estimate the degree of fever in his patients. He had a real aversion to the practical application of discovery. Twenty years after his death medical men began to use the thermometer for clinical purposes.

Some day I hope to deal with Hunter's unique position in the world of biologists and with the discoveries he made in anatomy, physiology, anthropology, botany, and geology. As a biological philosopher he is by far the greatest our country or any country has yet produced. His day is not yet come. In the meantime my chief object is to congratulate this Society on its fortunate title and to try to tempt young men who have to bear the burden of medical progress in the future to look into the riches which Hunter has bequeathed to posterity.

REFERENCE.

¹ *Dialogues between a Pupil of the late John Hunter and Jesse Foot.* London, 1795.

SURGICAL TRAINING:

REMINISCENCES AND SUGGESTIONS.*

BY

SIR HAROLD J. STILES, K.B.E., M.B., C.M. EDIN.,

F.R.C.S. EDIN.,

REGIUS PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF EDINBURGH.

REMINISCENCES.

THE man who first inspired me with enthusiasm for surgery was my grandfather, Thomas Stiles, who was born in the village of Pinchbeck in the Fens of Lincolnshire, in 1798—one year before Syme. He practised there for over fifty years, and died in his 97th year, seven years after I had taken my degree. I can claim, therefore, that from my close association with him, and the many conversations I had with him about his own life and his own teachers, I possess almost first-hand knowledge of surgery and general practice as it existed a century ago.

It was Sir Astley Cooper who inspired my grandfather with his enthusiasm for anatomy and surgery, just as it was Syme who inspired Lister. Cooper and Syme were alike in that they were the foremost surgeons of their generation. Both men were great teachers, and both had the priceless gift of inspiring their pupils with a love and enthusiasm for their work. Both were equally beloved and revered by their students.

It may at first appear to be a piece of presumption on my part to speak of a humble village surgeon in the same breath with such great men as Syme and the immortal Lister. My excuse, however, is twofold: first, that a century ago the means of transit were such that every country doctor who lived, as my grandfather did, miles from assistance, had to be his own surgeon; and, secondly—and this is just as true to-day—there are, and always have been, men doing general practice in the country who, owing to force of circumstances, have been unable to specialize. It is surely only natural that some of these men—and I personally know more than one—might have been—well, perhaps not exactly Listers, but at any rate ordinary professors of surgery had they had the same opportunities that I and some of my colleagues have had.

[Sir Harold Stiles then made a number of quotations from an autobiography written by his grandfather, illustrating the admiration felt for Cooper, and said that all who had studied the life of Lister knew that Syme had the same gift of inspiring his pupils. The operations Mr. Thomas Stiles recorded in his autobiography showed that he was no mean surgeon; in 1830 he successfully performed the operation of perineal lithotomy, and later entered notes of an operation of special interest:

Amputation of a very large malignant breast (Mrs. W.). Glands in the axilla also enlarged. Put a ligature around the base and removed them. Perfect recovery. Health good for nearly two years; then died of cancer in the pelvis.

Sir Harold Stiles compared this brief and matter-of-fact statement with a quotation from Sir Rickman Godlee's *Life of Lister*, giving an account of Lister's pioneer work on the operative treatment of carcinoma of the breast:

The first large radical operation planned on anatomical principles was that performed by Lister in 1867—twenty-one years later. This patient, a relation of his own, was found to have

such an extensive carcinoma that no surgeon would touch it, and she was thinking of handing herself over to a quack.

Though he must often have followed the policy of despair and left poor women thus affected to their fate, yet, when the question was thus forcibly brought home to him, Lister made up his mind that the employment of antiseptics would justify a bolder course. But, as the operation was a new and dangerous one, he could not possibly entrust it to another man, even if he could have found a surgeon willing to undertake it. He had accordingly the double anxiety of performing it for the first time on a member of his own family. After it was over he wrote: "The disease is, I believe, all cleared out, the armpit as well as the breast. I explored the former in my proposed manner and found the proceeding very satisfactory, involving but slight additional wound of the skin, and yet affording free access to the region."

