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# CANADA

# MEDICAL & SURGICAL JOURNAL

**DECEMBER, 1886.**

Original Communications.

## GLIMPSSES OF ABDOMINAL SURGERY IN EUROPE DURING THE PAST SUMMER.

BY WILLIAM GARDNER, M.D.,

Professor of Gynæcology, McGill University; Gynæcologist to the Montreal  
General Hospital.

*(Read before the Medico-Chirurgical Society of Montreal.)*

MR. PRESIDENT AND GENTLEMEN—At the request of certain members of this Society, I offer a brief narrative description of operators and some of the operations done by them which it was my good fortune to see during a recent visit to Europe. The pleasure of the task before me may be somewhat lessened when I reflect that I shall be giving descriptions of men and things actually seen by a few of the fellows of this Society, and repeating descriptions given by distinguished American gynæcologists who have also been abroad this season, and which nearly all of you have doubtless read. These descriptions refer to several of the same men and to a few of the same operations witnessed by myself. My narrative may therefore be to many of you as a tale that is twice told. My main object in going abroad was to see abdominal surgery, and the men I wanted most to see were Lawson Tait, Thornton and Bantock of England, and Schröder and Martin, the great lights of Berlin. On landing at Liverpool, I proceeded almost immediately to Birmingham, and for a few days became the guest of my friend Mr. Tait. Here I found letters informing me that if I wished to see Schröder and Martin I must lose no time in getting to Berlin, as these gentlemen cease operating and go for holidays early in

August. So, having ascertained that my friend would be at home and at work in August and September, I proceeded to London on my way to the continent—not, however, until I had seen three abdominal sections by Mr. Tait. To these I shall refer later. On reaching the metropolis, I found that the Samaritan Hospital would shortly be closed, as is the annual custom, for a few weeks. During the three or four days I spent in London I saw Dr. Bantock and Mr. Thornton each do one abdominal section. These two gentlemen, with Mr. Meredith, constitute the surgical staff of the little hospital in which so much has been done for abdominal surgery by Sir Spencer Wells and themselves. The building is a terrace house, to which a few years ago two storeys were added. The management hope in a short time to have a new building, in every way better suited to the important work of this most interesting institution. Dr. Bantock and Mr. Thornton work side by side, doing by far the greater part of the work, but their methods differ widely in this particular, that Dr. Bantock abstains entirely from the so-called Listerian precautions, while his colleague observes them all to the most minute detail, and still, to say the least, their results are equally good—a remarkable fact, to say no more of it. I had a letter of introduction from Mr. Tait to Dr. Bantock, and was received by him with very great kindness indeed. Of pleasant reminiscences of my late visit to Europe, one of the pleasantest is, perhaps, of some long conversations with that gentleman on, of course, the great gynecological topics of the day.

Of the well nigh fifty abdominal sections I saw while abroad, it was my singular good fortune to see very few simple and uncomplicated. I had thus an opportunity of learning the methods of dealing with ugly complications employed by some of the most eminent abdominal surgeons in the world. The operation I saw Dr. Bantock do was an ovariectomy, the cyst being extensively adherent to the parietes and the whole of the fundus and posterior surface of the uterus, while it was of the intra-ligamentous variety, and attached to the whole floor of the pelvis. The assistant was Mr. Alban Doran, assistant surgeon to the hospital,

and the author of the valuable little book on "Tumors of the Ovary, Fallopian Tube and Broad Ligament." No spray. Long abdominal incision. After tapping and separation of anterior and other adhesions, Dr. Bantock proceeded to incise the peritoneal investment of the cyst near its base, and to enucleate it. This was not so difficult a procedure as might have been expected. It left a very extensive oozing cavity composed of the whole floor of the pelvis. Adhesions to the uterus were so dense, and bled so freely, that the operator decided to treat it by hysterectomy. A Koeberlé's serrenœud was applied to the cervical portion, screwed up, and the uterus cut off. The stump was supported by two pins, made to transfix it and rest on the abdominal wall. The peritoneal cavity was washed out, the edges of the cavity whence the cyst was enucleated attached to the edges of the abdominal incision and a drainage-tube carried to its bottom, and after a most careful toilette of the peritoneum, the incision was closed by silk-worm gut sutures, the material Dr. Bantock always uses for this purpose. The most accurate coaptation was effected. This operation lasted two hours, and was beautifully and most carefully done. Dr. Bantock showed me his patient next day. She recovered perfectly.

Mr. Thornton's case was a pelvic abscess bursting into the vagina and leaving a fistula. He is a beautiful operator, careful, dexterous, giving great attention to details, and taking plenty of time. Listerian precautions throughout, including dense carbolic spray from a large apparatus. A long incision, careful and clever tucking up of the intestines with a large flat sponge. Right ovary and tube extensively adherent and filled with pus. Bursting of the abscess during separation of adhesions with the fingers. The pus horribly foetid. Tube and ovary tied with silk and quickly removed. The stinking pus was mopped out with a sponge dipped in 1-1000 sublimate solution, by which the odor was quickly destroyed. The raw, pus-secreting surface was further dosed with a strong solution of iodine, and then again and again boiled water was poured into the abdominal cavity in large quantity till it returned perfectly clear and odorless. The water was carefully sponged out, and then a glass drainage-tube carried to the floor of the pelvis. Abdominal

suture silk—a straight needle at either end. Vagina thoroughly washed out with sublimate solution. This patient made a perfect recovery. I was much struck with this operation, and it then seemed to me a model way of dealing with a difficult and dangerous class of cases.

The method of dressing the end of the drainage-tube employed by Bantock and Thornton is the same. It consists of a piece of rubber cloth with a button-hole slit, through which the tube is passed. The rubber cloth is then carefully folded over the absorbent dressings around the end of the tube.

I next proceeded to Berlin, where, in ten to twelve days, I saw eight laparotomies and four total vaginal extirpations of the uterus, besides a number of minor gynæcological operations by Schröder, Hofmeier, Gusserow and Martin. I wish here to remark upon the extensive additions to hospital and clinic accommodation in Berlin since my previous visit, ten years ago. In various parts of the city a number of magnificent new buildings rear their heads. One of the finest of these is the Universitäts Frauen-Klinik, presided over by Prof. Schröder, who is ably seconded by his assistants, Hofmeier and Reichel. Magnificent is, indeed, the only word that may adequately characterize Schröder's hospital. Everything that money can secure for the institution has been obtained. Herr Geheim-Rath Schröder (for he has recently attained to the rank of privy councillor), as an operator, impresses the spectator very much by his coolness and rapid and dexterous style. The hour is half-past seven in the morning, and with his invitation the visitor is enjoined to take a bath and change his clothing. One must be punctual, for Schröder, exactly at the hour, and attired in a white linen suit, walks along the corridor from the door which directly communicates with his dwelling, and enters the operating room. The visitors have previously entered. The door is now shut and locked. The patient is already under chloroform, the only anæsthetic I saw used in Berlin, and it was always given in the same manner. A wire frame, covered with a piece of flannel or similar material, is held over the mouth and nostrils, and the chloroform poured on from a dropping bottle. The most perfect silence in the room. The spectators, sometimes numbering seven, are

ranged in a row at a little distance from the foot of the table. Contrary to general custom, Schröder stands on the left of the patient; on her right is his assistant, Hofmeier, Secundärarzt to the hospital. No spray. The instruments lie in shallow glass dishes, covered with an antiseptic solution, within easy reach of the operator. The needles and ligatures are in charge of a nurse who stands near the head of the patient. Schröder uses a knife with a blade at least four inches long, and by a few rapid cuts from pubes to umbilicus upwards, opens the abdominal cavity. He then makes a rapid survey, searching for and separating anterior adhesions. No trocar is used, but the knife is plunged into the cyst, the woman being turned on her side while it empties, but no particular care is taken to prevent entrance of cyst fluid to the peritoneal cavity. The abdominal suture is made by curved steel needles, held by a needle holder. They are passed through the whole thickness of the abdominal wall, nearly an inch apart. A few superficial sutures are used, but no great care to carefully adjust the edges.

I saw Schröder do four ovariectomies, three of which were simple enough and soon over, but the fourth was evidently a malignant tumor, with numerous very vascular, parietal and pelvic adhesions—some to viscera. The bleeding points were tied where practicable, but as troublesome oozing from the pelvis continued, the vagina was tightly tamponed, while sponge pressure was being made from above in the pelvis. Abdominal suture was then rapidly completed, and compresses over the parietes with a firmly applied bandage—the whole a very different method to Lawson Tait's for similar complications.

Gusserow is the second professor of obstetrics in the University of Berlin—a quick, nervous, excitable, friendly little man, speaking English fairly well. His clinic is a fine new building, one of the departments of the great Charité Hospital. I saw him do two laparotomies—the first a so-called Tait's operation, but of which I am sure that distinguished surgeon would absolutely refuse the paternity. I arrived late and did not get a good view, but this much I did see—an enormous quantity of silk for ligature purposes left in the peritoneal cavity. The ligatures were all applied by transfixing the part with a curved

needle in the bite of a needle holder, and the double thread was always tied. Whatever may be the capacities of German women in this respect, I am well convinced that no American woman could encyst, absorb, or otherwise dispose of the quantity of silk I saw left in that woman's peritoneum. She, however, was doing well next day and for at least a day or two later. The sponges, too, would horrify an English or American surgeon. The other operation was a simple ovariectomy.

Dr. August Martin, son of the late celebrated Eduard Martin, is a privat-docent in gynæcology in the University of Berlin. He is an enormous man, who receives his visitors with great courtesy and kindness. He has a private hospital with forty beds, and a large out-patient clinic. Here, every day in the week, some operations may be seen. The hospital is in charge of Frau Horn, a remarkable woman, who assists at all operations, and who, I am well convinced, could do an ovariectomy nearly as well as the master himself. I have seen her more than once, when one of the assistants was doing some minor operation, take the curette or other instrument from his hands and show him how, in her opinion, it ought to be used, an interference which, however, none of them seemed to resent. I saw Martin do two laparotomies and three total vaginal extirpations of the uterus. He is a rapid and most dexterous operator, although I cannot possibly approve of some of his methods. The abdominal sections here, as in the case of each of the other Berlin surgeons I have mentioned, are done in a room used for no other purpose. Spray before, but not during the operation. The hour, that which is most convenient; on one occasion half-past 8 a.m., the other at half-past 11. The table, a low, short, iron structure. The patient's legs hang over the table, and Dr. Martin sits between her thighs. The spectators are instructed to take a bath, and before being admitted to the room, each must take off his coat, waistcoat, collar and necktie, and suspenders. The operator is clad in a white linen suit, and wears rubber galoches. The latter precaution is soon seen to be necessary, as the floor of the room is swimming with solutions from the fingers, ovarian fluid, or whatever may happen to fall thereon. In all cases, however simple, the Berlin men make a long, slashing cut through the

abdominal wall from umbilicus to the pubes, and to this rule Martin's method is no exception. The peritoneal cavity is open in a remarkably short space of time. The first operation I saw Martin do was a so-called Tait's operation. The first thing he did on getting in was to turn out all the intestines over the upper part of the abdomen, and immediately Frau Horn covered them with a warm carbolized towel slapped over them, a procedure which would make Lawson Tait fly in horror from the room. Extensive adhesion of ovaries and tubes. One was separated and ligatured; the other so extensively adherent that it was let alone, the intestines returned, and abdominal suture applied. I did not gather the diagnosis in the second case, but on opening the peritoneal cavity general tuberculosis of that membrane was found, or what was supposed to be that condition was found, and after snipping off a small portion for microscopic examination, the abdomen was closed without any further interference.

Martin is a remarkably neat and rapid operator for total vaginal extirpation of the uterus for cancer. Scarcely a day passed without one or more operations on the cervix uteri for conditions which Emmet and his followers would call laceration and its consequences. It consists in a modified amputation of the cervix, in which the muscular tissue and diseased mucosa of the cervix are amputated, and the edges of the vaginal investment of the cervix are sutured to the edge of the incision on its inner surface. This amputation was almost always preceded by curetting the cavity, its irrigation to remove shreds, and the subsequent injection into the uterine cavity of a solution of persulphate of iron, the excess of which was always immediately removed by the stream from the irrigator.

On my return from the continent I proceeded to Brighton to attend the annual meeting of the British Medical Association. In the section for obstetrics, the principal subjects for discussion were, *The Alternatives of Craniotomy*, *The Treatment of Extra-uterine Fœtation*, and *The Removal of the Uterine Appendages*. the most eminent authorities in Britain and some very prominent Americans taking part. A week later, on the 16th of August, I again reached Lawson Tait, and remained with him for a month. During this period I saw an immense amount of work, chiefly,



of course, in abdominal surgery. I believe I am correct when I say that he does by a very long way more abdominal sections than any other man. For rapidity, dexterity, coolness and readiness for any emergency, however trying, he is simply marvellous, and to these qualities, as well as to his indomitable energy and extraordinary physique, are due his success. On Tuesday, the 17th August, I saw him do four abdominal sections, two vesicovaginal fistulæ and one perineorrhaphy; and during the next four days he did at least ten other laparotomies for various conditions. I do not know the annual number of cases done by Mr. Tait, but it must considerably exceed an average of one for each working day. During three weeks I had the honor and advantage of assisting him with all his operations, but Mr. Tait's wonderfully nimble fingers leave little to do for his assistant under any circumstances. Indeed the great secret of success in his assistant is in knowing how little he must do and in abstaining from doing everything else. Mr. Tait's operations are for the most part done in his private hospital, which adjoins his dwelling in The Crescent, a short, quiet street in the centre of smoky Birmingham, and in the Birmingham and Midland Hospital at Sparkhill, a suburb of the town. It is probably known to most of the members of this Society that some authorities, notably Emmet of New York, credit Mr. Tait's phenomenal results to this very smoke of Birmingham, but he is much amused at the idea. He avoids, if he can, operating anywhere else, and then only if he can secure for the patient a nurse trained by himself. The majority of the cases are done at nine in the morning, but occasionally, when there is press of work, he also operates between two and three in the afternoon. The anæsthetic is a mixture of chloroform one part and ether two parts by measure. Heat is evolved when this mixture is made, implying, I suppose, some chemical combination. It is given by Clover's inhaler, which secures economy of the drugs and comparative purity of the air of the room—a great advantage to operator and his assistants. Mr. Tait believes this combination to be the safest he has tried, and has had an experience of it in 1500 cases without a death and without any *contretemps* worthy the name; and he told me he had had deaths from every other anæsthetic he had used. He

