

HONOUR A PHYSICIAN

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THIS is not the first occasion that I have had the honour and privilege of addressing your Society.

Some of you will be familiar with the verity that what is said is soon forgotten and can be said again. With this in mind, I looked up the notes of my talk to you in 1953, but found that such recapitulation would not be appropriate today.

Then, of course, the 150th Anniversary next month of the Battle of Waterloo serves as a reminder that Sir Charles Bell of your hospital played so prominent a part in treating the wounded in that epic affair. As you are aware I am not a surgeon myself, so I decided that it might be better to deal with something closer to the present era. This evening, therefore, I intend to say something about the Middlesex Hospital 100 years ago.

Following upon a severe winter the year 1865 was notable for a torrid summer and the prevalence of fevers and diarrhoeal diseases. From the annual report of the Registrar General of that year I have gleaned that there were 74,000 deaths in London alone, the population of which at that time was estimated to be 3 million. I do not wish to burden you with figures but in London there were 3,200 deaths from typhus, 4,560 from fevers, 3,600 from diarrhoea, 196 from cholera and 110 from dysentery. These, of course, were clinical diagnoses for the science of bacteriology was still in embryo. The Chief Medical Officer for London commented on the situation in the following words :

“ We have fever among us and cholera at our doors. We know how fatally these are promoted and extended by the evils which we see and recognise around us. Dirt and squalor are the enemies of religion as much as health ”.

At that time the Middlesex Hospital, which stood approximately on its present site had a staff of distinguished physicians and surgeons, among whom there were no less than six fellows of the Royal Society. I do not intend to say anything of the surgeons except perhaps Mr. Nunn, who at that time had been Dean for seven years.

It is in the physicians generally and one in particular that I am especially interested. You will realise that a century ago teaching rounds of the wards as we know them today, were not customary and the science and art of medicine were mostly acquired from systematic lectures. The Senior Physician at the Middlesex, Dr. Stephen Jennings Goodfellow, born in 1809, was the son of an English merchant in Portugal. He received his education at St. Bartholomew's and qualified in 1832; not wishing to enter general practice he became Superintendent of the London Fever Hospital. After being Lecturer on Medical Jurisprudence at the Middlesex he was, in 1849, appointed physician and eventually full physician and sole lecturer in medicine. Dr. Goodfellow had a great reputation both in England and America as a neurologist and authority on hysteria. He retired, following a stroke, in 1872.

The second senior, Dr. Alexander Patrick Stewart, was born in 1813 and was the son of the Reverend Andrew Stewart, Minister of Bolton, East Lothian, who had practised as a physician before his ordination. Dr. Stewart, a classical scholar, graduated M.D. Glasgow in 1838 and after studying in Paris and Berlin settled in London about a year later. His house appointment had been at the Glasgow Fever Hospital, where he had acquired wide experience of typhus and typhoid fever. It was he who, in 1840, read a paper to the Paris Medical Society in which he put forward his opinion that these were two dissimilar diseases, observing that the rash in each was characteristic. He earned further distinction by forbidding the use of pyrgatives in patients with typhoid fever and by his writings on cholera and on the origin and spread of epidemic diseases generally. We have reason to regard him as one of the pioneers of sanitary reform.

A bachelor, he was said to be completely lacking in punctuality with no regard for time whatsoever. Nevertheless he was remarkable for the accuracy and minuteness of his observations.

Next in seniority was Dr. Henry Thompson who had been appointed Assistant Physician and Lecturer in *Materia Medica* to the hospital in 1855 when he was 40. Four years later he was promoted to full physician. He had taken a first in classics at Cambridge before completing his medical studies at St. George's Hospital. One has the impression that he did not earn any special distinction apart from serving on the Committee of the Royal College of Physicians which in 1869 prepared the first edition of the *Nomenclature of Diseases*.

Dr. Edward Headlam Greenbow was a physician of a different stamp. Born in the North country where both his father and grandfather had practised medicine, he received his medical education at Edinburgh and at Montpellier. First, he joined his father for 18 years in general practice in Tynemouth and North Shields, where he became the Chairman of the Tynemouth Board of Health, doing much to improve the town's sanitation and drainage. He was nearly 40 when he graduated M.D. at Aberdeen, and in the following year became lecturer in Public Health at St. Thomas's Hospital. Employed by the Board of Health and Privy Council he did much pioneer work into the causes of mortality and in planning administrative reforms which served as the basis of the Public Health Act of 1858. However, he never lost interest in clinical medicine and in 1861 joined the Middlesex staff as Assistant Physician becoming Dean in 1868, full Physician in 1870 and later Treasurer and Chairman of the hospital.

