PAROTITIS IN PNEUMONIA.

CASE OF PERICARDITIS TREATED BY INCISION AND DRAINAGE.

By William Osler, M.D.,
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PAROTITIS IN PNEUMONIA.

This complication is of excessive rarity. I remember no case at the Montreal General Hospital, which has an unusually large service in this disease, nor was there an instance in the 105 post-mortems in the disease which I performed at that institution. It is very much less frequent than endocarditis or meningitis, with which, however, it has in one or two instances been associated. Traube mentions a case in which, in the course of an abscess following pneumonia, double parotitis developed on the forty-fifth day; the patient recovered.

The following is the only instance which has come under my personal observation. The cardiac physical signs were also of very great interest, inasmuch as there was a very well marked pleuropericardial friction.

PNEUMONIA OF THE UPPER THIRD OF THE LOWER LOBE OF THE LEFT LUNG; PLEURISY; PAROTITIS; DEATH.

M. R., aged 33, admitted to the Philadelphia Hospital, October 29, 1888. The patient was an Italian without friends, and as he was delirious no history could be obtained. The temperature on admission, at 4.30 P.M., was 103°; pulse, 120; respiration, 52. He was very restless all night and refused medicine. Feces and urine were passed involuntarily.

October 30, 1 P.M., the condition was as follows: Patient is delirious; tongue dry; hands tremulous and constantly picking at the bedclothes; pulse 120, feeble; respiration 50; temperature 103°. Expansion on the left side is defective, and there is a well-marked tympanitic note from clavicle to sixth rib; posteriorly there is dulness extending from near the spine of the scapula almost to the base and into the posterior half of the axilla. Over the dull region the breath sounds are tubular, with rales at the end of inspiration. Blowing breathing is intense at the angle of scapula. There is no expectoration. The heart sounds at the apex are clear.

October 31. Pulse ranged from 110 to 120; respiration 48 to 52; temperature from 101° to 103°. Still delirious and has had very little

1 Gesammelte Beiträge, Bd. II, Article 29.
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sleep. Takes medicine and nourishment well. Has been taking carbonate of ammonia, aromatic spirits of ammonia, whisky and strychnia. The patient is decidedly worse. The pulse is more feeble and the skin looks now a little bile-tinged. He is still delirious; it was noticed this evening that the left parotid gland was swollen. The bowels have been freely moved. The physical examination gave the following: Left lung clear to lower border of fourth rib, below which there is dulness. There is a loud friction murmur and many rales in left axilla. Below the third rib and to the left of the sternum there is a well-marked pericardial, to-and-fro, friction murmur. It is not heard at the base and is loudest in the fifth interspace below the nipple. It was concluded that it was pleuro-pericardial friction. The condition at the back of the chest remains the same.

November 2. Temperature through the day has ranged from 102° to 103°; pulse from 126 to 130, regular and small; respiration 44 to 52. Examination showed blowing breathing outside the nipple line and in the scapular regions rales were numerous.

At the apex both sounds were heard, a soft systolic murmur with the first. Sounds are clear at the aortic cartilage. The to-and-fro friction in the fourth and fifth spaces is scarcely audible.

November 3. The patient passed a fair night, slept better. The parotid gland not much swollen. Temperature 102.9°. The apex systolic murmur, which is much more distinct, is not heard in the axilla, but is much intensified towards the sternum. The sounds are clear at the aortic cartilage. The murmur is loud in the third and fourth left interspaces. The pleuro-pericardial friction sound has entirely disappeared. The percussion note is clear to the upper border of the fifth rib; it is dull from this into the axilla.

November 4. The patient is weaker; pulse 130 to 140; tremor is constant; respiration 44 to 56. Passes urine and feces involuntarily. The apex systolic murmur is distinctly louder and rougher than two days ago. Sounds at the aortic cartilage are clear. There are no cutaneous ecchymoses; no sputum has been obtained.

Respiration 65; pulse 160; temperature 103.6°. Death took place at 12.15 P.M.

Autopsy, twenty-four hours after death. Body that of a small, moderately muscular man; skin slightly icteric; left parotid swollen.

Thorax: A pint and a half of sero-purulent fluid in the left pleura. The upper lobe of the left lung is glued to the pericardium by thick fibrinous exudation. The entire pleura, visceral and parietal, is covered with a very thick creamy material. The right pleura is smooth.

Heart: The pericardium is smooth; no exudation. The right
chambers are dilated and full of dark, firm clots, which can be withdrawal from the vessels. No endocarditis. Muscular substance somewhat relaxed and turbid. The mitral orifice admits three fingers to the middle of the second joint.

Left lung: The lower two thirds of the lower lobe are collapsed, airless and dark in color. The upper third stands out very prominently, is very firm and in a condition of typical red hepatization. The bronchi of this part are filled with tenacious exudation. The upper lobe is crepitant throughout and a little congested at its base, but did not contain much blood or serum. The right lung is congested at the base. The bronchial glands are enlarged and tumefied. The spleen is enlarged and soft and contains two large wedge-shaped infarcts with yellow-brown soft centres. The kidneys are swollen and turbid; no infarcts. The liver presents the condition of cloudy swelling. The stomach is small; the intestines normal; the large bowel presents patches of deep congestion. The left parotid gland is deeply congested; the interlobular septa infiltrated with blood and here and there are distinct foci of pus. The brain presents no special changes.

CASE OF PERICARDITIS TREATED BY INCISION AND DRAINAGE.

The points of interest about this case are: (1) A septic pericarditis following acute necrosis of the bones of the nose; (2) the peculiar delirium occasionally seen with pericardial effusion; (3) the onset, two weeks after operation, when the patient had been doing well, of excessive cardiac debility, probably due to myocarditis.

January 15, 1890, I saw, with Dr. Donaldson, Mr. H., aged 36, who had come on from Louisville to spend Christmas at his home. A few days before the New Year he began to have trouble with his nose, which became acutely inflamed and swollen, and though there was no fetor in the secretion Dr. Donaldson thought that necrosis of the bones was present. A week or so before I saw him he began to get a little short of breath, the fever, which had been moderate, became high, and there were signs of congestion at the base of the right lung. The pulse became much more rapid and feeble, and the heart sounds indistinct. When I saw him the condition was as follows: He sits propped up in bed. Respiration is noisy, about thirty-five a minute. Face looks dull, perhaps a little suffused, not cyanotic. Part of the difficulty in
breathing comes from the fact that both nostrils are obstructed. The pulse is 110, irregular in volume and in force. Heart; inspection; nothing noticeable, as a heavy layer of panniculus covers the mammary regions, no impulse. No thrill. Dulness extends to upper border of the third rib in parasternal line and to a level of the second rib on the sternum; to the right it reaches two fingers' breadth beyond the sternum; to the left at least two inches beyond the nipple line. On auscultation no heart sounds audible over body of heart or towards apex. At the base feeble, distant, only just distinguishable sounds can be heard.

Resonance is impaired at the right base, and there are here rales, but no special blowing breathing. In the left lower axillary region there is a flat tympany, a modified Skoda's resonance.

It was thought from these signs that pericardial effusion existed. There was albumin in the urine, but no tube casts. A remarkable form of delirium was present; he would talk quite rationally for a time and then wander off on subjects connected with his business, and never seemed exactly to know where he was, though he always recognized his father and his wife. I saw him again on the 17th and on the 21st. The condition remained practically the same. Pulse was extremely irregular, feeble, 112 to 120. Temperature rarely above 101°. Respiration from 35 to 45. He could not lie down and the color of his face was certainly worse. Physical signs persisted unchanged. There was an entire absence of heart sounds. The dulness had certainly extended more to the left. On the 22d Dr. Halsted cut down into the fourth interspace, midway between nipple and sternum, and after aspirating somewhat over a quart of a sero-purulent fluid, incised the pericardium and inserted a gauze drainage plug. The patient stood the operation very well. The area of dullness diminished remarkably; the heart sounds were better heard; but there persisted in the fifth, sixth, seventh and eighth interspaces outside the left nipple marked dullness as far as the mid-axilla. The improvement after the operation was rapid. The pulse the following day was steadier, with only an occasional intermission. The heart sounds were more clearly heard and the area of dullness still further diminished. The drainage was very free, soaking the thick layers of gauze. On the third day the dullness was less marked in the axilla. The note was here somewhat tympanitic. The peculiar delirium persisted. Temperature fell to normal. He took his food well and gained rapidly in strength. On the eighth day the discharge had become very much less. The opening was still free. Dullness had diminished very much. On the tenth day after the operation the following note was made:
February 1. Patient is very comfortable, sleeps now with his head low, breathes without difficulty. Respirations are about 30. Pulse 112, regular, of fair volume. There is still moderate purulent discharge soaking the inner dressing. Cardiac impulse is not visible or palpable. Dullness begins at the lower border of third rib and at right margin of sternum; to the left it shades gradually from the nipple. Auscultation: First and second sounds heard everywhere in cardiac regions, still a little distant; no murmurs. No pericardial friction to be heard.

There is still a defective resonance at the right base with rales, clear at the left base, and in the lower left axilla the note is more normal than it has been. Delirium has not been present for some days.

February 6. Patient has not been so well. The drainage is free. There is no fever, but the pulse continues very rapid and has become more irregular. He is also very restless at night and requires morphia hypodermically. There was apparently a slight extension of the dullness to the left, but Dr. Halsted could pass his finger well within the pericardium and there seemed to be no reason to fear a reaccumulation. The heart sounds were clear, but not very strong; no murmur.


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THE ARMY SURGEON.

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FROM
THE MEDICAL NEWS,
March 24, 1894.
GENERAL SCHOFIELD, MR. SURGEON-GENERAL, PRESIDENT ALDEN, AND PROFESSORS OF THE FACULTY: At the outset I am sure you will permit me, on behalf of the profession, to offer to the Army Medical Department hearty congratulations on the completion of the arrangements which have made possible this gathering. With capacities strained to the utmost in furnishing to students an ordinary medical education, the schools at large cannot be expected to equip army surgeons with the full details of special training. A glance at the curriculum just completed brings into sharp relief the disabilities under which previous classes must have proceeded to their labors, the members of which have had to pick up at random—in many cases have probably never acquired—the valuable knowledge traversed in the lectures and laboratory exercises of the session. But greatest of all the advantages of an army medical school must be counted the contact of the young officers with their seniors, with the men under whose directions they subsequently have to work. In comparison with their predecessors, with what different feelings and ideas will the men before us enter upon their duties in the various posts to which they have been assigned. Instead of hazy notions—perhaps to one fresh from the Examining Board not pleasant ones—of a central authority at Washington, of a Yama enthroned as Secretary of War, and of an exacting Surgeon-General, the young officer who has enjoyed the delightful opportunities of four months' study amid these inspiring surroundings, which teem with reminders of the glories of the corps and of the greatness of his profession, the young

1 An address delivered at the closing exercises of the Army Medical School, Washington, D. C., February 28, 1894.
officer, I say, must be indeed a muddy-mettled fellow who does not carry away, not alone rich stores of information, but, most precious of all educational gifts, a true ideal of what his life-work should be.

Members of the Graduating Class: Though to you it may not, to me it seems peculiarly appropriate that the Surgeon-General should have asked a civilian to make an address on this occasion. With the strictly military aspects of your future life you have made yourselves familiar; of the merits and demerits of the army as a career for a physician you have in the past four months heard very much; but about all subjects there are some questions which are more freely handled by one who is unhampered by too particular knowledge, and this is my position, I may say my advantage, to-day. For me the Army Medical Department, so far as particulars are concerned, means a library with unsurpassed facilities, the worth of which is doubled by the liberality of its management; a museum in which I have spent some delightful hours; an index-catalogue, which is at my elbow like a dictionary; and the medical history of the late war, particularly the volumes by Woodward and Smart. Further, I have here and there gleaned in my general reading in the history of the profession of this country facts about the corps and its members. I have read the spirited vindication of John Morgan, who may be called the first Surgeon-General, and I am familiar with the names and works of many of your distinguished predecessors who have left their mark in our literature.

But as I write an aspiration of the past occurs, bringing me, it seems, closer to you than any of the points just mentioned, a recollection of the days when the desire of my life was to enter the India Medical Service, a dream of youth, dim now and almost forgotten—a dream of "Vishnu land, what Avatar!"

Speaking, then, from the vantage ground of my ignorance, let me tell you briefly of the opportunities of the life you have chosen. First among your privileges I shall place a feature often spoken of as a hardship, viz., the frequent change from station to station. Permanence of residence, good undoubtedly for the pocket, is not always best for wide mental vision in the physician. You are modern representatives of a professional age long past, of a day when physicians of distinction had
no settled homes. You are Cyprid larvae, unattached, free-swimming, seeing much in many places; not fixed, as we barnacles of civil life, head downward, degenerate descendants of the old professional Cirripeds, who laid under contribution not one, but a score of cities.

Without local ties, independent of the public, in, while not exactly of, our ranks, you will escape many of the anxieties which fret the young physician—the pangs of disprized worth, the years of weary waiting, the uncertainty of the effort; and perhaps those sorer trials inevitable in an art engaging equally heart and head, in which, from the very nature of the occupation, the former is apt—in finer spirits—to be touched with a grievous sensibility. In change, that leaven of life denied to so many, you will find a strong corrective to some of the most unpleasant of the foibles which beset us. Self-satisfaction, a frame of mind widely diffused, is manifest often in greatest intensity where it should be least encouraged, and in individuals and communities is sometimes so active on such slender grounds that the condition is comparable to the delusions of grandeur in the insane. In a nomad life this common infirmity, to the entertainment of which the twin sisters, Use and Wont, lend their ever-ready aid, will scarcely touch you, and for this mercy give thanks; and while you must, as men, entertain many idols of the tribe, you may at least escape this idol of the cave. Enjoying the privilege of wide acquaintance with men of very varied capabilities and training, you can, as spectators of their many crotchetts and of their little weaknesses, avoid placing an undue estimate on your own individual powers and position. As Sir Thomas Browne says, it is the “nimble and conceited heads that never looked a degree beyond their nests that tower and plume themselves on light attainments,” but “heads of capacity and such as are not full with a handful or easy measure of knowledge think they know nothing till they know all.”