insists on perfect silence during its administration. This is managed by Dr. Annie Clarke, his only paid assistant. All operations are done in the room the patient is to occupy. The table consists of a board eighteen or twenty inches wide, and about five feet long, which rests on two trestles. The head of the table is about three inches higher than the foot. In this, as in every appointment of his hospital and detail of his operations, simplicity is the most striking feature. So far as I know, no conditions are exacted of spectators invited to be present at operations. Both arms and legs of the patient are strapped to the table. Mr. Tait stands on the right of the patient, and his assistant on the left. At his right hand is a small table with the most necessary instruments immersed in plain water. Absolutely no antiseptic is used for any purpose whatever. I never saw or smelt either carbolic acid or sublimate, or any other solution of the kind during the five weeks I spent with him. Two basins of warm water rest on chairs, one at either hand of the operator. That on the right is for the sponges; that on the left to rinse the hands when necessary. A calico bag containing the carefully-prepared sponges hangs within easy reach of the right hand. Mr. Tait prepares for the operation by taking off his coat, putting on a rubber apron, and washing his hands and arms with terebene soap, without a nail-brush, which I never saw at any of his operations. Everything being ready, he takes half-a-dozen sponges from the bag and drops them in the basin for the purpose. He then takes up a case of scalpels which rests on the window and selects one, trying it on his thumb. The knives Mr. Tait uses are small ones, seldom more than an inch in length. The incision is then made, and one of the most remarkable things about his methods is the incredibly short incisions through which he does his many remarkable feats of operating. For removing the appendages, even if densely adherent, 1 inch to  $1\frac{1}{2}$  is the rule, and that applies to the cut in the superficial tissues. The peritoneum is incised only to an extent permitting his left index to enter; after this is crowded in the middle finger, with which the ovary and tube are separated from adhesions if necessary, grasped, and fished out through the abdominal incision to be ligatured. Such an operation, even when there are adhesions, is usually complete, includ-

ing the abdominal suture and dressing, in from nine to fifteen minutes, and so, in proportion, are other operations done with the same marvellous rapidity. Mr. Tait succeeds in removing adherent multilocular cystomata through wonderfully short incisions by getting his fingers in through the anterior large cyst after it has been tapped and opened, and breaking up the solid matter and small dense-walled cysts. One of the strong statements so characteristic of the man is that no laparotomy ought ever to take more than an hour, and he who thus consumes more time doesn't understand his business. It was my fortune to see him do scarcely anything that could be called simple, except a few of the removals of appendages, but I was told by a number of Americans who saw him do a simple ovariectomy for a unilocular cyst, that it was all over in exactly five minutes.

Mr. Tait uses the drainage-tube very often, and also very often washes out the peritoneum. He does not wait, as those who have seen Keith say he does, to tie or otherwise arrest every bleeding point, but if the oozing is inconsiderable, and sometimes even when it seemed to me considerable, he puts in a drainage-tube to the bottom of the Douglas pouch, and closes the wound, the accumulation in the tube being removed from time to time by a rubber ball and glass sucker, with a piece of rubber tubing at its end, which is made to dip to the bottom of the tube. During the operation he controls oozing surfaces by the pressure of sponges. If this is insufficient to stay the bleeding, he uses the cautery, or, as it seemed to me, oftener the perchloride of iron. A lump of the salt is dissolved in a few ounces of water and applied lightly to the part with a sponge, or a piece of the salt is grasped with forceps and pressed on the bleeding point. This applies to bleeding that cannot easily be reached by silk ligature, and he never uses catgut or any other. For washing out he uses plain water, which may have been boiled, but which many times I have seen him cool sufficiently by the addition of cold water as it came from the tap. All washing out cases are also treated by the drainage-tube, through which the remains of the water are sucked out, as they subside to the most dependent part, as well as by sponging. One of the great advantages of the drainage-tube claimed by Tait is that, besides its rendering

possible and easy the removal of blood and bloody serum, it enables him at once to see if the bleeding is serious, and to take measures to arrest it without taking out the tube or opening up the wound, and, in a number of such, the method has been to inject through the tube a watery solution of perchloride of iron, a procedure he has found perfectly successful. Silk is the material for the abdominal sutures, and it is passed through all the structures, muscle included, by a triangular needle threaded with a very long piece, which is passed continuously, leaving long loops, which are then cut, and so make the ordinary interrupted sutures. No superficial sutures are ever used, and certainly no extraordinary care taken to secure accurate coaptation of the edges. The dressing always consists of pads of gauze filled with plain absorbent cotton, held on by loosely applied strips of adhesive plaster, and over all a cotton bandage. It must not be supposed that doing, as I have many times seen him do, the most difficult and complicated things in an incredibly short space of time he gives the impression of haste or hurry, or that anything is left undone or done in a perfunctory manner.

Of the many interesting things I saw Mr. Tait do, I can briefly relate to-night only a few. One of the first cases was that of a lady from America, who presented the symptom of passing fœcal matter from the uterus. She was unmarried and past the menopause. Some solid masses could be felt in the pelvis. He did not bother much thinking what it might be, but cut in to see, when he found a multinodular myoma. He immediately concluded that the source of the trouble was a nodule which had become adherent to intestine and breaking down by a process of suppuration or necrosis had discharged into both uterus and intestine. He treated the case by hysterectomy, and cured her. I saw her five weeks afterwards, just before she left for home, and she was quite well. And while on the subject of hysterectomy, I saw two others, both treated extra-peritoneally by the Koeberlé serrenœud, the method Mr. Tait always adopts. He has also tried the intra-peritoneal method, but found it unreliable in controlling bleeding, and so, after losing some cases, he has gone back to the old method. After one of these operations,

he told me that it made about the twentieth successive successful case of hysterectomy treated in this way. Both of these got well.

*Sarcoma of the Kidney.*—This was a large tumor distending the abdomen, with an indistinct fluctuation-like sensation, extending to and felt in the pelvis. It had been diagnosed as ovarian, and Mr. Tait had agreed in this. It was a tremendously bloody operation to shell this vascular growth of the size of a foot-ball from its capsule, and it gave my friend a fine opportunity for the display of his coolness and fertility of resource. I saw the patient occasionally for two or three weeks after, slowly recovering from a terribly grave operation, to die, I suppose, later from recurrence of the growth.

*Burst Ovarian Tumor.*—Of these I saw three or four. One was a colloid cyst, and the jelly-like contents filled the peritoneum, sticking to everything. It appeared to be malignant, and had extensive pelvic as well as other adhesions, which bled freely. This patient died in 24 hours, the only death during all the time I was with Tait, except a cholecystotomy, to be mentioned later. These burst cyst-cases were all treated by washing out and the drainage-tube.

*Laparotomy in a Puerperal Fever Case.*—The patient, a lady (primipara) living at Wolverhampton, had a very difficult labor, and soon after developed symptoms of inflammation; severe pain, fever, incessant vomiting, exceedingly rapid and feeble pulse, and every evidence of impending death. About the seventh day, at her physician's request, Mr. Tait, with myself as assistant, went to Wolverhampton, some 20 miles from Birmingham, to see her. It was decided to open the abdomen. This was done by a two-inch incision, through which Mr. Tait got in his left index and middle finger. He found an encysted collection of horribly stinking bloody fluid to the left, and behind the uterus. This he burst with his finger, and sponged out, placing a drainage-tube in the bottom of the cavity. No washing out, although this had been contemplated. The patient was left, with instructions to her medical man that absolutely nothing should be given by mouth, and that turpentine and soap-suds

enemata be administered per rectum. The pulse improved within half an hour, the vomiting never recurred, and the patient made a continuous and rapid recovery.

Two days later, in company with Mr. Tait and Dr. James R. Chadwick of Boston, I saw Dr. Savage, Mr. Tait's colleague at the Birmingham and Midland Hospital for Women, do the same operation in a similar case. The patient was the wife of a physician of Birmingham, and had been confined a week before, and presented much the same set of symptoms as described in the previous case. Here, however, a large quantity of sero-purulent fluid escaped as soon as the peritoneum was opened. It was thoroughly and carefully washed out, and a drainage-tube inserted. The patient, however, died five or six days afterwards.

I cannot describe to you how full of interest these cases were to me, opening up, as they did, a new field for abdominal section. Mr. Tait told me that he had done already three or four such cases, saving half of them.

*Cholecystotomy.*—Of this operation, of which my friend is practically the originator, and has in Europe the field nearly all to himself, it was my good fortune to see two. The first was that of a very fat, deeply-jaundiced woman, with a skin presenting abundant evidence of the intense itching she had suffered. A diffuse, indistinct, fluctuating swelling could be felt in the region of the gall-bladder. An incision two or three inches long, running obliquely downwards and outwards, commencing a little above the lower edges of the ribs and extending two or three inches lower over the swelling, was made. On opening the peritoneum, the enormously distended gall-bladder was at once seen. It was tapped with a curved trocar, and 40 ounces of thick, dark green bile let out. The opening made by the trocar was then extended, and with forceps and scoop ten gall-stones were extracted. The edges of the opening in the gall-bladder were sewed to the edges of the abdominal wound, and a large rubber drainage-tube inserted. This patient died a few days afterwards, and at the autopsy cancer of the liver was found. The second was a case in which Mr. Tait was averse to operating, believing the evidence of cancer to be very strong. Ultimately, however, he decided to give her the benefit of ex-

ploration. The gall-bladder was found distended with half a pint of pus, and containing one good-sized gall-stone, but no evidences of cancer. I cannot speak of the ultimate fate of this case, as it occurred only a day or two before I left Birmingham.

Of Mr. Tait's remarkable success in abdominal surgery I can speak from personal knowledge, as by his kindness I had an opportunity of seeing repeatedly the most unfavorable cases till they were convalescent.

The after-treatment adopted by so successful a surgeon must be to all concerned as a most interesting matter. For 36 hours Mr. Tait allows absolutely nothing, not even water, by mouth. No morphia or any preparation of opium is ever given, except to ease a dying patient out of the world. As soon as any symptoms of peritonitis appear, such as pain, distension, vomiting, rise of pulse or temperature, seidlitz powders by mouth and soap-suds and turpentine enemata are given at intervals, till flatus passes and the bowels act.

My own impressions as to the reasons of Mr. Tait's remarkable success are that it cannot be credited to any single circumstance, but to the whole of his methods, which present such abundant evidence of the influence of so vast and unparalleled an amount of experience.

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## ABSTRACT OF A PAPER ON THE IMPORTANCE OF ALIMENTATION AND SANITATION IN SICKNESS.

BY J. EARLE JENNER, M.D., L.R.C.P.L., OF PICTON, ONT.

*(Read before the Canadian Medical Association, at Quebec, August, 1886.)*

In dealing with this subject, you will pardon me if I seem to leave my text and wander in the domain of health, as I find it difficult—if, indeed, it be wise to do so—to lay down one set of rules to live by when in health and another set of rules totally different to live by when sick. As disease is often the result merely of a departure from the laws of health, its treatment will reduce itself simply to a return to those laws. It is upon the supply of a proper quantity and quality of food that the health of mankind largely depends. One writer has said that the comfort, energy, usefulness and moral character of a man depends largely on his digestion, and as his digestion depends largely

upon the kind and quality of food he takes, as well as the time he takes it and the condition of his nervous system during the ingestion, it becomes of vital importance to the individual to know the details of his dietary and regimen.

The experience of every nation bears testimony to the baneful effects of improper feeding on the health of large bodies of men, and the death returns of every year show the evil effects of dietetic errors in feeding young children. Liebig says that improper feeding is the cause of most of the infantile diseases and more than half the deaths during the first year of life. Upon the feeding and housing of the child for the first ten years of its life will depend largely its physical and mental capacity; and its moral tenor will not be uninfluenced thereby. The importance of food, therefore, in its relation to health as well as to sickness, becomes of prime importance. The farmer knows that if he is to produce the best animal for the market it must not only be well bred but well fed, especially during the period of growth and development. The trackman understands the importance of weighing his oats and stripping the hay of all chaff and rubbish when training his horse for a severe contest. Stock raisers have long since learnt the absolute necessity of paying strict attention to matters of detail in rearing their animals, to have their enclosures large, light, airy and clean, free from all ammoniacal and other noxious odors, of having plenty of clean, well cured fodder, a clean bed, and a good supply of pure water. It is generally said a pig will thrive in dirt, but let a well-bred pig choose his habitation, and he will, in point of cleanliness, put to shame many of us who accuse him of filthy habits. What is true of one animal is true of all; learn what is the natural food for that animal, then give it in proper quantity, of the best quality, well prepared and at regular intervals, and the question of feeding is largely answered. The kind of food as well as the quantity thereof necessarily varies with the environment of the individual. Man, unlike all other animals, possesses the faculty of accommodating himself to his surroundings, otherwise his distribution over the earth's surface must necessarily have been very limited. This applies to his dietary as to his habits generally, and though to some extent the disastrous effects of dietetic



errors may be compensated for by an effort on nature's part to establish a tolerance for these foreign substances, she invariably murmurs at the abuse, and will as invariably wreak her vengeance if not appeased by a timely retribution on the part of the offender. I believe that in ninety-nine cases out of every hundred the seeds of a disordered digestion are sown during the first few years of life. If the child escape in the first year, the evils resulting from irregular and unnatural feeding—*e.g.*, giving it the breast or bottle every five minutes to keep it quiet and feeding it on rolled biscuit and such stuff as is the common practice—it will within a year or two experience the remorse of a guilty stomach for having partaken of dried beef, pickles and pastry, not to mention the numerous articles of diet admissible when properly prepared, but so universally made indigestible by bad cooking. Instead of adopting the prayer of Solomon, to be fed with food convenient for them, a large class of people go the very opposite road and fill their maws with all sorts of offal, absolutely interdicting pure cold water, banishing light and fresh air from their apartments, and shunning a draught as though it bore on its wings the messengers of death.

The difficulty I have found in treating many of my patients is not to get them to take medicines. They will swallow literally gallons of nauseous draughts prepared by themselves or their friends, and all the pills and potions I see fit to prescribe, but they will not, either through ignorance of the importance of such measures, or through superstitious fear of evil resulting therefrom, admit fresh air and sunlight into their dwellings and take into their stomachs a proper amount of fitly prepared nutritious food.