Croonian Lecturer and Censor of the Royal College of Physicians and a Fellow of the Royal Society, he was one of the Torch-Bearers of Occupational Medicine in this country. He was said to be a persevering teacher and an excellent man of business with a manner slightly pompous. Anyway pomposity apart, he proved to be a successful Dean of the School.

Another physician, who seems to have been largely concerned with dermatology, was Dr. Robert Liveing, who after graduating in the Mathematical Tripos at Cambridge, received his medical education at King's College Hospital. At first appointed, in 1862, Lecturer in Anatomy and Physiology at the Middlesex, he became successively Assistant Physician, Physician and finally Physician to the Skin Department. He delivered the Goulstonian Lectures at the Royal College of Physicians in 1873 and wrote a useful

handbook on skin diseases. His recreations were travelling and climbing and he was a Vice-President of the Alpine Club.

About this period Dr. Lauder Brunton, the distinguished cardiologist, served as Lecturer in *Materia Medica* but soon left to join the staff at St. Bartholomew's Hospital.

However, this evening it is with the last two members of the medical staff of this famous hospital that I am largely concerned. The eminent physiologist, John Scott Burdon Sanderson, later to be created a Baronet, was Physician to the Middlesex from 1863 to 1870, and was also Lecturer in Physiology for part of this time. His medical training was in Edinburgh, where he received a Gold Medal for his M.D., later taking up a Registrar's appointment at St. Mary's Hospital, London. Then, for 11 years he acted as Medical Officer of Health for Paddington, in which capacity he made notable sanitary improvements in Public Health generally. A capable investigator, Burdon Sanderson in 1870, gave up his private practice and hospital appointments to devote himself solely to research, occupying successively the Chair of Physiology at University College, London, the Chair of Physiology at Oxford, where he was the first Waynfleet Professor, finally in 1896 to become the Regius Professor of Medicine at Oxford.

He was a Fellow of the Royal Society and also of the Royal Society of Edinburgh, Harveian Orator of the Royal College of Physicians and unchallenged master in the experimental physiology of his day. A man of striking appearance and dignity, he could be markedly critical but at all times displayed generosity towards those who differed from him. One of his nephews was the first Lord Haldane.

I have now reached the main subject of my lecture this evening. I refer to Dr. Charles Murchison, a Scot, born in Jamaica, son of a doctor, educated in Aberdeen and Edinburgh and probably the greatest teacher of clinical medicine London has known. After receiving his Edinburgh degree in 1851 he became attached to the British Embassy in Turin for a year before returning to complete house appointments at the Royal Infirmary, Edinburgh. The following year he joined what was later to become the Indian Medical Service and spent a year each in Calcutta and Burma. In 1855 he left military service and settled in London where he filled successively a long series of hospital appointments. First, he was appointed to the Westminster General Dispensary and to St. Mary's Hospital and the following year we find him Assistant Physician to King's College Hospital. Four years later, in 1860, he resigned to take up the appointment of Assistant Physician to the Middlesex Hospital.

His first assignment there was an introductory lecture in which he paid a tribute to the memory of Dr. Charles Thomas Coote whom he had just succeeded. Coote had died earlier in 1860 at the early age of 36, probably from consumption. I shall quote only briefly from this address, in which Murchison advised the students "you must never cease to study because your student days are over". He spoke sternly against unprofessional conduct by medical men and pressed for reform in medical education, especially for raising the standards of preliminary education, as advised by the Medical Council. Murchison considered that the substitution of the Licence of the College of Physicians for that of Apothecaries Hall would improve the then status of medical profession.

At the Middlesex he gave 10 years of valuable service during which he was Lecturer in Pathology for part of the time and Dean for a year. His systematic lectures were outstanding, but it was by reason of his ward teaching and his enthusiasm and energy that he became famous. Usually followed on ward rounds by a large number of students, he taught men how to collect, arrange and tabulate facts, to examine the patient carefully and to think out the diagnosis for themselves. Although dogmatic, his methods were just what was needed by men who were later to face the examiners. At the Middlesex he was the first to give saline infusions in the treatment of cholera and dysentery. He also persuaded his surgical colleague, Mr. George Lawson, to insert a fine wire into an aortic aneurysm to encourage clot formation. Unfortunately this patient died from secondary infection.