Per contra, in thus attaining a broader mental platform, you may miss one of the great prizes of the profession—a position in a community reached in length of days by one or two, who, having added to learning, culture, to wisdom, charity, pass the evening of their lives in the hearts of their colleagues and of their kind. No gift of Apollo, not the Surgeon-Generalship, not distin-
guished position in science, no professorship, however honored, can equal this, this which, as wandering Army Surgeons, you must forego. Fortunate is it for you that the service in one place is never long enough to let the roots strike so deeply as to make the process of transplantation too painful. Myself a peripatetic, I know what it is to bear the scars of partings from comrades and friends, scars which sometimes ache as the memories recur of the days which have flown and of the old familiar faces which have gone.

Another aspect of the life of the Army Surgeon, isolation in some degree from professional colleagues, will influence you in different ways—hurtfully in the more dependent natures, helpfully in those who may have learned that "not from without us, only from within comes, or can ever come, upon us light"—and to such the early years of separation from medical societies and gatherings will prove a useful seed-time for habits of study, and for the cultivation of the self-reliance that forms so important an element in the outfit of the physician. And, after all, the isolation is neither so enduring nor so corroding as might have fallen to your lot in the routine of country practice. In it may be retained, too, some measure of individuality, lost with astonishing rapidity in the city mills that rub our angles down and soon stamp us all alike. In the history of the profession there are grounds for the statement that isolation promotes originality. Some of the most brilliant work has been done by men in extremely limited spheres of action, and during the past hundred years it is surprising how many of the notable achievements have been made by physicians dwelling far from educational centres—Jenner worked out his discovery in a village; McDowell, Long, and Sims were country doctors; Koch was a district physician.

So much depends upon the sort of start that a man makes in his profession that I cannot refrain from again congratulating you on the opportunities enjoyed during the past four months, which have not only added enormously to your capabilities for work, but have familiarized you with life at the heart of the organization of which hereafter you will form part, and doubtless have given you fruitful ideas on the possibilities of your individual development. Naturally each one of you will
desire to make the best use of his talents and education, and let me sketch briefly what I think should be your plan of action.

Throw away, in the first place, all ambition beyond that of doing the day's work well. The travellers on the road to success live in the present, heedless of, taking thought for, the morrow, having been able at some time, and in some form or other, to receive into their heart of hearts this maxim of the Sage of Chelsea: Your business is "not to see what lies dimly at a distance, but to do what lies clearly at hand." Fevered haste is not encouraged in military circles, and if you can adapt your intellectual progress to army rules, making each step in your mental promotion the lawful successor of some other, you will acquire little by little those staying powers without which no man is of much value in the ranks. Your opportunities for study will cover at first a wide field in medicine and surgery, and this diffuseness in your work may be your salvation. In the next five or ten years note with accuracy and care everything that comes within your professional ken. There are, in truth, no specialties in medicine, since to know fully many of the most important diseases a man must be familiar with their manifestations in many organs. Let nothing slip by you; the ordinary humdrum cases of the morning routine may have been accurately described and pictured, but study each one separately as though it were new—so it is so far as your special experience goes; and if the spirit of the student is in you the lesson will be there. Look at the cases not from the standpoint of text-books and monographs, but as so many stepping-stones in the progress of your individual development in the art. This will save you from the pitiable mental attitude of the men who travel the road of practice from Dan to Beersheba, and at every step cry out upon its desolation, its dreariness, and its monotony. With Laurence Sterne, we can afford to pity such, since they know not that the barrenness of which they complain is within themselves, a result of a lack of appreciation of the meaning and method of work.

In the early years of service your advantages will be fully as great as if you had remained in civil life. Faithfulness in the day of small things will insensibly widen your powers, correct your faculties, and in moments of

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despondency comfort may be derived from a knowledge that some of the best work of the profession has come from men whose clinical field was limited but well-tilled. The important thing is to make the lesson of each case tell on your education. The value of experience is not in seeing much, but in seeing wisely. Experience in the true sense of the term does not come to all with years, or with increasing opportunities. Growth in the acquisition of facts is not necessarily associated with development. Many grow through life mentally as the crystal, by simple accretion, and at fifty possess, to vary the figure, the unicellular mental blastoderm with which they started. The growth which is organic and enduring, is totally different, marked by changes of an unmistakable character. The observations are made with accuracy and care, no pains are spared, nothing is thought a trouble in the investigation of a problem. The facts are looked at in connection with similar ones, their relation to others is studied, and the experience of the recorder is compared with that of others who have worked upon the question. Insensibly, year by year, a man finds that there has been in his mental protoplasm not only growth by assimilation but an actual development, bringing fuller powers of observation, additional capabilities of nutrition, and that increased breadth of view which is of the very essence of wisdom.

As clinical observers, we study the experiments which Nature makes upon our fellow-creatures. These experiments, however, in striking contrast to those of the laboratory, lack exactness, possessing as they do a variability at once a despair and a delight—the despair of those who look for nothing but fixed laws in an art which is still deep in the sloughs of Empiricism; the delight of those who find in it an expression of a universal law transcending, even scorn ing, the petty accuracy of test-tube and balance, the law that in man "the measure of all things," mutability, variability, mobility, are the very marrow of his being. The clientèle in which you work has, however, more stability, a less extended range of variation than that with which we deal in civil life. In a body of carefully selected active young men, you have a material for study in which the oscillations are less striking, and in which the results of the experiments, i.e., the diseases, have a greater uniformity than in infancy.
and old age, in the enfeebled and debauched. This adds a value to the studies of army medical officers, who often have made investigations in hygiene, dietetics, and medicine, so trustworthy and thorough that they serve us as a standard of comparison, as a sort of abscissa or base-line. Thus you have demonstrated to us, and to the community at large, the possibilities of stamping out smallpox by systematic revaccination; in civil practice we strive to reach the low rate of mortality of army hospitals in the treatment of typhoid fever and of pneumonia. Many of the most important facts relating to etiology and symptomatology have come from camp or barrack. I often think that army surgeons scarcely appreciate that in their work they may follow the natural history of a disease under the most favorable circumstances; the experiments are more ideal, the conditions less disturbing than those which prevail either in family practice or in the routine of the general hospital. Many of the common disorders can be tracked from inception to close, as can be done in no other line of medical work, and the facilities for the continuous study of certain affections are unequalled. This, which is a point to be appreciated in the intrinsic education of which I spoke, gives you a decided advantage over your less favored brethren.

Your extraordinary range of observation, from the Florida Keys to Montana, from Maine to Southern California, affords unequalled facilities for the study of many of the vexed problems in medicine—facilities, indeed, which in the diversity of morbid conditions to be studied are equalled in no position in civil live. Let me here mention a few of the subjects that may profitably engage your attention. No question is of more importance at present than the settlement, definitely, of the varieties of fever in the West and South. The studies of Baumgarten in St. Louis, and of Guiteras and others in the Southern States, suggest the possibility that in addition to typhoid fever and malaria—the common affections—there are other fevers the symptomatology and morbid anatomy of which still require careful elucidation. In this you will be walking in the footsteps of notable predecessors in the corps, and in the exhaustive works of Woodward and Smart, to which I have already alluded, and which are always available, you will find a basis from which you may start your personal observa-
tions. More particularly in this direction do we need careful anatomical investigation, since the symptomatology of certain of the affections in question has much in common with that of the ordinary continued fevers of the North. I may call your attention to the satisfactory settlement of the nature of mountain fever by army surgeons, and need hardly add that the specimens contributed by Hoff and by Girard to this museum demonstrate conclusively that it is in reality typhoid fever.

In the Southern posts malaria with its protean manifestations presents still many interesting problems for solution, and you will leave this school better equipped than any of your predecessors for the study and differentiation of its less known varieties. With positive knowledge as to the etiology, and a practical familiarity with methods of blood-examination, you can do much in many localities to give to malaria a more definite position than it at present occupies in the profession, and can offer in doubtful cases the positive and satisfactory test of the microscope. The hematuria of the South requires to be studied anew—the filarial cases separated from the malarial, and, most important of all, the relation of quinine to hematuria positively settled.

In the more distant posts, where, so far as the soldier is concerned, your opportunities for study may be limited, you may add greatly to our knowledge of the disorders prevalent among the Indians. More particularly do we need additional information as to the frequency of tuberculosis among them, and its clinical history. One of your number, Dr. Edwards, has already furnished admirable statistics upon this point, but the field is still open and much remains to be done. In this connection, too, you may be able to carry saving knowledge upon the etiology of the disease, and enforce regulations for its prevention. You have only to turn to the Index-catalogue to see how scanty in reality are the facts in the nosology of the North American Indian.

At many posts there will be presented to you the interesting effects of altitude, with problems of the greatest physiological importance. An excellent piece of work may be done upon its influence upon the red blood-corpuscles, in determining whether, as has been maintained, there is an increase numerically per cubic millimetre, so long as the individual remains in the more
rarefied atmosphere. Points remain to be settled also upon the effects of altitude upon the chest-capacity, the chest-measurement, and the heart, and our knowledge is still lacking on questions relating to the influence of high altitudes upon many of the ordinary diseases. 

To one of you, perhaps, another peculiarly American disease—milk-sickness—may reveal its secret. Our knowledge of its etiology has not been materially increased since the early papers on the subject, which so well described its symptomatology.

These are but a few of the questions suggesting themselves to my mind, to which, as chance affords, you could direct your attention. In a ten or fifteen years' service, travelling with seeing eyes and hearing ears, and carefully-kept note-books, just think what a storehouse of clinical material may be at the command of any one of you—material not only valuable in itself to the profession, but of infinite value to you personally in its acquisition, rendering you painstaking and accurate, and giving you, year by year, an increasing experience of the sort to which I have already more than once referred.

In what I have said hitherto I have dwelt chiefly on your personal development, and on the direction in which your activities might be engaged, but while you are thus laying the foundation of an education in all that relates to the technical side of the profession, there are other duties which call for a word or two. In the communities to which you may be sent do not forget that, though army officers, you owe allegiance to an honorable profession, to the members of which you are linked by ties of a most binding character. In situations in which the advantages of a more critical training give you a measure of superiority over your confrères in civil life, let it not be apparent in your demeanor, but so order yourselves that in all things you may appear to receive, not to grant favors. There are regions, in partibus infidelium, to which you will go as missionaries, carrying the gospel of loyalty to truth in the science and in the art of medicine, and your lives of devotion may prove to many a stimulating example. You cannot afford to stand aloof from your professional colleagues in any place. Join their associations, mingle in their meetings, giving of the best of your talents, gathering here, scattering there; but
everywhere showing that you are at all times faithful students, as willing to teach as to be taught. Shun as most pernicious that frame of mind, too often, I fear, seen in physicians, which assumes an air of superiority, and limits as worthy of your communion only those with satisfactory collegiate or sartorial credentials. The passports to your fellowship should be honesty of purpose and a devotion to the highest interests of our profession, and these you will find widely diffused, sometimes apparent only when you get beneath the crust of a rough exterior.

If I have laid stress upon the more strictly professional aspects of your career it has been with a purpose. I believe the arrangements in the department are such that, with habits of ordinary diligence, each one of you may attain not only a high grade of personal development, but may become an important contributor in the advancement of our art. I have said nothing of the pursuit of the sciences cognate to medicine, of botany, zoölogy, geology, ethnology, and archeology. In every one of these, so fascinating in themselves, it is true that army medical officers have risen to distinction, but I claim that your first duty is to medicine, which should have your best services and your loyal devotion. Not, too, in the perfunctory discharge of the daily routine, but in zealous endeavor to keep pace with, and to aid in, the progress of knowledge. In this way you will best serve the department, the profession, and the public.

Generalities, of the kind in which I have been indulging, though appropriate to the occasion, are close kin, I fear, to the fancies fond, that vanish like the gay motes which float for a moment in the sunbeams of our mind. But I would fain leave with you, in closing, something of a more enduring kind—a picture that for me has always had a singular attraction, the picture of a man who, amid circumstances the most unfavorable, saw his opportunity and was quick to "grasp the skirts of happy chance." Far away in the northern wilds, where the waters of Lake Michigan and Lake Huron unite, stands the fort of Michilimackinac, rich in the memories of Indian and voyageur, one of the four important posts in the upper lakes in the days when the Rose and the Fleur-de-lys strove for the mastery of the Western world. Here was the scene of Marquette's mission, and here
beneath the chapel of St. Ignace they laid his bones to rest. Here the intrepid La Salle, the brave Tonty, and the resolute Du Luht had halted in their wild wanderings. Its palisades and bastions had echoed the warwhoops of Ojibwas and Ottawas, of Hurons and Iroquois, and had been the scene of bloody massacres and of hard-fought fights. At the conclusion of the war of 1812, after two centuries of struggle, peace settled at last upon the old fort, and early in her reign celebrated one of the most famous of her minor victories, one which carried the high-sounding name of Michilimackinac far and wide, and into circles where Marquette, Du Luht, and La Salle were unknown. Here, in 1820, was assigned to duty at the fort, which had been continued in use to keep the Indians in check, Surgeon William Beaumont, then a young man in the prime of life. On the 22d of June, 1822, the accidental discharge of a musket made St. Martin, a voyageur, one of the most famous subjects in the history of physiology, for the wound laid open his stomach, and he recovered with a permanent gastric fistula of an exceptionally favorable kind. Beaumont was not slow to see the extraordinary possibilities that were before him. Early in the second decade of the century the process of gastric digestion was believed to be due to direct mechanical maceration or to the action of a vital principle, and though the idea of a solvent juice had long been entertained, the whole question was sub judice. The series of studies made by Beaumont on St. Martin settled forever the existence of a solvent fluid capable of acting on food outside as well as within the body, and in addition enriched our knowledge of the processes of digestion by new observations on the movements of the stomach, the temperature of the interior of the body, and the digestibility of the various articles of food. The results of his work were published in 1833, in an octavo volume of less than 300 pages. In looking through it one cannot but recognize that it is the source of a very large part of the current statements about digestion; but apart altogether from the value of the facts, there are qualities about the work which make it a model

of its kind, and on every page is revealed the character of the man. From the first experiment, dated August 1, 1825, to the last, dated November 1, 1833, the observations are made with accuracy and care, and noted in plain, terse language. A remarkable feature was the persistence with which for eight years Beaumont pursued the subject, except during two intervals when St. Martin escaped to his relatives in Lower Canada. On one occasion Beaumont brought him a distance of two thousand miles to Fort Crawford, on the upper Mississippi, where, in 1829, the second series of experiments was made. The third series was conducted in Washington, in 1832; and the fourth at Plattsburg, in 1833. The determination to sift the question thoroughly, to keep at it persistently until the truth was reached, is shown in every one of the 238 experiments which he has recorded.

