and in many cases to your own special labors, there is already a host of these pernicious diseases with the causes of which we are perfectly acquainted. "*Felix qui potuit rerum cognoscere causas*". This knowledge has in an astonishing degree perfected the diagnosis of these scourges of the human race, and has indicated the path which must be followed in their prophylactic and curative treatment. In this path your beautiful discoveries as to the attenuation and intensification of viruses and preventive inoculations serve, and will always serve, as a guiding star. As a splendid illustration I may mention your researches on rabies. Their originality in the province of pathology as well as in that of therapeutics was so striking that at first many medical men felt some distrust. As for myself I was too well acquainted with the clearness of your genius, the scrupulous caution of your inductions, and your absolute integrity, to share for a moment these ignoble sentiments. My confidence has been justified by the event. With the insignificant exception of a handful of ignorant persons, the whole world now recognizes the greatness of what you have achieved against that terrible disease. You have supplied a means of diagnosis which surely dispels the anguish of uncertainty which formerly haunted any one who had been bitten by a healthy dog suspected of being rabid. That alone would have been enough to assure the everlasting gratitude of mankind. But by your wonderful system of antirabic inoculations you have been able to pursue the poison after its entrance into the body and to conquer it there. Monsieur Pasteur, infectious diseases constitute, as you are aware, the great majority of the diseases which afflict the human race. You can therefore have no difficulty in understanding why medicine and surgery hasten on this occasion to lay at your feet the deep homage of their admiration and their gratitude."

Pasteur was not fated to live to see the more recent advances in bacteriology, such as the study and use of toxins and antotoxins, and the work that has grown out of them. While much of the credit of these was due to the German school, especially Koch and Behring, yet the pupils of Pasteur have not been backward, as witness Roux's work on the antitoxins, especially diphtheria, Haffkine's work on cholera and the plague, Roux and Yersin's work on plague and plague antitoxin, Widal's work on typhoid, Calmette's work on snake venoms, Metchnikoff on the defensive action of the body cells, especially the leucocytes, also on syphilis, Nocard on pleuropneumonia and other diseases of animals, Duclaux on milk, cheese, etc.

Pasteur for the last two or three years of his life suffered from attacks of uraemia, and in one of these he passed away surrounded by his family and his assistants of the Pasteur Institute. He died on Sept. 28th, 1895, in his 73rd year. His funeral was a public one and attended by the President of the Republic as a mark of respect of the nation to a man whose genius had done so much for France and for humanity. His work will last as long as the history of medicine, and time will but make his achievements shine with a more brilliant lustre. As Renan has so eloquently said, in summing up his achievements, "His scientific life is like a luminous trail in the great night of the infinitely little, in those ultimate abysses of being where life is born".

W. T. CONNELL.



## GONORRHOEAL OPHTHALMIA.

---

**G**ONORRHOEAL Ophthalmia, Purulent Ophthalmia, Acute Gonorrhoeal Conjunctivitis or Blennorrhoea. By these terms we mean an acute contagious disease of the conjunctiva, due to a specific germ, the gonococcus of Neisser, occurring either in infants within a few days of birth, in which case we designate it ophthalmia neonatorum, or occurring in adults and then known usually as gonorrhoeal ophthalmia or purulent conjunctivitis.

I have chosen this disease as the subject of this article, not because it is a rare or unknown condition, but because it is a malady universal in distribution, the cause, according to Fuchs, of at least ten per cent. of all cases of blindness in Europe, and, though strictly speaking, one may classify it among the preventable and curable affections of the eye, yet a too large proportion of the failures, or unfortunate results are due to the ignorance, neglect or carelessness of the general medical practitioner.

Occurring in the newborn, purulent ophthalmia is, in nearly all cases, due to infection of the eyes of the child with gonococcus-laden secretion from the vagina of the mother and which gets into the infant's eyes as it passes along the birth canal on its initial journey into the external world. This is especially liable to occur in slow and protracted labors, or in face presentations, in which cases the lids are apt to be pulled open and so allow the vaginal secretion to come in direct contact with the conjunctiva. In other cases the secretion gets on the child's lids and face, and from there is probably carried to the conjunctiva by the water of its first bath, or through the medium of the sponge used to wipe it, or when it opens its eyes for the first time.

Besides infection with gonorrhoeal discharge from the vagina, the child's eyes may become severely inflamed from infection at birth with the colon bacillus through contact with bowel matter. Bacterial examination of the conjunctival discharge shows also that in a few cases the Koch-Weeks bacillus is the infecting agent, while in others Klebs-Loeffler bacillus, pneumococci, extra cellular diplococci and diplococci intracel-

lularis meningitides have been found by different observers. A bacteriological examination of fifty-six cases clinically diagnosed as gonorrhoeal ophthalmia which have come under my observation and care, during the past eight months, shows that the gonococcus of Neisser was present in fifty-one; in the other five extra-cellular diplococci only being found. Just what is the pathogenic nature of these extra-cellular diplococci is very doubtful. A possible theory is that they are degenerate forms of gonococci, as one almost invariably finds them present in convalescing cases of gonorrhoeal ophthalmia in which the secretion has almost ceased; and cases in which they are the only germs found present all the clinical features of mild gonorrhoeal infection. Morphologically, however, they do not correspond to the biscuit-shaped gonococcus, but resemble more the streptococcus or staphylococcus. They differ from true gonococci also in their arrangement, or distribution, as observed in smear specimens, being, as the name implies, wholly extra-cellular. The gonococci are found always arranged in pairs, as diplococci, and distributed throughout the specimen in clusters, some lying free in little heaps, others lying crowded together in the pus cells, while still others are within the epithelial cells. This distributive arrangement of the micro-organisms may be said to be distinctive of gonococcus infection.

These non-gonorrhoeal cases of ophthalmia neonatorum, while only a small proportion of the whole, are an important consideration from a medico-legal point of view, and as affecting the veracity and virtue of parents. It is very important, therefore, that the medical practitioner should always confirm his clinical diagnosis by a bacteriological examination of the conjunctival secretions before deciding that any case is gonorrhoeal in origin and in the same breath branding the parent, either father, mother, or both, as being "facile morale".

Clinically the disease runs the same course and has the same symptoms in adults as in infants, though in the latter the symptoms are much less severe and corneal involvement of less frequent occurrence. The onset is that of an acute inflammation. There is first a period of incubation, lasting anywhere from three hours to three days. With infants the mother or

nurse will tell you that on the third day, sometimes on the second or fourth, the trouble first manifested itself. The lids then become red and injected, hot and swollen with inflammatory infiltration, which, in such a loose cellular structure, progresses to such an extent that the patient is unable to open them, and it is with difficulty that the physician can separate them far enough apart to see the cornea. At the same time there is a marked swelling of the conjunctiva, both palpebral and ocular. In severe cases the chemosis may be so great that the cornea is almost completely hidden by it, or appears as if it set in a fiery red crater. In some cases it may even protrude through the palpebral fissure. The appearance of the conjunctiva is quite characteristic, in most cases being intensely injected and red. The swelling, being due to cellular infiltration of the tissues, is hard, tense and rough or granular looking on the surface. This is especially so in the palpebral part of the cul-de-sac, and serves as a differential point in diagnosing the condition from oedematous swelling of the conjunctiva, due to other infections, such as pneumococcus, or Koch-Weeks bacillus, in which cases the conjunctival surfaces are seen to be smooth, the redness not so intense, and the infiltration serous rather than cellular. For a day or two there is not much discharge other than a little sero-saneous secretion. This is soon succeeded by a profuse purulent discharge, greenish-yellow in color and of a consistency like thick cream. There is considerable pain and tenderness present in and about the eye, the preauricular gland is usually swollen and tender, and there is considerable local heat and some general rise of temperature. As the secretion sets in, the swelling of the lids begins to subside, as noted by the reappearance of wrinkles in the skin. Simultaneously the conjunctival swelling begins gradually to recede. At this stage the secretion of pus is very profuse and the eye has an almost characteristic appearance. The lids are still swollen and red, and a constant stream of thick creamy pus oozes out through the centre of the palpebral fissure and trickles down the face. This usually continues, gradually subsiding all the time, for from one to three weeks, during which time the swelling of the lids and conjunctiva soften and recedes to its normal condition.'

In severe cases, instead of a complete subsidence of the process, there may result a chronic condition of the lids and conjunctiva, persisting for six or eight weeks, in which case the conjunctiva in the cul-de-sac remains reddened, slightly thickened and granular, or velvety in appearance, but no discharge, or very slight discharge, being present.

The most dreaded result or complication of gonorrhoeal ophthalmia, in either adult or infant, is involvement of the cornea. Neglected, or left to itself, or improperly treated, according to Ball, the condition will result in blindness in about eighty per cent. of the cases, the result of ulcer and sloughing of the cornea.

