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MY ACADEMIC LIFE

BY

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On September 13, 1886, I made my appearance on a Monday—washing day. I always could be awkward. I was born within the gates of the ironworks at Rhymney, Monmouthshire. My father, a hard-working and industrious man, the fourth generation of master iron-workers, was manager of the Bessemer steel plant. My mother was a vigorous, courageous, and shrewd woman who had inherited the toughness and moral fibre of her sturdy Nonconformist Radnorshire stock. I was the youngest of six children. Within four years of my birth the lights went out of the melting pots, the fires were drawn, and Rhymney ironworks became derelict.

My Early Days

The family migrated to Merthyr Tydfil, where once again we lived within the gates of the Cyfarthfa Iron Works, in the house occupied by William Crawshay (1788–1867) before he built Cyfarthfa Castle. Again I saw the lights of the Bessemer, the glare of the blast furnace, and the unholy dazzle of the puddling furnace where skilled men, half naked, worked themselves to death. Cataract of the eye and pulmonary arterio-sclerosis collected them in middle age.

All night long the moving ingots of steel as they passed through the rollers in the mill cast a series of processional shadows of window, curtains, and blinds across the bedroom wall. We saw caravans, camels, Arab sheikhs, armies, navies, and even the procession to and from the Ark on those walls. If the noisome machinery stopped in the dead of night we awakened and crept to the window to see the minatory procession of stretcher-bearers and ambulance leave the works for the hospital or the mortuary. Such a procession bore away my father when I was 8 years old.

Within a few years the lights went out, the fires were drawn, and Cyfarthfa became as derelict as Rhymney. How often the melting-pots have gone cold in South Wales! Hirwaun, Ynysfach, Penydaren, Rhymney, Blaenavon, Cyfarthfa, Ebbw Vale, Dowlais, Pentre-chwyth, Morriston, Landore, and—who knows, who cares? These were the birthplaces of modern metallurgy. Boom and slump! A few more millionaires devoid of public spirit. For the masses acute depression, gloom, and despair. Unemployment, starvation, and forced migration for the young people; the workhouse for the aged and the crippled.

Think of that belt of country stretching across the coal, iron, and limestone outcrop from the western valleys of Monmouthshire and north Glamorgan to Swansea and Llanelli—treeless, soulless, glamourless. The countryside, above and below ground, robbed, raped, and destroyed. To know any industrial area from the social angle it is only necessary to visit the railway goods-yard, the colliery and steel-works railway sidings, the docks and wharves of the waterfront—either sea, river, or canal—the gasworks, and the dreaded workhouse. All the low-lying flat land, particularly if it enjoyed good natural drainage, was seized for industrial purposes. Soon, in turn, this was surrounded by new slums. Electric light was installed on the rail bank in Rhymney Iron Works in 1881. Think of the time spent and wasted by women in cleaning, filling, and tending paraffin lamps and searching for candles or tallow dips from that time onwards.

School-days

I was educated in Abermorlais Elementary School under the influence of John Jenkins, who was at one and the same time, as a justice of the peace, the friend of the offender and the terror of the Bench. I then attended an advanced elementary school under the charge of George Fleming, M.A., who would put boys through matriculation in seven or eight subjects, all of which he taught himself with vigour and enthusiasm. We learnt to lisp Eutropius and Caesar at 10 years of age. He was a well-known entomologist. I then spent a couple of years in the Merthyr Intermediate (County Secondary) School and took the higher certificate of the Central Welsh Board in English, French, and mathematics, pure and applied. The headmaster, Charles Owen, M.A.; was an old railway goods clerk who taught us English from the Anglo-Saxon Chronicle and Beowulf onwards with such love of the humanities that we all knew Palgrave's *Golden Treasury* by heart without the fatigue of learning it. Such were the cultured teachers at the junction of the two centuries. The word "coaching" was unknown. A "crammer" was an outcast of the ancient universities who prepared a dud for a commission in the Army or Militia.

On the results of the higher certificate and an entrance examination at University College, Cardiff, I gained two scholarships of the value of about £88 per annum. I

read science at Cardiff and took the course for the training of teachers. I did not do well, partly because I was too young and partly because there was no machinery for bringing the student into contact with cultured men. There must have been some at Cardiff. There certainly were academics who were narrow in their preparation and outlook and treated the average raw student as though he were predestined to become a researcher. There was none of that intimate contact between teacher and taught which was the mainspring of the most expensive public schools and the ancient universities.