The opportunity presented itself, the observer had the necessary mental equipment and the needed store of endurance to carry to a successful termination a long and laborious research. William Beaumont is indeed a bright example in the annals of the Army Medical Department, and there is no name on its roll more deserving to live in the memory of the profession of this country.

And in closing let me express the wish that each one of you, in all your works begun, continued, and ended, may be able to say with him: “Truth, like beauty, when unadorned is adorned the most,’ and in prosecuting experiments and inquiries I believe I have been guided by its light.”
Typhus fever has almost gone; relapsing fever we never see now; yellow fever has not reached these latitudes for many years; malarial fevers are becoming yearly less frequent; one member only of the old group of the fevers remains in full possession of its rights and privileges, still remains a witness to civic incapacity, to municipal folly, to domestic carelessness, and shall I not add, to professional supineness? Typhoid fever, the autumnal fever of the physician of the latter part of the last and of the beginning of this century, the slow nervous fever of Huxham, still numbers scores of victims in cities, towns and villages; and today, as at the beginning of the century, it is the serious fever of the year.

No disease demands a more careful and thorough study, since its manifestations are so varied and the larger your experience the more impressed will you be at the complexity of the picture which it presents.

Preliminary to, or rather concurrent with, your observation of the cases in the wards I would urge you to read the important literature on the subject, of which you will find the following in the library. Louis’s great work on typhoid, both the original and the translation, by H. J. Bowditch; Gerhardt’s articles in the American Journal of the Medical Sciences, for 1837, in which for the first time the essential differences between typhus and typhoid fevers were clearly and succinctly announced; Bartlett’s work on fevers (1842), in which the two diseases were separately considered and the differences fully acknowledged; Jenner’s articles (1848), which have been recently reprinted with his contributions on diphtheria; the great work of Murchison on the continued fevers; the article by Liebermeister in von Ziemssen’s Encyclopaedia; while in Vol. I of the new French Traité de Médecine you will find an elaborate account by Chanterne of the bacillus and the conditions under which it develops. I have also given the librarian for your use Brand’s brochure on the treatment of typhoid fever.

Let me at the outset refresh your memories upon one or two points in the etiology of the disease. The bacilli or their germs are very widely spread, and though the possibility of infection through the air cannot be denied, yet undoubtedly they enter chiefly through the digestive tract with food or water. They settle in the lymph follicles of the intestine, in the mesenteric glands, in the spleen, and to a less extent in the liver, and after a variable period (the stage of incubation, in which they are growing and extending) produce suffici-
ent toxic material to cause symptoms. It is important to bear in mind that they do not settle on the mucosa of the bowel, but that they grow in its tissue, and they are not found in the feces until the middle or toward the end of the second week. It is an infection of the chylopoietic lymphatic system, not of the intestine alone, and there are fatal cases in which the bowel lesion, believed to be characteristic, has been extremely slight or even absent. There may be the most intense toxic and nervous manifestations with very slight intestinal affection.

The dangers of the disease in order of severity are: 1. The general toxemia. 2. The intestinal lesion. 3. The secondary infections. The typho-toxines may be produced in such quantity as rapidly to overwhelm the system, and patients may succumb within a week or ten days with intense nervous symptoms before the ulcers form in the intestines. In other instances the system fails gradually in a less profound but more prolonged toxemia.

The dangers from the intestinal lesion are very great. As the necrotic tissue separates, blood-vessels may be eroded and cause a fatal hemorrhage or the sloughs may be so deep as to extend through the entire wall, or in separating leave so thin a base that perforation subsequently occurs. These two accidents together account for fifty per cent. of the fatal cases.

Primarily causing an affection of the chylopoietic lymph glands the typhoid bacilli may themselves pass to distant organs and excite inflammations—nephritis, meningitis, pneumonia, etc., but more often the organs, weakened by the prolonged fever, fall a prey to the colon bacilli, the staphylococci, the streptococci, and the micrococci lanceolatus, which cause the secondary complications and which constitute the third great danger in the disease.

Upon the question of the treatment of typhoid fever the profession has not reached any unanimity. I must say that the cases are still, as a rule, overdosed. I am sometimes appalled at the number and variety of drugs which are poured into an unfortunate victim with this disease. You will here have an opportunity of seeing what a non-medical plan of treatment can do, since a very large majority of our cases receive no drugs from the beginning to the close. We employ a systematic hydrotherapy, believing that on this plan a certain percentage of the cases are saved, and we shall continue to use it until some method is devised by which the mortality in large series of cases in hospital practice is reduced below six or seven per cent.

Not much progress has been made with the so-called specific treatment of the disease. Sterilized typhoid cultures have been used, but the number of cases is as yet scarcely sufficient upon which to base any positive opinion. I show you here the charts of two cases in which during last session we then employed cultures. Both were cases of great severity, and one patient after seven injections seemed so ill that we thought it better to abandon the injections and return to the baths. In the other case also the injections did not seem to have any special influence. Following one of the injections in half an hour the patient had a very heavy chill.

We should not, however, be discouraged, as the outlook for serum therapy seems at present unusually bright. Specific medication in the fevers has not kept pace with the enormous development in our knowledge of their etiology. Take, for example, the cases admitted during the past two days which you saw in Ward F this morning. In beds 8 and 10 we could say positively that by specific medication the fever would disappear and the patients would be afebrile at the time of the next ward visit on Friday; whereas in the patients in beds 23 and 24 by no method of procedure with which we are acquainted could we arrest the progress of the fever. It is, however, quite possible that some day we may have typhoid fever under our control just as we have malarial fever. I should like to call your attention to the fact that we do not give a preliminary calomel purge, nor do we mind if constipation exists. In looking over
any long series of cases you will find that those with constipation do better as a rule than those with diarrhea. It is extremely interesting to note how from time to time the profession returns to old ideas on practice which it had abandoned years ago. At present you will see a good deal in the journals about the eliminative and purgative treatment of typhoid fever. To promote in every way the excretion of the toxines (by keeping the skin active and by stimulating the flow of urine) is a most rational indication, best met by the use of water, external and internal. If the bacilli manufactured their poisons on the surface of the mucosa, calomel laxatives and intestinal antiseptics of various sorts would be indicated, but as I mentioned to you, the universal opinion of bacteriologists is that the bacilli are not found in the feces or on the mucosa until about the middle of the second week, by which time in severe cases a profound toxemia may have developed and many even have proved fatal. Later in the disease, when the sloughs have separated and the ulcers are present, the use of purgatives is, I hold, very bad practice.

The statistical details of the cases treated in the hospital during the first four years you will find in the Report on Typhoid Fever issued last spring.

During the fifth year of the hospital, ending May 15, 1894, eighty cases were treated to a termination, of which five died, a mortality of 6.2 per cent.; the total mortality during the four years since the introduction of the Brand’s method has been in the 276 cases, 6.8 per cent. Of the fatal cases last year, two were admitted at the end of the second week; one was a man with extensive tuberculosis of the lymph glands; one died of perforation. One case, supposed to have meningitis, is of exceptional interest, as it illustrates one of the commonest mistakes in the diagnosis of typhoid fever. The case has very exceptional pathological features and will be reported in full by Dr. Flexner, but I will give you a brief abstract of the history. A colored girl, aged 18, had been ill, so she stated, for about five weeks before coming to hospital, during which time she bad been feverish and had had occasional looseness of the bowels. On admission the temperature was 103°; pulse 120 and the tongue dry and brown. The abdomen was a little distended and the spleen could readily be felt. There was no diazo-reaction in the urine. She was irrational and had much vomiting. She was given sponge baths and ordered a creasote mixture, and morphia hypodermically in the evening.

On the 24th and 25th she remained much in the same condition, constantly moaning, but with the head thrown back. The temperature did not rise above 103°. On the 26th the vomiting was very persistent. It was noticed that the right arm was rigid, and it was very difficult to flex it. The pupils were equal and reacted to light. On the 27th the temperature fell to 99°; the head was thrown back; she resisted slightly any attempt to bend the neck; she answered questions with difficulty and was much confused. She lay with the eyes open and with a rather staring expression. She moved the left arm readily, but the right lay extended and motionless by her side, and if it were touched she cried out. There did not appear to be any tenderness about the joints, but there was a good deal of sensitiveness of the general surface. The deep reflexes of the left arm were active. There was well-marked ankle clonus on both sides and the knee-jerks appeared to be lively. The uterus and its adnexa were normal. There was a small amount of albumen in the urine, with a few red blood cells.

On the 29th the rigidity of the muscles of the neck seemed greater. The stiffness of the right arm persisted. The temperature on the 28th and 29th ranged from 98.2° to 100°; the greater part of the 29th it was below 99°. At the time of my visit on the 30th the right arm showed slight clonic movements, and at intervals became quite rigid. The temperature remained low on the 30th, and it was noticed that there was a slight swelling in the left parotid region. This led to a suspicion on the part of
Dr. Thayer that the whole trouble might really be typhoid fever. Previous to this we had regarded the case as one of meningitis. The vomiting continued and she sank and died on the evening of May 1. It is interesting to note that for nearly five days previous to her death the temperature for the greater part of each day was between 98° and 99°.

The autopsy showed characteristic lesions of typhoid fever, with the most extensive distribution of the typhoid bacilli in liver, spleen, lungs, kidneys and bone-marrow. The brain and spinal cord showed no changes.

Many of the so-called sporadic cases of meningitis are instances of this cerebro-spinal type of typhoid fever, in which the brunt of the disease falls upon the nervous system. The cases are sometimes extremely difficult to recognize, but it is well for you always to bear in mind Stokes’s dictum, that in fever “there is no single nervous symptom which may not and does not occur independently of any appreciable lesion of the brain, nerves or spinal cord.”
Cancer of the Stomach with Very Rapid Course.

By William Osler, M.D.,
Professor of Medicine, Johns Hopkins University.
CANCER OF THE STOMACH WITH VERY RAPID COURSE.

BY WILLIAM OSLER, M.D.,
Professor of Medicine, Johns Hopkins University.

The diagnosis of cancer of the stomach may be obscured by many causes, among which perhaps the least frequent are variations in the duration of the disease. The disease rarely lasts more than two or three years; a duration indeed of three years is most exceptional, while a rapid course—three months or less—is still more uncommon, even in young persons, in whom, as Mathieu (quoted by Welch) points out, the progress of the disease is often rapid.

I have had under observation two cases only in which the course of the disease was remarkably rapid. In one of these, reported by Dr. Thayer, the entire duration from the onset of the symptoms (the patient being a strong, well-developed man, aged 40) was under six weeks. With the exception of occasional bilious attacks he had always enjoyed good health. The chief symptom was incessant vomiting. At the post-mortem there was found an infiltrating, not ulcerated, cancer at the pylorus, without dilatation of the organ. In this case the fatal result was not due primarily to the cancer, which was not larger than a walnut, but to the vomiting excited by its presence.

In the following instance the acute symptoms developed in a man who had had dyspepsia for years, and who had been for eighteen months a martyr to vertigo of the type of Menière's disease. The case presents several features of special interest:

(1) The complete relief of agonizing vertigo by the correction of refraction errors.

(2) The onset of acute symptoms (uncontrollable vomiting) and death within two weeks, without any previous aggravation of the existing dyspepsia or serious loss in weight.

(3) Vomitus of an extremely offensive (almost fecal) odor, due to sloughing of the cancer.

Dyspepsia for many years; for Eighteen Months Attacks of Vertigo of Great Severity; Complete Relief by Correction of Refraction Errors; Sudden Onset of Severe Gastric Symptoms and Death within Two Weeks; Diffuse Infiltrating Carcinoma of the Stomach with Sloughing.

—A. B., aged 54, seen April 4, complaining of vertigo and of stomach trouble.

The family history is good; there are no similar affections that he knows of in any of his near relatives.

1 Johns Hopkins Hospital Bulletin, Vol. II.
The patient is a brick-maker by occupation. His habits have been good. He has been a steady smoker until about a month ago.

The patient was well and strong as a young man, and has throughout life enjoyed tolerably good health, though for many years he has had dyspepsia, but never very badly until within the past eighteen months. Two years ago he had an attack of biliary colic severe enough to require hypodermic injections of morphia. Four months afterwards he had a second attack, with great pain in the right side. After this the skin was a little yellow. He has had no attacks since of a similar character. For about eighteen months he has had attacks of severe vertigo associated with flatulency. The first one occurred while he was sitting at the table in a restaurant drinking claret-punch. He jumped up and said to his wife, "Catch me, catch me," and had to get hold of the table to steady himself. He had a sensation as if a cannon-ball had burst in his head, and as if everything was in motion. The attack lasted about an hour. He did not vomit, but looked pale, and broke out into a profuse perspiration. He has had only two attacks of similar severity, one while in his carriage. He said it seemed as if the horse was down and everything was turning over. This attack lasted about an hour. He had to go to bed and felt very badly, and after it he was all confused in his head.

The milder attacks have occurred with great frequency. Scarcely a day passes without one or two; thus, yesterday after breakfast his stomach felt badly and he had a good deal of belching. Then, as he expresses it, his head went off at once, and he generally cries to his wife, "Come and catch me." Coming home just before dinner he had another spell. When they are at all severe he gets pale and cool, and perspiration rolls off his face in beads. He belches all the time during an attack, and on some days he belches continually. He has no pain whatever in the chest or elsewhere. The attacks do not come on during sleep, but he has had several of them while in bed.