Turning then to his own career, Sir Harold Stiles said that under the inspiration of his father, Dr. Henry Stiles, he determined to be a surgeon, and when he went up to Edinburgh in May, 1879, he had gained an elementary knowledge of anatomy by the study of osteology and dissection of the fetus. He then proceeded to enlarge on the importance of a knowledge of anatomy to a surgeon.]

In those days (he continued) we spent three years at anatomy, and during that time I almost dissected the whole body twice. I am afraid my distinguished colleague, the Professor of Physiology, would say I spent far too much time over anatomy. I venture, however, to differ from him. Professor Schafer's contention is that physiology is the pivotal science around which all the medical sciences are centred, and that it furnishes a basis on which the whole of medicine and surgery is founded. While I do not wish in any way to belittle the fundamental importance of physiology, I maintain that anatomy is, and always must be, the most basic of all the medical sciences. Professor Schafer goes so far as to say that "most of the time which the student gives to dissection is—to make no bones about it—wasted." Personally, I hope that the "flat of the General Medical Council which prescribes that every student shall dissect the whole of the body in the course of his anatomical training" will be adhered to. Despite my devotion to anatomy, I am convinced that I did not spend one day too much in its practical study. I quite agree that physiology has now become an essential part of the training of the present-day surgeon, because surgery has now become as much a science as an art. For this reason I should welcome a class on surgical physiology run on parallel lines to the class on surgical anatomy.

With regard to the position of anatomy in the curriculum, it is evident that something will have to be done to keep this fundamental subject alive in the student's mind after he has passed his second professional examination. While this can be done to a certain extent by means of classes on applied anatomy, it is my opinion that the clinical teacher should take full advantage of his excellent opportunities for teaching anatomy on the living subject, both in the wards and in the operating theatre. With regard to surgical applied anatomy, I am convinced it should be taught in the anatomical department by a practising surgeon who has been a demonstrator of anatomy. If the class were made compulsory, as it certainly ought to be, and if the teachers of clinical surgery were careful to describe and review all their operations from the anatomical point of view, then I am at one with those of my colleagues who would do away with the present classes of operative surgery. A reform such as this would do much to keep up and augment the student's knowledge of practical anatomy; moreover, it would convert what many students regard as a dry, burdensome subject into one full of life and interest.

The extension of the medical curriculum to five years was a great advance in medical education, but the full benefits of the additional year will not be realized until further modifications in the methods and arrangement of teaching have been devised. Time does not allow me to pursue this matter in detail, but I will make brief reference to systematic lectures, which have justly brought fame and renown to this school. In former days, when textbooks were few and incomplete, these lectures necessarily occupied a large place in the time table; but now that textbooks have reached such a high standard of completeness and excellence I venture to think that some of the time expended on systematic lecturing could be usefully transferred to practical demonstrations in ward and laboratory. In the rearrangement of the curriculum I doubt the wisdom of the student commencing hospital

* An inaugural address on his appointment as Regius Professor.

work during his first year. While the short time which could be put at his disposal for this purpose would be insufficient to benefit his education, it would be long enough to divert him from the prosaic, though basic, studies (the thorough prosecution of which is essential to his future efficiency) to the more alluring life of the hospital.

I did all my surgical work in the wards under the charge of Professor Chiene, whose strong and kindly individuality and great personal interest in the welfare of the student greatly appealed to me. I am glad to have this opportunity of stating that it is to his example and encouragement and to the training received under him that I owe my presence here to-day as Regius Professor of Clinical Surgery. Professor Chiene was a zealous disciple of Lister. I was fortunate in obtaining under him the important office, first of "spray clerk" and later of "instrument clerk," so that I obtained a good view of all his operations. There is no more interesting subject in the whole history of surgery than that which centres round the introduction and abandonment of the spray. The spray clerk was the policeman at the operations, his duty being to see that neither the operator himself nor any of the assistants were allowed to intervene between the spray and the wound. Hence I have always blessed the spray for having given me such a splendid introduction to the details of operative surgery.

As I intended to take five years to my undergraduate studies I was able to devote a large part of my fourth and fifth years to hospital work—the fourth in the surgical wards and the fifth in the medical wards. For the benefit of the students of the present day let me add that I worked in the wards on several evenings of each week—a custom which I regret to hear is now the exception rather than the rule. I shall do my utmost to revive it. When I was a student the curriculum was not so crowded as it now is, and one of the advantages of taking an extra year was that one could spend most of the extra time at clinical work.