Corneal involvement may be due to several, or a combination of several, causal factors. Physiologically and anatomically, the cornea is known to be nourished by the lymph circulating in the lymph spaces of the *substantia propria* or stroma, and which is derived from the numerous capillary blood vessels about the corneal margin. Where there is an intense inflammatory chemosis, or swelling about the margin of the cornea, it naturally follows that the pericorneal vessels will be much pressed upon, with the result that the nourishment of the cornea will be correspondingly interfered with by the direct shutting off of its source of supply through these vessels. The cornea, is, as it were, strangulated by the chemosis. Added to this we have the direct chemical action of the toxins generated by the gonococci and the destructive influence of the germs themselves, already greatly lowered in vitality.

Of the fifty-six cases of blenorrhoea treated at the Manhattan Eye and Ear Hospital during the past eight months there were fifteen adults, all males, whose ages ranged from twenty to forty; five children of ages from two to ten; thirty-six infants, the oldest of whom was eight months. The gonococcus of Neisser was found in the secretion from the eyes of all adults and children, and in all infants but five, in which cases the bacteriological report was extra-cellular diplococci, no gonococci being present in the smear specimens.

Of the thirty-six infant cases, eleven resulted in permanent injury to one or both eyes, as the result of corneal ulceration. Of these eleven, three went on to perforation of the cornea and

complete anterior staphyloma or protusion and bulging of the iris through the whole cornea. In each of the perforation cases the eyes had been neglected by the parents and received no medical attention, in one case for three weeks, in another four weeks, and in the other six weeks. In all cases where ulceration of the cornea occurred the eyes had been without proper surgical attention for periods varying from three days to four weeks previous to admission into hospital. In no case where the infant's cornea was perfectly clear on admission did ulceration take place subsequently. In twenty-six of the thirty-six babies treated, namely, in about seventy per cent. of the cases, the disease first manifested itself clinically by redness, swelling and discharge from the eyes before the fifth day; five being first noticed on the second day, fourteen on the third, and seven on the fourth.

In the other cases the disease was not manifest for periods varying from ten days to eight months, showing that infection occurred subsequent to birth. It is quite conceivable that the germs may have lain dormant in some of the ten day cases, but such a theory is scarcely tenable in the two and eight months babies.

It is noteworthy in the case of the adults that all the patients were males, and each one gave a history of having gonorrhoeal urethritis coincident with, or very shortly previous to, the onset of his eye trouble, which tends to the conclusion that auto-infection, or rather infection from their own dirty fingers, occurred in each and all of these cases. The adult cases were all unilateral, the infants mostly bilateral. In five of the twenty adult cases the cornea ulcerated and perforated, and complete anterior staphyloma, with permanent loss of sight, resulted. Four of these patients had allowed the condition to run from five to seven days without treatment, and on admission to hospital the cornea was already extensively involved. In the fifth case the patient had been treated by a family physician for five days previously, by having his eyes continuously bandaged. When he presented himself for treatment at the hospital the discharge was very profuse, and the whole cornea was found to be one large sloughing mass, the result no doubt of its five days' continuous pus bath, due to the damming up of the secretions by the bandages.

In four other adult cases simple corneal ulcerations took place, all of which recovered with a slight impairment of vision in the shape of corneal opacities. One of these was particularly interesting as showing the harmful influence gonococci-laden pus has when allowed to lie continuously in contact with the cornea. In this instance the condition had been allowed to run for five days without medical attention. There was only a very moderate amount of swelling and chemosis of the conjunctiva. The discharge was profuse, but as the lids were not intensely swollen the pus escaped readily through the half open palpebral fissure. The whole lower half of the cornea, however, as high as it was covered by the half closed lower lid and which was continuously bathed in the pus which filled the lower cul-de-sac, was already eroded and ulcerating. The line of demarcation between ulcerated and clear glistening cornea exactly corresponded to the line where the half open lower lid had acted like a dam in holding the pus in contact with the cornea. Under treatment, which consisted chiefly of cleansing almost continuously, iced cloths for twenty minutes every hour, atropine four grains to the ounce three times a day, silver nitrate ten grains to the ounce once a day, the ulceration ceased and healed up nicely, leaving, however, a permanent opacity over the affected area of the cornea. The effect of treatment in this case was very marked, the ulceration apparently ceasing and the healing process starting almost at once.

Another ulceration case was of special interest as illustrating the effect of the intense chemosis of the conjunctiva in shutting off the corneal nutrition and so leading to ulceration. The patient was a boy seventeen years of age, and on admission, three days after onset of the disease, there was very marked swelling of lids and conjunctiva, but only a very moderate amount of discharge. The ocular conjunctiva was swollen up, tense and hard, and so encroached on the cornea that only a very small area of corneal surface was left exposed. This intense chemosis remained for about forty-eight hours, during which time it was relieved three times by free scarification. As the swelling subsided and the overhanging conjunctiva receded from the cornea above, it revealed an ulceration area about two mm. square close to the corneal margin, in the upper vertical

meridian. The swelling continued to recede, but the secretion became even more profuse. The ulcer, however, began to heal almost at once. The position on the upper edge of the cornea, and almost continuous cleansing treatment, kept its surface free from constant contamination, but the restoration of its source of nourishment coincident with the subsiding of the chemosis seemed to be the greatest contributing factor to its rapid healing.

As regards the question of relative virulence of the disease in infants as compared with adults, it is undoubtedly very much more virulent in the latter in nearly all cases. In the twenty adult cases nine resulted in corneal involvement, of which five eyes were lost entirely. The longest any of these were neglected was only one week, most of the patients presenting themselves within two or three days of the onset of symptoms. Being adults they naturally have enough sense to seek treatment. Of the thirty-six babies, on the other hand, eleven had corneal involvement, but only three eyes were lost, and yet, in nearly every instance, the infant had been neglected surgically for a much longer period than were the adults. In the infant cases that ulcerated and recovered the average length of time neglected was about ten days. In one case the discharge began in the infant's eye on the third day after birth, was allowed to run for three months without medical attention, and yet on admission to hospital both cornea were still clear, the bacteriological examination showing gonococci still present. As compared with this among the twenty adults, all those cases neglected for five days, or more, had severe corneal involvement develop. A possible explanation of this difference in virulence may be in the source of infection. In adults as a rule the infection is direct from an acute gonorrhoeal urethritis, while in infants the infection is much more likely to be from an old chronic or long standing vaginitis, in which the virulence has become much attenuated.

As regards treatment, in infants prophylactic measures are of the utmost importance, and too much cannot be said in praise of the Credè method now almost universally in vogue. When there is the slightest suspicion of gonorrhoea in the mother vaginal antiseptics should be used freely before confine-

ment, and immediately after birth the child's eyes should be washed with a weak bichloride solution (1-8000), or a six per cent. solution of boric acid, after which a drop of 10 grains to ounce silver nitrate solution is to be put in each eye. This may be neutralized after a moment or two with a few drops of normal salt solution.

In adults many cases would be prevented if patients with gonorrhoeal urethritis were always specially warned by their physician of the great danger of blindness resulting from having any of the pus in any possible manner in contact with their eyes, either through the medium of dirty fingers, dirty towel, handkerchief or other contaminated article. When only one eye is affected the other should be protected by a Buller's shield. This is readily made by setting a common watch glass in adhesive plaster cut to fit along the forehead and down the centre of the nose, particular care being taken to have it securely sealed along the side of the nose. Here the plaster may be reinforced with collodion.

The curative treatment in any case, whether in infant or adult, consists chiefly in persistent and thorough cleansing and the application of strong antiseptics. While there is any swelling of lids or conjunctiva iced cloths are to be applied. In infants this can only be tolerated for from ten to twenty minutes every hour, sometimes two hours. In adults almost constant ice may be applied, one half hour on, one half hour off. The pus must be washed out of the cul-de-sac thoroughly, which in some cases means every five or ten minutes. To do this continually throughout the twenty-four hours will require the constant attention of a day and night nurse. In washing the eye a weak solution (1 to 8000) bichloride may be used, or more commonly a saturated solution of boric acid. A rubber tube syringe is the best for ordinary use, and great care must be taken not to injure the cornea in any way, either by touching with the end of the syringe or allowing the stream to strike directly on its surface.

Once or twice a day the conjunctiva of the everted lids is to be painted with silver nitrate solution. In infants two per cent., or very rarely four per cent., is the strongest solution used, usually one per cent. or five grains to the ounce being sufficient.



Argyrol, twenty-five per cent., may be dropped into the eye every hour, or even every half hour, but it is very doubtful if it has any effect whatever; it certainly does no harm. Where the swelling is very extensive, and the lids not able to be separated, canthotomy should be done at once. This consists simply in cutting the outer canthus with scissors out to the bone, the conjunctiva and skin being then united with sutures.

When there is intense chemosis, with danger to the cornea from the pressure interfering with its nutrition, scarification of the conjunctiva is of great benefit. Cocainize the eye and with a Graefe, or other similar knife, make a large number of radiating incisions in the ocular conjunctiva around the cornea, allowing it to bleed as freely as it will. This procedure gives great relief for a time.

Should the cornea become hazy or ulcerate, atropine, half a grain to the ounce for infants, and four grains to the ounce for adults, three times a day, is to be used, and hot water applied for twenty minutes every hour or two. Ulceration of the cornea does not contraindicate the use of silver solutions. The silver should be applied directly to the everted lids, care being taken not to touch the corneal surface. The excess is washed out with normal salt solution. Later on in the disease, when the discharge has ceased, but the palpebral conjunctiva still keeps red and thickened, an astringent such as the alum stick may be used with benefit.