From his statement the vertigo apparently is both subjective and objective. Objects go to the right, but he feels that he turns also. In the attacks it is impossible for him to walk. It appears to him that one foot goes about ten feet higher than the other. If the head is held tight the attacks do not appear to be so severe. He has never lost consciousness, though he sometimes feels faint. There is no throbbing at the heart. The longest interval he has ever passed without an attack is two weeks.

He lays the greatest stress upon the condition of the stomach, and says that everything comes from it, and that the belching is incessant and most distressing.

Though he did not complain of difficult hearing, it was evident
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that he was a little deaf, and on questioning him he stated that deafness had been coming on for several years past, particularly in the right ear, in which there is a singing noise almost constantly. In the spells it is much louder, and sometimes there is the explosive burst already spoken of. He thinks he is never without the noise in the ear.

Present Condition.—A small-framed man, a little pale, with feeble musculature. He belches loudly at intervals. The pulse is 76. No special sclerosis of the arteries. Apex-beat not visible, not palpable. No increase in area of dulness. The second sound is very ringing and accentuated at the base. There is a soft systolic murmur at the aortic area. No diastolic murmur audible. The liver is not enlarged. No tenderness on palpation at costal margin. The stomach is moderately distended. Tympany extends from fifth rib to three finger-breadths above the navel. Spleen not palpable. Hearing is much impaired on right side. He says he has been deaf in this ear for seven or eight years. He can hear the watch in close contact. In the left ear can hear it at a distance of six inches.

Dr. Theobald, to whom I referred the patient for examination of the ears, wrote that there was deafness in the right ear, due to changes in the auditory nerve or its expansion in the labyrinth, and that there was also slight deafness in the left ear. The examination of the eyes showed a rather high grade of hypermetropia, with a decided amount of astigmatism, which he thought would be materially benefited by glasses, as the error of refraction was possibly an important factor in causing the attacks, though the condition of the ears was such that it was reasonable to suppose that they also might have something to do with it. The change in the patient from the use of the properly-adjusted glasses was most remarkable. He came to see me again towards the end of May, and said that he was living a new life; that not only had he had no severe attack, but that the milder attacks had disappeared completely. His stomach still troubled him, but he said was not nearly as bad as it had been.

I did not see this patient again until June 29 (with Dr. Benzinger). His stomach had been worrying him for some weeks, though he had kept about and had been transacting his business as usual until June 22. On that day he began to have vomiting, and could not retain anything on the stomach. Since then he has not been able to take anything into his stomach without aggravating the vomiting. In the intervals between the attacks he is comfortable, has no pain, and the only distress is just prior to and during the attacks, which recur every three or four hours. The material vomited was at first watery, grayish in color, and not bloody.

To-day when I saw him his condition was as follows: He looked
very much as he did in April; perhaps a little thinner. The color of the lips is good. There is no fever. The tongue is moist, and has a slight fur. He belches at intervals. The material vomited to-day was reddish-brown in color, and contained flakes of blood, and on settling it had a distinct coffee-ground sediment. The abdomen was not distended and was nowhere painful. Nothing could be felt in the region of the stomach; there was evidently no dilatation.

I thought from the acute onset and severity that it might possibly be a severe gastric crisis in connection with his labyrinthine disease. I did not see him on the 30th.

July 1. The condition of the patient is unchanged. About every two or three hours he vomits from six to eight ounces of a thin fluid, blood-stained and highly offensive, and which contains also fragments of blood clot, and sometimes shreds of necrotic tissue. All the usual remedies have been tried to allay the vomiting without any avail, and even if he takes a little water it is thrown off at once. He has been fed by the bowel, and given large injections of brandy and water. Apart from the vomiting spells he says he is very comfortable and has no pain. The examination of the epigastrium is negative. The recti are somewhat resistant, but there is not the slightest distention, and no pain on deep pressure.

On Monday and Tuesday the vomiting continued, and he grew weaker, but even now he did not look very badly, and the pulse kept up wonderfully. He retained the injections very well. The odor of the vomitus had become, if possible, worse, and now appeared to have a distinctly fecal smell; the character of it remained about the same, a thin reddish-brown fluid, with a coffee-ground sediment. The odor was such that we suspected perforation into the bowel. It was remarkable how much he brought up from the stomach in the twenty-four hours, at least two pints, yet for more than a week he had taken nothing into his stomach.

The examination of the fluid showed that it was acid, reacted feebly for free hydrochloric acid, contained red blood-corpuscles, granular débris, but no formed elements. On Tuesday evening at 9.20 I examined the material which had been vomited at 8.40 P.M. It was extremely foul, with a distinctly fecal odor. Nothing characteristic was found in the fragments of blood clot or in the sediment. A cercomonas was seen. The pipette which I used to remove the fluid had been standing in a jar of water, but I had, as a precautionary measure, drawn alcohol into it before using.

On Wednesday, July 4, the condition of the patient remained much the same, but he became weaker after each vomiting spell. In the evening it was evident that he was failing very rapidly, and he
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had not the strength to vomit. He sank and died on the morning of the 5th.

*Autopsy*, by Dr. L. F. Barker.—Only the abdomen was examined. The peritoneal cavity contained the preserving fluid of the undertaker.

The greater curvature of the stomach and a small portion of its anterior wall were alone visible, the rest of the organ being covered by the left lobe of the liver. On lifting this the stomach had a grayish-red appearance, was small, and the walls looked infiltrated. Neither the transverse colon nor any coil of the small bowel was adherent. The organ was opened *in situ*. There was some bloody fluid in the cavity, of the same nature as that which he had vomited. The body of the organ was the seat of a diffuse infiltrated carcinoma. In the lesser curvature and the posterior wall in an area nearly the size of the palm of the hand sloughing had taken place. There was a large, flat, ulcerated surface to which shreds of necrotic tissue were adherent. The index finger could be passed into the pyloric orifice; the cardiac orifice was free. There was no perforation. The liver was smooth, and there were no changes in the other abdominal organs.

Of course, the anatomical condition made it perfectly plain that the growth in the stomach had been of considerable duration, but it had not seriously undermined his health or strength. I rarely remember to have seen such a remarkable change in a patient as in this man after the correction of his refraction error by Dr. Theobald. As he expressed it, he was "living a new life," and when I saw him towards the end of May he looked very much better. The dyspepsia still worried him, but he no longer had the incessant belching. Yet the onset of his serious and fatal illness was within a month of this date. This form of infiltrating neoplasm disturbs in the least degree the functions of the stomach, and there are many instances of persons who have had diffuse carcinoma, whose appetite and digestion have remained good almost to the end.

From the character of the vomit and the horrible stench in this case, I fully believed that sloughing had occurred, but there was also a fecal odor of the vomitus, which led us to suspect perforation of the bowel as well. Very possibly in the persistent and long-continued vomiting there was more or less regurgitation of the contents of the intestine.

By no means the least interesting feature in the case was the entire relief of the severe vertigo by glasses.
Case of Sporadic Cretinism (Infantile Myxœdema) Treated Successfully with Thyroid Extract.

BY

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FROM

ARCHIVES OF PEDIATRICS,
February, 1895.
CASE OF SPORADICcretinism (INFANTILE MYXOEDEMA) TREATED SUCCESSFULLY WITH THYROID EXTRACT.

BY WILLIAM OSLER, M.D.

Professor of Medicine, Johns Hopkins University.

In my paper upon sporadic cretinism in America, read before the Association of American Physicians, in May 1893, I reported three cases of this disorder. One of these which had been under Dr. Booker's observation, subsequently passed out of sight. The other cases have been treated with the thyroid extract. In the girl aged nineteen the treatment has not been very systematically carried out by the patients, and the condition has not materially improved.

In the third case the results have been truly remarkable. I give the notes in full from the American Journal of Medical Sciences, Nov., 1893.

M., aged two years and three months, was brought to me first from the Eastern Shore of Maryland, January 10, 1892. The parents (first cousins) are healthy and strong. No hereditary ailments on either side; no members of the family have had goitre. The patient was the second child; the labor was easy, and she thrrove well. Nothing special was noticed about the child until the end of the first year, when it was suspected something might be wrong, as she had not cut her teeth, and did not attempt to walk or to talk. Throughout her second year she grew fairly well, but had several attacks of slight fever, and did not develop as other children, making no attempts to crawl or to walk, and seemed unnaturally quiet and dull. She did not cut the incisor teeth until she was nearly two years old. Within the past six months she has changed remarkably in color, has become very pale and waxy, and the face and limbs seem puffy
and swollen. She has taken milk well, and has developed a little mentally; smiles, and attempts to repeat her own name when it is said, and has learned to say "mamma" and "papa."

Present Condition.—Under-sized child for her age. Aspect is very striking; color pale; face, very broad across; the mouth is open; tongue protrudes, and is evidently enlarged; the lips are full and heavy; the cheeks very large, almost pendulous; the hair is almost straight; the eyes are blue; the sclerotics very pale; the eyelids glossy and infiltrated. The forehead is large, not badly shaped; the head well formed, rather prominent behind; the anterior fontanelle is not quite closed. She looks good-tempered, but takes very little notice, and smiles in a feeble way. The facial aspect is that of a cretinoid idiot. The muscles of the arms are feebly developed; the subcutaneous tissues are much infiltrated; the hands are swollen and glossy—not tense, and look edematous, but the infiltration is firm, and only yields on prolonged pressure. The legs look large; the thighs present several folds; the skin looks glossy, and the subcutaneous tissues are much infiltrated. The skin over the dorsal portion of the feet is very glossy and tense, and on firm pressure pits with distinctness. The abdomen is distended and the superficial veins prominent. Palpation is negative; the edge of the liver is palpable about six cm. below the costal margin. The edge of the spleen is not palpable, nor does the organ appear to be enlarged. The thorax is well formed; no trace of rickety enlargement of the ends of the ribs; no evidences of rickets in the long bones. The apex-beat of the heart is just within the nipple line. There is a systolic murmur with the first sound, which is loud and intense at the pulmonary cartilage; the breath sounds are clear. There is no enlargement of the superficial lymphatic glands; the thyroid gland is not enlarged; the cricoid cartilage can be well felt, as can also the entire trachea as low as the sternum, and it can be taken between the two fingers quite plainly. Dr. Halsted thought he could feel the thyroid beneath the sternomastoid muscle. The percussion note on the first bone of the sternum is clear. The examination of the blood showed a moderate increase of leucocytes and some irregularity in the size of the red blood-corpuscles.

The condition was diagnosed sporadic cretinism. As it was evident that the blood condition of the child was very much below par, she was ordered the syrup of the iodide of iron.
March 1, 1893.—Patient brought again to-day. In the year and two months which have elapsed since I saw the child she has improved remarkably. She is now three-and-a-half years old. Her height is 75 cm. She looks more intelligent, takes more notice, and the facial expression is decidedly brighter. She tries to say a few words, and has begun to walk with a little assistance. The most striking changes are the disappearance in great part of the anaemia and lessening of the firm subcutaneous oedema which was so marked a feature. She still has a little infiltration about the eyelids and cheeks. The limbs also look full, and they are firm. The skin is a little glossy over the hands and feet. The tongue does not protrude so often from the mouth, though when the face is in repose it is frequently seen protruding slightly. The face looks broad and full, and the expression and aspect are still cretinoid; head is 51.5 cm. in circumference, the abdomen 54.5 cm. The neck is thick and short, and presents a large tranverse fold of fat. The thyroid gland is not palpable, and below the thyroid cartilage the trachea can be felt with the greatest distinctness and grasped between the fingers down to the sternum.

Treatment with the thyroid extract was begun in March 1893. At first Dr. Hewetson, one of my assistants, who superintended the treatment of the case, prepared the glycerine extract, and the child took an amount corresponding to about a quarter of the gland in the twenty-four hours. This she took throughout the summer and autumn, but for the past four or five months she has been taking the desiccated gland.

The child was brought to me on April 28, 1894. The change has been of an extraordinary character, and is manifest: first, in entire loss of the cretinoid aspect; the color is good, the nutrition evidently very much improved, the flesh firm and solid; second, she has begun to develop rapidly, and in the fourteen months which have elapsed since the last measurements she has grown four inches in height; third, she now walks and runs about everywhere; and fourth, the mental development has been proportionately striking. Fourteen months ago, though she would try to say a few words, her vocabulary was confined to mamma and papa, but she now talks clearly, and says almost everything.

No one meeting the child for the first time would have any idea that there was anything peculiar about her, though she is, of course, still undersized, undeveloped,
and does not talk so plainly as a child of four years and eight months.

The case adds another to those in which beneficial effects have followed the administration of the thyroid extract in infantile myxœdema.

Oct. 1894.—The improvement in this case continues. I saw the patient again in July. She is a very bright active child, in whom no one would notice that there had been anything wrong, and in whom no one would notice anything amiss except, perhaps, that she does not talk as plainly as a child should at her age.
This is the only English publication devoted exclusively to diseases of infants and children. It contains the best work of the best men for the general practitioner. It is practical. It makes an annual cyclopaedia of Pediatrics, carefully indexed, of inestimable value for constant reference.

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VISIBLE CONTRACTILE TUMOUR OF THE PYLORUS FOLLOWING ULCER OF THE STOMACH.

BY

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VISIBLE CONTRACTILE TUMOUR OF THE PYLORUS FOLLOWING ULCER OF THE STOMACH.

By WILLIAM OSLER, M.D., LL.D., F.R.C.P.,
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In stricture of the orifice one can not infrequently feel the contractions in the enormously hypertrophied pyloric region of the stomach. In such cases a wave of peristalsis may be felt, during which the anterior wall of the organ hardens, and then, as the wave approaches the pylorus, a firm, hard mass may be grasped, which gradually relaxes, sometimes with a gurgling of gas. In very thin patients with much dilatation of the stomach the peristalsis is readily to be seen and the pyloric tumour may also become visible. In the following case the tumour at the pylorus was remarkably distinct, and as it hardened in contraction lifted the skin in the epigastric region, so that a prominent mass could be seen even at a distance. The large size of the tumour suggested the possibility of carcinoma, but the history, and the evident muscular character of the mass, made me feel sure that it was chiefly due to the hypertrophied muscularis.