Professor Chiene had been a demonstrator of anatomy under Goodsir, and it may be truly said that he was the greatest teacher of surgical anatomy in Edinburgh. I fancy it was my own enthusiasm for anatomy which appealed to my chief and prompted him to make me his house-surgeon and afterwards his university assistant. As his house-surgeon I had an opportunity of seeing him put into practice those principles of surgery which he so ably and graphically instilled into us in his systematic lectures. If I were asked what impressed me most about his work as a practical surgeon I should say it was his surgical judgement.

POST-GRADUATE TRAINING.

After I had completed my house-surgeonship I spent the next two years as a demonstrator of anatomy under Sir William Turner. Although I had already given much attention to anatomy, I felt that the teaching of anatomy and more dissecting-room work would be the best training for what the late Professor Annandale used to call an "operating surgeon." My advice to my house-surgeons who intend to make surgery their life-work is to return to the dissecting-room for a year. They will then be able to view and study anatomy through surgical spectacles, and they will find that by adopting this advice they will save themselves much anxiety.

Here again I wish to pay still further acknowledgement and tribute to my old master, Professor Chiene. To him the Edinburgh school is indebted for organizing, equipping and staffing a department of surgical pathology in connexion with the chair of systematic surgery. He may be said to have been the founder of an Edinburgh school of surgical pathology, and the work that he initiated has been still further developed by my colleague, Professor Alexis Thomson (and his assistants); as a young man he was an assistant in the pathological department under the late Professor Greenfield, and is recognized as one of our leading authorities in surgical pathology.

During the nine years that I was university assistant to Professor Chiene, besides teaching surgical anatomy, practical surgery, and surgical pathology, I had charge of the morbid anatomy department of the surgical laboratory. It was my duty to examine and report upon all the pathological material derived from Professor Chiene's wards. It was at this period that what was called the

"Naples" method of embedding early embryos in melted paraffin was introduced by embryologists. Fortunately a lectureship on embryology had shortly before been instituted in connexion with the chair of zoology, and I spent two hours a day for the next three months in the embryological laboratory, working at the development of the mamma under the late Mr. George Brook, the then lecturer on embryology. Having acquired a good knowledge of Mr. Brook's methods I began to apply them in the surgical laboratory, and very soon came to use no other method. In 1890 I gave a microscopical demonstration of sections prepared by the paraffin method, illustrative of the morbid anatomy of various surgical conditions. I mention this because the surgical laboratory of this university can claim to have been the first pathological laboratory in this country to use the paraffin method. It was mainly by the adoption of this technique that I was able to carry out my investigations on the histology and mode of dissemination of carcinoma of the mamma. These investigations, along with those of Heidenhain, laid the foundation for the radical treatment which is now employed in dealing with malignant disease of the mamma.

In the summer and autumn of 1893 the university granted me leave of absence to study under the late Professor Kocher of Berne, whose operating impressed me quite as much as his rigid aseptic technique. He was the most progressive surgeon of his generation. He was then doing operations for goitre by the hundred, and he was one of the most successful pioneers in abdominal surgery, as well as in the surgery of the extremities. The secret of Kocher's great success as an operator, apart from his aseptic technique, was that his operations were planned and carried out on strictly anatomical lines. His clinical teaching too was a model of what clinical teaching should be.

I must not leave the subject of post-graduate training without recording what I owe also to Drs. William and Charles Mayo, the founders and builders of the Rochester Clinic, the most famous post-graduate school in the world. In 1906, and again in 1911, I had the privilege of being Dr. William Mayo's guest, for a fortnight on each occasion. To give an adequate idea of how much these visits impressed me, and of how much I profited by them, would occupy the whole time allotted for my address. I was equally impressed by the great development which had been achieved in the interval between my two visits; in fact, my second visit was just as profitable as the first.

LESSONS OF THE WAR.