G. F. DALTON.

Manhattan Eye and Ear Hospital, New York.

---

#### AMENDED DIAGNOSES.

---

ON Wednesday, April 11th, 1906, I received an urgent call to see a female, aged seventeen years. She was five miles away and, the messenger stated, was bleeding from the nose in an alarming manner.

I found his statement to be no exaggeration. She was still having hemorrhage from the left naris when I arrived. Her condition, and the large amount of blood, made the parents' statement, that it poured from both nares and the mouth, seem credible.

That she had scarlet fever a few weeks previous, and some throat trouble subsequently, comprised the available history.

The existing hemorrhage was controlled by adrenalin solution, some of which I left, with instructions to keep her in bed and give milk freely. During the next twenty-four hours she had two slight hemorrhages, which were promptly checked by the adrenalin, and one sudden gush of a large amount of blood.

On my next visit I discovered some ulceration of the nares, and, by digital examination, an oval tumor about the size of an almond, long axis up and down, at the left side of the pharynx; its middle on the plane of the palate. It had not the character of fluid contents, did not pulsate, and the tissues covering it seemed intact. Though, with the mirror, I could not see enough trouble in the nasal passages to account for more than the moderate degree of hemorrhage which existed when I first saw her, I discovered no other source and carefully plugged the nares.

Next day I took Dr. Leonard with me. (He was the family physician and had been away when I was called, and had seen the patient the previous Friday for sore throat, which did not seem to be anything serious.) There had been a bad hemorrhage from the mouth just before we arrived.

While we were examining her there was a sudden and appalling hemorrhage. Passing my finger rapidly about the naso-pharynx, hunting for the source, I found an opening which admitted the index finger to the first joint. It was high up to the left, above the situation of the tumor I have mentioned. This completely controlled the hemorrhage, but it immediately returned upon the slightest withdrawal of the finger.

Dr. Leonard made a firm tampon, the diameter of my index finger, which I got into place. I remained with the patient all night. At three o'clock a.m. I noticed some difficulty about the throat, and my finger met the tampon in the

fauces. A long clot slipped out of the opening as I got my finger there and prevented more than a slight loss, but it now took the finger to the second joint. I succeeded in packing gauze into the cavity which extended downward and outward. Evidently the tumor I felt had been caused by a clot of blood in the cavity now occupied by the gauze. Dr. Leonard relieved me in the morning, and though there was no more hemorrhage she died at 9:30 a.m. There was no post mortem, but there can be little doubt we had to do with a pharyngeal phlegmonous abscess, with destruction of the internal carotid.

By inquiry I learn that in the last fifty years there have been two similar cases in the Manhattan Eye, Ear, Throat and Nose Hospital with same results, in one of which the common carotid was tied.

In this case there was, undoubtedly, hemorrhage from the nose, but we cannot but regret that the full diagnosis was not earlier made.

It is well that all cases of incomplete diagnosis do not have such a tragic outcome, and after the reader's heart has been suffused by sympathy with his brother practitioners, and for the patient cut off in the early bloom of womanhood, he may forgive the following infliction:—Some years ago I was called to see a multipara, who was suffering from what she described as labor pains. She was four months pregnant. Upon examination I found far back in the pelvis an os having a perimeter of about three inches, and concluded that a miscarriage was impending. Upon recurrence of pain I found nothing protruding, as would be expected when there is so much dilatation. Continuing the examination I found this os to be firmly closed by pressure of the uterus against the sacrum. There was an unusual sulcus just posterior to the pubic bones, which was explored with difficulty, owing to the firm impaction of the uterus which existed. Here I found also an os not dilated. I did not say—

“Janus am I, oldest of potentates,  
Forward I look, and backward and below  
I count as god of avenues and gates”,

but making a more careful examination of the perineum I only said “You had a severe tearing during some childbirth”. The

patient replied, "Yes, with my first child. I've had no control of my bowels since". With little trouble I restored the uterus to its proper position and pregnancy went to full term.

An impacted, retroverted, gravid uterus, resulting in threatened abortion, is somewhat common; but accompanied by complete laceration of the perineum, with the opening into the rectum situated where the os uteri might be expected, is unique.

The patient, though mother of eleven children, never had a miscarriage.

G. C. TREMAINE WARD.

Napanee, Dec. 13th, 1906.

---

#### A CASE OF TYPHOID WITH UNUSUAL COMPLICATIONS.

---

**M**R. K., aged about 23 years, came to Kingston from Cobalt on August 23rd last. He had contracted typhoid fever from drinking water at the latter place, and when he reached Kingston he had been very ill for about six days. His morning temperature on August 13th was 102 F., and that evening it had reached 105, remaining at that point until after midnight. He presented all the usual signs of typhoid, but the diarrhoea was not severe, but, nevertheless, characteristic. In a few days the diarrhoea became more severe, and with the temperature running from 102 in the morning to 105 in the evening, the patient became very delirious. On August 17th, the tenth day of the fever, the patient's relations consented to his removal to the hospital, and from this time forward the case presented features of special interest. The temperature remained high for the next five or six days, reaching 105.5 about the sixteenth day of the fever, and then gradually dropped to 100. All this time the headache was severe and the delirium pronounced. During the third week the patient lay on his back, picking at the bedclothes, and grasping at imaginary ob

jects. With the pulse running from 84 to 110 there developed a mitral regurgitant murmur. The diarrhoea, which at no time was excessive, gave place, after the tenth day, to an obstinate constipation, requiring the daily use of various forms of enemata. From the tenth to the twenty-first days the fever seemed to spend its force entirely on the central nervous system.

At the end of the third week the typhoid condition showed signs of abating. The evening temperature dropped to 100 and remained there for a few days. The mind became clearer, the twitching disappeared, and everything pointed to convalescence. At this time, however, two large bed sores formed over the sacrum and the posterior spines of the iliac bones, and then began a septic condition of the skin which lasted for five weeks. At first small boils formed on the skin of the back. In a few days these increased in number until there was scarcely a square inch of the back that was not affected. Later the crops of boils were much larger, each exuding about a teaspoonful of creamy pus when opened. The pus contained staphylococci, but the reaction about the foci was hardly perceptible, the lesions having the appearance of small cold abscesses. In three weeks' time there was no tendency to come to a head, but large quantities of pus, from half an ounce to an ounce, would form under the skin, and remain there without causing much tenderness. These were incised and drained. In a few localities painful carbuncle-like structures appeared, but they differed from the true carbuncle in that there was no tissue "*en masse*", but simply the formation of an abscess with multiple openings and accompanied by great tenderness. During this septic process the patient's temperature rose from 100 to 103.5 two or three times a day. There were profuse perspirations but no chills, and the pulse ranged from 100 to 120. He wasted very rapidly, and in spite of stimulation with strychnine,  $\frac{1}{30}$  of a grain every four hours, and normal saline injections per rectum, as indicated, he had several attacks of cyanosis.

However, about the beginning of the seventh week, after the whole of the skin had been riddled by abscesses and a few dozen had formed on the anterior surface of the trunk, and on various portions of the extremities, the process ap-

parently exhausted itself, and at the end of the eighth week of his illness he was able to be removed to his home in an ambulance. Two weeks later he had gained about ten pounds and was able to walk about his room, and at the time of writing, December 1st, is enjoying good health again.

The treatment consisted of liquid diet, principally milk, tepid sponging when temperature went above 102. In the early stages, when diarrhoea was present, he was given tincture iodine *iii.* and carbolic acid *mi.* in an ounce of water every four hours; strychnine and whiskey as mentioned above, and normal saline solution.

At the end of the fourth week, and when there had been no diarrhoea for two weeks, and the septic process began to sap the patient's strength, the diet was made as liberal as it seemed safe to make it, and iron, quinine and strychnine administered.

A. R. B. WILLIAMSON.

---

## A REVIEW.

THE PRACTICE OF PHYSICK. By William Salmon. In three volumes. A.D. 1706.

IT is not often one has an opportunity for reviewing so ancient a work as the one now in our possession, under the above heading, and published for the benefit of suffering mankind exactly two hundred years ago. Such has been granted through the kindness of a personal friend who procured it from the library of the late John Creighton. A perusal of its three volumes, in all some six hundred pages, is most interesting, often amusing, and withal at times instructive, though much, if not nearly all, contained therein has been relegated to the dead past, with the fairies, the witches, the love potions and the like.

At the present time the preface to a book is utilized by the author for setting forth the reasons for writing, and in a

modest way to make known any special advantages which the work possesses. At the same time he thanks those who have assisted him in making the work a success. Such does not seem to be the case with some of our brother scribes who wrote in the long past. From this work, and from some other very ancient ones which we have had the privilege of reading, notably a work on obstetrics by Nicolas Culpepper, the preface is taken advantage of by the author for quite a different purpose. Like some of the Greek and Roman plays, where the author uses the prologue to give answer to some of his critics, and to express dissatisfaction, and perhaps disgust, at the works of some of his rivals, the preface here is used to set forth the magnitude of the book, to advertise the advantages of some special potion or secret confection, and, while magnifying the erudition of the author, to pummel and pulverize those critics, or rivals, who have expressed themselves in opposition.