The poet has truthfully said as soon as we begin to live we begin to die ; the first breath of the infant kindles a flame in its tenement of clay that continues to burn until the structure is consumed. At once this process of destruction commences and goes on simultaneously with that of building up or reconstruction, never ceasing, night or day, until the end comes, when the vital powers, no longer able to repair the breach, succumb to their fate and the body returns to its mother earth. During this period of growth and development in a healthy individual,

this *reconstructive* process is in excess of decay; and notwithstanding the constant wear and tear of the entire organism, the creature grows, develops, and apparently knows nothing of physiological waste. In this fact doubtless lies the key to the most potent prophylactic means that can be brought to bear in treating diseases.

Just in proportion to the amount of proper food, water, air and sunlight, with exercise, that the creature receives, will it grow, develop, and be enabled to resist disease and decay. This law which applies in health holds doubly good in sickness. Then the functions of the various organs are either over active, and thus waste is in excess of repair, or they fail in part or wholly to perform their task, and effete material accumulating in the system interferes with the proper absorption and assimilation of nutriment. In either case the phenomena of starvation obtain. While pursuing my post-graduate course in London I frequently visited the Children's Hospitals at Shadwell and Great Ormond street, where I had abundant opportunity of studying the effects of starvation on little children. It is a noted fact that of all children under one year old brought into the London hospitals, a large percentage are cases of systematic and deliberate starvation by their inhuman mothers that at their death they may recover the £2 insurance on their little lives.

The importance of proper feeding at this period of life cannot be over-estimated. The babe deprived of its natural source of nourishment either from physiological incapacity on the part of its mother, or from positive refusal on her part to perform toward her offspring the duties of a mother, too often sickens and dies from pure malnutrition. It loses, or, perhaps, never acquires, that plumpness that so beautifully rounds and shapes the tiny form of a healthy infant; the skin, void of that soft elasticity characteristic of babyhood, is dry and harsh, and hangs in folds from its attenuated limbs; its face, pale, pinched and wrinkled, wears an anxious, careworn expression; and its voice is but a feeble wail, resembling the cry of sick kittens. The entire picture is one of premature old age. Give these children carefully selected and properly prepared pancreatised food, or, what is

better, a good wet nurse, and behold the change. Gradually, almost suddenly, the wrinkles disappear from the little face, the limbs grow plump and firm, the feeble cry has developed into a lusty crow, its sleep, which was irregular, nervous and interrupted, becomes sound, peaceful and natural, from which the little one awakens smiling, evidently refreshed and invigorated. We can scarcely believe, as we contemplate the change, that all this manifestation of life and health exists in the miserable, helpless, dying weakling of a few days ago; but such transformation scenes are of daily occurrence in children's hospitals. If withholding food from a strong, healthy child can so soon bring it to such a condition of beggary, how much more deleterious must its effects be on one consumed by fever, depleted by loss of blood, or wasted by chronic albuminous discharge or prolonged suppuration. An eminent authority has said concerning the consumptive person, "If his stomach go back on him, the outlook is gloomy in the extreme." I always feel that my sheet anchor is out when my patient takes freely of nourishment.

The babe that has sickened as the result of improper feeding requires little treatment other than relieving the alimentary canal of any undigested food it may contain and being put on a well constructed regimen. The child should be fed solely at the breast for the first six months at regular intervals of two hours, then for two months longer at intervals of two and a half hours, when farinaceous foods should be gradually added, and at ten months the child should be weaned and fed on milk and farinaceous food until the second year, when meat may enter into the dietary. If the weaning time come in the hot season, better not wean until the fall.

Children should not be brought to the table with adults, no matter how well regulated the household may be. To refuse a child anything it wants during a meal is to so disturb the even balance that should exist between mind and body for the proper performance of functional work as to interrupt or stop altogether the process of digestion; hence it is of prime importance that nothing inadmissible for the child be put before it during meal-times or while the process of digestion is actively going on.

I have used largely, in treating young children and adults suffering from malnutrition and various wasting disorders, Reed and Carnrick's peptonized cod-liver oil with milk, given in sherry wine, and combined with syrup of the iodide of iron where I find glandular enlargement with or without suppuration. This, with out-door life and an abundance of milk, has seemed like the "elixir vitæ" to many of my patients.

Often, where I have found cod-liver oil disagree, I have seen most flattering results from a decoction of mullein leaves in milk. Three ounces of the green leaves to a pint of milk, boil, and let stand an hour, then strain through muslin, and sweeten. Drink when hot; may be taken *ad libitum*. This will often check the night cough of phthisis, and many patients thrive and grow fat while taking it.

For the summer diarrhœa of children, I have had good results from the use of Benger's liquor pancreaticus. I rarely find it necessary to do more than correct the stools with gray powder and oil. Keep the child quiet and cool, and give it nothing but pancreatized milk. The vomiting ceases, flatulence disappears, and the stools become natural. In most cases of non-inflammatory diarrhœa this will be sufficient to work a speedy cure. Pancreatized gruels may be substituted when the child will not take milk. Always give plenty of pure water. I have always found, too, when raw milk does not agree with adults, if pancreatized, it will sit lightly on the stomach, will not be followed by flatulence, but by a feeling of comfort.

Doubtless more than half the disease we have to treat, and very much more of misery and disorder that escapes our notice entirely, is the result of a disregard of nature's laws. Of all the causes of disease, heredity is, perhaps, the only one that can never be avoided during life. Before the child is born its constitution is already framed, and during its lifetime can only be strengthened and supported in weak places, but not remodelled. It can, however, be so built up and invigorated by carefully avoiding all deleterious influences, as insufficient and bad food, unsanitary surroundings, and exposure to severe weather, and by supplying the needful inorganic elements for a robust constitution, that what was in its conception a defective, totter-

ing framework may become a solid, substantial structure, capable of resisting the storms of an average lifetime.

Impure air, which fills so many of our houses and public buildings, forms an eligible medium for parasites and disease germs. Impure water and milk form the most prolific source of many diseases, especially the zymotic diseases. The organic impurities contained therein produce diarrhœa, specific fevers, and parasitic affections. Sewer air is another very prolific source of disease in towns and cities, producing throat disease, diarrhœa, diphtheria and typhoid fever. More than half the houses of our common cities and towns are capable of producing disease.

Now that sanitary science and hygiene are being taught in the public schools, we may look forward to a better observance of the laws of health by the rising and future generations, but the matter of educating the people in rules of right living should not be left solely to the school teacher. His knowledge is not always as perfect in this department as desirable, and his efforts should always be supplemented by the physician when about his professional work. The physician should feel himself the responsible guardian of the public health, and not consider it beneath his calling or too much trouble to give instructions in hygiene and sanitary science whenever opportunity presents. If he be wide-awake to his own interests he will not neglect this part of duty, as he will soon begin to reap the benefits of his labor thus spent in the good results of such training. Often hygienic instruction should take precedence of a prescription for drugs, although it may not be deemed worth so much in money by the patient. If every doctor should make it a point to lay down certain rules for the instruction of nurses and attendants upon the sick room, and for the guidance of mothers in rearing their children, and *insist* on the great importance of carrying them out in detail, only a few years would elapse before intelligence in these matters would be universal where now ignorance and superstition are so prevalent. I have known eminent English physicians and accoucheurs to have printed rules for the guidance of mothers and nurses, a copy of which they leave at each house when called professionally. This may savor of quackery,

but I hold that any means calculated to educate the people in sanitary, hygienic and prophylactic medicine is admissible, and should receive the sanction of all regular practitioners.

It is a deplorable fact that this duty of educating the people in rules of right living has been sadly neglected by the profession. It cannot be otherwise, or ignorance in this matter would not be so prevalent. A great deal of the error to which I have referred is traceable to the doors of the profession, either through ignorance, carelessness or a dishonorable desire to ingratiate one's-self with the family by assenting to the whims and superstitions of the age. These notions are confirmed, approved and sanctioned by the attending physician, instead of being branded as infamous and dangerous to the public welfare. To root out this evil often calls for more tact and skill on the part of the physician than to successfully combat the disease which he is called to treat. To question the propriety of certain domestic remedies, and interdict certain time-honored customs and sayings, is to cross swords with the household and perhaps lose the confidence of the family forever. An instance which occurred in my own experience about a year ago illustrates this fact. I was called to attend a woman in labor, a primipara. She inherited phthisis, and I found tubercular deposits in the apices of the lungs. She lived in a large brick farm-house, with plenty of commodious, airy and well-ventilated rooms, but religiously shunning these, chose for her lying-in chamber a room such as I never saw before or since in any dwelling. It was an inner room, surrounded on all sides by other rooms, with neither window, skylight, nor transom, not even a stove-pipe hole in the ceiling nor a rat-hole in the floor. The rats had evidently concluded it wasn't the best room for them. The only opening in the walls was a door, and that was less than the regulation width. I advised her to take another room, but she thought she would get on all right. I told her friends of the danger of leaving her boxed up in that pen, and of the necessity of pure air and sunlight for her, but they remonstrated and replied, Mrs. So-and-So was confined in that room, and she did all right, and that Dr. B. said it was just the room for the occasion, the best in the house. I may here say that Mrs. So-and-So was at that time in Denver City, Colorado,

whither she had gone two years subsequent to her confinement on account of lung trouble, which proved to be phthisis. I cannot say where Dr. B. went to ; he died soon after. I need scarcely tell you my patient did not do well. The lochia became foetid, chills and fever supervened, and dyspnœa at last drove my patient to seek a more abundant and purer supply of air. After transferring her to a large, airy, well-lighted room, under the curse of some neighbor woman who predicted her certain death in nine days because she was carried through a doorway, I depended entirely on this change to work her recovery. The improvement was as steady as the change was sudden. The dyspnœa ceased at once, the appetite returned, foetor disappeared, and in two weeks she was on her feet, though I urged her to keep to her couch a fortnight longer.

The importance of dietetics in the treatment of all diseases is being recognized more and more every day as not second in importance to medicinal treatment. Since Mayer of Germany, in 1842, first established his doctrine of the conservation of energy, and traced every manifestation of life and active or physical force, whether within the living organism or in a mere machine, back to the sun, the essential elements of life, fuel and oxygen, have gradually and of later years rapidly gained ground in their important relation to the animal economy. Still, much room is left in our system of medical education to improve the teaching of dietetic medicine. Instead of making the matter of feeding the sick a side issue in the course of lectures in our schools, and merely casual reference to the question of nourishment in the sick room, it should be given a place in the course of didactic lectures equally important to physiology or theoretical medicine, and special attention directed to alimentation at each bedside clinic.

I am not aware that systematic teaching of dietetics is pursued in any of our Canadian or American schools, nor do I know that a chair for this purpose is established in any of the British or continental schools, but I observed that particular pains was taken by the London professors to impress on the students at their bedside clinics the all important item of nourishment in the treatment of disease.

The average Canadian student is left to acquire his knowledge of dietetics during the first few years of his practice. Happy is he, and still happier his patients, if he has had the benefit of a good office experience. Without having had the importance of dietetics impressed on his mind, and the precarious nature of the appetite and the idiosyncrasies of individuals pointed out to him, he will either neglect this factor of alimentation altogether or make his own stomach a model by which he regulates the dietary of all his patients, forgetting that what is one man's meat is another's poison.

I have often thought that a manual of dietetics, written or compiled by some competent authority as Dr. Roberts of Manchester, or J. Milner Fothergill, M.D., London, should be in the hands of every practitioner, introduced as a text-book into every medical school and, as far as possible, into the homes, to take the place of such abominations as "The Home Physician," "Every Man his own Doctor," etc., to which, I am sorry to say, many of the fraternity give their testimony.

To enumerate the various prepared foods and aids to digestion in the market would fill a chapter as long as the catalogue of the ships in the Iliad. My object is to urge the importance of systematic and vigorous alimentation in sickness, and direct attention to the duty of physicians in inculcating principles of right living among the people generally. I am convinced that feeding should receive the first consideration in treating acute diseases, and drugs be resorted to as mere adjuncts, but very necessary adjuncts at times. Certain symptoms will always and forever require the use of certain drugs, and a few specific remedies, as quinine in malarial fever, iodide of potash in syphilis, etc., will, perhaps, never lose their usefulness; but certain it is that the wholesale and indiscriminate use of many drugs is fast coming into disfavor, and although we are not ready yet to dispense with drugs altogether, I believe the time will soon come when the treatment of disease will resolve itself largely into a system of hygienic rules, when fresh air, sunlight, good food, pure water, and exercise either by the patient himself or by the vicarious system of massage, which is doing such wonders in the ranks of the neurasthenics, will reign to the almost absolute exclusion of drugs.



## THE TREATMENT OF LARYNGEAL TUBERCULOSIS BY SUB-MUCOUS INJECTION OF LACTIC ACID.

BY GEORGE W. MAJOR, B.A., M.D., &c.,

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*(Read before the Medico-Chirurgical Society of Montreal.)*

The introduction of lactic acid as a local remedy in tuberculous disease of the larynx has opened up a new era in the treatment of this troublesome affection.

The discriminating action of lactic acid when in contact with healthy and diseased tissues, as pointed out by A. von Mosetig-Moorhof, was utilized by Krause, who foresaw in the analogy between lupus and tuberculosis as great a possible future for this solvent in laryngeal tuberculosis as Mosetig-Moorhof had found in lupus.

On October 14th, 1885, at a meeting of the Berlin Medical Society,\* Krause communicated the results of the use of lactic acid in fourteen cases of laryngeal phthisis. He there made a number of demonstrations, and exhibited several preparations of the larynx secured at the autopsy of a patient who had undergone treatment. The result was considered exceptional. Virchow, amongst others, bore testimony to the presence of cicatrization in the specimens, and acknowledged the possibility of curing tuberculous ulceration of the larynx.

These conclusions have since been fully confirmed by several independent observers, as, for instance, E. Jellinek (Vienna),† J. Gottstein (Breslau), A. Rosenberg (Berlin), W. Lublinski (Berlin), and Theodore Hering of Warsaw.‡

Last winter I treated privately and at my klinik for diseases of the nose and throat, Montreal General Hospital, a number of cases of tuberculous infiltration of the larynx with lactic acid of varying percentages, applied by means of atomizers, brushes, sponges or absorbent cotton. Employed in this way its action

\* Berliner Klinische Wochenschrift, No. 29, 1885.

† Wiener Med. Professoren-Collegium, Sitzung von 9 November, 1885.

‡ Societ  Francaise d'Otologie et de Laryngologie, session d'Avril 1886.

was very satisfactory, checking ulceration and promoting cicatrization. In a case of tuberculous ulceration of the pillars of the fauces it worked almost miraculously; ulcerations healed that had obstinately refused to yield to a variety of other measures.