Study at University College

After several happy years' teaching in elementary schools, secondary schools, and in evening technical classes I determined to read medicine, following in the footsteps of one of my brothers, D. T. Harris, who recently retired from the chair of physiology in the London Hospital. I entered University College with the Bucknill Scholarship. Here I found teachers who were as enthusiastic as those of my childhood. E. H. Starling, Sir William Bayliss, and Buckmaster were in physiology, R. H. A. Plimmer in biochemistry, and, in particular, Sir George Dancer Thane in anatomy. Thane was the last of the precisionists in anatomy, a great medical historian, and an authority on the *Dictionary of National Biography*. When about to enter hospital, Thane insisted that I serve as part-time demonstrator in anatomy while still pursuing my hospital work. He worked me to the bone for the princely stipend of £150 per annum, but the contact with Thane's mind and method was worth a fortune. After taking my degree I spent my time partly in anatomy and partly in hospital, where there was a concourse of giants. Sidney Martin, Sir John Rose Bradford, Charles Bolton, Batty Shaw, F. J. Poynton, T. R. Elliott, Sir Thomas Lewis, Wilfred Trotter, T. W. P. Lawrence, and A. E. Boycott. The intellectual atmosphere and culture of U.C.H. transcended the medical scientific brilliance. We had a liberal education.

When Thane retired from the chair of anatomy in 1919 he was followed by that extremely brilliant figure, the late Sir Grafton Elliot Smith. His arrival at University College sealed my fate. I could not desert anatomy, for I could not leave Elliot Smith. Egyptology, neurology, and anthropology were opened out to me. I saw at close contact the vagaries, turns, twists, and intense driving force of one of the best intellects of the century. Yet I continued to spend almost half of my time in hospital and was mainly interested in the babies and children, for the growth of animal or plant always attracted me. I spent several years in the dual role of anatomist and physician, demonstrator of anatomy and curator of the museum on one side of Gower Street, and assistant to the medical unit on the other.

In 1931 I was elected to a new chair of clinical anatomy, established jointly by University College and University College Hospital. These were halcyon days, for the closest co-operation existed between the two sister institutions. In 1934 I was elected to the chair of anatomy at Cambridge. I retire from this on September 30, 1951, under the age limit, having enjoyed seventeen years of contact with the Cambridge medical students, and having watched with pleasure their growth and development. My only complaint is that an overcrowded school of nearly 600 students does not facilitate that intimate contact which is the basis of a liberal education.

The Medical Student of To-day

All is not well with the education of the medical student. There is a surfeit of small men who dub themselves medical scientists. There is a shortage of cultured doctors interested primarily in the art of living. Medical students come up to Cambridge after two years of cramming for the four subjects of the first M.B. The fashionable talk about the atom and the origin of the universe has denied them any precise knowledge of surface tension, viscosity, elasticity, and the general properties of matter. They may have hazy notions of rheology, but they do not know Hooke's law of elasticity, Young's modulus, or Graham's law of diffusion. So it is not surprising that they fail to realize that a healthy skin is waterproof and the gut is not. All too frequently they are crammed by specialists, turnspits of science, who have little of the breadth of vision and culture which was the hall-mark of the sound teacher of 1750 to 1900.

The medical student should never miss the opportunity to travel by foot or sea, for travel induces interest in the broad and cheerful stream of life. As schoolboy and student I walked the rivers and mountains of Wales. After qualifying M.R.C.S., L.R.C.P. I enjoyed a trip of seven months around South America. In 1925 to 1927 I spent fifteen months and five months in the U.S.A. as a Rockefeller Research Fellow, and I am most grateful for the inspiration I derived in St. Louis and the Mayo Clinic.

The medical student to-day, like the community in general, is suffering from the failure to realize that speech is a more recent acquirement than vision. Visual aids—the cinema and television—are a poor substitute for declamation. The sound teaching of the good clinician is the only teaching left which approaches in excellence the declamation and conversational approach of the Greek philosophers.

It is not enough to examine a patient or a dissected part visually, to read endless laboratory reports, radiographs, and electrocardiograms. The signs and symptoms of the patient or the lay-out of the dissection must be discussed aloud. It must be impressed on the student that there is no method of assessing "how, why, when, and where" unless time is patiently spent in eliciting a careful history. As Sir John Rose Bradford used to say: "Clinical examination may give you the site of the lesion. A careful history, the patient's, not yours, will give you the nature of the lesion." How I remember the out-patient dyspeptics of U.C.H. whom one met later in the Oakley Square T.B. Clinic—the hastily diagnosed "appendix" which was a pneumonia, the impatient handling of the mother whose child developed a "mastoid" or died of "D. & V." within twenty-four hours. Medicine is an art, and largely a vocal as well as a visual art.

The Financial Position

What of the economic position of the anatomist? No one should become a professional anatomist unless he is prepared to carry the burden of a small salary without interfering with his efficiency as a teacher or researcher. My standard of living has not altered sensibly since those merry days as a student in Cardiff University College on £88 per annum. During this last session I had one son at Cambridge University and one daughter pursuing a post-graduate course in London, so that my effective income for 1950–1 was commensurate with that of my student days in 1903.

Cambridge University in particular has treated its medically qualified demonstrators and lecturers in the preclinical subjects in most niggardly fashion, so that some of my first-class students, now medically qualified, are working for £350 per annum—with several years of active service thrown in. Cambridge will suffer.