Apparently the book is in part a translation of some previous writer, with such opinions and chapters as the author deems expedient to make a first-class work. He says:—"We here present the World with an Abstract of the Practice of Physick, and such an one as was drawn by the Hand of one of the greatest and most reputed Masters of Our Art. . . . . Now considering this was a Practical piece . . . . I adventured (besides the bare translation of it) to divide it into Books, Chapters and Sections, and to add my *Modicum* to it which I exposed to the world in a former impression and was sold off in a very short time . . . . Feeling how acceptable it was in that mean Dress . . . . . I thought of a new *Edition*, and in it have made it my business to Animadvert upon him when he was Disagreeable to the Rational Practice of the Art, and to add what other Precepts and Observations as are now entertained among the greatest Professors of Physick; so that I can be held to say that it has not, for its Rational Prescriptions, Plainness of Language and Usefulness of Matter, its equal in the World."

As the preface proceeds the author seems to warm up to the subject:—"I confess in this Work there are no tedious Dissertations, no Long and Pompous Recipes with which many Books are admirably filled, Prescriptions so Heterogene and long that if a Yard and a half were cut off from them there

would be enough left behind to do all the work that the whole was able to perform ; a very great Fault in my Opinion, yet such an one as some Men can never be reformed from, and which being sucked in by the Mother's Milk (as I may say) is so natural to them that should they but cast a reflecting Eye upon it they would seem Heterodox to the Ives and their dear fond Opinions."

The next two paragraphs are devoted to praise bestowed upon some other books written, and the great benefit to be derived from the perusal of those chapters which he has added : — "I have wrote a great many Books on the Art of Physick (as may appear by the following catalogue), and possibly done more in that kind of Learning than any one Man has yet done from the Original of Time to this day ; of which number this Work is one."

Now comes the application of his crusher to those critics who perhaps have, in their turn, criticized unkindly, or perhaps ridiculed, some of the books mentioned. It is well worth producing in full : — "I doubt not there may be some Failures, (and what Man is there who writes without them), but I believe that I, who am the Author, can more easily find them out and see them than a great many others who pretend to more Knowledge and Judgement, and to be Quicker-Sighted than I am. Those Critical Spies of my Books, in seeking out for my Failings, have hitherto had the unhappiness ever to find out Faults where there were really none ; but never yet could see them where they truly were : Such Faults as these men find out in my writings, they themselves never had Skill enough to make."

Notwithstanding the lofty professional pedestal our author has mounted, he does not object to acknowledge that he deals in proprietary medicines, as we call them, and to dispense secret decoctions and panaceas. While doing so he also acknowledges that such perhaps is not in exact keeping with the medical etiquette of the day, but his method of explaining his reticence quite equals Captain Cuttle's weather probabilities, as expressed in one of Charles Dickens' novels : — "There is one thing I know which will be Objected against me, which is, that I have kept secret the Preparation of my *Impetus Aureus*, and of



my *Panacea Aurea*. Solomon says, There is a Time for all things, and a Time for every Purpose under Heaven: A Time to gather Stones and a Time to cast them away: A Time to keep Silence and a Time to Speak: and every thing is Beautiful in its Time. But my Time of speaking to that Purpose has not come; and until the Time thereof is come that Beauty and Excellency cannot appear: For which reason these Great Secrets must yet remain within the Vail."

As a *finale* to the long preface he delivers a lecture to a certain class of doctors, who, he thinks, impose on the public by false representations:—There are a Sort of Men in this World who affect to be Doctors but are no Physicians; who though they are great Pretenders to our Art yet cannot talk the Language thereof, and know so little truly of Physick that they understand not its Constituent parts, and while they Pragmatically talk of the Nature and Qualities of Medicaments, and Magnificently judge of Diseases, do not know so much as their Names. These, by a kind of Pedantry, triumph in their Ignorance and Folly, and for want of Knowing Principles make false Judgements. I say to the consideration of such, this work is not Commended, because we know it is as much above their Understandings as the Author thereof is below their Thoughts; Though all the while many of these Triflers are beholding to the little of the Art and to some of the Books we have published, and privately hug them to their Bosoms, while they diligently spurn at their Author and maliciously smite him with their Flagitious Tongues."

Time and space will not permit a review of even a small portion of the work, but it is well worth noting gems of truth as to causation, etc., which seem to gleam forth from out of what otherwise appears all chaos. In the chapters, "Of a Consumption or Pining" and "Of a Phthisis or Ulcer of the Lungs" we read under the head of "causation" that "Humid Particles are drawn into the Pores of the Lungs, or deposited upon the Glandules of the Fauces, or Salival Ducts, and from there drawn into the Lungs, and which so Irritates as to cause frequent and Vehement Coughing, which I have many times seen." However shortly after this statement the articles lapses into the darkness of the age by relating what is called the Sym-

pathetic Cure for the disease :—“Take an egg, Boil it in the Patient's Urine and then put it an Ant's Nest or Hill and let it lie there until the Ants have eaten it all up.” “Dip or thoroughly wet a Linen Cloth in the Patient's Purulent Spittle, then hang it up in the Chimney, where the Smoke continuously goes up, and by doing this, by a wonderful Sympathy, arising as supposed from the Consent of Spirits, the Ulcer will be healed by virtue of the Smoke, and the Nutrition of the whole Body will ensue.”

Considerable space is devoted to “The Pestelential Fevers of 1665 and 1666”, commonly known to us as the Great London Plague. “The Fever which afflicted in London, and in most parts of the Kingdom, even through the whole Year of 1665, was highly Putrid and Malignant, to wit, the Spotted Fever, and the Plague itself; all which time myself was in London, nor was I Absent from the City one Day, from the first beginning of that raging Pestilence, to the conclusion thereof, though I believe there died in the City and Suburbs at least an Hundred Thousand, some Weeks between eight and nine Thousand a Week. I made many Observations of other Men's practice, as well as of my own, and this I can aver as the greatest of Truths, that I know not one Person (among some scores) which were let Blood but died; for the Strength thereby became Profligate, and for want of a Vital Potency, which resides mostly in the Blood, Nature was not able to protrude the Morbifick Matter by a proper Diaphoresis.” At a time when blood-letting was at its zenith, and every one was bled regardless of the nature of the disease, it is strange to hear such a strong condemnation of the practice, and forms one of the bright points in the otherwise heterogeneous admixture of potions, draughts, decoctions, and hideous diaphoretics, emetics, and cathartics, as well as irrational and disgusting procedures.

Considerable space is devoted, too, to diseases of women, particularly on disorders of menstruation. One chapter, “Of Falling down of the Womb”, starts in by combating what the author consider an erroneous opinion. “Barbet is of the Opinion that it is not the Womb which falls down, but rather the Vagina or Sheath; and of this Opinion I am also. For when I consider of what strong Ligaments or Stays the Womb

is held up in its place, I think it must be next to impossible for such a Prolapsion." Strict directions are given for replacement, and various astringent decoctions enumerated. Mechanical support is recommended in the form of a wooden ring, made of box wood or lignum vitæ, two to three inches in diameter, and pushed up into the vagina. Instances are recorded where women have worn these heavy masses for twenty years.

R. W. GARRETT.

---

### THE PROVINCIAL BOARD OF HEALTH.

---

**T**O-DAY the citizens of Ontario know that should any member of his family become ill of a dangerous contagious or infectious disease, machinery exists to prevent its spread to others ; that should an epidemic of a serious nature threaten the country, prompt and effective means will be taken to fight it away ; that should any nuisance exist in his locality, means are at hand to compel its abatement ; that the water he drinks can be, and often is, demonstrated to be pure or otherwise ; that the food he consumes is subject to inspection, to determine if it is fit for use ; and that the air he breathes in public buildings, churches and schools is far better than in former days. In no small degree these and other beneficent conditions are the result of the work of the Provincial Board of Health during the past twenty-five years.

Very little had been done in sanitary matters in this Province before the year 1882, when the Provincial Board of Health, as now constituted, came into existence. In 1815 a Medical Board was established for Upper Canada, but its functions were mainly the granting of licenses. In 1832, when cholera became epidemic, a Sanitary Commission was created. Other epidemics of cholera came in 1849, 1854, and 1866, to combat which a Central Board was appointed, whose duties were chiefly to enforce quarantine and make some regulations to secure cleanliness. For the first two years of its existence the duties of the Board were mainly advisory ; consisting of

circulars to physicians, clerks of municipalities, and others, in regard to sanitary matters: reports of delegates to sanitary conventions; reports of committees on public health and vital statistics; reports on outbreaks of typhoid fever, small-pox and other diseases; and in preparing for the government a draft of the Public Health Act, which was passed in 1884. This law, based on The Public Health Act of England of 1875, marks the beginning of real progress in sanitation in Ontario.