It is not, however, of lactic acid used as a superficial application to the laryngeal mucous membrane that I am desirous of speaking, it is rather of it as a *submucous injection* into the substance of the laryngeal soft tissues when the seat of tuberculous infiltration.

During the past summer I saw in Krause's private klinik (Berlin) a number of cases undergoing treatment by injection, and had ample opportunity of observing the results achieved in many of them. The instrument employed is on the principle of the hypodermic syringe, larger, longer, and suitably curved for entering the larynx by the natural passages, and was originally designed by Dr. Theodore Hering of the throat klinik at St. Roch's Hospital, Warsaw. From 5 to 10 minims or upwards may be injected at each sitting, and the strength of the solution may vary from 20 per cent. to 80 per cent. This treatment may be employed at any period of the disease, and is especially efficacious in the early stage, that of œdema and club-shaped swelling of the arytenoid bodies.

For the sake of brevity and perspicuity, I shall refer to the history of the case of the gentleman whose larynx you all have had the opportunity of examining this evening.

Mr. James T. T., aged 34 years, of Gaspé, came under my care on the 7th of September. He reports his family history as free from any phthisical tendencies. In November, 1885, he slept between damp sheets, and his illness dates from that time. On laryngoscopic examination I noted characteristic swelling of both arytenoid bodies, interspace and ary-epiglottic folds, deposit in both ventricular bands slightly ulcerating on the surface, post-laryngeal papillomata, one of the surest signs of tubercular deposit in the posterior laryngeal wall,\* and a partial prolapse of the right sacculus laryngis. There was also loss of voice,

\* Author's communication, *vide* Transactions of the Fifth Annual Congress of the American Laryngological Association, New York, 1883.

and deglutition was painful,—a most typical case of phthisis laryngea. An examination of the chest developed the fact of deposit in the right lung. The left side of the larynx was first acted upon, by way of experiment, and was injected on September 11th and every second or third day thereafter for eleven sittings, when, in size, as you may have observed, it nearly approaches normal proportions. The right side was then treated, and has already undergone seven injections, with, as you have seen, very good and satisfactory results. The patient now suffers no pain or inconvenience in swallowing, is much improved in voice, and his breathing is not embarrassed. The physical condition has also been benefited *pari passu*. Internally, I administered thrice daily one grain each of phosphate of lime and soda. He complained of but little pain of short duration after each operation, which was seemingly lessened at each subsequent procedure.

Should a slough form, as sometimes happens, at the point of entrance of the needle, the active treatment must be temporarily suspended, but recourse may be had meanwhile to a weaker solution of the acid in the form of a spray applied to the surface of the larynx. The slough, on separating, leaves a healthy, granulating surface, which will heal completely in a few days. I have found spasmodic closure of the glottis very likely to occur after the use of a strong solution of lactic acid, especially when the brush, sponge or cotton holder has been the medium of application. When used by atomization, a much stronger percentage of acid can be borne without this danger. This difficulty I have not observed in the process of submucous injection.

I employ an acid of the average strength of 20 per cent., but it is well to commence with a weaker solution and to gradually increase the percentage at each sitting, and the average quantity used for each injection has been from 6 to 10 minims.

For obvious reasons, care should be taken to bury the point of the needle sufficiently deeply in the laryngeal substance to prevent the escape of the acid externally to the puncture. In the case of a tuberculous deposit assuming the proportions of a tumor or nodule, the needle should be entered in the centre of it and the mass freely injected. Lactic acid itself in a more

dilute form may be used as a pigment or spray in the intervals between the injections, or, if desirable, at the same sitting.

The treatment by lactic acid injection need not preclude the use of many other and valuable methods of local cure—sedative, anodyne, antiseptic, alterative or astringent. There is no objection to the use of cocaine to render the parts more tolerant; so far I have not, however, found it necessary.

The strongest argument in favor of this treatment is to be found in the fact that the disease in the larynx may be cut short in its early stage of development or before erosions and ulcerations have had time to occur. No former line of treatment (if we except, occasionally perhaps, astringents) has ever been equal to the accomplishment of this end, and in this particular point I regard it as of inestimable value.

In speaking so highly of the plan under consideration, I particularly wish it to be understood that I do not seek to overestimate the value of local treatment to the disparagement or neglect of constitutional remedies; on the contrary, I regard systemic means as of very great and paramount importance.

Before concluding these remarks, I must here briefly refer to three points intimately connected with laryngeal phthisis, concerning which misgivings apparently exist in the minds of some members of our profession.

Primary laryngeal tuberculosis, or, in other words, laryngeal phthisis, uncomplicated with lung deposit, is seldom encountered. Several very eminent and conscientious observers, however, maintain that they have met with such cases (J. Solis-Cohen, B. Fränkel, of Berlin, and Rossbach of Jena); on the other hand, many equally celebrated authorities as Morell Mackenzie, Voltolini and the late Professor Krishaber have either absolutely denied, or have been at least doubtful of its existence. When it happens, it will most probably be found, I think, in persons hereditarily free from tuberculous tendencies, and in whom the disease has been induced by external causes. In many cases of laryngeal phthisis the local manifestation may be far advanced in the larynx before any pulmonary trouble can be detected. This is not, however,

absolute proof of secondary lung tuberculosis. This mooted question can alone be finally determined in any given instance by an examination after the death of the patient by accident or by some intercurrent and acute disease in which pulmonary complications do not play a part. Such a combination of circumstances are not likely often to happen, hence the difficulty experienced in arriving at any definite conclusion.

Is the condition described as phthisis laryngea a true tuberculosis of that organ? Schnitzler finds the cause of the disease to be a chronic inflammation of the mucous membrane, and the ulcerations to be due to follicular tumefaction, while Max Schottelius claims that the condition is caused by the corrosive action of the sputa on the laryngeal mucous membrane. These two views, I may say, meet with but little favor.

Rheiner, Rokitansky and Virchow insisted over twenty years ago on the actual presence of tubercle in the larynx. We are indebted to the researches of Wendt, Heinze and Isambert for recent advances in the pathological knowledge of tuberculosis, as affecting the larynx and pharynx. They have settled the fact that tubercle does exist in these regions, and undergoes similar changes there as elsewhere.

Morell Mackenzie's studies have led him to conclude that in all cases of laryngeal phthisis, with but few, if any, exceptions, tuberculosis of the mucous and submucous membrane is the sole etiological factor. I need hardly say that the general consensus of opinion coincides with his observations.

This absence of unanimity may, I think, be accounted for by oversight of the fact that every laryngitis occurring in a person the subject of pulmonary tuberculosis is not necessarily of a tuberculous nature; on the contrary, it is within the knowledge of every observer that many cases of lung disease run throughout their course with but trifling, if any, disturbance of the larynx.

The third and last point I raise relates to our ability to diagnose laryngeal tuberculosis by laryngeal signs only. I claim that we not only are in the habit of making a diagnosis of tuberculosis affecting the larynx by laryngeal signs only, but that we

frequently are able, even before signs of laryngeal infiltration exist, to foreshadow with very tolerable accuracy prospective laryngeal or lung deposit by laryngeal indications other than those of infiltration.

## QUARTERLY RETROSPECT OF SURGERY.

BY FRANCIS J. SHEPHERD, M.D., C.M., M.R.C.S., ENG.

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*Treatment of Fracture of the Patella.*—Mr. Fred. Treves (*Brit. Med. Journal*, July 24th, 1886) says that the methods of dealing with this common injury are not yet entirely satisfactory, and that the discussion on the subject is not yet closed. There are certain cases where the fracture is transverse, and where the fibrous expansions by the side of the bone are untorn, that present so little disturbance of parts that the mere securing of the limb in the straight position is sufficient to get a good result. In other cases, good results are obtained by strapping or splints. The application of Malgaigne's hooks, applied to felt discs moulded over the fragments, has met with certain success.

Lister's operation of opening the joint and suturing the broken fragments has been practised extensively by some surgeons. According to Mr. Treves, the objections to this operation are an anæsthetic is required and the operation is not without risk, and also one median suture is not always sufficient. Another plan is that where no skin incision is used, but a silver wire is passed through the joint under the fragments, and is so adjusted that when the two free ends are twisted together over a pad on the skin the broken bones are brought together. This plan has proved very successful in the hands of several surgeons. The mode of treatment, however, advocated by Mr. Treves is the old one by the use of Malgaigne's hooks; he says that, theoretically, it is difficult to conceive a better means of bringing the fragments of the broken patella together. When first introduced, the objections to Malgaigne's hooks were due to the fact that the points of the hooks excited suppuration, and as the points of the upper hooks always pierced the synovial member,

suppuration often spread to the joint. Antiseptic surgery has removed this reproach, and with the disappearance of this condition must vanish the objections to this excellent method of treatment. According to Mr. Treves, the other advantages are that no anæsthetic is required, the maintenance of the apparatus causes no inconvenience, and before the hooks are inserted the fluid in the joint can be evacuated. Mr. Treves' method is as follows: The limb is secured on an ordinary straight back-splint with a foot-piece, which is secured to the leg by straps and buckles. The position of the patella is carefully marked out in pencil on the skin, and the sites for the points of the hooks indicated; four punctures are now made with a sharp tenotome at the points at which the hooks are to enter; the punctures in each case should pass down to the bone. The two upper punctures enter the joint, and any fluid can be evacuated through them; the lower punctures are without the joint. The hooks should be aseptic, and the upper and lower ones applied separately, the first introduced being the lower. They should then be screwed together till the fragments are in close contact. To prevent riding of the upper fragment, a tube passing over the upper pair of hooks and fixed under the knee with a leaden clamp should be applied.

Mr. Treves always applies the hooks under the spray, and administers no anæsthetic. After the hooks are accurately applied the spray is withdrawn and the punctures covered with iodoform. The limb should be placed on an inclined plane, and the knee should be kept always fully exposed to the air. This, he thinks, hastens healing. The hooks are usually left in for six weeks. In the cases treated by Mr. Treves, no elevation of temperature, pain or suppuration has occurred, and the union was in all cases firm and secure.

*New Operation for Fractured Patella, by subcutaneous patellar wire suture.*—Prof. Anton Ceci of Genna (*Deutsch. Zeitsch. f. Chir.*, Bd. XXIII., Nos. 3 and 4, 1886) advocates the following method of treating fractured patella: The effused fluid is first removed by aspiration, and, if it be large, the joint washed out afterwards, or a splint may be applied and the opera-

tion deferred for three or four days. The operation is performed with the help of a drill, perforated at the end with an eye. An assistant holds the limb of the completely narcotized patient in hyper-extension, approximating the two fragments of the patella and moving the skin in folds towards the centre of the patella. The operator then pierces the skin with the drill under the patella, and forces it diagonally through the substance of the patella, keeping it parallel to the large surface of bone, transfixing it in an oblique direction from the inner part below, upwards and outwards. The point passes through the skin above, the eye is now threaded with silver wire, and is then retracted and pulled through the patella and out at the first point of insertion. The operation is then repeated in the other diagonal line of the patella, but at right angles to the first perforation, having previously passed the wire under the skin and the lower margin of the patella to the lateral aspect of the bone. The end of the wire is again passed under the skin above the upper margin of the patella, and finally the two ends are twisted tightly together, and the twisted part is buried. The assistant must hold the fragments in apposition unmoved throughout the operation, and care must be taken not to get the wire tangled or twisted into loops. The skin having been moved out of place during the drilling, the perforations are removed from the wire, when the tension is relaxed. The wire lies to a great extent buried in the substance of the patella, in the figure 8 shape.\*—(*Annals of Surgery.*)

Hardly a year passes without the introduction of a new method of treating fracture of the patella or the introduction of an old one. The last method introduced is fashionable for a time, and then falls into disuse and is forgotten, to be revived again at some future time as something better than anything else. There is no doubt that the good result of treatment depends considerably on the kind of fracture and the amount of injury and effusion. Good results may be obtained by various methods, and each one has its failures also. Lister's method of treating

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\* Other methods of treating fractured patella are fully discussed in the Retrospects of June, 1882, and December, 1883.



fractured patella in the hands of men who have not fully imbibed the principles of antiseptic surgery has led to the loss of not a few legs and some lives. Philadelphia surgeons have for some time past used Malgaigne's hooks in much the same way as that advocated by Mr. Treves, and they say the results obtained are excellent and the danger nil. Professor Ceci's method appears so complicated that few will attempt it, and, besides, the advantages do not appear to be very great. For several years past I have adopted Mr. Heath's method of treatment by aspiration, if there is effusion, and then the application of a plaster-of-paris bandage. The results obtained are good, and in the last two cases, in which the plaster was applied within an hour of the receipt of the injury, the union after several months was particularly close. The method has these advantages: it is safe, simple, and can be applied by medical men in the country (who have not the appliances of a hospital at hand) with the greatest ease. The materials are always ready, and take but little time and skill to apply.

*Surgery of the Brain.*—At the recent meeting of the British Medical Association held at Brighton, Mr. Victor Horsley read a paper entitled "*Advances in the Surgery of the Central Nervous System*" (*Lancet*, Aug. 21st, 1886, and *Brit. Med. Jour.*, Oct. 9th, 1886). In introducing the subject, the author laid special weight on the fact that all the advantages, both scientific and operative claimed in his paper, were the results of lessons learned from experiments on monkeys, a fact worthy of noting in these anti-vivisection days. It had been said that monkeys were not quite like human beings, but this was not correct from a surgical standpoint. The chief facts of the paper are as follows: (1) The preparation of the patient for the operation, which consisted in shaving the scalp and then thoroughly cleansing the head. (2) Anæsthesia; he preferred chloroform, giving first a hypodermic of a quarter of a grain of morphia—the morphia produces contraction of the arterioles of the brain, and there is in consequence less oozing, and a less amount of chloroform is needed. (3) Strict Listerism, pure and simple, spray and gauze dressings. (4) The line of incision—instead of

the old-fashioned crucial flaps, a semi-lunar incision was advocated, as being easily pushed out of the way of the later steps of the operation, as less likely to suffer from interference with the blood circulation, and therefore with the vitality of the flap. (5) The use of large trephines—it is difficult to hit the exact spot, and yet so necessary to have ample room, that the old small trephines are comparatively useless. (6) MacEwen's plan of replacing the bone. The bone, after removal, should be preserved in hot carbolized sponges, cut up into small pieces and placed in the opening between the dura mater and the scalp. The brain being exposed, the first question to decide is whether it bulged into the opening or not. Normal brain, Mr. Horsley said, never bulges at first, but if the operation lasts for an hour or more, some bulging becomes evident. If the brain bulges at first, it is presumptive evidence of the presence of a tumor; a yellowish color and venous congestion are likewise suggestive points. The lesion being found, how is it to be treated? The use of the actual cautery leads to secondary troubles, so he prefers to use a knife to excise the necessary structures. There is generally considerable oozing at first, and if so, a sponge should be pressed into the incision. The tumor or diseased part having been removed, the wound should be closed as quickly and as accurately as possible, as primary union of the flaps was almost essential to success. Drainage is required for 24 hours only; if more serum collects after this, a small probe should be passed in to let it out, but a little tension does no harm, as it keeps the brain matter in its place until cicatrization is complete. Hernia cerebri only occurs as the result of decomposition. Mr. Horsley, at the Brighton meeting, showed three patients on whom he had operated. They had recovered from the operation, and were well enough to travel. The chief clinical symptoms in these cases had been epileptiform fits. Two of the cases following injury, with subsequent scarring of the convolutions. The third case was one of tumor, which was accurately localized by the manner in which the fits invariably commenced. In two of the cases the wound healed by first intention in four days, and in the third in seven days. In the tumor case, half an inch of surrounding cerebral tissue was removed.