Yet, in spite of financial stringency, I rejoice that I turned a deaf ear to the many temptations to enter private or consultant practice or to accept attractive financial offers from the U.S.A.

Old and Recent Students

My Old Students.—The best men and women, in the sense of wholeness, are in general practice. Some of the best are in consultant practice. Many of the poorer ones have become specialists, by the acquirement of one of the many tawdry diplomas which clutter up medical education.

The N.H.S. must recognize the difference between the consultant and the specialist. The latter is a man who has specialized in some narrow field. On the other hand the consultant is a man of stature who is consulted by his old students, his fellow students, and even by his teachers. He is not selected on academic attainments but arrives on his prowess as a doctor. This innate difference between consultant and specialist must be recognized sooner or later as a fundamental fact. Moreover, it must be met, as regards financial implications, by a frank public statement as distinct from the present back-stair method of merit awards.

My Recent Students.—I advise them to combine some historical perspective with a first-hand knowledge of the structure, function, and habits of Man. William Harvey, Stephen Hales, and Thomas Young are of greater import than May, Fuchs, and Pontecorvo. Faraday, Pasteur, Claude Bernard, and E. H. Starling are of more significance than the Third programme. The Bible and Shakespeare are part of our social heritage and our way of life in a sense that the Bloomsbury and Mayfair novelists never will be.

The health of this country will be improved only by efficiency at the periphery, as distinct from centrally at the Ministry. To achieve this good students must be prepared to enter general practice at the periphery and improve the standard of medicine by continuing as students not only of Medicine in the narrow sense but of the Art of Living in the broad sense. Comenius, as far back as 1657, said that the function of the university was "to bring sap, vitality, and strength to all." Good anatomists, as well as good doctors, can help to achieve this.

Dr. W. G. Harding, senior assistant medical officer of the London County Council Public Health Department, recently visited Paris (see *Medical Officer*, June 16, p. 239) in order to make a study of some of the public health and welfare services in that City. He arrived at one institution, for homeless families, just as the residents were eating their midday meal. "The ration issue of macaroni was 80 grammes dry weight (about 3 oz.); and of boneless meat 100 grammes (about 4 oz.) or of meat with bones 120 grammes (about 5 oz.), for a meal issue. The quality of the meals was excellent. It seemed almost unbelievable to find later on some of the residents preparing extra dishes on petrol cookers in their own rooms (strictly against the rules) in order to 'supplement' the official diet, which in quality and quantity appeared to be of a standard hardly equalled in our better restaurants. This point illustrates the very different standards of feeding in our two countries."

CONSULTING MEDICINE

BY

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Physician to Guy's Hospital

The Editor has suggested that in writing about the career of a medical consultant the subject should be approached in the manner of an autobiography. This, then, is my excuse for an egotistical display usually reserved for those who have retired.

It is always of interest to oneself, and possibly to others, to look for the reasons for adopting medicine as an occupation. Parental influence is probably the most potent factor. Paternal and avuncular example conditioned me, as it were, to the idea of medicine. When approaching matriculation age I finally determined to be a doctor because I loathed bowing to authority and wanted to be my own master. Last, and perhaps not least, an appallingly bad school record in respect of work was leavened by some signs of proficiency in science. I remember a lugubrious headmaster telling me that if I did not take Latin in the matriculation I should for ever be barred from achieving that "plum of the profession" the London M.D. A merciful change of attitude of the University authorities rendered this gloomy prognostication inaccurate.

Medicine or Surgery?

Why choose medicine as opposed to surgery? I suppose that most students when they reach the wards have a leaning towards surgery as an art more dramatic in its execution and prompt in its curative effect than the exertions of a physician. To some extent the preclinical period of training may influence the choice, but seldom to a striking degree. I think I can trace the effect of such masters as Starling and Cushny at University College in exciting an interest in the functions and reactions of the human body, but it is probably more a matter of trend of mind. There were others who were fascinated by the intricacies of anatomical structure and who early excelled in this subject. They chose surgery as a natural outlet. During four years' internment in Germany in the first world war I found that pharmacology and physiology could be read with profit, but that the study of anatomy without a corpse was a fruitless labour. This fact, and the opportunity of observing at close quarters four thousand fellow beings of all ages and from all strata of society, directed me to the more contemplative life of the physician. At the end of the war, finding all my friends dead and their places filled by women—a new phenomenon—I departed to the then misogynous atmosphere of Guy's.

I found that within a year of starting clinical work it was possible to be sure in which direction the final choice would lie. Even one's physical attributes may be of importance in determining the future. A surgeon stands for many hours in a hot operating theatre. If he is short and stocky he may feel none the worse. A tall thin man or woman will find prolonged immobility in these circumstances unbearable and productive of such exhaustion that as a life's work it would be unthinkable. The absence of manual dexterity will again tend to divert from surgery, but this is less important, because with determination it can usually be overcome.