The subsequent history of the case, too, is of interest. Successful gastro-enterostomy was performed by Dr. Bressler, and three weeks subsequently the Murphy button which had been used perforated the colon, causing fatal peritonitis.

Attacks of gastralgia—Hæmatemesis—Prominent tumour at pylorus, which relaxes and contracts and appears and disappears beneath the skin—Dilatation of the stomach—Gastro-enterostomy; perforation of the colon by the Murphy button.

B. S., aged 28, admitted to the Johns Hopkins Hospital December 1st, 1893, complaining of pains in the stomach. His family history is good.
He has been healthy, with the exception of attacks of dyspepsia. He uses alcohol in moderation.

In May, 1892, after an indiscretion in diet, he had cramp-like pains in the left side of the abdomen. The attack did not last very long, but the pains recurred in a few days and continued for about a month at varying intervals. They had no relation to meals, and although he was often nauseated, he only occasionally vomited. He was confined to bed in this illness and lost considerably in weight. From his description it was evident that the pain was of very great severity. After getting up he felt fairly well, except for an occasional dull, aching pain in the abdomen. He kept at work and was very well all through the summer and autumn.

In December, 1892, he again began to have attacks of pain, cramp-like in character and of great severity, coming on as a rule three or four hours after meals and lasting for an hour or two. Throughout the winter of 1892-93 he was in the house and in bed a great part of the time, not able to work. Towards the spring he vomited at intervals large quantities of food, a quart at a time. In May he vomited blood in large amounts. He said it looked like finely minced liver; for several days afterwards the stools were dark and tarry. After this he got quite well, the appetite returned, he gained in weight, and went back to work. Towards the latter part of the summer he noticed a lump in the left side of the abdomen, which has increased in size. A week ago the patient had a return of the severe cramp-like spasms, and he has since vomited blood four times, not, however, in very large amounts.

On admission the patient looked a little emaciated, but the lips and mucous membranes were of fairly good colour; no fever; weight 128 pounds. Examination of the thoracic organs is negative. The abdomen looks natural; the left epigastric region is perhaps a little fuller than the right. The stomach occupies a small area almost completely covered by the ribs. It does not extend lower than the seventh space on the left side. On deep inspiration an elongated mass is felt to descend from beneath the costal margin. After dilatation with bicarbonate of soda and tartaric acid the left epigastric region becomes much fuller. The mass is now to the right of the middle line, feels firm and hard, and gas can be felt bubbling through it. The area of stomach tympany is greatly increased, extending almost to the umbilicus and passes the median line. Above it extends nearly to the nipple. On inspection waves of contraction are seen to pass from left to right, and there is a distinct hour-glass contraction. Liver and spleen are not enlarged. At 9.45 a.m. the patient’s stomach was emptied and washed, and the milk he had taken at 7 a.m. came out
curdled, and but little diminished in amount. At 12.30 the patient took 250 cc. of clear broth, from 50 to 100 grammes of meat cut small, about the same amount of bread and 250 cc. of water. At 5.30 p.m. about 250 cc. of fluid mucus with finely divided food, yellowish brown in colour and with a rancid odour, were removed. This reacted with phloroglucin-vanillin for HCl, and with Uffleman's test for lactic acid. Peptones were present; 10 cc. were neutralized by 13.5 cc. of deci-normal sodium hydrate solution, and 10 cc. of the juice shaken thoroughly with ether were neutralized by 10.2 cc. of deci-normal sodium hydrate.

The patient was ordered five grains of bicarbonate of soda every two hours in milk. He improved rapidly, gained in weight, took small quantities of food at short intervals, and seemed to be doing well. The test meals always gave a marked increase in the total acidity.

Special attention was directed to the condition of the tumour. It was extremely variable in position, depending entirely upon the degree of distension of the stomach. Shortly after admission it was noticed that the tumour mass was visible beneath the skin, appearing and disappearing. On watching the epigastric region an elevation of the skin took place, usually midway between the navel and the ensiform cartilage, and a definite tumour projected, which could be seen plainly at some distance away. After remaining for from half a minute to a minute it gradually disappeared. On palpation, when visible, there is to be felt an extremely firm, hard, somewhat sausage-shaped mass, which, as it disappears, relaxes and gets soft. There is no visible peristalsis, except when the stomach is inflated.

The patient remained in the hospital throughout December, gained somewhat in weight, and took his food well. He was discharged January 7th, 1894.

On January 15th he was re-admitted, complaining of a severe burning pain in the epigastrium, only relieved by eating. While at home he took from five to ten grains of bicarbonate of soda every two hours. Shortly after admission I made the following note: "The tumour mass in the abdomen appears and disappears as formerly noted. It occupies a position to the left of the median line. The variations in it are very striking. As it contracts and becomes hard it lifts the skin and can be then plainly seen. As the contraction relaxes it disappears, often with a sizzling sound, which can be heard, and then becomes much softer to the touch. But even in this state the tubular induration can be felt. There are now, without inflation, slight waves of peristalsis seen to the left of the tumour mass below the costal margin."
January 26th. After having had no food since 10 p.m., the tube was passed at 8 a.m., and 266 cc. of a yellowish brown fluid of the consistency of thin gruel were withdrawn; odor rancid. It reacted strongly to litmus paper, and the phloroglucin-vanillin for acid; no reaction for the lactic acid test. The total acidity was neutralised by 6.5 cc. deci-normal sodium hydrate solution. During the latter part of January the patient did not do so well. There was evidently more dilatation of the stomach, and the waves of peristalsis were plainly seen without artificial inflation. The pyloric tumour was no longer visible, and was felt much further to the right, midway between the navel and the costal border. From three to five hours after the taking of food there was usually found about a litre of yellowish-brown, rancid, frothy fluid.

On February 15th the following note was made: "This morning the outlines of the stomach are very distinct, and the peristalsis active, the pyloric outlines reaching nearly to the right mammillary line. The mass at the pylorus is not nearly so distinct, and is no longer to be felt near the middle line, but can be made out in the right parasternal line, evidently covered by the distended pyloric portion of the stomach. Palpation increases the peristalsis."

On the 26th of February the patient vomited 200 cc. of bright blood. The peristalsis was very active. The greater curvature of the stomach extends two fingers breadth below the level of the navel. The tumour mass to-day is far over in the right hypogastrium. The patient was ordered enemata of peptonized milk and egg, and given only albumen water by the mouth, with bicarbonate of soda every two hours.

28th. The stomach is much reduced; the pyloric tumour is in the median line; there is no peristalsis.

March 2nd. The patient has had no more vomiting, and is much better. The abdomen looks natural; there is no peristalsis. The pyloric tumour is to-day just above and to the right of the umbilicus. The contraction and relaxation are apparent to-day.

The patient during this attack has lost in weight. Thus he weighed 132 pounds on the 13th; he now only weighs 123 pounds.

March 5th. Patient insists on going home; he has been better for the past few days. The dilatation of the stomach has very much lessened. The pyloric tumour is situated just below the ensiform cartilage. No peristalsis is seen. The stomach bulges just beneath the left costal margin. The tumour mass is not nearly so variable and almost constantly hard and firm.

Remarks—This case presented many points of interest, and was
shown repeatedly in the ward classes. The age of the patient, the
history of dyspepsia, the gastralgic attacks, the vomiting of large
quantities of blood, and the persistent hyperacidity of the gastric
juice, pointed unmistakably to ulcer. The tumour mass was the
feature of special comment. The most remarkable phenomenon was its
phantom character. It would lift the skin in the middle line, between
the navel and the ensiform cartilage, appearing as a definite tumour
transversely placed, and was then to the touch firm and hard. After
lasting for from half a minute to a minute it would gradually disap-
pear, with sometimes an audible sizzling sound; on palpation the
tumour mass became very much softer, but even when relaxed it
was evident as a somewhat sausage-shaped, tubular body, which
could be rolled beneath the fingers. The only rational explanation
seemed to be that in consequence of the ulcer there was much
 cicatricial puckering, with narrowing of the pyloric orifice, and con-
secutive hypertrophy of the pyloric zone. The phantom character of
the tumour could be alone explained on the supposition of an alter-
nate contraction and relaxation of the hypertrophied muscular tissues
about the pylorus; and with this the evidence obtained on palpation
was fully in accord, since when the tumour was visible beneath the
skin, it was excessively firm and hard. Relaxation took place under
the hand, and with a marked change in the consistency. The varia-
tions in position and size of the tumour, with the increase in the
dilatation, is often noticed in pyloric masses of this character. The
patient was urged to have an operation, but would not consent.

January 20th, 1895. Since the above remarks were written, I
ascertained that this patient, during the summer of 1894, came under
the care of Dr. Bressler, who performed successfully gastro-enter-
ostomy, using Murphy's button. At the end of the third week, after
convalescence was established, general peritonitis developed, of which
he died.

Dr. Bressler very kindly sent the specimen to me for examination
and description.

The specimen consists of stomach, except cardia, with the coil of
intestine removed en masse. Attached to the greater curvature of the
stomach, about 6 cm. from pylorus, is a portion of the small intestine
(jejenum). The line of attachment is shown in front; narrow, clean,
and without adhesions. The artificial orifice between intestine and
stomach admits the index finger. The transverse colon passes directly
behind the attachment of the stomach and intestine. At the splenic
flexure Murphy's button has lodged, and has caused a perforation 2 by
1.2 cm. The pyloric region of the stomach is enlarged, the transverse
colon and omentum adherent, and there is considerable thickening of peritoneal tissues about it. When the duodenum is opened, the thickened lips of the pylorus can be seen, and a circular orifice about 5 mm. in diameter. From the stomach, the little finger cannot be inserted into the ring. There is a narrow channel through which a lead pencil could be passed. When laid open, the thickened walls seem to be made up of a greyish connective tissue, and enormous thickening of the muscularis. The wall measures in one place 14 mm. The mucous membrane corresponding to the thickened portion is in places puckered, looks thin, and at one point, corresponding to the anterior wall, and about 3 cm. from the duodenal orifice, there is an area 15 by 10 mm., which looks like the floor of a healing ulcer. The whole muscular coat of stomach is greatly hypertrophied.

A portion of the pylorus was cut out from the peritoneum to the floor of the ulcer, and I am indebted to Dr. Blumer for sections. There was nowhere any trace of carcinoma. Almost the entire mass was made up of enormously hypertrophied muscularis. Near the floor of the ulcer a large artery was cut across, which showed a thickened muscularis and great proliferation of the sub-endothelial layer.
ON THE ASSOCIATION OF ENORMOUS HEART HYPERTROPHY, CHRONIC PROLIFERATIVE PERITONITIS, AND RECURRING ASCITES, WITH ADHERENT PERICARDIUM.

By William Osler, M.D.,
Professor of Medicine, Johns Hopkins University; Physician-in-Chief, Johns Hopkins Hospital, Baltimore.
ON THE ASSOCIATION OF ENORMOUS HEART HYPERTROPHY, CHRONIC PROLIFERATIVE PERITONITIS, AND RECURRING ASCITES, WITH ADHERENT PERICARDIUM.*

BY WILLIAM OSLER, M.D.,

Professor of Medicine, Johns Hopkins University; Physician-in-Chief, Johns Hopkins Hospital, Baltimore.

Recurring ascites is a not very uncommon incident in the chronic heart disease of children and adults. It is seen most frequently in mitral valve lesion with consecutive changes in the liver, due either to the atrophy, consequent upon the cyanotic induration, or in adults to an associated alcoholic cirrhosis. There are instances also in children, in which the ascites is due to another cause; namely, a chronic proliferative peritonitis with extensive perihepatitis and peri-splenitis.

Some eight years ago there was admitted to my wards at the University Hospital, Philadelphia, a boy aged thirteen, with a history of recurring attacks of ascites. He had a very greatly enlarged heart, and a loud apex systolic murmur. He was under observation for a long time, and was tapped repeatedly. The dropsy was limited to the peritoneum, and we regarded the case as one of old mitral disease, with secondary cirrhosis of the liver.

The autopsy showed, somewhat to our surprise, an adherent pericardium, an enormously enlarged heart without valve lesion, a chronic proliferative peritonitis, with perihepatitis and perisplenitis. The case was unique in my experience, and remained so until a second case came under my observation, the notes of which I give here in more detail. The patient, with the exception of a few months during the summer of 1891 and 1892, was in

*Read before the American Pediatric Society, Virginia Hot Springs, May 28, 1895.
Ward G of the Johns Hopkins Hospital from May 14, 1891, to December 8, 1894, a period of more than three and a half years, her age on first admission being eleven years; at the time of her death, fourteen.

Previous History.—There was no history of acute rheumatism or of St. Vitus's dance. She had had measles, scarlet fever, and whooping-cough. On questioning the mother closely about rheumatism, she says that Louisa had at one time growing pains in the legs, and the muscles of the right arm were once so stiff that she could scarcely use it. The joints, however, were never swollen or tender.

Onset of Illness.—About May 1, 1891, she began to have shortness of breath, with swelling of the feet and of the abdomen. Nothing abnormal had been noted before this time. On her first admission there was orthopnoea, general anasarca, cyanosis, and extreme ascites, so that she was tapped at once, and over three litres of clear fluid were withdrawn. There was enormous hypertrophy of the heart, with great bulging of the praecordia. There was no thrill, but there was a very loud blowing systolic murmur at the apex, rough in quality, and transmitted to the spine. The murmur was heard also at the lower sternum and at its left margin. The pulmonary second sound was accentuated.

The child improved a good deal, and the œdema of the feet disappeared, but the swelling of the abdomen persisted. The spleen could be felt below the costal margin; the liver was enlarged, the edge only one inch from the transverse navel line.