During the quarter of a century that has elapsed since its enactment, the definite cause, or germs, of many diseases have been identified, and their diagnosis, by the aid of the bacteriologist, become a matter of absolute certainty. Causes of disease, means of prevention and control, thus became simpler problems, and with the facilities provided by the new Act, and the amendments of subsequent years, sanitary matters took on a new aspect. Local boards of health, with sanitary inspectors and medical health officers were appointed in each municipality, and given powers to enforce the provisions of the Act and the regulations of the Provincial Board. To the Provincial Board was entrusted the power of compelling local action in outbreaks of disease, and framing regulations for the control of small-pox and other contagious diseases; to expropriate land required for isolation hospitals; to regulate the cutting and disposal of ice; to cause inspection to be made of slaughter houses, dairies, creameries, bake shops, &c.; to control the manner of construction of public water works and systems of sewerage; to compel removal of nuisances; and to establish laboratories for the scientific examination of diseased tissues, and prosecute research in sanitary affairs. This is a partial enumeration of the powers and duties of the Provincial Board of Health, and the present condition of sanitary matters in Ontario, as referred to at the outset, shows how well these duties have been performed.

Much remains to be done, notably in connection with the closer examination of suspected food products, the control of outbreaks of typhoid fever, and in the fight against that greatest of all plagues, tuberculosis. Although the work at the laboratories has been increasing yearly, much more benefit to physicians and the public is within easy reach by a more fre-

quent and general use of the facilities the laboratories offer. Free examinations are made to assist in the diagnosis of tuberculosis, typhoid fever, malaria, influenza, rabies, anthrax, actinomycosis, glanders ; for the diagnosis and release from quarantine in diphtheria, and the bacteriological and chemical examination of suspected waters. This work is done at Toronto by Dr. J. A. Amyot, and at Kingston by Dr. W. T. Connell, either of whom will, on request, send physician's data cards, to accompany the specimens they send. In the annual report of the Board for 1900 will be found full details of the laboratory work and the rules to be observed in sending specimens for examination. In the laboratory at Queen's, alone, twelve hundred and thirty-three of these free examinations were made during the first ten months of the year 1906.

On the 28th of September last the present Board was appointed, the only members of the former Board whose services were retained were those of Dr. C. A. Hodgetts, who is Chief Officer of Ontario and Secretary of the Board, and is also Deputy to the Registrar-General. The Government retains the efficient services of Dr. R. W. Bell, Medical Inspector, Dr. J. A. Amyot and Dr. W. T. Connell, Bacteriologists, in addition to the other departmental officers. The present chairman, Dr. Charles Sheard, Medical Officer of Health for the city of Toronto, is known as one of the most prominent and successful sanitarians in Canada. Besides the ordinary routine work, the Board has confined its attention to a revision of the Public Health Act, and have prepared a draft of a new Act for submission to the Legislature, making no radical changes, but merely such as were apparently needed by the growth of the Province and the advance in sanitary science.

In the near future other important matters will, no doubt, receive consideration, such as municipal responsibility for the care of consumptives ; a vigorous educational campaign in public health requirements through the public schools, etc. The Board, aware of the expectations of the Government, the medical profession, and the general public, hope to justify their continued existence.

M. I. BREMAN, M.B.,

Newburg, Ont., Dec. 15th,

## THE HAGEN BURGER DEGREE CANCELLED.

---

**M**OST readers of the QUARTERLY know something already of the Hagen Burger case from what appeared in the Journal of the American Medical Association last May. As the case is now concluded it may be of interest to put on record here the whole story, and its outcome so far as Queen's is concerned.

In the early part of December, 1902, G. L. Hagen Burger came to Queen's and applied for admission to the fourth year in Medicine. He was introduced to the Registrar, the late Dr. Herald, by Dr. A. McCabe, of Gloucester, Mass., a former student, who was favorably known to the Faculty. On presentation of his certificates he was admitted to the fourth year and attended classes during the rest of the session, but failed to pass the final examinations. Eighteen months later he appeared for supplementary examinations, that is, in September, 1904, and, having passed them, was granted the degrees of M.D. and C.M. In the interval of eighteen months he had passed the examination for registration in Massachusetts and was in practice in Boston.

A few months later, in January, 1905, a letter was received from the Secretary of the State Board of Medical Examiners of Colorado, enclosing a specimen of Hagen Burger's handwriting and asking whether he had our degree. We were then informed that in 1902 Hagen Burger had presented to the State Board of Colorado, for registration, a degree from Kiel University in Germany which was proved to be forged, that a criminal action was pending against him on this account in Denver, and that in the fall of 1902 he had, through political influence, been granted permission to visit Germany, ostensibly to secure evidence to clear himself. Instead of doing this he came to Queen's.

When this information reached us Dr. Herald was still living, but was no longer Registrar. The entries in the registration book showed that he presented a degree from Kiel University and the licenses to practice in Montana and Colorado. This was in accordance with Dr. Herald's recollection of the

matter. In May, 1905, Dr. Herald died. It was not till December of 1905 that the case was brought formally before the Senate for trial, when Hagen Burger was present with his counsel. He then declared that he did not submit to Dr. Herald any diploma, nor any other certificates except that of license to practice in Montana. As to the Kiel degree he did not acknowledge that it was a forgery, but stated that he had earned it, and if it were not correct in form the forgery had been practised upon him. He related that he had gone to Kiel in 1896, and had complied with the regulation in the preparation of a thesis and had defended it in the usual way; that he had then gone to Berlin, where the diploma was forwarded to him by registered mail, so that if the signatures and seal were not authentic he had been imposed upon by some one in connection with the University.

Some members of Queen's Senate were impressed with the possible truth of his statements, and consent was given to delay for more careful investigation. Afterwards Professor Patchett was appointed by the Senate to visit Kiel during the summer, and to get all the information possible. His report presented to the Senate on December 3rd, last, contains some interesting points. Hagen Burger stated in his evidence that Dr. Runge was the individual in the Registrar's office in Kiel to whom he had paid his fees and presented his thesis, and that he was also a practising physician in Kiel at the time. It appears, however, that Dr. Runge graduated from Kiel in 1895, that he was never connected with the University in any official capacity, and never was in practice in that city. He is known to the University authorities as an honorable gentleman. Hagen Burger stated that he went to Kiel and defended his thesis in 1896. But the practice of defending theses was abolished in 1892, and in place of this the candidate had to undergo an oral examination before the whole Faculty. Evidently Hagen Burger was not aware of this. The genuine diploma of Dr. Otto Tretow served as a model of the forged diploma of Hagen Burger. Professor Patchett saw this diploma and found that the points of difference were:—

(1) The substitution of Gottfried Leonard Hagen Burger for Ottonem Tretow.

(2) The signatures of both Dr. Werth, then Dean of the Faculty, and Wilhelm Selig, the Principal, whereas only the Dean signs these diplomas, and in Latin script, not as on Hagen Burger's, in German script. Any official of Kiel University would have known this.

(3) Instead of the official seal of the University there appears on the forged diploma an imprint of the rubber stamp used by the Medical Faculty in correspondence.

The following paragraph from Professor Patchett's report will be of interest. "Exactly how Hagen Burger came by a copy of Tretow's diploma would be difficult to discover, as he is so entirely absent from the list of acquaintances of any of the gentlemen I met at Kiel. To understand that he easily could come into possession of a copy, however, requires no great power of imagination. Besides the one official diploma printed on parchment, and furnished with the seal of the University, students can have any number of unofficial copies of it, printed on ordinary paper, without the signature of the Dean of the Faculty and without the seal. These copies are freely distributed among friends, and are accounted of so little value that no one would have difficulty in procuring one. There is no reason to suspect any one connected with the University of complicity in this forgery—facts seem to indicate Hagen Burger's having acted fairly independently. Also there is little notice to be taken of Hagen Burger's statement, made in his own examination before the Senate of Queen's University, that he could not have presented a copy of this diploma to the Medical Faculty of Queen's, since that diploma was in the possession of the Colorado Medical Board. With the same ease with which he could obtain one copy, he could obtain any number."

As there is no doubt about the genuineness of Dr. Tretow's diploma, Hagen Burger's plea implies the supposition that two men, on precisely the same day, had degrees conferred on them for precisely the same thesis, and upon such an unusual subject as Congenital Dislocation of the Lens. This alone is enough to condemn Hagen Burger's evidence.

After the most careful consideration the Senate adopted the following minute :—



“The Senate of Queen's University having met in conjunction with the Medical Faculty to consider questions which have arisen in connection with the degrees of Doctor of Medicine and Master of Surgery conferred on Mr. G. L. Hagen Burger by the said Senate in September, 1904, find as follows :—

“*First*, That the degrees of Doctor of Medicine and Master of Surgery, granted to the said Mr. Hagen Burger by the Senate of Queen's University, were obtained in part after examination and in part on the credit of certain documents and certificates produced or referred to by him.

“*Second*, That one of these documents, namely, a certificate from the State Board of Medical Examiners of Montana, was founded upon and required for its validity the possession of a regular degree in Medicine, obtained from some University or other institution authorized to grant such degrees.