My last—and in many ways my greatest—teacher has been the war. While our experience during the last five years can hardly be said to have brought about any revolutionizing discovery in general surgery, it has, nevertheless, emphasized the value of many practical methods and details of treatment which we shall do well to keep before us in our civil work. The technique, for example, which has been evolved for the early excision of contaminated wounds, a procedure which has proved of the greatest value as a prophylaxis against sepsis in war surgery, has its application in the treatment of industrial injuries. The Thomas splint, which has been such a boon in the treatment of fractures of the lower extremity, should henceforth be an essential part of the armamentarium of the general surgeon.

The war experience of the pathologists and bacteriologists has likewise made equal, if not greater, additions to our knowledge; indeed, it may be said that the war has created a new epoch in bacteriology. One need only mention the researches that have been carried out on the anaërobic micro-organisms of wound infections, on trench fever, and on Weil's disease. Sir Almroth Wright's work on Nature's methods of combating sepsis has taught us how to assess the value of antiseptics, and has explained to us how rest, combined with radical operative treatment based on sound principles, is the most essential factor in the treatment of wounds, and that if these principles are thoroughly carried out it matters little whether the wound be treated on antiseptic or on aseptic lines.

The chief lesson I have learnt from the war, however, is the value of team work by young men guided by the wider general experience of their seniors. The surgery of the war has been the surgery of young men—men with keen and receptive brains, men who have been well trained in the fundamental medical sciences and who have been

able to apply their knowledge not merely to the improving of old methods of treatment, but also to the devising of new methods to meet the new conditions they had to deal with and the new environment in which they found themselves.

It is largely due to team work by the younger men that great advances have been made, not only in wound treatment, but in the early and late treatment of fractures, especially fractures of the femur, in wounds involving the joints, in injuries to the nerves, and in military orthopaedics generally; also in wounds of the lungs and pleura and their complications, as well as in injuries of the skull and brain. Special mention must also be made of the wonderful work which has been accomplished in connexion with the repair and reconstruction of the parts after severe facial injuries. In this work the dental surgeon has taken a prominent part; indeed, he has been indispensable. Lastly, much valuable information has been obtained also with regard to the nature of shock and to the methods of combating it.

PROFESSOR CAIRD.

I feel I cannot conclude my address without taking this opportunity of saying what I owe to my distinguished predecessor, Professor Caird. Lister's love of surgery was well known. Caird's is certainly no less profound. His enthusiasm for surgery and his love of teaching have been unbounded.

Fortunately, although Professor Caird has reached the age at which he must retire from the chair, he is as vigorous as ever, both in body and mind. It is to be hoped now that, freed from arduous hospital work and clinical teaching, he will find time to give to the surgical world some of the fruits of his ripe experience.

I have already referred to the splendid system of clinical teaching adopted by the late Professor Kocher. I feel sure I am correct in stating that a similar system has been followed—and with the same thoroughness and success—by my distinguished predecessor in this chair, and it will be my endeavour, as far as in me lies, to follow in his footsteps.

TWO CASES OF TRAUMATIC ANEURYSM OF THE COMMON CAROTID.

BY

R. JAMISON, F.R.C.S.,

LIEUT.-COLONEL R.A.M.C.; CONSULTING SURGEON, NORTH RUSSIAN EXPEDITIONARY FORCE.

I VENTURE to publish an account of these two cases because I think them to be of interest from a surgical point of view, and also because the patients not only survived their original wounds but also operative interference.

CASE I.—*Gunshot Wound of Neck: Arterio-venous Aneurysm of the Left Common Carotid.*

The bullet had traversed the left side of the neck horizontally at the level of the cricoid, leaving a perfectly clean wound. The man came under my notice about three weeks after being wounded, when there was a visible pulsating swelling, with its greatest prominence in front of the anterior border of the sterno-mastoid. The swelling presented the usual signs of an aneurysm, including a loud bruit, which ceased on pressure being made at the root of the neck.