The case was regarded as one of mitral valve disease with secondary enlargement of the liver. On the first admission she remained until August 29th, and improved very much. A few days before leaving the note reads that "the ascites has disappeared, the heart's action is regular, the pulse 72, and of medium volume. The apex beat is in the sixth space in anterior axillary line; there is a wide area of heaving impulse as high as the third rib. There is a systolic thrill at the apex, and a loud, musical, systolic murmur which is transmitted to the back, and the pulmonary second sound is intensely accentuated."

We had no other idea about the case than that it was one of mitral insufficiency, though the question came up on several occasions whether or not she had in addition adherent pericardium.

She was readmitted October 8, 1891, with great shortness of breath and ascites. She was tapped, and nearly three litres
Osler: Enormous Heart Hypertrophy.

again removed. She was very much cyanosed, particularly in the hands and feet. The cardiac physical signs were the same—a loud, rough, apex systolic murmur transmitted well to the spine. In diastole at the apex there was a soft rumble, but no definite murmur. There was a systolic murmur in the lower sternal region, but no special difference could be determined between it and the murmur in the apex area. The urine always contained a small amount of albumin, and at times granular and hyaline casts. Very full notes were made of the case at intervals, particularly with reference to the condition of the heart. The apex beat seemed to have lowered, and could be felt in the seventh space, 7 c. m. outside the nipple.

Throughout the summer of 1892 she was tapped on several occasions, and the condition remained very much the same. There was no general anasarca, but much cyanosis of the hands and feet.

Before her second discharge on the 16th of June, 1892, it was noted that the first sound at the apex was sharp, followed by a loud, musical, systolic murmur, which was heard throughout the axilla and back, having at the scapula an intense blowing character. Passing upwards and inwards from the apex, the murmur lost its musical character. The second sound, which was heard feebly at the apex, was intensely accentuated in the third left interspace. The sounds in the aortic region were clear. For the first time, just before her discharge, on the fourth cartilege to the left of the sternum, a double murmur was heard, a soft diastolic, behind, as it were, the accentuated second sound. Passing down the left sternal border the murmur became lost.

After tapping the liver could now be felt very plainly. The border was about three fingers breadth above the navel.

She was readmitted on September 21, 1892, and remained continuously in the hospital until her death, December 8, 1894. During this entire period ascites was the marked and prominent feature. Prior to this admission she had been tapped only three or four times. To December 7th, the day before her death, she was tapped 121 times, and from three to five litres were removed on each occasion. We thought that in all probability there was adherent pericardium as well as extreme mitral insufficiency. There was systolic retraction in the apex region, marked bulging of the praecordia, and the upper limit of pulmonary resonance seemed very fixed.
During these last two years, the condition of the liver interested us very greatly. When the abdomen was empty the organ formed a visible and actively pulsating tumor midway between the navel and the costal border; and it is well figured in my lectures on the diagnosis of abdominal tumors.* It was smooth, descended with inspiration, and expanded visibly. Its edge was rounded and the whole mass could be grasped in the hand, feeling like a large spleen. The edge passed beneath the right costal margin about the nipple line, and far over on the left costal margin the enlarged spleen could be felt. Grasped in the hand, the pulsation was expansile and forcible, a little later than the cardiac impulse.

Early after her admission on this occasion, there was felt for the first time also a distinct peritoneal friction rub just below the edge of the liver. The condition of the heart did not materially change, except that the area of dullness increased. The loud, intense, apex systolic murmur persisted, and was heard all over the right side of the chest. In the sixth space a little above the nipple, there was a rumbling, echoing sound occupying the entire diastole, and in a limited area this had almost the characters of a presystolic murmur. The first sound was always well heard. Along the left sternal margin the soft diastolic murmur already mentioned was well heard. It was not audible at the aortic cartilage, but in the third, fourth, and fifth interspaces on the left side. She never had general anasarca after her first admission.

There were two additional features of great interest in her case. It was noticed on her first admission that the cyanosis of the hands and feet was extreme. This persisted with but little change, no matter what her general condition might be, whether she was suffering with great dyspnoea or whether she was wheeling herself about the ward in a chair, the hands and feet were permanently cyanotic. She became very thin, but the extreme lividity without any œdema was a remarkable feature in her case.

Then, shortly after her last admission, it was noticed that subcutaneous fibroid nodules were developing, and a series of these appeared about the knuckles, the wrists, and the elbows.

As I have already mentioned, the primary lesion in this case

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was thought to be mitral sclerosis with moderate narrowing of the valve, and enormous secondary hypertrophy and dilatation of the right chambers. The evidence also pointed to adherent pericardium, and as the patient had evidently a shrunken, cake-like liver, with recurring ascites, and a well-marked peritoneal "reibe-gerüsch," and remembering my former case at the University Hospital, Philadelphia, I made a diagnosis of proliferative peritonitis with peri-hepatitis and peri-splenitis, secondary possibly to the adherent pericardium.

The child died on December 8, 1894, the day after her 121st tapping; the respirations became very much embarrassed, the heart's action extremely rapid, and she sank and died in coma.

Autopsy by Dr. Flexner. Anatomical Diagnosis—Chronic adhesive pericarditis—pericarditis affecting especially the right ventricle—chronic adhesions between pericardium, diaphragm, and lung—enormous hypertrophy and dilatation of heart, particularly of the chambers on the right side—hypertrophy of left ventricle—dilatation of cardiac orifices; normal valve segments—chronic proliferative peritonitis with peri-hepatitis and peri-splenitis—cirrhosis of the liver—chronic passive congestion of the spleen, intestines, stomach, and kidney—fibrous nodules about the elbows and hands.

The body was much emaciated; the legs were a little oedematous; the veins were prominent, but the extreme lividity of the arms and legs had disappeared. The abdomen was distended and there was a prominence between the recti muscles. The superficial, abdominal and thoracic veins were prominent. There were subcutaneous fibroid nodules, ranging in size from a split pea to a bean, attached to the subcutaneous fascia.

There were about 2000 cc. of clear fluid in the peritoneum.

The omentum was rolled up, thickened, perforated in many places, adherent to the abdominal wall and to the transverse colon. The parietal peritoneum over its entire extent was opaque, in many places covered with nodular thickenings and threads of fibrous tissue. The mesentery was shrunken, and its serosa opaque and thickened. The lymph glands in general were not enlarged. The spleen was adherent to the diaphragm, capsule irregularly thickened, and its edges and posterior part was dense in consistence, and dark in color. It was moderately enlarged.

The liver was firmly bound by old adhesions to the diaphragm.
It was much deformed; without clear separation between the right and left lobes, but the whole organ was enveloped in a thickened, pearly white membrane of from two to five mm. in thickness. The gastro-hepatic omentum was also thickened. From the hilus of the liver thickened bands of fibrous tissue passed with the portal vessels, and in some places the Glissonian sheath was greatly thickened. The liver tissue itself was greatly altered in appearance; the cut surface was dark, almost black, with here and there light areas apparently of fat tissue. The central veins of the lobules were dilated. The length of the liver was 15 c. m.; thickness 6 c. m.; width 10 c. m. The consistence was greatly increased. The hepatic veins were enormously enlarged, and even in the middle of the organ they easily admitted the little finger.

The kidneys presented a markedly cyanotic appearance; on section there was much congestion, the consistence was much increased, almost of stony hardness. The mucous membrane of the stomach and intestines was greatly congested. Otherwise it showed no special changes.

Thorax.—The heart occupied an enormous space in the front of the chest. The intercostal spaces were dissected out so as to get accurately the limits of the heart in situ. From the midsternal line the following were the measurements: In the second interspace to the right, 6 c. m.; to the left, 8 c.m.; third interspace to the right, 8 c. m.; to the left, 11 c. m.; fourth interspace to the right, 11 c. m.; to the left 15 c. m., so that the total transverse measurement of the heart in the fourth interspace was 26 c. m. (10½ in.). In the sixth interspace the right border of the right auricle is 11 c. m. from the median line, and the apex was 14 c. m. (6 in.). The right auricle was enormously large, and (before removal of the heart) measured, in an oblique direction from the tip of the appendix to the orifice of the cava, just above the diaphragm, 14 c. m. (6 in.). The front of the heart was formed almost entirely by the right chambers. The pericardial sac was partly obliterated by old adhesions, which were situated particularly over the right ventricle, involving the left ventricle only a short distance beyond the septum. The greater part of the right auricle itself was free and the whole of the posterior surface of the heart. The adhesions were composed of strong fibrous bands. The right auricle was enormously distended and filled with partially decol-
orized clots. The walls seemed somewhat thickened and the endocardium was opaque. The orifice of the inferior cava was unusually large, measuring 4.5 c. m. in diameter; looking into the cava from the auricle one saw directly the large openings of greatly dilated hepatic veins, into which the index finger could be passed. The coronary sinus was also greatly dilated and the foramina Thebesii were unusually distinct. The right ventricle was much dilated and hypertrophied. The tricuspid orifice was large; admitted five fingers freely. The papillary muscles were thickened and flattened; the trabeculae likewise thickened and flattened. The segments of the tricuspid valve were a little opaque but not shrunken. The septum ventriculorum was closed. The thickness of the wall of right ventricle was 8 mm.; the length, 11 c. m. The pulmonary artery was large. The valve segments were normal and held water. The left ventricle was not nearly so large as the right; measured 8 c. m.; thickness of the muscular wall, 10 mm. The mitral segments were not shrunken, but were thicker throughout than normal. The mitral orifice admitted two and a half fingers. At the point of insertion of the chordae tendineae of the mitral segments there were a few calcified points. The posterior papillary muscle and the trabeculae were flattened. The endocardium of the left auricle was opaque and thickened, but the cavity itself was not specially dilated. The aortic valves held water. The segments were not specially thickened, except the middle one, which was thickened, and this segment presented a small aneurismal dilatation as large as a split pea, which looks towards the artery. The aorta just above the valve was 6 c. m. in circumference; at the end of the arch, 3.5 c. m.; at the coeliac axis 3 c. m.; just above the bifurcation, 2 c. m. The vessel was small and the walls thin.

On microscopical examination the liver showed enormous dilatation of the vessels. The tissue looked almost like an angioma. In other places the liver tissue was better preserved. The increase of connective tissue was not diffuse, but in circumscribed thick bundles. The muscular tissue at the right ventricle showed a moderate degree of fatty degeneration, which was much more marked than on the left side.

Remarks.—There are many points of great interest in connection with this case, but I only can refer here to the recurring
ascites with proliferative peritonitis. The case is almost the exact counterpart of the one under my care in Philadelphia.

Chronic proliferative peritonitis is met with chiefly in adults under conditions similar to those which produce cirrhosis of the liver. It has been in my experience a rare disease in childhood; and in the adult the symptoms are in reality those of atrophic cirrhosis of the liver, and the diagnosis is very rarely made before death.

Rosenbach is the only author I can find who suggests the possible connection between adherent pericardium and a chronic peritonitis; and he thinks that the chronic proliferative process extends along the veins, through the diaphragm, and involves the peritoneum. It is not unlikely that in the case here reported this sequence may have occurred. Some of the cases of indurative mediastino-pericarditis present a very similar clinical picture (see Harris, Medical Chronicle, 1895).

Other points of great interest in the cases were: The enormous hypertrophy and dilatation of the heart with only partial pericardial adhesions; the clinical picture of mitral valve disease, which most of these cases of adherent pericardium present so soon as the cardiac dilatation becomes excessive; the diastolic murmur along the left sternal margin which was probably associated with insufficiency of the valves of the pulmonary artery—Graham Steell's murmur of increased pulmonary tension; the subcutaneous fibroid nodules in a child who had never had acute arthritis and who had no mitral valve disease; and lastly the remarkable tumor formed by the pulsating liver.

1 West Franklin Street.
TEACHING AND THINKING

The Two Functions of a Medical School.

BY

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TEACHING AND THINKING.*

THE TWO FUNCTIONS OF A MEDICAL SCHOOL.

Many things have been urged against our nineteenth century civilization—that political enfranchisement only ends in anarchy, that the widespread unrest in matters spiritual leads only to unbelief, and that the best commentary on our boasted enlightenment is the picture of Europe in arms and the nations everywhere gnawing at each other's heels. Of the practical progress in one direction, however, there can be no doubt; no one can dispute, viz., the enormous increase in the comfort of each individual life. Collectively the human race, or portions of it at any rate, may have in the past enjoyed periods of greater repose, and longer intervals of freedom from strife and anxiety; but the day has never been when the unit has been of such value, when the man, and the man alone, has been so much the measure, when the individual as a living organism has seemed so sacred, when the obligations to regard his rights have seemed so imperative. But these changes are as naught in comparison with the remarkable increase in his physical well-being. The bitter cry of Isaiah that with the multiplication of the nations their joys had not been increased, still

* Remarks made at the opening of the new building of the Medical Faculty McGill College, by William Osler, M.D., F.R.C.P., Lond., Professor of Medicine Johns Hopkins University, Baltimore.
echoes in our ears. The sorrows and troubles of men, it is true, may not have been materially diminished, but bodily pain and suffering, though not abolished, have been assuaged as never before, and the share of each in the Welt schmerz has been enormously lessened.

Sorrows and griefs are companions sure sooner or later to join us on our pilgrimage, and we have become perhaps more sensitive to them, and perhaps less amenable to the old time remedies of the physicians of the soul; but the pains and woes of the body, to which we doctors minister, are decreasing at an extraordinary rate, and in a way that makes one fairly gasp in hopeful anticipation.

In his Grammar of Assent, in a notable passage on suffering, John Henry Newman asks, "Who can weigh and measure the aggregate of pain which this one generation has endured, and will endure, from birth to death? Then add to this all the pain which has fallen and will fall upon our race through centuries past and to come." But take the other view of it—think of the Nemesis which has overtaken pain during the past fifty years! Anaesthetics and antiseptic surgery have almost manacled the demon, and since their introduction the aggregate of pain which has been prevented far outweighs in civilized communities that which has been suffered. Even the curse of travail has been lifted from the soul of woman.