In the discussion which followed the reading of the paper, Prof. Charcot (Paris), after congratulating Mr. Horsley on his brilliant success, said the patients exhibited might be taken (1) as new proofs of the value of the legitimate use of animals for purposes of experimentation, and (2) as confirmation of the doctrines of localization of the functions of the brain.

Mr. Hughlings-Jackson thought that every person with epileptiform seizures was the subject of a very localized lesion of some kind, either a tumor or otherwise. If the aura were very localized and constant, it was in favor of tumor. He would, however, recommend an operation, even if tumor were not present. He had changed his views with regard to double optic neuritis, for tumors could exist without it. He thought that in removing the tumor the adjoining portions of the brain should be removed, for the tumor produced fits by altering that portion of the brain on which it was seated. He would cut out too much rather than too little. Unfortunately there would occur cases with more than one tumor in the brain, or with more than one tumor on one side of the brain.

Since this paper was read, Mr. Horsley has had another successful case of operation for brain tumor (*Brit. Med. Journal*, Oct. 2nd, 1886). The patient was a man who had been absolutely hemiplegic for a month, and had passed into a semi-comatose condition; before these symptoms developed he had endured terrible pain in the head, and had suffered from fits. On the 23rd of September last Mr. Horsley trephined over the motor region of the right hemisphere, and after enlarging the aperture made by the trephine, succeeded in removing a large tumor from the brain. The tumor weighed  $4\frac{1}{2}$  ounces, was 3 inches long, 2 inches broad, and 2 inches deep. On the day after the operation, the patient was perfectly rational and even amusing in his conversation, and said he was quite free from pain. On September 27th the wound was entirely healed, and the man had recovered some power in his legs.

The results obtained by Mr. Horsley are certainly most brilliant, and with proper antiseptic precautions the operation of trephining the skull and incising the brain does not seem to be

a specially dangerous one. The improvements introduced by Mr. Horsley in the treatment of the wound are valuable, especially the previous thorough cleansing of the scalp and the semilunar incision. Mr. Horsley has also established by these successful operations that the repair of wounds in the lower animals does not differ from that in the human subject, a point which was, till quite recently, disputed. He has also proved that great benefits may be conferred on the human race by properly conducted experiments on the lower animals, these operations being the direct results of experiments performed on the brains of monkeys.

For further information about Mr. Horsley's operations, we refer the reader to the paper published in full in the *British Medical Journal* of October 9th, 1886. In connection with this abstract, the reader is advised to consult the Retrospect for June, 1885, where the early operations on the brain are described and a valuable paper on the "Operative Surgery of the Brain," by John B. Roberts, M.D., in the Transactions of the American Surgical Association for 1885.

*The Danger of Wounding the Diaphragm in Operations for Empyema.*—M. Lagrange says (*Archives Générales de Médecine*, Sept. 1886) that wounding of the diaphragm in operating for empyema is an accident the conditions of which it is necessary to know in order to avoid. He holds that it is a mistaken idea to suppose that the accident is rare, and cites cases in which it occurred when the 7th intercostal space was opened, and Kirrison on one occasion found the diaphragm as high as the 6th intercostal space. This anomalous position of the diaphragm may be caused by adherence of that structure to the lung, with retraction of the lung or retraction of the parietes of the thorax, with consequent exaggeration of curve of the diaphragm; and it is a mistake to suppose, as is stated in the text-books, that pleural effusion is always accompanied by descent of the diaphragm. In many cases it is impossible to tell the exact position of the diaphragm, especially when it is intimately adherent to the thoracic walls. He advocates strongly that the operation of opening the pleura for the evacuation of pus should never be

performed lower than the 5th intercostal space. Cases are recorded where the diaphragm has been wounded, and even the abdominal cavity opened and some of the contained viscera incised. At the Montreal General Hospital it has been the custom of late to open the pleural cavity low down, not uncommonly in the 8th and 9th spaces. I myself have frequently done this, and without any untoward result. The diaphragm can always be felt through the incision. It is a good plan, and one which I have always adopted, after cutting through the tissues down to the pleura, to use a dressing forceps, if nothing but pleura intervenes it is easily perforated, and pus immediately exudes, but if diaphragm should be present, the forceps cannot be pushed through it without the exercise of considerable force, and the condition may be recognized before harm is done. The value of a low opening is very great, because we thus thoroughly empty the pleural cavity and run no risk of leaving the narrow posterior portion filled with pus. If the opening be made high up, this cavity cannot be thoroughly evacuated without washing out with some fluid, a proceeding which always complicates the operation, may introduce septic matter, and retards healing.

*Limits of the Pleura.*—In this connection a paper by Mr. W. A. Lane, which appeared in the April number of the *Journal of Anatomy and Physiology*, is interesting. Mr. Lane says that the lower limit of the pleura, behind, can be determined clinically by measuring the lower ribs, especially the 12th. If the 12th ribs are under two inches in length, the pleura may not even reach their upper margins, as the length of this rib increases, the pleura extends still lower down, and in some instances may reach a point  $1\frac{1}{2}$  inches below the lower border of the rib. Laterally the lower limit of the pleura crosses the 7th costal cartilage obliquely three-quarters of an inch below its articulation with this rib, then the end of the 8th rib, the 9th rib a quarter of an inch above its extremity, the 10th three-quarters of an inch above, and the 11th one and a half inches from its outer end. In the axillary line, Mr. Lane found that in the majority of cases the lower limit crossed the 10th space or the 11th rib, not unfrequently lower on one side than the

other, but not much more frequently on one side.—(*Medical News*, Oct. 23rd, 1886.)

*Final Results of Operation for Cancer of the Lip.*—In the *Centrallblatt für Chirurgie*, June 19th, 1886, there is an interesting series of statistics relative to the efficacy of operation for cancer of the lip, collected by Dr. A. Wörner from Prof. Braun's clinic at Tübingen and from other sources. Of the 305 cases in Tübingen, one in nine occurred in women. The average age was 62 years. Fifty-one of the cases occurred in inveterate tobacco smokers; traumatism was the cause in eleven cases; neglected warts in seven cases. In only sixteen was the upper lip affected. Three hundred and fifty-four operations were performed on 277 patients. In the greater number a V-shaped incision was sufficient to remove the disease. In 28 cases, excision of the maxilla was necessary. Of the 277 patients operated on, the disease recurred in 111; 87.2 per cent. recurred within a year; 12.7 per cent. after the lapse of one or more years. In one case the disease returned nine years after the operation. The growth was again removed, and the patient lived eleven years without a relapse, and died finally of old age. Of the 277 cases, 89 (or 32.13 per cent.) were still living without a return of the disease at an average period of 5.8 years after excision; and 71 (or 25.63 per cent.) had died of other affections at an average period of freedom from relapse of 8.4 years after operation. Of the whole number of 160 cases, 106 lived over three years. The mortality from the operation itself amounted to 5.77 per cent. Wörner also compares the previous reports on this subject made by Thiersch, von Bergmann, Billroth, Kocher, etc. In all, 866 cases. Of the whole number of recurrences, 87.6 occurred in the first year; 244 (or over 28 per cent.) were free from a return after three years.

These results are certainly encouraging, and the fact that in so large a number of cases there is no return must encourage surgeons to strongly advocate operation, even in advanced cases, with the view of prolonging life. If there be a recurrence, it is generally within a year. If the patient passes three years without recurrence, he is tolerably safe.

*Stomach Operations performed at Prof. Billroth's Klinik from 1880 to 1885.*—*Gastrotomy*: One case; this was done on a patient aged 19 for the extraction of some teeth: patient recovered in five weeks. *Gastrorrhaphy*: Two cases; both died. In one, the operation was performed for rupture of the stomach after a plentiful meal; death occurred from collapse in four hours. In the other, from a gunshot wound in a woman aged 63; death from peritonitis and collapse in twenty-eight hours. *Gastrostomy*: Four cases. In one for œsophageal cancer, the result of swallowing a caustic alkali; death on the ninth day from inanition. In the second, for carcinomatous stricture at the cardiac orifice; death one month and a half after operation from croupous pneumonia. In the third and fourth, for the same reason as the second; one died in twenty-four hours from inanition, the other in eighteen days from the same cause. *Gastrectomy*: Eighteen cases, of which eight recovered and ten died. These cases were, 14 pylorectomies for carcinoma, with 6 recoveries; 1 pylorotomy combined with gastro-enterostomy, death in four months from a return of the disease; 3 pylorotomies for cicatricial stenosis, with 1 recovery; 1 partial resection of pylorus, followed by death. In all, 25 cases, with 9 recoveries.—(*Glasgow Medical Journal*, Aug. 1886; quoted in *Medical News*.)

*Treatment of Erysipelas.*—Dr. Haberkorn (*Centralblatt für Chirurgie*, No. 19, 1886) speaks highly of the internal administration of benzoate of sodium. He thinks it a most useful remedy in all infectious diseases, especially the exanthems. In erysipelas, he gives it in doses of from 4 to 5 drachms daily, in mucilage or seltzer water. In nearly every case the temperature fell to normal in 48 hours. No local applications were used. The number of cases treated was nearly fifty, and none resulted fatally. Dr. H. asks surgeons to make a trial of this simple remedy.

*Disinfection of the Hands.*—Dr. Kümmell (*Centralblatt f. Chirurgie*, No. 17, 1886), after detailing the various results arrived at by himself and others in connection with this point, describes a series of experiments recently made by himself in

order to determine the different extent of cleansing that was necessary after being exposed (1) to ordinary sources of dirt, and (2) to special sources, such as post-mortems, etc. The general results are as follows: 1, After ordinary washing with soap and water, the hands were placed in a bacterium-growing medium, and growths of fungi and bacteria were observed. If the hands had been specially infected, they were capable of affecting a gelatine medium at least a week afterwards. 2, Almost all power of infection was removed from the hands by a three minutes' washing and brushing with potash soap and hot water, followed by disinfection with carbolic acid (3 per cent), chlorine water (50 per cent.), or sublimate solution (1 per cent.) Of these solutions, chlorine water appears to be the most efficacious. When, however, the dirt of a post-mortem has to be got rid of, the scrubbing must be longer continued, viz., for five minutes, and it is better to employ a powerful potash soap, after which a 5 per cent. solution of carbolic acid should be used and the hands thoroughly soaked in it, and then brushed with a good nail-brush and soap again. If sublimate solution is employed, the 1 per cent. is usually, but not invariably, satisfactory. It is most important to get the hands into such a condition by washing with soap and water that the disinfectant can obtain ready access to all the cracks and crevices. The water should be as warm as the hands will stand, and the arms should be bared and thoroughly washed as well. It is well to bear in mind that the clothes, as well as the hands, may be sources of infection, and that all attempts should be made to prevent their acting as a source of trouble as well.—(Quoted in *Practitioner*, July 1886.)

*Intubation of the Glottis.*—Dr. Ingals states that he has employed intubation as a substitute for tracheotomy in two cases of membranous croup, and although both patients died, he is favorably impressed with the possibilities of the tubes. The operation can be done easily, it is free from danger, it so promptly relieves serious symptoms, that Dr. Ingals thinks that it will soon become a recognized treatment among general practitioners. “Looking at the intubation of the larynx from our present standpoint, it seems well adapted to the following cases: (1) For diphtheritic



and croupous stenosis of the larynx occurring in children under  $3\frac{1}{2}$  years of age. (2) For cases of the same affection in older children in which, from any cause, the physician wishes to defer the operation of tracheotomy. (3) For those cases in which consent to tracheotomy cannot be obtained. (4) For those cases in which proper nursing could not be secured. (5) For severe cases of spasmodic croup in children under 10. (6) For simple stenosis of the larynx (not diphtheritic) in children. (7) With proper sized tubes, it might be of value in the treatment of the various forms of laryngeal stenosis in adults.—(*Journal of American Medical Association*, Feb. 6th, 1886.)

*Lanolin in Skin Diseases.*—Dr. Stern (*Deutsch. Med. Woch.*, No. 15, 1886) states the experience of this remedy obtained in Behrend's Poliklinik at Berlin. An useful ointment should possess certain qualities. It should not be too rapidly absorbed. It must cling to the surfaces for some time, since there the pathological changes exist which are to be removed by its use. It should therefore stand between substances which are too quickly absorbed and those which are not absorbed at all. The officinal Ung. Diachyli unites these peculiarities in a very perfect manner, for on the one hand it permeates the epidermis, and on the other it remains a certain time on the surface. These render it specially suitable for the treatment of eczema. An excellent modification of this ointment is as follows: Emp. Plumbi, simp. Lanolini, āā 50.0; Adipis, 10.0. This ointment shows portions of the salve still present on the skin several days after application. On suitable localities a daily application of this ointment is unnecessary; several cases of eczema of the hands healed quickly when the salve, spread on cloth, was not changed oftener than once in three days. Two preparations have been used in seborrhœa capitis; a lanoline cream: Cetacei, 10.0; Ol. Olivæ, 30.0; Lanolini, 40.0; Aquæ, 50.0, and a lanolin pomade: Lanolini, 50.0; Ol. Theobromæ, Adipis, āā 5.0; Tinct. Benzoin, 3.0; Ol. Etheriæ Ejud. gutt. ii. With these the scales disappeared with remarkable rapidity, but sufficient time had not elapsed to determine if the cure was permanent. In a case of psoriasis eruption, too, after eight days' use of lanolin cream,

the redness had much diminished, and the tendency to bleeding, on scraping the patches, had much lessened, and, indeed, such a marked improvement in the condition generally of the scalp had taken place as to raise hopes that the complaint might thus be quickly caused to disappear. A 5 per cent. chrysarobin lanolin salve, on the contrary, did not appear to exert a more favorable effect on the eruption of psoriasis than the simple one of lanolin. The special advantage of lanolin as a basis for ointments over those previously in use seems to be its long persistence on the surface of the skin, combined with its simultaneous retention in the epidermis.—(Quoted in the *Edinburgh Medical Journal*, Nov. 1886.)