Operation.—A long incision was made over the anterior border of the sterno-mastoid, and deepened until the internal jugular vein was exposed. The vein was enormously distended, having a diameter of 2 in. No doubt the division of the fascia had allowed it to expand to an extent greater than before the disturbance of the parts. There was a communication between it and the internal carotid just below its division. The internal carotid was clamped with a guarded pair of forceps with a view to seeing if the communication could be closed. However, although this proceeding lessened the tension in the vein, it had no effect on its size, and this, coupled with the dense cicatricial tissue of the bullet track, prevented a safe exposure of the main vessels. The vein was accordingly divided and tied. The clamp on the common carotid was removed, and the vessel ligatured in two places and divided between them. A somewhat difficult dissection exposed the external and internal carotids. These were ligatured at their origin from the common trunk.

D

CASE II.—*Gunshot Wound of Neck: Dissecting Aneurysm of the Left Common Carotid Artery.*

The bullet passed from a little below and behind the mastoid process to a point on the left side of the trachea at its commencement. The entry wound was clean and newly healed when he came under observation, but there were signs of inflammation round the bullet. This case differed in appearance from the last only that the swelling steadily increased and was more tense.

First Operation.—The bullet, which was found lying in a little pool of pus, was extracted. The wound was left open, and at the end of a week was reasonably clean and nearly healed; the steady increase of the aneurysm, however, necessitated interference.

Second Operation.—A similar incision was made and gradually deepened until the sac of the aneurysm appeared. It was roughly fusiform, and extended from 1½ in. above the clavicle to somewhere about the level of the lower jaw. Its upper limits were not investigated. The sac was perilously thin, and appeared to consist only of some of the outer coat of the artery. The internal jugular crossed it somewhat far back. It was firmly adherent, so that the main bulging was directly forward. In order to reach the common carotid in the little available space above the clavicle without dragging on the vein, it was necessary to divide and tie the vein below the sac. The tying of the carotid was then begun; during the process the sac burst spontaneously in its upper part, and a high pulsating jet of blood shot up. A swab was pressed on the hole and controlled the bleeding. The tying of the carotid was then finished. On removing the swab for a moment the jet of blood was in no way diminished, but had lost its pulsation. The sac entirely overlay the external and internal carotids, preventing any search for them, so two swabs were placed on the hole in the sac and pressure maintained on them by sewing the inner edge of the carotid sheath firmly to the edge of the fascia covering the sterno-mastoid. This proceeding stopped the haemorrhage for the time being, at any rate, and the wound was closed.

Third Operation.—No signs of haemorrhage having occurred after the second operation, the wound was reopened five days later and the swabs removed. The sac had been obliterated entirely and no haemorrhage occurred. The wound was reclosed and a small drain put in the lower angle of the wound to give early warning of any bleeding.

Both patients were young men of nineteen or twenty, and made uninterrupted recoveries. Case I complained of headache for three or four days after his operation, but otherwise neither of them showed any sign or symptom of being the worse for the loss of both arterial and venous channels on the one side.

My best thanks are due to Colonel G. St. C. Thom, A.M.S., D.D.M.S., N.R.E.F., for permission to publish these cases.

TRAUMATIC RUPTURE OF THE SUBCLAVIAN ARTERY: DEATH NINE DAYS LATER.

BY

DUNCAN C. L. FITZWILLIAMS, F.R.C.S.,

LATE CONSULTING SURGEON TO THE NORTH RUSSIAN EXPEDITIONARY FORCE.

THE following is an account of a case of sufficient interest to warrant publication on account of its rarity.

Semenko, a Russian mechanic belonging to H.M.S. *Josephine*, was admitted to the 53rd Stationary Hospital, Archangel, in the evening of October 4th, 1918.

History.

He was on board a small tug which was coming alongside one of H.M. ships, and was warding it off from the ship's side. To do this more effectually he had the boat-hook against the ship's side, and the near end of the pole placed under his left clavicle. He was leaning on the pole. Unfortunately for him the wash of a passing vessel caught the tug and threw it towards the ship. Immediately behind him was the cabin of the tug; he was therefore caught between the cabin and the end of the boat-hook, which pinned him to the wall of the cabin. When the swing of the boat was over he dropped on deck. The doctor of the ship was called, and he was seen also by Colonel Ormrod, R.A.M.C., who sent him up to the stationary hospital at once.

Complete absence of all pulse at the left wrist was noted. Morphine had been given to him before removal.