He had been appointed to the London Fever Hospital in 1856, an appointment which gave a definite bias to his medical research, but in 1870 he resigned from both the Middlesex and London Fever Hospitals to be appointed a full physician to the then newly-built St. Thomas's Hospital, where for 9 years he continued the teaching methods he had developed at the Middlesex. Sir William Osler, who attended his rounds on several occasions, referred to him as the model bedside teacher.

He wrote a number of books of which "The Continued Fevers of Great Britain" is probably the most notable—an authoritative work—based largely on his experience at the London Fever Hospital. He also published no fewer than 311 papers on a variety of subjects. He was a Fellow of the Royal Society and for a time President of the Royal Medical Society of Edinburgh and of the Paris Medical Society. Dr. Murchison had a cultivated mind, and had garnered a great store of botanical and geological knowledge. A good fisherman he loved to explore the countryside, especially in the company of young people. He was a close friend of Dr. Burdon Sanderson, to whom I have already referred.

Of Murchison it can definitely be said that it was he who put the teaching of clinical medicine on the map as far as London was concerned. Regrettable though it was that he forsook the Middlesex Hospital, it was his work there that made him famous as a bedside teacher. Murchison will probably best be remembered not for his excellent pill, his sign or the disease named after him but because he has given his successors the classical account of typhus fever and it is this group of diseases with which I propose to deal.

Typhus Group of Fevers—Clinical Description

Murchison was familiar with typhus not only in patients but because he had suffered two attacks of the disease himself. His clinical account stresses the sudden onset of high fever, often with rigors and marked prostration, the flushed face, the dull heavy expression with suffused eyes, the dry tongue covered with brown leathery fur, which splits and bleeds easily, the delirium, with sleep disturbed by painful dreams. The patient, quite oblivious of his surroundings, slips down off the pillow into the bed, often sleeps all day, and mutters to himself most of the night. The rash, which appears late on the third or early on the fourth day, is typical and shows three elements—macules, petechiae and subcuticular mottling. In typhus, the fever remains high until it abates

about the twelfth day by lysis or crisis. Then, to use Murchison's own words, "The patient falls into a deep sleep which lasts for several hours and from which he awakes another man". The patient soon develops a ravenous appetite and his strength is gradually regained.

You will be surprised to hear that Murchison never accepted the theory that infectious diseases were due to "germs", but it has to be remembered that in his day most of the common micro-organisms, other than anthrax, had not been discovered, and that Pasteur's famous paper formulating the germ theory was not published until 1878. Nevertheless Murchison made significant contributions to the clinical study of fevers, typhus and typhoid especially.

The Cause of Typhus

The small micro-organisms called rickettsiae were not discovered by Ricketts until 1906. Another investigator, von Prowasek soon afterwards confirmed the findings of these intracellular organisms with only some of the characters of bacteria. Both of these workers in the cause of Medical Science died of laboratory infections, and in their honour the organism is now called *Rickettsia prowaseki*. Since then about 50 similar organisms have been discovered, only ten of which are pathogenic to man. Rickettsia give rise to a number of diseases in various parts of the world, afflictions which have little in common epidemiologically.

Means of Spread of Classical Typhus

The method by which classical typhus is spread from man to man was discovered in 1911 by Dr. Charles Jules Nicolls then working in Tunis. He showed that the common body louse is the responsible insect vector, and also that the infection is contaminative, rickettsia passing out in the excreta of the louse. These are rubbed into the bite when the patient scratches his skin. It is perhaps well to remember that lice leave the typhus patient when the temperature is high which may be the origin of the injunction to medical men—"never sit on the patient's bed". Lice also leave the body when it cools after death. The infected louse then swells up and dies about 10 days after being infected. It is when rickettsia are concentrated in the body of the louse that they are most effectively destroyed by physical and chemical means.

Predisposing Causes

Epidemic typhus has always been associated with dirt, squalor, overcrowding and war, particularly in winter, when people do not bathe and change their clothes regularly but preferring to huddle together over fires to keep warm. Today, with improved standards of living and the introduction of modern insecticides, the disease has disappeared from this country and is now only encountered in Africa and in the East.