*Treatment of Skin Diseases by Muslin Plasters.*—The muslin plasters with a gutta-percha basis which Dr. Unna introduced are recommended by Hofmann. He prescribes (1) boracic acid plasters for ulcers of the legs and bed-sores; (2) chrysarobin plaster, which has the advantage of combining the irritating action to the point of application; (3) in milder cases of dry circumscribed eczema, zinc plaster; (4) for severer forms of eczema, zinc tar plaster; (5) naphthol plaster for affections attended with itching; (6) for softening thickened layers of epidermis, salicylic and salicylic-mercurial and salicylic-cannabis plasters,—these can also be used to advantage in sycosis, lupus, and severe case of acne; (7) for rheumatic affections, ichthyol plaster; (8) resorcin plaster, employed with good results in arthritis urticaria acute and in ingrowing toe-nails; (9) in various inflammatory processes, mercurial-carbolic plaster.—(*Deutsch. Med. Woch.*, No. 51, 1885; quoted in *Practitioner*, Aug. '86.)

*Healing under Blood-clot.*—Schede of Hamburg, at the recent meeting of the congress of German surgeons, read a most interesting paper on the above subject. (*Medical News Editorial*, Sept. 26th, '86.) Since the general use of antiseptics it has been frequently observed that the presence of a clot may not do any harm, that, in fact, the clot may become organized. Observing this fact, Schede has boldly made use of the blood poured out into a variety of surgical wounds to secure a protecting covering, which has the advantage of doing away with the neces-

sity for drainage or compression. In Phelps' operation for club-foot (open division of all contracted soft parts, down to and including the astragalo-scapoid ligament), he found that if he simply covered the gaping wound with a bridge of protective silk, placed over this a good antiseptic dressing, and secured fixation with plaster bandages, he could leave the wound to itself without concern, and that, after three or four weeks, there would be solid cicatrization, or only a narrow strip of granulation or a little strip of leather-colored clot still attached along the middle, as the sole remains of the large mass of blood which filled the wound immediately after the operation. In this way not only does the skin unite, but all the soft parts (muscles, tendons, ligaments) assume their normal functions. In manner similar to this, Schede found a very large number of operations to heal without mishap. Of these he gives a list comprising 241 operations, including 40 resections of joints, with 37 typical recoveries; one resection of a piece of the wall of the thorax as large as the palm of the hand, with typical healing; 18 operations in which he chiselled out tuberculous foci in bones, with free opening of the joint, all with typical healing; 29 cases of removal of necrosed bone, with 27 typical recoveries; 20 open operations for club-foot, all with typical healing; 10 operations of scraping off of fungous granulations of the sheaths of tendons, with suppuration in two cases only; 24 cases of removal of tumors, with slight suppuration in two. In one case he saw a large blood-clot become organized in the lacerated brain after a severe complicated fracture of the skull. The method pursued in securing these extraordinary results was, where possible, to employ Esmarch's bandage, to observe the most scrupulous asepsis, and to remove every portion of diseased tissue. Large wounds were closed with sutures placed at such intervals as to leave only one or two openings about half an inch long to permit the escape of superfluous blood into the dressing. In some cases a counter opening was made for the purpose. Schede found that the skin united well over considerable cavities, such, for example, as are left after an operation for necrosis. No drainage-tube was used. The wound was covered with a piece of protective for two pur-

poses: first, to secure complete filling of the wound with the blood-clot, and, second, to keep this moist by preventing its absorption by the dressings, which were only intended to absorb the excess of blood. Over all was placed a thick antiseptic dressing of sublimate gauze and cotton and sublimate moss bags. It is important, in order to secure filling up of the wound with blood, that when a counter opening is made, it shall be at the highest point, instead of, as usual, at the lowest. When no large vessels were involved, and the bleeding was not profuse, no notice was taken of it. Perfect asepsis is indispensable to Schede's method. If any doubt exists as to having secured it, he advises filling up the wound with antiseptic material, such as iodoform gauze, sublimate gauze, or bismuth, and leaving it till granulation is established, after which the filling of the wound with blood can be secured by shaving off the granulation, and thus the cure will be materially hastened.

This method should answer well in cases of resection of joints, as ankle and elbow, and, in fact, is the same method of healing as takes place in cases of severe compound fractures, where the wound, after thorough cleansing, is immediately closed. The difficulty will always be in securing perfect asepsis.

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### Reviews and Notices of Books.

**A Manual of Physiology. A Text-book for Students of Medicine.**—By **GERALD F. YEO, M.D., F.R.C.S.**, Professor of Physiology, King's College, London, etc. Second edition, revised by the author. Philadelphia: P. Blakiston, Son & Co.

Unfortunate and unreasonable as it is, the fact nevertheless remains, that the great majority of students of medicine are introduced to physiology before they have any knowledge of anatomy, coarse or microscopic, or any practical acquaintance with physics, chemistry, or general biology. No book that we know of, so meets the case of such students as Yeo's manual. It furnishes in its early chapters a useful account of certain subjects in general biology; and throughout the work sufficient

reference is made to anatomy to supply, as well as can be done in a work on physiology, what is absolutely necessary for the comprehension of the functions of the organs considered. The student is made sufficiently well acquainted with modern methods of investigation; and the graphic tracings of important results are introduced in a way calculated to impart knowledge in the most impressive manner, and at the same time familiarize him with those methods of procedure which must more and more find a place in clinical medicine as well as physiology.

The book is thoroughly abreast of the times, clearly written, and well illustrated. The main facts of the science are stated in a methodical manner that makes the rapid review of the subject easy for the learner, no small matter to the heavily burthened student. A second edition has very soon been called for. Its use in McGill University during the past two years has given great satisfaction, warranting its continuance.

**Insanity and its Treatment.** Lectures on the Treatment, Medical and Legal, of Insane Patients.—By G. FIELDING BLANDFORD, M.D., Oxon, F.R.C.P.L., late Lecturer on Psychological Medicine at the School of St. George's Hospital, London. Third edition. Together with Types of Insanity: An Illustrated Guide in the Physical Diagnosis of Mental Disease. By A. McLANE HAMILTON, M.D., one of the Consulting Physicians to the Insane Asylums of New York city and the Hudson River State Hospital for the Insane, etc. Supplied only to subscribers for "Wood's Library of Standard Medical Authors" for 1886, (twelve volumes, price \$15), of which this is Vol. II. New York: Wm. Wood & Co.

Dr. Blandford's work on insanity has been before the profession for several years, and is recognized as a valuable textbook. This, the third edition, contains all the recent advances made in this department of medicine. It is eminently suited for the general practitioner. The American publishers have greatly enhanced the practical value of the work by the addition of Dr. Hamilton's plates on the types of insanity.

**A Manual of Diseases of the Nervous System.**—By W. R. GOWERS, M.D., F.R.C.P., Assistant Professor of Clinical Medicine in University College, London; Physician to University College Hospital and to the National Hospital for the Paralyzed and Epileptic. Vol. I.—Diseases of the Spinal Cord and Nerves. London: J. & A. Churchill.

During the past decade, no department of practical medicine has had more devoted and able workers than that of neurology. The natural result being that a flood of light has been thrown upon many hitherto obscure diseases. The author of the volume under consideration holds a distinguished position in the great school of English neurologists. He is the author of numerous works on the nervous system, all of which are universally accepted as standard works. The present volume is the first of a complete account of the nervous system and its diseases. It deals with the spinal cord and nerves. The second volume, dealing with the diseases of the brain and general diseases of the nervous system, is in the press. The first volume opens with an account of the general symptomatology of diseases of the spine and nerves. There is a very full and accurate description of the different varieties of neuritis, including the simple multiple, endemic and leprous forms. In the third part of his work the author treats of diseases of the spinal cord. He first gives a very complete account of our present knowledge of the anatomy and physiology of the cord. We know of no single work where the enquirer will find such a full and clear description. Many practitioners object to have so-called practical works laden with anatomy and physiology. If such an objection has ever any force, it is certainly not in a work on the nervous system. It is quite impossible to either diagnose or treat with any degree of intelligence the great majority of the diseases of the spine without an accurate knowledge of its anatomy and functions. After fully considering the diseases of the vertebral column and the membranes of the cord, the different forms of myelitis are taken up. Dr. Gowers makes some valuable suggestions when speaking of the pathology of acute ascending or Landry's paralysis. He adduces reasons that make it probable that this curious

malady is owing to some toxic influence. The fact that no constant or definite lesion has ever been found in this disease, and, further, the very frequent occurrence of acute swelling of the spleen, are the chief reasons advanced for the hypothesis that it is due to some toxic influence. He looks upon the terminations of the pyramidal fibres in the anterior cornua as the parts that primarily and principally suffer. Its beginning in the lumbar cord is explained on the ground that here these fibres are so far removed from their trophic centre in the cerebral cortex that they naturally suffer first. The nutritional stability is the lower, the further the fibre is distant from its trophic centre. Of the nature or origin of this toxic influence nothing is known. The degenerations of the cord, including tabes, lateral sclerosis, ataxic paraplegia, hereditary ataxia and chronic muscular atrophy, are all elaborately dealt with. As the author was the first neurologist to point out the great influence that syphilis plays in bringing on tabes dorsalis, it is instructive to know that his later experience confirms all that he said previously on this intimate relationship.

The work is profusely illustrated, and well printed. It will certainly become very popular, as it represents the present state of a difficult, but all-important subject better than any other work with which we are acquainted.

#### **The Physician's Visiting List for 1887.—Philadelphia: P. Blakiston, Son & Co.**

The present is the 36th year of this publication, and it seems able to hold its own against most of its more recent rivals. Besides the contents hitherto comprised, the following new features have been introduced: Disinfectants and Disinfecting; Examination of Urine; List of Standard Reference Books; Incompatibles, and a Cash Account. It presents, as usual, a very neat and finished appearance.

#### **The Medical News Visiting List, 1887.—Philadelphia: Lea Brothers & Co.**

This list, elegantly mounted, is also carefully and conveniently arranged as to contents. Besides the regular diary for registration of visits, etc., it furnishes weights and measures, comparative scales, poisons, doses, ligation of arteries, and a host of other desirable information to have at hand for reference. It is by many preferred to all others.

## Society Proceedings.

## MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

*Annual Meeting, October 8th, 1886.*

J. C. CAMERON, M.D., 1ST VICE-PRESIDENT, IN THE CHAIR.

The annual meeting of the Society was held on Friday, the 8th of October. Drs. J. H. Y. Grant, R. H. Wilson and A. F. Schmidt were proposed for membership.

The treasurer of last year, Dr. Perrigo, and the secretary, Dr. Gurd, handed in their resignations.

The election of officers for the ensuing year resulted as follows :

*President*—Dr. J. C. Cameron.

*1st Vice-President*—Dr. Geo. Wilkins.

*2nd Vice-President*—Dr. Alloway.

*Secretary*—Dr. R. F. Ruttan.

*Treasurer*—Dr. Laphorn Smith.

*Librarian*—Dr. Reed (re-elected).

*Council*—Drs. Geo. Ross, Rodger and Kennedy (re-elected).

*Publication Committee*—Drs. Kennedy, Geo. Ross and Bell.

*Abdominal Sarcoma.*—DR. GEO. ROSS showed organs from a case of abdominal sarcoma. The patient was an active, muscular man, 28 years of age, and came under observation three weeks previously. Six months ago he began to experience lumbar pain, which was called lumbago, and suggestions made of some affection of the kidneys ; suffered much, and at times pain was also felt in the abdomen, not infrequently accompanied by vomiting ; general health had failed, and he looked somewhat thin and anæmic, although he had kept at his business until the time of his fatal seizure. Having suffered considerably for some days, he was suddenly taken one morning with most agonizing pain in the epigastrium. When seen, he was collapsed-looking, with rapid pulse and cold perspiration. A large quantity of morphia was required before any relief was obtained. The case now looked something like a perforative peritonitis, but the course of events soon negated this. From this time until death, twenty days later, it was absolutely necessary to give frequent hypo-



dermic injections to control the excessive pain. There was great tenderness in the epigastrium, which region was occupied by a firm projection, rightly believed to be part of the liver. Soon sharp, stabbing and very distressing pains were complained of in the lower part of the chest—first on one side, then on the other. There was no physical evidence of pleurisy, but fine and coarse râles were heard over the back and lateral regions of both lungs. A short cough set in, and, during several days, small quantities of very bright blood were frequently brought up. The diagnosis was, tumor in the back of the abdomen, locality uncertain, but pressing upon the lumbar nerves—the recent and fatal attack being looked upon as due to an acute intra-peritoneal abscess. The specimens were: a mass of sarcoma as large as two fists, which lay against the vertebral column, and had evidently originated in the retro-peritoneal glands. Several nodules of secondary deposit in the liver; the left lobe occupied by an immense clot of blood, entirely disorganizing the part and distending the capsule of the organ (softening of one of the nodules and a profuse hemorrhage into the substance of the liver, distending its capsule had caused the sudden attack described). The lungs contained numerous nodules of similar growth, varying in size from a large pea to a walnut; the largest of them projected considerably from the surface, and corresponded to the seat of the stabbing pains. Dr. Ross remarked upon the importance of abiding pain in any part of the dorsal or lumbar region, with deterioration of the general health, as indicating the presence of such growths in the deep-seated glands. Such hepatic hemorrhage must be a very rare occurrence, and could not have been diagnosed during life.

