BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 10 1960

HISTORY AND DEVELOPMENT OF TEACHING HOSPITALS IN ENGLAND*

BY

Sir ARTHUR THOMSON, M.C., M.D., LL.D., F.R.C.P.

Teaching hospitals are at a critical stage of development and it may interest boards of governors, when approaching the problems before them, to be reminded of the course of their evolution. In the Middle Ages there were two types of hospital in England: monastic institutions for the care of the sick, and lazaret-houses which were important and numerous when leprosy was rife in Europe. Leprosy declined in the fifteenth century and a great number of the lazaret-houses fell into decay and disappeared. The dissolution of the monasteries between 1530 and 1540 put an end to the remaining hospitals in England except in a few places where courageous petition to that irritable and despotic monarch Henry VIII ensured the survival of some ancient foundations. It is to petitions of this kind that St. Bartholomew's and St. Thomas's owe their unbroken history.

A Changing Pattern

For two hundred years after the Reformation England was virtually without hospitals of any kind, and a cynic might say that we managed pretty well nevertheless. We defeated the Armada; the Elizabethans wrote their poetry and Newton his *Principia*; the Tudor despotism and the Stuart kingship were changed for the dominance of an oligarchy; Marlborough fought his campaigns; and the sick suffered in silence and apart. England then was a rural and semi-feudal country; the sick poor were scattered in villages, and it was not until towards the end of the eighteenth century that the pattern was completely and quickly changed by the Industrial Revolution. The application of steam-power to the machinery of production, the rise of capitalism, and the enclosure of common lands drove the smaller yeoman farmers and the cottagers from the countryside to the mines and factories of the new industrial centres.

Sickness widely spread in an agricultural community with village workshops might escape notice, but the misery of the sick poor congregated in makeshift towns without sanitation was intensified and compelled attention. Not only was their suffering more apparent but the constant threat of epidemic disease stimulated interest in their condition. It is not surprising, therefore, that the eighteenth century witnessed the foundation of a large number of charitable institutions in the shape of voluntary hospitals. Another factor in this development which has not received the attention it deserves was the change in the climate of English opinion as a result of the evangelical revival. English puritanism before the Wesleys was much influenced by Calvin's belief that salvation came from grace rather than from works of

charity in the relief of suffering, but in the eighteenth century there was a profound change, and henceforth to the English puritan charity became an obligation.

The letter which led to the foundation of the Royal Infirmary in Sheffield in 1789 is characteristic of many at the time. "Of all the virtues which form our national character," it runs, "that of mercy and compassion may be justly esteemed the highest ornament." Candour compels me to add, regretfully, that Dr. John Ash, in 1765 in Birmingham, did not take as high a line as your Dr. William Younge, for all he said in his original advertisement was, "A general hospital for the relief of the sick and lame situated near the town of Birmingham is presumed would be greatly beneficial to the populous country about it as well as that place."

Influence of the Voluntary Hospitals

It is not my purpose to trace the course of English voluntary hospitals during the period that followed their foundation until they were taken over by the National Health Service, but rather to examine the way some of them became teaching hospitals and so influenced the progress of medicine in this country. Dependent on voluntary contributions, they were always poor and often in grave financial difficulty; it is remarkable that they were able to provide as good a service as they did.

At the time of the foundation of the hospitals medical education was largely based on a system of apprenticeship. The apothecaries, who then did much of the family practice in the country, were required to serve for five years as indentured pupils to learn the "trade, art, mystery and business of surgeon apothecary and man midwife"; surgeons were trained as apprentices and also as surgeon's "mates" in the Army; physicians, too, frequently had short periods of apprenticeship, but to them it was of much less importance than to the other branches. The would-be physician had first to graduate in arts and become proficient enough in classical scholarship to read Galen and write a commentary in Latin as a thesis for his medical degree.

It is true that the regulations of the ancient universities called for something more than this. In one a candidate was required to attend the lectures of the regius professor of medicine during three terms, to witness two dissections of the human body, and to "keep an act"—that is, to make a dissertation before his teachers and defend it. But early in the nineteenth century official inquiry established the interesting fact that, though many doctorates of medicine had been conferred on members of this university, no regius professor had lectured for more than a hundred years.

*An address to the Annual General Meeting of the United Sheffield Hospitals.

So agreeable an anomaly, of course, would be unusual in any institution lacking venerable tradition, and its existence proves that university regulations at that time were not accorded the respect we hope they have to-day.

In addition to the men trained in this haphazard way there was a vast army of quacks who had no instruction of any kind and who certainly never endured any examination before they embarked on their careers.

An immediate consequence of the foundation of the new hospitals was the extension of the system of apprenticeship to their wards. The privilege of taking apprentices was a valuable perquisite for the members of the hospital staffs. Not only could they exact substantial fees from their pupils but they also obtained free service at negligible cost.

In that way teaching hospitals began. There is no doubt that clinical instruction in the wards was an improvement in education—perfunctory though the teaching might sometimes be. Dr. Wilks said severely that “walking the hospitals” often amounted to little more than looking at the patients and hearing the remarks of the medical attendant. Casual comment of that kind, however, has its value.

Private Schools of Anatomy

Hospital teaching was handicapped by the absence of any provision for instruction in anatomy, and to meet this need private schools, run for profit, were established. Some of these were very famous; in London, for example, the Windmill Street school of William and John Hunter, Skeys in Aldersgate Street, and Edward Grainger's over a tailor's shop in Webb Street at the back of Guy's Hospital. The last was taken over by St. Thomas's in 1842. The high reputation of these schools is witnessed by the opinion of the Registrar of the Royal College of Physicians in 1811 that there was “no need for medical schools as the metropolis abounded with noble hospitals and that medical education was better promoted by numerous private schools as at present arranged than it would be by any national establishment.” In the provinces many schools were founded in the pattern of those in London, and in large cities there were often two or three in bitter competition. In Sheffield you had two: Mr. Overend's school, which began in 1828 and failed soon after; and the Medical Institution, which opened the following year and survived to become the Sheffield School of Medicine. The pupils in these private establishments were not confined to hospital apprentices.