“*Third*, That the degree which Mr. Hagen Burger presented to the State Board of Medical Examiners of Montana was a degree purporting to be conferred on him by Kiel University.

“*Fourth*, That the said degree from Kiel University has been ascertained beyond doubt to be a forgery.

“In view of the findings, the Senate of Queen's University declare and adjudge that the degrees of M.D. and C.M., obtained by Mr. Hagen Burger from Queen's University, were founded on documents which are invalid, and they do hereby cancel these degrees and withdraw from Mr. Hagen Burger all right to the use of them.”

It is a serious matter to cancel a degree and to withdraw the privileges associated with it. This, however, is a case in which the duty of the Senate was clearly defined, and, no doubt, their action will have the approval of our graduates and friends.

## THE NEW GYMNASIUM.

---

AT length the students of Queen's have built them an adequate gymnasium. The new building, which has been in use for some weeks, will be formally opened on the eighth of January with suitable publicity ; it will doubtless suit the requirements of the case for many years to come.

The movement, which has culminated in the present stately home of athletics of Queen's had its inception many years ago ; so long ago, in fact, that the oldest student of the University to-day must admit that the agitation began "before his time". The story is one of rare interest, of vague attempts to place athletics upon a proper footing, of promising beginnings which came to naught, and of a most laudable persistence on the part of the athletic committee.

The section of the student body devoted to athletics was subjected to the most trying vicissitudes ; they were driven from pillar to post ; they found no rest for the sole of their foot, they may be said to have wandered like the chosen people, forty years in the wilderness, until they were led by Joshua MacInnes into the promised land of shower baths and swimming pool, and working room of to-day. For it was over thirty-three years ago that the first agitation for a gymnasium began, and it increased in intensity up to the year 1880, when the University moved to its new quarters in Divinity Hall and the old Convocation Hall in the present medical building was given over for athletic purposes. But this venture was not a success ; there was no proper control, or supervision, and things went from bad to worse, until the gymnasium was finally closed in 1884.

Then followed various plans, especially the proposal that the University should erect a gymnasium and collect fees from all students, and classes were actually opened in 1885. However, as the equipment was totally inadequate for the purpose, interest soon waned, attendance dropped off, and the classes were closed in 1888, a year after the formation of the present Athletic Association.

But the movement, which was based on a crying need of the youth of the University, could not utterly die, and in 1890

we find the Athletic Association soliciting subscriptions for the erection of a new gymnasium. Accordingly, a building was designed and built by Professor Dupuis, which was a combined workshop and gymnasium, the top floor being reserved for the latter purpose—the room which is now the wood-working shop. A casual inspection of this room, compared with the present hall, gives a good idea of the growth of Queen's in the past fifteen years.

This arrangement worked with more or less satisfaction until 1899, when the pressure on floor space necessitated the giving up even of this small accommodation so as to provide for workshop facilities. Nevertheless, friends of physical culture persisted in their efforts, being very active in '01 and '02, and might have then succeeded in erecting a gymnasium were it not for the enthusiastically received project to found a memorial to the late Principal Grant, which has had its perfect fruition in the present noble Grant Hall. Yet the question was becoming more and more pressing. Queen's track and football teams were doing splendid work at home and abroad, hampered, as they were, by the lack of proper training facilities which were freely enjoyed by other colleges; yet again the gymnasium scheme was forced to the role of Cinderella by the far-reaching endowment scheme of 1904-'05. Still the question could not be put aside, and in the fall of 1905 the matter was finally taken up with commendable seriousness and breadth of outlook by the Athletic Association, who obtained the endorsement of the Trustees, and the Alma Mater Society secured a site for the new building and obtained permission to canvas for funds and take the matter in hand at once.

The results are known to everybody. The present building, with the largest working room in Canada, and the only one, so far as the writer knows, in which the athletic training of both men and women is undertaken, equipped in the most modern style, stands as an enduring monument to the admirable spirit of Queen's, which stands aghast at no obstacles, however formidable, and whose ruling motive is that of helpful service.

On Convocation Day of 1906 the first sod was turned by the Chancellor, who spoke in enthusiastic terms of the project. Addresses were also given by the Principal; Hon. Justice Mac-

lennan, Chairman of the Board of Trustees; Dr. Armstrong, Moderator of the General Assembly; and J. McD. Mowat, Mayor of the city of Kingston.

Some time previously the Athletic Committee had advertised for architects to submit plans and specifications for a building. Finding no response forthcoming they asked Professors McPhail and Kirkpatrick, of the School of Mining, to submit designs. These were accepted and instructions were given them to proceed with the work by day labor, being determined that the work should not be delayed another season, but that the building should be ready for occupation during the session of 1906. The work was put in hand early in May, and the first classes were held in November, although the building was not yet quite completed.

The building is 60 ft. x 105 ft., built of Kingston blue limestone, the masonry of which is pronounced by competent judges to be the best of its kind in the city. It is lined with buff brick, and consists of basement, main floor and gallery. In the basement are provided the necessary shower and tub baths, lavatories, drying room for clothes, plunge bath, and the required steel locker accommodation, both in the women's and men's departments. On the main floor are the Athletic Committee's room, the Physical Instructor's and Medical Advisor's rooms, the weighing and measuring room, and the gymnasium floor of 55 ft. x 81 ft. Over the offices a gallery, 20 ft. x 55 ft., will accommodate a large number of spectators to witness the floor work and basket ball games. A running track, of twenty laps to the mile, extends completely around the building, supported on steel wall brackets.

Very briefly the financial aspects of the case are these:—

The Athletic Association had about \$3,000 on hand from former attempts, especially that of 1890. A further sum of \$7,000 was raised by subscriptions of the student body, the faculty and others, while the Endowment Committee granted \$3,000 in lieu of a canvas of the city of Kingston.

This leaves the gymnasium with a debt of about \$12,000, which sum has been advanced by the Trustees, as a loan, at current rates of interest. In addition to this the Trustees have presented the Athletic Association with \$800 for the construc-

tion of the swimming pool, which is nearing completion, and will be ready for use after the Christmas holidays.

The swimming pool occupies the eastern end of the basement, and is constructed in concrete, being 20 ft. x 40 ft. in size and 7 feet deep. The keen interest manifested in the progress of the work has been well illustrated by the scores of students, and others, who visited the building daily during the last weeks of construction.

---

### ONTARIO MEDICAL COUNCIL ELECTIONS.

---

**T**HE Medical Council of Ontario is composed of thirty members, seventeen of whom are elected every four years by the profession, five by the homeopathic practitioners, and eight are appointed by the various Universities. The results of the election have just been announced as follows:—

By acclamation.—Division No. 1, Dr. J. L. Bray, LL.D., Chatham ; 3, Dr. J. McArthur, London ; 4, Dr. J. A. Robertson, Stratford ; 6, Dr. J. Henry, Orangeville ; 7, Dr. P. Stuart, Milton ; 8, Dr. S. H. Glasgow, Welland ; 10, Dr. E. E. King, Toronto ; 12, Dr. H. Bascom, Uxbridge ; 13, Dr. S. C. Hillier, Bowmanville ; 14, Dr. A. F. MacColl, Belleville ; 15, Dr. W. Spankie, Wolfe Island ; 16, Dr. J. W. Lane, Mallorytown ; 17, Dr. M. O. Klotz, Ottawa.

In Division No. 2, Dr. J. H. Cormack, St. Thomas, defeated Dr. J. Meams, Woodstock ; in No. 5, Dr. T. W. Vardon, of Galt, was elected over Dr. L. Buel ; Dr. R. Gibson was re-elected in No. 9 ; in No. 10, Dr. J. S. Hart, Toronto, was elected.

The homeopathic representatives elected are : Dr. G. Henderson, Strathroy ; Dr. L. Luton, St. Thomas ; Dr. E. T. Adams, Toronto ; and Dr. C. E. Jarvis, Toronto.

## EDITORIAL.

---

MEDICAL INSPECTION OF SCHOOL CHILDREN.—The City of Montreal is the first in Canada to adopt and carry out a regular system of medical inspection of school children. In January last seven medical inspectors were appointed, and the sum of three thousand dollars was provided to defray the cost. The results fully demonstrated the wisdom of the city councillors. From press reports of the inspection we learn that classes have been conducted in basements without regard for ordinary sanitation or hygiene, that contagious diseases have made great marches, and have had free play, unchecked, amongst the pupils, with serious consequences, and that the ordinary requirements of cubic air space per pupil with adequate ventilation, were not receiving the recognition due them. These conditions, it is said, have been prevalent for years, not in the public schools of the city, but in the numerous so-called private schools.

In connection with this subject of the medical inspection of schools, it may be mentioned that at the last meeting of the Ontario Medical Council a resolution was adopted as follows:—

Moved by Sir James Grant, seconded by Dr. James Henry, "That the Executive of the Government of Ontario be invited by this Council to take into consideration the desirability of appointing medical examiners in the public schools in the chief centres of Ontario in order to guard the lives of the rising generation against tuberculosis, inasmuch as such precaution is becoming general in the most progressive countries at the present day."