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*Stated Meeting, October 22nd, 1886.*

J. C. CAMERON, M.D., PRESIDENT, IN THE CHAIR.

*Synovitis of the Knee-joint in Congenital Syphilis.*—DR. LAPTORN SMITH exhibited a boy 12 years old, and read the following notes:—He was brought to me by his mother, complaining of a swelling of the right knee, which he had had for nine months or a year. He also had some ill-looking suppurat-

ing sores on his throat and chin, due to glands which had formed abscesses and broken, thus destroying a considerable surface of skin. The knee was very much swollen, only slightly red, not very painful, and not at all hot to the touch. As the swelling was pointing, I opened it, and a half ounce of thick yellow pus escaped. The peculiar appearance presented by the boy's nose and teeth enabled me at once to diagnose congenital syphilis. His nose is flattened, and his teeth present the peculiar chisel shape which Mr. Hutchinson says is pathognomonic of congenital syphilis. Moreover, the disease of the knee-joint was much less painful than non-syphilitic knee-joint disease generally is. The mother did not know anything about syphilis, but I elicited the following important information: That her first child was born dead; her second was born dead; the third was this one, born at full time, but affected with "snuffles," mucous patches at the anus, and a copper-color rash over the body, for all of which he was treated; the fourth child was born at full time, only had a slight eruption, and is now alive and well. The fifth, sixth and seventh pregnancies were premature. This boy never had interstitial keratitis, nor any other symptoms than those mentioned. She also informed me that her husband was over 40 when he married—a suspicious circumstance, I thought, so I asked her to send him to me. On seeing him, I astonished him very much by telling him that he had had syphilis in his younger days, which he at once admitted. I placed the boy on cod-liver oil, and gray powder alternated with syrup of iodide of iron, generally; and Scott's dressing locally, alternated with tincture of iodine, under which he rapidly improved. I removed him from school, but I did not deem it advisable to confine him to bed, nor even altogether to the house, all of which I would have done if I had considered it a case of ordinary disease of the knee-joint, because I considered it of importance to keep up his general health. The affected knee is now only a quarter of an inch larger around than the other one, which is now perfectly healthy, although it was somewhat full when he first came. Mr. Clutton of St. Thomas Hospital has collected 13 of these cases, which he calls symmetrical disease of the knee-joint due to he-

editary syphilis. What is most interesting about these cases is the prognosis, which is very favorable, contrary to that in ordinary cases; and what is remarkable is that there is little or no pain. This boy could hardly be prevented from running as fast as the other boys in the street, although his knee-joint was so full of liquid that the patella distinctly floated. All of Mr. Clutton's cases were in children between 8 and 12 years of age.

DR. BELL considered the case a marked one of hereditary syphilis, and advised putting the affected joint at rest.

*Laryngeal Phthisis.*—DR. MAJOR introduced to the notice of the Society the treatment of laryngeal phthisis by the injection of lactic acid into the substance of the larynx. (See page 280.)

*Discussion.*—DR. R. J. B. HOWARD congratulated Dr. Major on the marked effect of this mode of treatment in the case exhibited. In the earlier stages of laryngeal phthisis he usually applied a weak solution of silver nitrate, and later, iodoform and boracic acid. In all cases of ulceration he found this treatment very efficacious. A relapse of the disease was, in his experience, the general rule.

DR. F. W. CAMPBELL considered the tendency of modern methods of treating phthisis to be direct applications to the seat of the lesion, but did not believe in neglecting general treatment at the same time.

DR. GEO. ROSS called attention to the beneficial effect of the treatment in the case exhibited. The interesting point about the mode of treatment is the prospect it opens up of being able to destroy the tubercular focus in cases where pulmonary tuberculosis originates in the larynx. Patients have escaped general tuberculosis by excision of an affected joint. Even in pulmonary tuberculosis, where the laryngeal phthisis is secondary, the relief of the intense pain and distress would be a great boon.

*Tumor of the Optic Nerve.*—DR. BULLER exhibited the tumor and gave the following particulars of the case:—This growth was removed on the 16th of April from the orbit of a little girl 7 years of age. The history of the case and the objective signs were sufficiently distinctive to warrant a diagnosis of tumor of the optic nerve before the operation for its removal was under-

taken. The child was well developed and in excellent health. About six months previously an undue prominence of the right eye was noticed, and this had slowly increased. Two months previously the vision was tested by a physician and the eye found to be entirely blind, just as it was when I first saw it on the 15th of April. The amount and character of the proptosis can be pretty well estimated by a glance at this photograph taken the same day. The protrusion was considerable, and almost directly forwards; the movements of the eyeball were slightly impaired, but not more so in one direction than another. No signs of any deep-seated inflammatory process existed, nor was there pulsation or bruit, or change in degree of proptosis from placing the head in such a position as would favor congestion of the parts. The ophthalmoscope showed a greatly swollen optic nerve—unilateral choked disc. This, with the complete and early blindness, were strong points in the diagnosis. I hoped to be able to remove the growth and return the eyeball in position. After dividing the attachment of the outward rectus, and passing the finger between this muscle and the eyeball, it was easy to feel the enormously swollen nerve and trace it to the optic foramen, where it was removed with curved scissors and afterwards separated from the eyeball. There was only moderate bleeding, and, as far as the manipulative procedure was concerned, it would have been easy to return the eyeball, but, on finding that the pulpy growth over the sheath of the nerve extended right up to the optic foramen, I thought the chances of preventing a recurrence of the tumor would be improved by a free application of chloride of zinc paste to the apex of orbit, and under these circumstances deemed it useless to attempt to save the eyeball. Accordingly the eye was removed and the zinc paste applied. The child made a good recovery and returned home in two weeks after the operation. The growth, you will see, is all contained within the sheath of the optic nerve, and forms an ovoid mass about 25 mm. in length and 15 mm. in diameter; it was tolerably firm, and had a pulpy, semi-transparent appearance when removed. I suspect it is a myxo-sarcoma, but Dr. Johnston has kindly made an examination of its histological structure under

the microscope, and will perhaps kindly favor us with the result of his investigation.

DR. WYATT JOHNSTON reported the result of the microscopic examination. No trace of nerve tissue was found. The growth was fibrous, and was characterized by a fine meshwork resembling a glioma.

In reply to DR. BELL, DR. BULLER stated that there was no recurrence of the growth.

*(To be continued.)*

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## CHATHAM MEDICAL AND SURGICAL SOCIETY.

*Stated Meeting, November 5th, 1886.*

THE PRESIDENT, DR. RUTHERFORD, IN THE CHAIR.

*(From our own Correspondent.)*

*The Differential Diagnosis between Hysteria and Cerebral Disease.*—DR. TYE read a very interesting paper upon this subject. He first referred to the difficulty sometimes experienced in diagnosing hysteria from disease of the brain, such as meningitis, embolism, apoplexy, etc., and cited cases bearing out this difficulty. A few weeks previously he had seen a young girl, 16 years of age, of delicate form and of a nervous temperament, who had been ill for several weeks, lying quietly in bed, but constantly uttering a low, sharp cry. Her eyes were closed, pupils appeared normal and responded to light. There was no elevation of temperature, nor had there been at any time previously. There was no paralysis of the limbs; the skin reflexes and knee jerk were normal, but the catheter was required. The uterus was healthy. The family history was fair. Dr. Tye suspected tubercular disease of the meninges, but could not find positive evidence, while the age, sex and form suggested hysteria, and the symptoms sustained that diagnosis. A few days later, however, there was an elevated temperature, meningeal symptoms became fully developed, and the patient subsequently died. Gowers, in speaking of hysteria, says "there are few organic diseases of the brain that the great mimetic neurosis may not simulate—palsy and spasm, coma and convulsions, pain of any form and degree, giddiness, loss of sight, hearing and speech. Almost every symptom of positive lesion finds its counterpart in the repertory of the functional disturbance which lies latent or manifest within the potentialities of the nervous system of most women and many men, ready to spring into activity on the

slightest touch of favoring circumstances." The pathological basis of hysteria seems to be either a want of co-ordinating power or paralysis of the cells of the cortical portion of the brain. In meningitis the cortex suffers most, hence a similarity of manifestations may be expected. Hysteria apparently often exists alone, but frequently co-exists with other diseases, especially cerebral affections, and particularly when tubercle is present. Dr. Grassett, in *Brain* for 1884, has established, by a long series of cases rigidly investigated, that hysteria is a symptom of the tubercular diathesis, and that the manifestations of hysteria, tubercular meningitis, and pulmonary consumption may occur in the same family, or in the same persons at different periods, or that they may all co-exist. He also establishes that when the hysterical symptoms are prominent the tubercular are latent, and develop as the hysteria subsides. Dr. Tye has met with marked examples of this class of cases. Hysterical subjects sometimes develop pyrexia, but rarely, and it is thus of a fugitive character. In meningitis there is usually a slight elevation of temperature from the beginning, although this may be intermittent. When effusion takes place the temperature is often subnormal; hence when a fever continues for some days, we decide there was a lesion. Occasionally there is a state of unconsciousness in hysteria, and a similar condition may be due to effusion. If the patient be a female, or a boy with a former history of functional disturbance, and no pain exists, we may be able to decide. Deglutition is comparatively easy in hysteria, difficult or impossible in the organic case. Rapid breathing or even the Cheyne-Stokes respiration may be seen in hysteria. This later symptom often occurs in the first hysterical attacks; it only occurs in the last stage of grave organic disease, and not transient. In hysterical paralysis, contractions are more marked than in real paralysis. The contractions of hysteria make less resistance, and that resistance is irregular; in real paralysis, resistance is constant. There is no wasting in hysterical paralysis except from long disuse. The skin reflexes are not lost in hysteria, neither is the patellar reflex or ankle clonus. Electrical reactions are present in hysterical paralysis. Hysterical conditions frequently follow strong emotional efforts, and such symptoms increase under observation. In all cases offering difficulties in diagnosis, and where doubt exists, we are justified in giving that doubt in favor of the more serious lesion, or we may state that although the symptoms of hysteria are most prominent, more serious symptoms may yet appear, and more time is required to make a diagnosis. In conclusion, again

quoting Gowers, "It must never be forgotten that many organic diseases of the brain produce hysteria. In any case apparently hysterical, the slightest symptom of organic disease is of absolute diagnostic significance, and in the absence of any symptoms of that kind, no other symptom nor former history should be allowed to bias the observers mind." Attention to this rule will often dispel difficulties.

Discussion adjourned until next meeting.

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## HAMILTON MEDICAL AND SURGICAL SOCIETY.

*Regular Monthly Meeting, Oct. 5, 1886.*

DR. STARK, PRESIDENT, IN THE CHAIR.

*(From our own Correspondent.)*

DR. McCARGOW exhibited a specimen of an enlarged heart; the heart and pericardium weighed 30 ounces. There had been five or six ounces of fluid in the pericardium. There was a large deposit of lymph and fibrin, and the surface of the pericardium was much roughened.

DR. MALLOCH brought before the Society a patient, aged 21 years, whose right knee he had excised on the 1st of May last. The man walked in without crutch or stick, having a thick-soled boot on the affected side. After the members had examined the knee, and satisfied themselves as to its solidity, Dr. Malloch read the notes of the case. The operation, performed under strict antisepticism, was that of Dr. Fenwick. Watson's splint was used, with paraffine bandages. In all the knee was dressed four times between the day of operation and the 10th of June, when the original splint was removed and changed, as the paraffine had got soft from the heat. Plaster bandages were then used; union had not fully taken place. The patient was then allowed up on crutches, subsequently to put his weight on it. The pieces of bone removed showed unmistakably that there had been ulceration of the cartilages. The man has never suffered in the least from the knee since the operation.

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—In the gynæcological section of the late meeting of German naturalists and physicians, Professor Schultze of Jena gave an account of a case of premature labor, where he was unable to remove a decomposing placenta. Symptoms of general infection coming on, he removed the body of the uterus by laparotomy. The patient recovered.

CANADA

# Medical and Surgical Journal.

MONTREAL, DEC., 1886.

## THE BLOOD AND BLOOD-FORMING ORGANS.

We agree with the Cartwright lecturer of 1886 (Osler) that in no department of physiology has so much time and labor been expended with as little positive result as on the origin and life-history of the blood-corpuses; and we would add, on the subject of the coagulation of the blood. This is explained, we take it, by the fact that most of the observers have confined their attention too much to certain limited aspects of the subject to the almost entire neglect of others. The investigation of the blood is just one of those subjects upon which a large number of observers might work in concert, each selecting his own field, but with a constant comparison of results. We fear, however, that the resources of physiology are as yet too meagre to permit of much such investigation. Such concerted work has been done in physiology to a limited extent, but it remains upon the whole as an ideal, the realization of which must be left for the future, though we hope the near future.

Bizzozero's work on the corpuscles seems to have borne better than any one else's the test of time and criticism. He has also stated differences in unlike animals, though it does not appear that he realized fully the significance of his own observations; for we insist that in this and in other fields the tacit belief that what is true of one animal, or at least of one vertebrated animal, holds for another is being proved more and more to have been the fruitful source of fallacy in conclusions.

With regard to the coagulation of the blood, it seems to us to be the very Sahara of physiologists. The really pertinent question is not why the blood coagulates when shed, for coagulation



is tantamount to death, but why the blood *does not* coagulate in the body, and that is a no more difficult problem than many others, *e.g.*, why muscle plasma does not coagulate into myosin during life; for the blood is also a living tissue. When we have ascertained that two allied substances derived from blood (paraglobulin and fibrinogen), or, according to others, the latter only, suffice when acted on by a so-called ferment to produce clotting, how much are we really wiser from any truly scientific or practical point of view? We know that all of these substances may be injected into the blood without coagulation ensuing. Let us record briefly some of the conclusions of the most recent observers in regard to the so-called *fibrin-ferment*.

A. Schmidt held that the ferment was derived from the white corpuscles, and probably from one kind. Others, including one very recent investigator (Kemp), maintain that coagulation is induced by the *blood-plates*, which furnish probably a fibrin-ferment; while Wooldridge, who has for years been engaged on the problem, is very emphatic in his statement that *lecithin* suffices to set up coagulation. He believes the lecithin is derived in normal clotting from the leucocytes. Several observers object to the view that the leucocytes take the part assigned them, from noticing that coagulation may take place, as in a capillary tube under the microscope, without disintegration of the leucocytes. We think too much has been made of this objection, for Kemp explicitly states his belief that "the connection between the breaking down of the plaques and the coagulation is not histological but chemical, *i.e.*, the plaques appear to give up a soluble substance which is active in coagulation." If this holds for the blood-plates, it may also for the leucocytes.

Now it is interesting to note in this connection that Howell has found that in the king-crab (*Limulus*) the clot is formed apparently wholly of altered leucocytes, the only morphological element in the blood of this animal. Halliburton, however, maintains that coagulation may take place in the blood of *Limulus* when the corpuscles are filtered off, provided fibrin-ferment be added to the plasma.