The greatest art is in the concealment of art, and I may say that we of the medical profession excel in this respect. You of the public who hear me go about the duties of the day profoundly indifferent to the facts I have just mentioned. You do not know, many of you do not care, that for the cross-legged Juno who presided over the arrival of your grandparents, there now sits a benign and straight-legged goddess. You take it for granted that if a shoulder is dislocated there is chloroform and a delicious Nepenthe instead of the agony of the pulleys and paraphernalia of fifty years ago. You accept with a selfish complacency, as if you were yourselves to be thanked for it, that the arrows
of destruction fly not so thickly, and that the pestilence now rarely walketh in the darkness; still less do you realize that you may now pray the prayer of Hezekiah with a reasonable prospect of its fulfillment, since modern science has made to almost everyone of you the present of a few years.

I say you do not know these things. You hear of them, and the more intelligent among you perhaps ponder them in your hearts, but they are among the things which you take for granted, like the sunshine, and the flowers, and the glorious heavens.

'Tis no idle challenge which we physicians throw out to the world when we claim that our mission is of the highest and of the noblest kind, not alone in curing disease but in educating the people in the laws of health, and in preventing the spread of plagues and pestilences; nor can it be gainsaid that of late years our record as a body has been more encouraging in its practical results than those of the other learned professions. Not that we all live up to the highest ideals, far from it—we are only men. But we have ideals, which means much, and they are realizable, which means more. Of course there are Gehazis among us who serve for shekels, whose ears hear only the lowing of the oxen and the jingling of the guineas, but these are exceptions, and the rank and file labour earnestly for your good, and self-sacrificing devotion to your interests animates our best work.

The exercises in which we are to-day engaged form an incident in this beneficent work which is in progress everywhere; an incident which will enable me to dwell upon certain aspects of the university as a factor in the promotion of the physical well-being of the race.

A great university has a dual function, to teach and to think. The educational aspects at first absorb all its energies, and in the equipment of the various departments and in providing salaries, it finds itself hard pressed to fulfil even the first of these duties. The Dean has told us
the story of the progress of the medical school of this institution, which illustrates the struggles and difficulties, the worries and vexations attendant upon the effort to place it in the first rank as a teaching body. I know them well, since I was in the thick of them for ten years, and see today the realization of many of my day-dreams. Indeed in my wildest flights I never thought to see such a splendid group of buildings as I have just inspected. We were modest in those days, and I remember when Dr. Howard showed me in great confidence the letter of the Chancellor, in which he conveyed his first generous bequest to the Faculty, it seemed so great that in my joy I was almost ready to sing my Nunc dimittis. The great advances, here at the Montreal General Hospital and at the Royal Victoria (both of which institutions form most essential parts of the medical schools of this city) mean increased teaching facilities, and of necessity better equipped graduates, better equipped doctors! Here is the kernel of the whole matter, and it is for this that we ask the aid necessary to build large laboratories and larger hospitals in which the student may learn the science and art of medicine. Chemistry, anatomy and physiology give that perspective which enables him to place man and his diseases in their proper position in the scheme of life, and afford at the same time that essential basis upon which alone a trustworthy experience may be built. Each one of these is a science in itself, complicated and difficult, demanding much time and labour for its acquisition, so that in the few years which are given to their study the student can only master the principles and certain of the facts upon which they are founded. Only so far as they bear upon a due understanding of the phenomena of disease do these subjects form part of the medical curriculum, and for us they are but means—essential means it is true—to this end. A man cannot become a competent surgeon without a full knowledge of human anatomy and physiology, and the physician without physiology and chemistry flounders along in an aimless fashion, never able to gain any accurate conception
of disease, practising a sort of pop-gun pharmacy, hitting now the malady and again the patient, he himself not knowing which.

The primary function of this department of the university is to teach men disease, what it is, its manifestations, how it may be prevented, and how it may be cured; and to learn these things the four hundred young men who sit on these benches have come from all parts of the land. But it is no light responsibility which a faculty assumes in this matter. The task is not easy, being beset with countless difficulties, some inherent in the subject, others inherent in the men themselves, and not a few bound up with the "fool multitude" among which we doctors work.

The processes of disease are so complex that it is excessively difficult to search out the laws which control them, and although we have seen a complete revolution in our ideas, what has been accomplished by the new school of medicine is only an earnest of what the future has in store. The three great advances of the century have been a knowledge of the mode of controlling epidemic diseases, the introduction of anaesthetics, and the adoption of antiseptic methods in surgery. Beside them all others sink into insignificance, as these three contribute so enormously to the personal comfort of the individual. The study of the causes of so-called infectious disorders has led directly to the discovery of the methods for their control, for example, such a scourge as typhoid fever becomes almost unknown in the presence of perfect drainage and an uncontaminated water supply. The outlook, too, for specific methods of treatment in these affections is most hopeful. The public must not be discouraged by a few, or even by many failures. The thinkers who are doing the work for you are on the right path, and it is no vain fancy that before the twentieth century is very old there may be effective vaccines against many of the contagious diseases.

But a shrewd old fellow remarked to me the other day, "Yes, many diseases are less frequent, others have disap-
peated, but new ones are always cropping up, and I notice that with it all there is not only no decrease, but a very great increase in the number of doctors."

The total abolition of the infectious group we cannot expect, and for many years to come there will remain hosts of bodily ills, even among preventable maladies, to occupy our labours; but there are two reasons which explain the relative numerical increase in the profession in spite of the great decrease in the number of certain diseases. The development of specialties has given employment to many extra men who now do much of the work of the old family practitioner, and again people employ doctors more frequently and so give occupation to many more than formerly.

It cannot be denied that we have learned more rapidly how to prevent than how to cure diseases, but with a definite outline of our ignorance we no longer live now in a fool's Paradise, and fondly imagine that in all cases we control the issues of life and death with our pills and potions. It took the profession many generations to learn that fevers ran their course, influenced very little, if at all, by drugs, and the £60 which old Dover complained were spent in medicine in a case of ordinary fever about the middle of the last century is now better expended on a trained nurse, with infinitely less risk, and with infinitely greater comfort to the patient. Of the difficulties inherent in the art not one is so serious as this which relates to the cure of disease by drugs. There is so much uncertainty and discord even among the best authorities (upon non-essentials it is true) that I always feel the force of a well-known stanza in "Rabbi Ben Ezra," which, however, I could not quote in the tender ears of students.

One of the chief reasons for this uncertainty is the increasing variability in the manifestations of any one disease. As no two faces, so no two cases are alike in all respects, and unfortunately it is not only the disease itself which is so varied, but the subjects themselves have peculiarities which modify its action.
With the diminished reliance upon drugs, there has been a return with profit to the older measures of diet, exercise, baths, and frictions, the remedies with which the Bythenian Asclepiades doctored the Romans so successfully in the first century. Though used less frequently, medicines are now given with infinitely greater skill; we know better their indications and contradictions, and we may safely say (reversing the proportion of fifty years ago) that for one damaged by dosing, one hundred are saved.

Many of the difficulties which surround the subject relate to the men who practice the art. The commonest as well as the saddest mistake is to mistake one's profession, and this we doctors do often enough, some of us without knowing it. There are men who have never had the preliminary education which would enable them to grasp the fundamental truths of the science on which medicine is based. Others have poor teachers, and never receive that bent of mind which is the all important factor in education; others again fall early into the error of thinking that they know it all, and benefiting neither by their mistakes or their successes, miss the very essence of all experience, and die bigger fools, if possible, than when they started. There are only two sorts of doctors; those who practice with their brains, and those who practice with their tongues. The studious, hard working man who wishes to know his profession thoroughly, who lives in the hospitals and dispensaries, and who strives to obtain a wide and philosophical conception of disease and its processes, often has a hard struggle, and it may take years of waiting before he becomes successful; but such form the bulwarks of our ranks, and outweigh scores of the voluble Casios who talk themselves into, and often out of, practice.

Now of the difficulties bound up with the "fool multitude" in which we doctors work, I hesitate to speak in a mixed audience. Common sense in matters medical is rare, and is usually in inverse ratio to the degree of education. I suppose as a body, clergymen are better educated
than any other, yet they are notorious supporters of all the nostrums and humbuggery with which the daily and religious papers abound, and I find that the further away they have wandered from the decrees of the Council of Trent, the more apt are they to be steeped in thaumaturgic and Galenical superstition. But know also, man has an inborn craving for medicine. Generations of heroic dosing have given his tissues such a thirst that even young infants in the higher circles of society have been known to cry for certain drugs. As I once before remarked, the desire to take medicine is the one feature which distinguishes man, the animal, from his fellow creatures. It is really one of the most serious difficulties with which we have to contend. Even in minor ailments, which would yield to dieting or to simple home remedies, the doctor's visit is not thought to be complete without the prescription. And now that the pharmacists have cloaked even the most nauseous remedies, the temptation is to use medicine on every occasion, and I fear we may return to that state of polypharmacy, the emancipation from which has been the sole gift of Hahnemann and his followers to the race. As the public becomes more enlightened, and as we get more sense, dosing will be recognized as a very minor function in the practice of medicine in comparison with the old measures of Aesclepiades.

After all, these difficulties—in the subject itself, in us, and in you—are lessening gradually, and we have the consolation of knowing that year by year the total amount of unnecessary suffering is decreasing at a rapid rate.

In teaching men what disease is, how it may be prevented, and how it may be cured, a University is fulfilling one of its very noblest functions. The wise instruction and the splendid example of such men as Holmes, Sutherland, Campbell, Howard, Ross, Macdonnell, and others have carried comfort into thousands of homes throughout this land. The benefits derived from the increased facilities for the teaching of medicine which have come with the great changes made here and at the hospitals during the past
few years, will not be confined to the citizens of this town, but will be widely diffused and felt in every locality to which the graduates of this school may go; and every gift which promotes higher medical education, and which enables the medical faculties throughout the country to turn out better doctors, means fewer mistakes in diagnosis, greater skill in dealing with emergencies, and the saving of pain and anxiety to countless sufferers and their friends.

The physician needs a clear head and a kind heart; his work is arduous and complex, requiring the exercise of the very highest faculties of the mind, while constantly appealing to the emotions and finer feelings. At no time has his influence been more potent, at no time has he been so powerful a factor for good, and as it is one of the highest possible duties of a great University to fit men for this calling, so it will be your highest mission, students of medicine, to carry on the never-ending warfare against disease and death, better equipped, abler men than your predecessors, but animated with their spirit and sustained by their hopes, "for the hope of every creature is the banner that we bear."

The other function of a University is to think. Teaching current knowledge in all departments, teaching the steps by which the status praesens has been reached, and teaching how to teach, form the routine work of the various college faculties, which may be done in a perfunctory manner by men who have never gone deeply enough into their subjects to know that really thinking about them is in any way important. What I mean by the thinking function of a University, is that duty which the professional corps owes to enlarge the boundaries of human knowledge. Work of this sort makes a University great, and alone enables it to exercise a wide influence on the minds of men.

We stand to-day at a critical point in the history of this faculty. The equipment for teaching, to supply which has taken years of hard struggle, is approaching completion, and with the co-operation of the General and the Royal
Victoria Hospitals students can obtain in all branches a thorough training. We have now reached a position in which the higher university work may at any rate be discussed, and towards it progress in the future must trend. It may seem to be discouraging, after so much has been done and so much has been so generously given, to say that there remains a most important function to foster and sustain, but this aspect of the question must be considered when a school has reached a certain stage of development. In a progressive institution the changes come slowly, the pace may not be perceived by those most concerned, except on such occasions as the present, which serve as landmarks in its evolution. The men and methods of the old Coté street school were better than those with which the faculty started; we and our ways at the new building on University street were better than those of Coté street; and now you of the present faculty teach and work much better than we did ten years ago. Everywhere the old order changeth, and happy those who can change with it. Too many, like the defeated gods in Keats' Hyperion, unable to receive the balm of the truth, resent the wise words of Oceanus (which I quoted here with very different feelings some eighteen years ago in an introductory lecture):

"Still on our heels a fresh perfection treads,
* * * * * * born of us,

Fated to excel us."

Now the fresh perfection which will tread on our heels will come with the opportunities for higher university work. Let me indicate in a few words its scope and aims. Teachers who teach current knowledge are not necessarily investigators; many have not had the needful training; others have not the needful time. The very best instructor for students may have no conception of the higher lines of work in his branch, and contrariwise, how many brilliant investigators have been wretched teachers? In a school which has reached this stage and wishes to do thinking as well as teaching, men must be selected who are not only thoroughly au courant with the best work in their depart-
ment the world over, but who also have ideas, with ambition and energy to put them into force,—men who can add, each one in his sphere, to the store of the world’s knowledge. Men of this stamp alone confer greatness upon a university. They should be sought for far and wide; an institution which wraps itself in Strabo’s cloak and does not look beyond the college gates in selecting professors may get good teachers, but rarely good thinkers.

One of the chief difficulties in the way of advanced work is the stress of routine class and laboratory duties, which often saps the energies of men capable of higher things. There are two essential provisions, first, to give the professors plenty of assistance, so that they will not be worn out with teaching; and, second, to give encouragement to graduates and others to carry on researches under their direction. With a system of fellowships and research scholarships a university may have a body of able young men, who on the outposts of knowledge are exploring, surveying, defining and correcting. Their work is the outward and visible sign that a university is thinking. Surrounded by a group of bright young minds, well trained in advanced methods, not only is the professor himself stimulated to do his best work, but he has to keep far afield and to know what is stirring in every part of his own domain.

With the wise co-operation of the university and the hospital authorities Montreal should become the Edinburgh of America, a great medical centre to which men will flock for sound learning, whose laboratories will attract the ablest students, and whose teaching will go out into all lands, universally recognized as of the highest and of the best type.