In support of his resolution Sir James said:—"With reference to this motion, Mr. President, I make the statement that in Japan, which is now recognized as a very advanced country, they have either six or seven medical examiners in their public schools. In Europe, in the chief centres there, it has been carried out very extensively, and in Great Britain the Educational Body of London have taken it into consideration and is also being generally adopted there. We find also in the United States, in the cities of Boston, Philadelphia and Chi-

cago, the same idea is promoted and is being generally adopted. They have gone still further, they have adopted a class of trained nurses to investigate the various educational institutions and report generally upon the state of health of the pupils. The fact of the matter is, it is a very important subject. We find that lately in one of the chief educational institutions in Great Britain, in a case reported in the British Medical Journal, where there were three hundred odd pupils, a medical man found that there were twenty-five or thirty cases of tuberculosis, thoroughly defined, existing among those scholars in the school, and no attention whatever paid to them until the diagnosis was made. I feel confident myself that a large proportion of the cases of tuberculosis we have in this country to-day originate in our public schools, and the disease is thus disseminated without any attention being paid to it at all. When we consider there are now in Canada eight thousand deaths annually from tuberculosis, each life being worth one thousand dollars, a loss to Canada of eight million dollars annually, it is an extremely important matter indeed. Under these circumstances, I feel satisfied that the time has now arrived when those in charge of the educational affairs of this country should take this matter into serious consideration, and see if some additional efforts might not be made, entirely outside of the Congress which is held annually at the Capital to consider the whole question of tuberculosis, in order to assist, if possible, in staying the development of that white plague which is so fatal, not only in our own country, but in various parts of the world in which we are deeply interested."

---

"MENS SANA IN SANO CORPORE".—In another column will be found a history of Queen's College gymnasium. The writer of the article has taken great pains, and spent much time, in order that he might place on record the early and late history of the efforts of the students, and the authorities of the College, to secure and maintain a fitting place for the development of the brawn and muscle of the coming men of Canada.

As a result of their long and repeated efforts, often carried

on under extreme disappointments, this autumn saw the completion of a gymnasium, said to have a greater floor space than any other gymnasium in Canada. The athletic committee, under whose guidance this building was erected, decided that every student entering on gymnastic work should be subject to a thorough medical examination, and requested the Medical Faculty to undertake the task. This was readily acquiesced in, and one of its members appointed to obtain information on the subject. As a result a form of physical examination was drawn up. This has been printed on large cards, in such a way that they can be readily filed. On one side is a complete family and personal history, to be filled out by the student and signed by him. On the other side is a scheme for a careful physical examination, in addition to four columns to allow for notes being added each year of the student's course, when he comes up for re-examination.

The purpose of such an examination is three-fold :—

1st. To have a complete record of the personal and family history and present condition of health of every student who enters on gymnasium work, and, further, a record of the progress in physical development made by the student in his four years' course.

2nd. To exclude from participating in exercises which would be injurious to those students, who, through inherited or acquired defects, might suffer injury in undertaking such work.

3rd. To indicate, where necessary, special exercises for those whose development has not been symmetrical, or who have minor defects that may be overcome by carefully selected gymnasium work.

At the present time five or six members of the Faculty spend an hour a day at the gymnasium examining candidates. They are admitted, one at a time, into the examiner's room, and each fills out the personal and family history portion of the card. They are then stripped and the heart and lungs carefully examined. This examination is also repeated after physical exercise. Pathological conditions found to exist in any part of the body are noted and commented on, while notes are made on the habitual posture, the special senses, skin and muscular development.



Another part of the examination is recorded on a separate card, and is carried out by the gymnasium instructor. The height, weight, chest expansion, lung capacity, and the girth of the body are carefully noted, after which the card is filed away until the candidate comes up for re-examination.

---

FIRST AIDS TO THE WOUNDED.—The necessity for a thorough knowledge of this most important subject has recently been exemplified in no mean manner, and that, too, by three Canadian nurses while travelling by railroad in France. In an accident which occurred we are told that ten passengers were killed and over fifty were injured. Before the train had come to a stop these three ladies, though injured themselves, proceeded to take charge of the work of rescue. One of them, speaking French fluently, gave directions to the employees, while all three assisted in extricating passengers, and gave first aids in making and applying tourniquets and bandages, so that they had accomplished much in making the injured comfortable before the arrival of the doctors. Two near by rooms were quickly turned into impromptu hospitals, and within a short time a train load was on the way to Paris. Notwithstanding that they were tired and weary, they refused to go on the train, but remained at their work of mercy until all that could be done had been accomplished. All Paris has been shouting their praises.

---

KINGSTON GENERAL HOSPITAL.—Since the publication of the last number of the QUARTERLY, the Governors have decided to return to the old system of management, and accordingly have appointed Dr. A. D. Macintyre Medical Superintendent, and Miss Dyson Superintendent of Nurses. *Apropos* of the management of this most charitable institution, we quote the following from the *British Whig* of December 3rd:—

“At the recent County Council session the General Hospital received criticism for accepting money from Mrs. H. Babcock, of Holleford, for treatment of her daughter. It was charged that the hospital took all the money she had, and which had been raised by subscription of Portland township people, and that more money had to be sent by Portland people to bring the widow and her daughter home.

“The Treasurer of the hospital has received a letter from Mrs. Babcock, acknowledging receipt of the ten dollars refunded. She denies that the hospital authorities asked her for any money. She gave the ten dollars, feeling that it was not too much for what her daughter had received. She had plenty of money left to take her daughter and herself home, and says she never made any complaint about the matter, or asked that the money be refunded. Her daughter has improved in health, through the operation gratuitously performed by Dr. Garrett, and, though not strong, can do light housework. She says her daughter and herself received kind treatment from the nurses and the doctors.”

It is pleasing to note that the members of the County Council were as ready to acknowledge their error as they were to criticize, as evidenced by the following resolution, passed at a later meeting:—

“That the Council puts on record its appreciation of the manner in which the Kingston General Hospital has been, and is conducted, and its belief that at all times patients from the county have received just and courteous treatment.”

It is a pity that some generous donor would not turn last year's deficit of two thousand dollars into a surplus, such as was reported by the Governors of the Brockville General Hospital at its last meeting, at which a surplus of over three thousand dollars was acknowledged.

## NOTES AND COMMENTS.

---

A happy and prosperous New Year to all our readers.

---

The thanks of the QUARTERLY are due to those who have kindly contributed interesting articles for publication.

---

The Provincial Board of Health of Ontario is to be congratulated on the appointment of Dr. M. I. Beeman, of Newburg, as one of their number. No appointment could have been made that would be more pleasing to the profession in Eastern Ontario.

---

Queen's University is being congratulated on all sides by the munificent sum of \$100,000 offered by Mr. Andrew Carnegie to the Endowment Fund. The only stipulation in connection with it is that it shall be the last \$100,000 of the half million for which the Trustees are now canvassing. Already over \$250,000 have been raised, and with such an offer it cannot be long before the sum required will be completed.

---

The Alma Mater Society held its annual *Conversazione* on the evening of December 14th. The new Arts Building and Grant Hall furnished the necessary accommodation for over fifteen hundred guests. During the evening refreshments were served in the upper flat and a concert was given in the Mathematics Room. The chief amusement, however, was dancing, which was kept up to a late hour.

---

In another column will be found a list of the newly elected members of the Council of the College of Physicians and Surgeons of Ontario. Among them we find the name of our old friend, John L. Bray (1863) Chatham, and who recently received the degree of LL.D. from Queen's University, *honoris causa*. He was first elected to the Council in 1880, and since then has occupied all the positions of honor and trust in that body, besides being one of the chief guiding spirits in the framing of its legislative enactments,

The annual lecture on Historic Medicine, arranged for by the Medical Faculty, was delivered this year in Convocation Hall by Dr. W. T. Connell. There was a very large number in attendance, including members of the various Faculties, undergraduates and citizens. The seating capacity of the hall furnished insufficient accommodation, and the galleries were resorted to. The readers of the QUARTERLY will feel indebted to Dr. Connell for his kindness in permitting of the publication in full, in this number, of his most interesting and instructive lecture.

---

The earth and rock excavation for the new Biological Building has been completed and made ready for the commencement of active work in the spring, as soon as the frost is out of the ground. Owing to the opposition raised by the Trades and Labor Council, the ornamental cut stone work, which it was hoped might be procured from the penitentiary quarries, and amounting to some seven or eight thousand dollars, has been struck from the plans and the architect instructed to prepare new plans in keeping with the funds at the disposal of the committee, which means a plain, oblong, rock-faced building, devoid of ornamentation.

---

This year's dinner of the Aesculapian Society of the Medical Department of Queen's University, held on the evening of December 18th, was by far the most brilliant affair yet undertaken by the medical students. There were three very pleasing departures from those held in previous years. First, it was held within the University grounds, in Grant Hall; second, other than the immediate guests of the Society were admitted to the galleries to listen to the speeches; and, third, M. Henri Bourassa, M.P., and a well-known brilliant speaker, was invited to deliver the address of the evening. Palms, choice flowers and decorations peculiar to the medical student were plentifully supplied, and long before the speeches commenced the galleries were well filled. M. Bourassa chose for his address "Canadian Patriotism", and in a speech of over one hour held his listeners' closest attention by his eloquence.