The conclusion we draw from an examination of the whole subject is, that coagulation may take place under a variety of

circumstances, and at all events that the method, as we prefer to call it rather than the cause, is not the same in all animals, and possibly not the same always in the same animal—*i.e.*, that certain elements or events may at one time take a larger share in the process than at another, and that the question is at any rate a comparatively fruitless one.

Quite otherwise do we view the problems as to origin and life-history of the corpuscles. Till very recently, and indeed even yet, there has been sad lack of physiological knowledge in regard to the so-called blood-forming organs. It has been assumed on the slightest resemblances in structure that the thymus and thyroid organs were blood-formers; but such had absolutely no scientific foundation.

During the past year this subject has been investigated by Gibson. He tested the function of the lymphatic glands as to formation of red-cells by ligature of the thoracic duct in dogs, followed by microscopic examination of the mesenteric glands. His conclusions in regard to the spleen were based on the effects of its removal in dogs, which he finds may be done with perfect safety. He also adduces evidence from cases of surgical ablation of the spleen in man. He practised removal of the thyroid body in dogs also. He shows that the real functions of the thyroid are as yet very imperfectly known, and that the view that it has anything to do with blood-formation is utterly without foundation. On the contrary, it does seem to be closely associated with the well-being of the nervous system, for all those animals from which it has been *wholly* removed, including man, show sooner or later marked impairment of intellectual power and general nervous vigor. A curious result, however, and one of great interest to the surgeon, was the apparently vicarious action of even a small part of the organ. The animals seemed to thrive very well with one-half of the gland or even less.

Gibson's experiments were not so numerous as could be desired, nor in all cases wholly free from objection; but, taken with the results of others, and in the light of the entire literature of the subject, we think his conclusions may be regarded as, upon the whole, well founded, and as fairly representing the

state of knowledge up to date. His inferences, in his own words, are as follows:—

1. Nucleated red cells, derived from white corpuscles and colorless marrow cells, are the only forerunners of the non-nucleated red blood-corpuscle throughout the whole of life.

2. The transformation of the colorless cells into nucleated red cells takes place in the bone marrow, spleen, and lymphatic glands.

3. The colorless cells and the nucleated red cells multiply in the blood-forming organs by division.

4. The red bone-marrow plays the most important part in the production of red blood-corpuscles during extra-uterine life.

5. After the production of anæmia, some of the fatty marrow becomes red marrow, and joins in the formation of red blood-corpuscles.

6. The blood-forming action of the spleen is in extra-uterine life a subordinate one, but when the reserve blood-forming capabilities of an animal are called on its activity is greatly increased.

7. After excision of the spleen, a portion of the formerly fatty marrow becomes red marrow, and the lymphatic glands increase their activity as regards the production of red blood-corpuscles.

8. After excision of the spleen, the red corpuscles in the blood decrease in number, and there is a consequent increase in the number of white corpuscles. The red corpuscles return to their normal number within six months, after which there may be a decrease in the number of white corpuscles.

9. The chief function of the lymphatic glands is the production of white corpuscles, but they also, even in normal condition, produce a certain number of red corpuscles. Their activity in the latter respect increases with the necessity for the production of red corpuscles.

10. The spleen and bone-marrow, and possibly also the lymphatic glands, contain cells whose function appears to be to break down red blood-corpuscles.

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### THE ACTION OF ANTIPYRINE.

There is an almost universal verdict that in antipyrine we have a most powerful antipyretic. That it is certain and quick in its action is generally conceded. There is no doubt that it is more certain and more rapid in its action than all agents of this

class used up to the present time, with the exception of cold water. Occasionally, however, we notice reports of disagreeable and even dangerous untoward effects, where it has been administered to reduce an elevated temperature. Dr. Graham of Brussels reported a case last winter where alarming symptoms of collapse followed its administration to a typhoid patient. In the *British Medical Journal* for Oct. 2nd, 1886, Dr. Fairland reports a similar alarming state where it was given to a typhoid patient. The German medical periodicals of the current year contain a considerable number of reports pointing to a like action. The question naturally arises—Is it possible to obtain all the benefits of antipyrine and at the same time to avoid its untoward effects on the circulation? We believe this can be answered in the affirmative. Antipyrine can be given in such a way as to almost preclude the possibility of its acting as a cardiac depressant. It is simply a matter of dosage. The dose should *never* exceed 20 grains; doses of 30 grains and upwards are dangerous. When given in quantities of ten grains and repeated every hour or two until the temperature reaches 101°F., the danger of collapse is practically *nil*. To give larger doses, or to reduce the temperature to below the normal even with less quantities, is not safe.

Many able physicians question the utility of any agent that simply acts as an antipyretic in febrile diseases. They contend that nothing is gained by simply reducing the temperature for a few hours. When the course of the disease is not in any way modified, how is the patient benefited? they ask. Are not the evils arising from the disturbance of the patient's nervous and digestive systems greater than the supposed gain we obtain from lowering the temperature? When we consider the direct pernicious influence that a continuous high temperature has on the nerve centres and muscular tissues, we believe we have quite sufficient justification for the use of those agents whose only effect is to reduce the temperature. The acute granular and fatty cardiac degeneration which is so frequently an active factor in the causation of deaths from typhoid fever and pneumonia, must surely be in some measure prevented or delayed by the judicious use of such an agent as antipyrine.

## THE GENESIS OF THE ELEMENTS.\*

“The nature and probable, or at least possible, origin of the so-called elements” forms a very sensational subject for a paper; but, heretical as it seems to doubt the existence of the elements as we picture them, a careful study of Crookes’ paper impresses one strongly with the idea that what is now the accepted notion of an element must in the near future be profoundly modified.

The address is a model one for a mixed audience such as one finds at the British Association; accurate and scientific, yet easy of comprehension and perfectly logical. Though it should be read in its entirety to be fully appreciated, a brief outline of the arguments used may not prove uninteresting.

First of all he discusses the riddle, What are the elements? Text-book definitions such as “bodies which have not been decomposed,” or “bodies which increase in weight with every chemical change,” he regards as doubly unsatisfactory, inasmuch as they are only provisional, and may be considered at best as confessions of intellectual impotence. Far-seeing philosophers, chemists and physicists, such as Herbert Spencer, Faraday, Norman Lockyer, Sir William Thompson and others, have already entertained the idea of the complexity, if not of the decomposibility of our elements. These authorities are quoted by Crookes to show that some such ideas as his own are, so to speak, floating in the scientific atmosphere of the times. Opposed to this weight of authority, however, stands the fact that no element has yet been transformed into another or broken into anything simpler. Hirschel and Clerk Maxwell conclude, upon purely physical grounds, that elements bear the impress of manufactured articles. If the elements represent the finished products, where can we find anything to correspond to the raw material? Should we not expect somewhere in nature to meet with the analogues of the by-products and waste material that accompany manufacture? With confessed inability to produce direct evidence to support this notion of atoms, Crookes resorts to indirect evidence based on the mutual relation of the elementary

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\*An address to the chemical section of the British Association by William Crookes, F.R.S., President, Sept. 4th, 1886.

bodies. His lengthy argument in favor of the composite nature of elements will only admit of a short notice.

Prout's law—that the atomic weights of all elements are multiples of unity, *i.e.*, of hydrogen—seems to indicate that the elements are not co-equal, but came into existence by some process of development or evolution.

A more important evidence is found in the mode of occurrence of the elements in nature. Nickel and cobalt always occur together, and so similar are they to each other that, says Crookes, “had their compounds been colorless they would probably still be regarded as identical.” Platinum is found alloyed with other elements of the same family, while the metals of the rare earths, Yttrium, Samarium, etc., are scarcely separable by chemical processes so nearly identical are they.

The existence of those pseudo elements, the compound radicles cyanogen, ammonium, methyl, etc., must be more than a curious coincidence. They play to perfection the rôle of atoms, yet we know they are compound. Dr. Carnelley concludes an elaborate paper on Organic Radicles with the statement that the inorganic elements, as a whole, resemble the hydrocarbon radicles in chemical as well as physical properties.

By such indirect evidence of the complexity of the elements we are led up to the question, How did the elements come into existence, and why have we in round numbers 70 elements instead of 7 or 700? The notion that they are eternal and self-existent, or that they were created by chance, may be discarded as too improbable. As an alternative to such views, Crookes presents us with a comprehensive scheme of genesis by a process of evolution—a plan of inorganic Darwinism that supplements to some extent Laplace's theory of the development of worlds.

We are in imagination carried back to the very beginnings of time; when our solar system was in an ultragaseous condition, when matter, as we know it, had no existence, “before even the sun himself had consolidated from his original protyle.”\* So high a temperature may be assumed to have existed at that period that even our chemical atoms were in a dissociated con-

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\* A word coined by Crookes as analogous to protoplasm, derived from the Greek *pro* (earlier than) and *ule* (the stuff things are made of).

dition. But by a cooling process the time comes when protyle is so reduced in temperature that the first step in granulation occurs. Now, if all the known elements were not simultaneously formed at this period, the simplest form of matter, that nearest protyle itself in its nature, must have been the first-born. Hydrogen, then, or perhaps something still simpler, would be first, and remain for a long period the only form of matter as we now know it in existence.

For reasons of a purely physical nature, the consolidation of protyle at this early period must have proceeded regularly and very slowly, therefore, as we would expect, the early formed elements are well defined, fully developed, and wholly independent of each other. After Hydrogen, with atomic weight =1, came the next simplest element, Lithium (7), then Glucium (9.5), Boron (11), Carbon (12), Nitrogen (14), Oxygen (16), Fluorine (19), Sodium (23), and so on in order of their simplicity to Thorium and Uranium, the heaviest and most complex.

After matter became more abundant, the cooling process became more irregular, hence we have the very conditions that would produce those families of elements like Fe (56), Mu (55), Cr (52), Cobalt and Nickel with identical atomic weights, the platinum groups, and later, the metals of those rare earths, samarskite, gadolinite, etc., which Crookes so aptly described as "the cosmical lumber-room where elements in a state of arrested development are finally aggregated."

With a patience rarely met with outside the walls of a German laboratory, Crookes has been toiling for years in this "cosmical lumber-room," until, by an original process of chemical fractionation, he has seemingly proved beyond doubt that *all the atoms of the recognized element Yttrium are not alike*. The importance of this discovery can scarcely be exaggerated. Is it possible that when we say the atomic weight of copper is 63 we only express the average weight of copper atoms? Do some atoms weigh but 62, and others 64, while only a majority of them conform to the number 63? Are we to expect that some one in the future will prove that in the spectra of calcium the different bands of red, yellow, blue and green come from different atoms? Professor Crookes has at least turned the thoughts of

chemists into new channels, and opened an extensive field for future research.

Can this scheme of evolution be extended beyond the limits of the recognized elements? Before hydrogen one might conceive of elements, but after Thorium and Uranium, the heaviest elements we know of, we are unlikely to find anything to extend the series. But instead of new elements of increasing complexity being formed as the temperature fell, some of the earlier formed elements with strong affinities must have begun to combine, thus giving rise to compounds whose decomposition is not beyond the powers of forces at our command. Hydrogen and oxygen, for example, probably early united to form water.

This far-reaching evolutionary scheme, which we have but roughly sketched, would not be confined to our solar system alone, but would find an analogue in every centre of celestial energy represented to us as a fixed star. In concluding his paper Crookes says: "We cannot, indeed, venture to assert positively that our so-called elements have been evolved from one primordial matter; but we may contend that the balance of evidence fairly weighs in its favor."

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### Obituary.

—Dr. Alexander Dyce Davidson, Professor of Materia Medica in the University of Aberdeen, died very suddenly on the 22nd of October. While engaged in delivering the second lecture of his course he was struck almost instantaneously by an apoplectic attack, and died an hour afterwards. Dr. Davidson was also Lecturer on Ophthalmology in the University of Aberdeen. He was the author of numerous works devoted chiefly to his specialty. His loss is severely felt by the profession throughout the north of Scotland.

—Dr. Paul Bert, the famous French statesman and physician, died in Tonquin in the early part of November from typhoid fever. He first achieved a great reputation by his interesting physiological researches, especially by his bold experiments for ascertaining the conditions of human existence at different altitudes. He risked his life in several balloon voyages. His work on Anæsthetics is a valuable contribution to scientific pharmacology.



### Personal.

G. H. Raymond, M.D. (McGill, '86), has been admitted a Licentiate of the Royal College of Physicians, London.

Dr. Daniel G. Brinton of Philadelphia has been appointed Professor of American Archæology and Linguistics in the University of Pennsylvania.

The polling for the Rectorship of the University of Edinburgh has resulted in the election of Lord Iddesleigh by 347 votes over Sir Lyon Playfair.

Many of our readers will regret to hear that Mr. Joseph Bell has resigned his position of Senior Surgeon to the Royal Infirmary, Edinburgh. He is succeeded by Mr. John Duncan.

W. W. White, T. J. Haythorne and F. J. Seery, all graduates of McGill in 1886, have passed the final examination, and have been admitted to the degrees of L.R.C.P., Ed., L.R.C.S., Ed., and L.F.P. and S., Glasgow.

On the occasion of the celebration of the two hundred and fiftieth anniversary of the University of Harvard, the honorary degree of LL.D. was conferred on Drs. Joseph Leidy and S. W. Mitchell of Philadelphia, and J. S. Billings of Washington.

### Medical Items.

—The German anatomists have formed an "Anatomical Association." Prof. Kölliker is named president, and Bardeleben of Jena, secretary.

—Through the recent death of Lady Wilson, widow of the late Sir Erasmus Wilson, the College of Surgeons becomes entitled to the legacy of £200,000 left by Sir Erasmus.

—According to the vital statistics of Germany for 1885, 4,091 males and 1,209 females committed suicide. The methods of self-destruction were as follows: By hanging, 3567; drowning, 1,177; shooting, 611; poisoning, 232; cutting their throats, 112; throwing themselves under railway trains, 77; throwing themselves from heights, 49.

IMPORTANT CAUTION.—The following letter has been addressed to Liebig's Extract of Meat Company Limited, London.—"Accra, Gold Coast Colony, West Africa, 16th September, 1886. Gentlemen, I enclose two labels taken from pots containing *Abominable Compounds*, which I find, after nine months' experience, to be utterly useless. They were supplied to the Medical Department here, I suppose, as genuine 'Liebig.' Having used your extract extensively for ten years, I consider it a most valuable preparation; and sincerely regret it is possible for other firms to impose worthless imitations on credulous people.—Your obedient servant, A. WOODBURN-HERON, Assist. Colonial Surgeon."