Nowhere is the outlook more encouraging than at McGill. What a guarantee for the future does the progress of the past decade afford! No city on this continent has so liberally endowed higher education. There remains now to foster that undefinable something which, for want
of a better term, we call the university spirit, a something which a rich institution may not have, and with which a poor one may be saturated, a something which is associated with men and not with money, which cannot be purchased in the market or grown to order, but which comes insensibly with loyal devotion to duty and to high ideals, and without which *Nehushtan* is written on its portals.
THE PRACTICAL VALUE OF Laveran's DISCOVERIES.

BY

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FROM

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THE PRACTICAL VALUE OF LAVERAN'S DISCOVERIES.

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Even in well-known affections advances are made from time to time that render necessary a revision of our accumulated knowledge, a readjustment of old positions, a removal even of the old landmarks. Perhaps the most remarkable illustration of this is offered by the discovery of the tubercle-bacillus. What a volte face for those of us who were teachers before 1881! Happy those who had agility and wit sufficient for the somersault! Scarcely less important has been the revolution in our knowledge of malaria since the researches of Laveran, in 1881, on the parasite of the disease. His discovery attracted for a time little attention, chiefly because the workers in pathology, the world over, had not opportunities for studying the disease. The verification of his work came slowly, while the conception of its far-reaching consequences has not yet filtered from the laboratories and clinics into the wide field of every-day practical medicine.

There are several aspects in which Laveran's studies may be considered as of immense value:

THE RELATION OF THE PROTOZOA TO THE ACUTE INFECTIONS.

A stimulus has been given to research that has already borne fruit in observations upon amebic dysentery, Texas cattle-fever, and certain skin-affections. The question of the protozoal origin of carcinoma has been revived, and prosecuted with an

1 Read before the Medical Society of the District of Columbia.
energy that must result in a valuable addition to our knowledge of the structure, and possibly, too, of the etiology of malignant growths. Although the life-history of the parasite is as yet imperfectly known, sufficient details are available to furnish one of the most interesting chapters in pathology, and at last we have revealed the meaning of that periodicity, so mysterious a feature in the malarial fevers, which has puzzled generations of physicians since Hippocrates. As a direct outcome of the study of the protozoal parasites of paludism may be mentioned the really brilliant discovery by Theobald Smith of the parasite of Texas fever, also a hematozoon, connected in its life-history with the cattle-tick (Boophilus bovis). No more interesting problem in comparative pathology has been solved of late years, and the life-history of the parasite is better known than that of any other pathogenic protozoon.

THE DIAGNOSIS OF MALARIAL FEVER.

The best guarantee of a truth, as some one has said, is the wisest men’s acceptance of it. There has been an extraordinary unanimity in the verification of Laveran’s main facts by every competent worker who has had suitable opportunities for the study. The extensive and complete bibliography—the most complete yet published—in the monograph by my assistants, Drs. Thayer and Hewetson,1 gives some idea of the widespread interest which the question has aroused. It is not too much to say that Laveran’s work has revolutionized the study of fevers, as now a trained observer can determine whether any given case of fever depends upon a malarial infection. The parasites are present in all forms of the disease, and constitute a diagnostic criterion of unfailing accuracy in uncinchonized subjects. A certain technic and training are required, which a season in any malarial center can

give, but which is not so easy to get in other localities. I shall refer shortly to the extraordinary abuse of the term malaria, which is used as a cloak to cover our ignorance of the nature of obscure fevers. A more extended knowledge of the fact that the malarial fevers are readily and quickly recognizable will give the physician pause in a hasty diagnosis, and will in time obviate one of the most glaring inaccuracies in the mortuary returns of certain towns.

But it is in the study of the fevers in the tropics that Laveran's discovery will prove of the greatest service, and as shown by the work of Vandyke Carter, in India, and Dock, in Galveston, the differentiation of malarial from other fevers is quickly made. It is most important that men who desire to study this problem should be equipped with the necessary technic. Several recent reports on malaria in the tropics have been sadly defective, and show that valuable opportunities have been wasted from lack of proper training on the part of the observer. Accurate information on the subject, in English, has not been until recently available. My article in the British Medical Journal (1887, I), remained for several years the only one which had a wide circulation, and the letters which I have received from practitioners in distant parts of the world indicate that, with the imperfect literature, there coexisted as a rule imperfect training and faulty apparatus. Now, however, the publication by the New Sydenham Society of Laveran's monograph, and of the works of Marchiafava and Bignami, of Mannaberg, and the monograph of Thayer and Hewetson, already referred to, gives access to all the available literature, and should prove a great stimulus to the study of tropical fevers from the new standpoint.

For so many generations the paroxysm of intermittent fever has stood for the type and representative of the class of fevers associated with chill that it has been, and still is, very difficult, particularly in
this latitude, to avoid the suspicion of paludism in any disease associated with recurring rigors; and yet one may safely say that, in the cities of the Atlantic seaboard, the instances of chills and fever due to the malarial parasite are greatly exceeded by those of various other affections. The idea seems firmly ingrained in the mind, and I scarcely pass a week without seeing some instances in which the diagnosis of malaria has been made, simply because the patient has had recurrent chills. The error would not be so unfortunate were it not for the fact that it often causes delay in the adoption of suitable treatment, and may completely blind the physician to the true nature of the case. Perhaps the most frequent mistake is in the chills and fever of tuberculosis. As is well known, these occur at the two extremes of the disease. It is more particularly in the early stages that the mistake is serious, and I have on many occasions known a patient treated persistently for malarial fever without a suspicion having arisen that the trouble depended upon tuberculosis. In all varieties of septicemia the mistake is most frequent. Malaria postpartum, of which one hears not a little, is very often septicemia, and I rarely see a case of abscess of the liver that has not been drenched with quinin, in some instances for months, in the belief that it was a chronic malaria. Frequently pyelitis, pyelonephritis, gall-stones, and empyema are in the same way overlooked, and, even when the diagnosis has been demonstrated, I have often heard from physicians expressions which indicated a lingering idea that after all the septic trouble was only a consequence or a complication.

The profession at large has not yet laid to heart the following rules:

1. That the diagnosis of the malarial fevers can be made with certainty by the blood-examination.
2. That an intermittent fever which resists quinin is not of malarial origin.

A rich experience during the past nine years warrants the expression of these positive statements.
In the differentiation of the fevers of the South, about which so much discussion has taken place during the past ten years, the study of the changes in the blood must in the future play a most important rôle. The question of the existence of a third type of continued fever, which has been advocated by Guiteras, Baumgarten, and others, cannot be determined without a more complete study than has yet been given to the cases.

When one reads the report of the Proceedings of the Orleans Parish Medical Society, in which for many years the nature of the long-continued fevers of Louisiana has been discussed, the condition really seems to be similar to that in which the profession labored before the differentiation of typhus and typhoid fever. It is interesting to note that in New Orleans at least physicians seem to be coming gradually to the conviction that the long-continued fever which resists quinin is in reality typhoid, a view strongly advocated by Dr. Matas in a short paper in The Medical News of December 15, 1894.

MALARIA AND VITAL STATISTICS.

The U. S. Census Report for 1890, recently issued, which covers the six years ending May 31, 1890, gives the following number of deaths from malaria, to which I add for comparison those of typhoid fever:

Washington—Malarial fever, 500; Typhoid fever, 850.
Baltimore—“ 934; “ 904
New York—“ 2060; “ 2031
Brooklyn—“ 1413; “ 1002

That in Baltimore, New York, and Brooklyn the deaths from malarial fever exceeded those from typhoid will, no doubt, be read with astonishment, particularly by those familiar with the conditions of practice in those cities. Any reasonable physician in Philadelphia or Baltimore will at once acknowledge that a death from malarial fever is a great rarity, while deaths from typhoid fever are only too
common. Taking the reports of the large New York hospitals as a basis, one can estimate the degree of reliability of the figures on which the mortuary statistics are prepared. In the last-issued report of the Department of Public Charities and Correction of New York (1894) for the year 1891, the comparative rarity of malarial fever is well indicated by the fact that, of above 15,000 patients admitted to Bellevue Hospital during the year, there were only 15 instances of intermittent malarial fever. It is true that there were 76 cases of typhomalarial fever and only 16 of typhoid in the figures, which is surprising, considering the little stress that has been laid of late years upon typhomalarial fever; but when one turns to the list of deaths and finds that all the cases of typhoid fever died, 16 in number, it looks as if the diagnosis rested a good deal upon whether the patient recovered or not. In the total number of deaths, 1547, malaria does not appear as accounting for a single one. So also at the Charity Hospital, of 619 deaths not one was caused by malaria.

At the Roosevelt Hospital in the year 1893 there were treated in the medical division 1436 cases, and, so far as one can gather from the report, there does not appear to have been a single case of malaria treated in the wards. Dr. Roosevelt, to whom I wrote on the subject, kindly informs me that from January 1, 1883, to December 31, 1893, inclusive, there have been but two deaths from malaria, both cases of the pernicious form. The total number of deaths in medical cases during this period was 2024, so that the proportion of deaths from malaria to all deaths from disease in the medical division of that hospital during the 11 years was about 1 to 1000.

In the New York Hospital, for 1893, of 1482 medical cases, there were in all 38 cases of malaria, with one death from pernicious fever.

Through the kindness of Dr. Browning I am able to give more extended figures for Brooklyn, a city
in which the prevalence of malaria has engaged the attention of the profession for some years. The figures and tables sent to me were prepared by the direction of the Committee of Health, under the supervision of the secretary, Dr. G. S. West. Dr. Browning writes: "One peculiar general feature is that in the last 14 years, while the malaria cases have diminished pretty steadily down to less than one-half, the typhoid cases have fully doubled. During the same period the population has increased fully one-half, and by a small extent by increase in the city's area. Even then the typhoid cases have increased about twice as fast as the population."

He gives the figures for the ten years from 1884 to 1893, inclusive: deaths from typhoid fever, 1543; deaths from malarial fever, 1224. It will be noticed that there is a serious discrepancy between these figures and those in the Government Census for 1890, which deals with the six years ending May 31, 1890, during which time the deaths from malarial fever are stated to be 1413.

Carefully prepared tables of the deaths from typhoid fever, malarial diseases, and typhomalarial fever from 1880 to 1893 inclusive, have also been furnished. The totals for the 14 years are as follows: Typhoid fever, 1898; typhomalarial fever, 1104; and malarial diseases, 2006. In the Transactions and also in the Proceedings of the Medical Society of the County of Kings there are interesting discussions and reports on the prevalence of malaria. With reference to the occurrence of fatal malaria, it is worthy of note that in the reports on malarial fever on Long Island by Dr. Baker and by Dr. W. H. Thayer,¹ while it was acknowledged that intermittents occurred in many parts of Long Island, yet none of the physicians, whose correspondence is given in the papers, mentions, so far as I can gather, a single case of fatal malarial fever, nor

do I see one mentioned in the discussion following the reading of the reports. In September, 1893, the members of the Society of the County of Kings again discussed at length the question of malaria in Brooklyn.¹ I have looked carefully through all of the papers there read, and it is certainly a very significant fact that not one of the authors of the papers, and not a physician who discussed the question raised, mentioned the occurrence of fatal forms of malarial fever. In the article by Dr. Hall on types of malaria seen in Brooklyn, in which he quotes the observations of a number of physicians, no mention is made by any of them of fatal forms, and this is a city credited in the bills of mortality with as many deaths from malaria as from typhoid fever! Certain of the writers of the papers seem to have themselves been a little suspicious; thus Dr. Hall remarks that "Carelessness of diagnosis probably affects our ideas of the prevalence of malaria to a considerable extent;" and Dr. Law, in the methods of treatment of malaria in Brooklyn, states that it seems to him a good practice in cases of the remittent type of the disease to give quinin in large doses for two or three days, and then, if the fever is not broken up, to stop and take bearings and search for some inflammatory lesions, or reconsider the possibility of typhoid.

The report from the Brooklyn Hospital gives the following: In 1890, of 608 medical cases admitted there were 18 cases of malaria and no deaths. In 1892, of 742 medical cases admitted there were 27 cases of malaria and one death. In 1893, of 683 medical cases admitted there were 20 cases of malaria and no deaths.

In the report from the Kings County Hospital for the year 1892 there were no deaths from malarial fever in a total of nearly 3000 patients treated with 310 deaths. In the report for the year ending July

31, 1893, there was one death from pernicious mal-
arial fever in a total of 3258 patients treated, with
425 deaths.

In dealing with the statistics of malaria, Brooklyn
may be taken as a model, and I have dealt with it
partly because of the reputed large death-rate, and
partly because the activity of the members of the
Medical Society of the County of Kings has fur-
nished most suggestive material, which has been
supplemented by the kindness and energy of Dr.
Browning.

In localities frequented by the disease, malarial
fever kills in such a way that the diagnosis is rarely
in doubt. In the acute cases death follows within
a few days. In other cases the hemorrhagic features
prevail, while the malarial cachexia or the acute
exacerbations in the malarial cachexia less frequently
prove fatal. The simple intermittents rarely kill,
even when protracted. Taking into consideration
the statements of physicians in Brooklyn and Long
Island, as given in the reports referred to, together
with the striking absence of all reference to fatal
forms, also the distinctive and readily recognized
character of the fatal forms of malaria, one cannot
help feeling that in these localities and elsewhere the
diagnosis is put down carelessly, and does not repre-
sent in any way the incidence of malarial fevers. In
the oft-quoted and oft-printed chart of the Michigan
State Board of Health, showing the comparative
mortality from typhoid fever in seweried and un-
sewered towns, Brooklyn figures almost at the bot-
tom of the list, having a mortality of 1.5 per 10,000
inhabitants, a mortality which is much more than
doubled if we add, as it seems should be done, the
deaths due to typhomalarial fever and those due to
malarial diseases.

The conclusion of the whole matter may be thus
briefly expressed—the mortuary bills dealing with
malaria are false, due either to ignorance or to wil-
ful deception on the part of those who make the re-
turns. Malaria is a disease that now rarely kills in
the large towns on the Atlantic seaboard, and it behooves the profession to abandon the practice of making a careless diagnosis of the disease in every case of obscure fever which proves fatal, and the Medical Boards should refuse to receive a death-certificate signed malarial fever without more specific details than have heretofore been demanded.
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