Pathology of Typhus

Beginning in the 18th Century with John Pringle who was one of the first to introduce regular post mortem examinations, there were many unsuccessful attempts to account for the pathology of typhus, until in 1914 Fraenkel discovered the areas of perivascular

infiltration on the smaller blood vessels which are characteristic findings. The mental symptoms, rash, thrombosis of vessels, bed sores and areas of gangrene are all related to Fraenkel's nodules as these microscopic lesions are often called.

Other Forms of Typhus Fever

In man the other forms of typhus are primarily animal diseases or zoonoses. In these cases the organisms are transferred accidentally from animal to man by means of fleas, ticks or mites.

Murine Typhus

This is a widely distributed disease of rats, spread from rat to rat and occasionally to man by the rat flea, *Xenopsylla cheopsis* which is also the vector of bubonic plague. The clinical picture is similar but the disease is milder than that of classical typhus.

Tick Typhus

This is a widespread disease, two familiar examples of which are rocky mountain spotted fever in North America and Fièvre boutonneuse in the Mediterranean. The common reservoirs are respectively the ground squirrel and the dog, various ticks being the responsible insect vectors.

Mite Typhus

Japanese river fever or scrub typhus poses a present day problem for the British Commonwealth Forces in Malaya and Borneo. The reservoirs are the field rat and field mouse, from which tiny larval mites, closely resembling the small red harvest mite seen in Britain, transfer the infection to man. A small ulcer or primary eschar develops at the site of the bite, usually on the leg and this is followed by fever, lymphadenitis and a generalised macular rash, the illness running a course similar to that of classical typhus.

Treatment

Until lately the treatment of typhus was limited to symptomatic measures and good nursing. Nevertheless over the centuries many other forms of therapy, such as bleeding and hydrotherapy, have been recommended at one time or another. Murchison wrote "A patient with typhus is like a ship in a storm: neither the physician nor the pilot can quell the storm, but by tact, knowledge and able assistance they may save the ship". He did not foresee that we would one day find a specific treatment for the disease.

It was in 1947 that chloramphenicol, then a newly-discovered antibiotic, was found by Doctor Joseph E. Smadel working in the laboratory of the National Institute of Health, Washington, to be effective against *Rickettsia orientalis*. Soon afterwards he went to Malaya where he and Dr. Raymond Lewthwaite, another Middlesex Hospital man, carried out therapeutic trials with early cases of scrub typhus. Although all the scrub typhus patients responded quickly to this form of chemotherapy others later were

found to have typhoid fever. Today, chloramphenicol is accepted as the specific treatment for both rickettsial and enteric infections, reducing the mortality to about one twelfth of the former rate in each of these diseases.

Q Fever

You may remember that the small rickettsia (*Coxiella*) which causes Q fever was originally discovered in Australia in 1937 by Macfarlane Burnet. At first the disease was thought to be restricted to Australia and to be spread by ticks. Since then it has been reported all over the world and is now known to be disseminated directly by ticks and indirectly by dust or discharges. As with typhus, it is one of the common laboratory infections, but unlike it, the acute febrile illness which follows is usually mild and self-limiting. However, as many of you are aware, chronic forms, often accompanied by endocarditis have been recognised in the last few years.

From the time he left the Middlesex Hospital Murchison was convinced that he had aortic valvular disease which he was inclined to attribute to his two attacks of typhus. Now that Q fever has been incriminated as a cause of chronic endocarditis especially of the aortic valves, it is just possible that Murchison was right in this surmise. In spite of the knowledge that he would probably die swiftly he carried on with his work as usual, doing regular ward teaching at St. Thomas's Hospital and seeing patients in his busy private practice at 79, Wimpole Street. He died as suddenly as he had predicted on the 23rd April, 1879, at the age of 49.

His name and his fine record are perpetuated in the Murchison scholarships awarded in alternate years to undergraduates by the Royal College of Physicians and the University of Edinburgh.

Conclusion

This evening I have given you a brief survey of the personnel of the medical staff of the Middlesex Hospital a century ago, cultured men most of them hailing from North of the Border. Certainly one of their number, Dr. Charles Murchison, should be better known for his work on fevers, and for his persistent efforts in raising the standard of the clinical teaching of medicine. In my view no praise is too great for this patient far-sighted physician and as far as the Middlesex Medical School is concerned, I quote appropriately from the Apocrypha:

“ Honour a physician with the honour due unto him
for the uses which ye may have of him ”

Ecclesiasticus Chapter 38, Verse 1.

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