## OBITUARY.

---

**I**N the death of Dr. Charles Augustin Lawler Queen's has lost another promising graduate. Only last spring he received his degree, which entitled him to pursue his life work. He was an excellent student and a careful observer, and gave promise of an unusually successful career. Shortly after his graduation he was taken ill, and fell a victim, after only three months' illness, to that fell destroyer, tuberculosis.

---

From Jamaica comes the announcement of the sudden death of Dr. J. G. Neish (1900). He was the son of the late Dr. James Neish (1865), and was one of four sons who came up from Jamaica for their medical education. His son, in turn, is now taking his Arts course in Queen's with the intention of going into Medicine. In this we have strong evidence of a more than ordinary fidelity to the University, three generations having prepared themselves there for their life work.

---

In the death of Dr. R. B. Price (1866) another old graduate of Queen's has passed away, his death occurring very recently in Chicago, the outcome of an attack of pneumonia. The deceased was born in Bath, Ontario, and for many years successfully practiced there. On retiring he lived for some time in Kingston.

---

The Cobourg papers announce the tragic end of Dr. James Henderson, dashed to his death, on his way home, by the midnight express. Doubtless, tired and weary from a hard day's work long extended into the night, he missed seeing the approaching train until it was too late. His many patients in Cobourg will, for many a day, miss their skillful, sympathetic attendant.

## REVIEWS.

---

**A TEXT BOOK ON OBSTETRICS.** By Adam H. Wright, M.D., Professor of Obstetrics, University of Toronto. D. Appleton & Co., 1905.

It is pleasing to see that workers along special lines in our Canadian Universities are beginning to place their thoughts, methods and mature judgements in printed form before their students and the Canadian reading public. I think I am right in saying that to our Medical School here belongs the credit of first publishing a medical work for the use of class students. The late Dr. K. N. Fenwick's "Obstetrics and Gynæcology" was very complete for its size, and furnished to the student of his time a class-book always eagerly sought after by them. Since then three medical works have appeared written by Professors in the Medical Faculty of Queen's University. We congratulate our old friend and collaborator, Adam Wright, on the splendid work on Obstetrics which he has just given to the student and professional world. Space will not permit of giving such a critical review as the work deserves, suffice it to say, if the teachings in the class are on an equal basis with those in Dr. Wright's book the students are to be congratulated on having so gifted and scholarly a teacher. The book is easily handled, and not padded for size and shape. The type is large, clear and well leaded, and the paper good. The illustrations are for the most part new, and have been selected solely for illustration of the text. The work is divided into two parts:— 1, Physiological Obstetrics, and, 2, Pathological Obstetrics—a division adopted by most teachers now-a-days, it being the natural line of cleavage of the subject, and giving as well the opportunity for dividing the subject into Third and Fourth Year work.

**MANUAL OF MIDWIFERY.** By Henry Jellett, M.D., Gynæcologist and Obstetric Physician to Dr. Stevens' Hospital, Dublin. William Wood & Co. 1905.

While this book appears under the name of Dr. Jellett, it is not a compend of his views in its entirety. Many chapters have been written by other men in the profession, notably those on Embryology and Anatomy, Infectious Diseases, Organic and Functional Diseases of Pregnancy, the Surgical Fevers of

the Puerperium and the Insanities of Reproduction. The typographical work is excellent, but the print is small and insufficiently leaded for easy reading. The illustrations are very numerous, but are not well reproduced, having the appearance of hurry and bad workmanship. We recognize among them many old familiar friends of our student days still doing duty, poor productions of Leishman, Playfair, Sharpe, Naegele, Cazeau and Tarnier and Galabin. It, too, is divided into two parts, as in Dr. Wright's work.

**MANUAL OF OBSTETRICS.** By A. F. A. King, M.D., Professor of Obstetrics and Diseases of Women and Children. Columbia University, Washington, D.C. Ninth Edition. Lea Brother & Co. 1908.

King's Manual, in its ninth edition, needs no introduction or recommendation, it is well known as the "Students' Manual and Friend".

**OPERATIVE GYNECOLOGY.** By Howard A. Kelly, M.D., Gynecologist to The Johns Hopkins Hospital, etc. Baltimore, Md. Second Edition. D. Appleton & Co. 1906.

The high standing of Howard Kelly as a Gynecologist was early recognized by the authorities of The Johns Hopkins Hospital, and he was selected, while early in professional life, for the head of that important specialty. The choice proved an eminently successful one, and his professional attainments soon had a world-wide reputation. The first edition of his work, published some eight years ago, was eagerly bought and read with pleasure by all classes of practitioners, and now a second edition has made its appearance. This, as the former edition, is remarkable for the clearness and simplicity of style, the personal element of its teachings, representing, as it does, a mirror of the author's own methods and opinions, his mature judgment and skillful work. While many changes have been made in detail, the scope and plan of the work is similar to the first edition. New chapters have been added on local and palliative treatment, on displacements of the uterus and the use of pessaries, on operations for the cancerous uterus, on Alexander's operation, while the incomparable Max Brodell, whose name appears in the corner of so many of the half-tones in the previous edition, has added over one hundred new illustrations.

**PRACTICE OF GYNECOLOGY.** By W. Easterly Ashton, M.D., Professor of Gynecology in the Medico-Chirurgical College, Philadelphia, Pa. Second Edition. W. B. Saunders & Co. 1906.

A second edition of this work, following but a few months upon the first, speaks for itself. Few changes have been made in the text, and may, accordingly, be said to be a reprint of the first edition, the result of the latter being almost instantly absorbed on its appearance. It is, undoubtedly, *the* text-book of the specialist, the general practitioner and the student. I do not know of any work that contains so much for all. While the description of plastic and minor surgery is masterly, and can be read with profit by the gynecologist, the author has not lost sight of the fact that all who practice medicine are not gynecologists, and that the student requires to become acquainted with little points, and become master of detail, before he can acquire a correct knowledge of the subject. Accordingly neither of the two have been forgotten, and in his descriptions the author takes nothing for granted, but states exactly what should be done in each case, giving directions and illustrations so explicit as to be easily and intelligently followed. As an example reference might be made to the chapters on "General Technique of Gynecological Examinations", "Microscopic Examination of Tissues", "The Blood in Relation to Surgery", "General and Local Examinations", "Hydrotherapy", "Dietary", "Post-Operative Treatment". To be convinced of the author's descriptive and illustrative powers all one has to do is to read the article on the removal of broad ligament tumors of the uterus. At its close one almost feels as if he had just successfully performed the operation.

**PRACTICE OF GYNECOLOGY.** In original contributions by American Authors. Edited by J. Wesley Bovee, M.D., Professor of Gynecology, George Washington Hospital, Washington, D.C. Lea Brothers & Co. 1906.

As designated, this work is made up of contributions from various authors, and forms one of three companion volumes dealing respectively with Gynecology, Obstetrics and Pediatrics, "covering", as the author says, "the whole cognate domain in the light of the best and latest knowledge". Each contributor seems to have fully treated the subjects allotted to him, and the material is accordingly up to date. From a sur-



gical standpoint plastic surgery and operations through the vagina are main features of the book, being fully described, and each successive step is amply illustrated. Surgical complications of the intestines, and especially of the appendix, are omitted, a weak point, in that the gynecologist of to-day must be prepared to meet emergencies, or, in other words, must be an abdominal surgeon. The book can scarcely be said to be in any way adapted to student minds, but is an excellent reference work for the gynecologist, and general surgeon and practitioner.

**A TEXT BOOK OF DISEASES OF WOMEN.** By Barton Cooke Hirst, M.D. Professor of Obstetrics in the University of Pennsylvania. Second Edition. W. B. Saunders & Co. 1905.

This work also has been universally popular, a reprint being necessary within a very short time. The book is a companion work of the author's treatise on obstetrics, and is treated in the same masterly way.

**PRACTICAL GYNECOLOGY.** By E. C. Montgomery, M.D., Professor of Gynecology in the Jefferson Medical College. Second Edition. P. Blakiston, Son & Co. 1905.

This is also one of many of the excellent works on Diseases of Women that have appeared in print within the last few years. Space will not permit a critical review of this and the previous mentioned work, but it is hoped to be permitted to do so at a later date.

**PRACTICAL DIETETICS.** By Alida Frances Pattee, Special Lecturer in Dietetics, Bellevue Training School for Nurses. New York. 2nd Edition. 1905.

There are many books on Food and Dietetics for nurse and doctor, but none seems to reach the actual requirements, in a practical way, as thoroughly as the present work. The preparation of the food for the sick, as well as for the convalescent, is a science, and if we are to get results, should be as accurate as the science of chemistry or of the compounding of medicines. Miss Pattee's qualifications are the ones peculiarly fitted for accomplishing such a task, and she has done it in a thorough manner. Not only is the dietary for various diseases accurately mapped out, but much detail is given for the preparation and serving.

R. W. GARRETT.