A Popular Development

The next step in the evolution of teaching hospitals was the establishment of medical schools within the precincts of the hospitals or closely associated with them. These, too, were often private enterprises promoted by members of the medical staffs. That this development had great advantages and was very popular is shown by the resolution of the Board of Governors of September 8, 1840, which is quoted by J. Langdon Davies in his history of Westminster Hospital: “that it is expedient in conformity to the usage of all the great metropolitan hospitals and most of the provincial hospitals of any magnitude, that this institution should have a school of medicine attached to it . . . but not to involve the Charity in any expense.” Westminster seems to have been late in the field, for E. W. Morris records

in his history of the London Hospital that as early as 1783 the Governors gave permission for Mr. Blizzard to build a lecture theatre, but there is little reference to the school during the next fifty years apart from comments on the disorders of the pupils. In 1834, however, an inquiry was held which reached the conclusion that there was “no doubt that the school remained in possession of Sir William Blizzard for a long time after its erection and has since passed through various hands without any express permission of the Governors.” The final verdict recalls Solomon's judgment on the disputed baby—“that the fabric of the school belongs to the Governors, but the equipment, fixtures, fittings, and contents of the museum belong to the lecturers.”

The difficulties that arose at the London were inevitable in a system which enabled lecturers in the medical school not only to keep the profits for themselves but to exclude other members of the hospital staff from teaching in it. Occasionally the lecturers nominated their own successors and sometimes they put their office up for sale.

Troubles among the students were as serious as those of the staffs. In the course of a few years there developed a hierarchy of students. First were the apprentices, who had paid a substantial sum for their indentures and who acknowledged no allegiance to their hospital or to any but their individual masters. These were the student aristocracy, and it was commonly, and often not unjustly, believed that none but those who had paid well for their privilege could hope for promotion in the hospital service. Next came the pupils, who might pay small fees to the hospital for right of entry but more often paid for courses of instruction by lecturers in the medical school. And the lowest form of student life was the dresser, who was frankly a cheap form of labour which he undertook in the wards in return for casual teaching and experience. Strife between these orders must have been frequent. Any of these students might present themselves for approval to one or other of the numerous licensing bodies, who had the power to grant professional titles after examination. Some of these authorities relied on examination fees for their revenue, and in order to attract candidates did not shrink from competitive advertisement of easy examinations and small fees.

From this chaos medical education was rescued by the establishment of the General Medical Council in 1859, and within a few years a minimum curriculum and standard of examination were generally accepted as essential for entry to the *Medical Register*. The effect on the teaching hospitals and private schools was immediate and decisive. Many of the smaller institutions were closed and the surviving medical schools were linked with the larger teaching hospitals under the control of *ad hoc* committees or boards of governors. The new system persisted unchanged in essentials for nearly half a century, and even the establishment of the modern civic universities, which at their foundation often absorbed the existing medical schools and other technical institutions, did not modify it materially for some years, though the appointment of teachers in medicine became the responsibility of universities.

Stimulus to Research

The growth of scientific knowledge, however, and the difficulty of keeping pace with it or extending it experienced by those subject to the pressing claims of

clinical practice for their livelihood, fostered the development of the concept of whole-time academic units in the staffing of teaching hospitals for the promotion of research and clinical science. Distinguished work by Sir Thomas Lewis in the first small unit of this kind to be established in England in 1915 at University College Hospital provided the necessary stimulus, and over the years the present system has steadily evolved, though not entirely without opposition. That the change was wise and happy in its result I am convinced.

Dispassionate survey of the history of medicine in the nineteenth and early part of the twentieth century leaves no doubt that England compared badly with other countries and Germany assumed the undisputed leadership.

Theodor Billroth, Professor of Surgery in Vienna, in the eighteen-seventies examined the reasons for this remarkable German progress "in the course of three decades." His book, *The Medical Sciences in the German Universities*, is tinged by a note of slightly arrogant superiority which an Englishman finds distasteful in any nation but his own. Why, he seems to ask, are we Germans so good? And why, as William H. Welch said in 1924, had German ideas and conditions of medical teaching, study, and research so far outstripped those of other lands? The reason is that in Germany medical education had not been divorced from the influence of universities throughout the nineteenth century as it had been in England. In most English schools of that period the emphasis was on vocational teaching; their aim was the production of the competent practitioner, and in pursuing it they often neglected the cultivation of scientific method and criticism as the basis for progress. The fault did not lie entirely with the English medical schools. Established, as they necessarily were, close to the large hospitals in new industrial towns, there were no universities by which they could be closely influenced. In the whole country there were only four universities; the two ancient and famous ones in Oxford and Cambridge were remote from large hospitals, and in London and Durham they were but slowly taking shape. Billroth in his book mentions over twenty German universities, most of them in populous capital cities of old principalities and in close contact with hospitals, and he draws attention with pride and justice to a long catalogue of their joint achievements. Not least among them was the beginning of the pharmacological revolution inspired by the work of Ehrlich, of which we are now reaping the harvest.

Scotland was more fortunate than England; with a much smaller population, she had four ancient universities, and three of them were in large centres of population. It is not, I think, surprising that the Scottish medical schools were ahead of the English in the nineteenth century, though they did not reach the standard of the German. It is fair to remind you also that the revolution in surgery due to Lister's great discovery of the nature of putrefaction in wounds came from Glasgow and that his inspiration was derived from Pasteur's papers on fermentation, which were put before him by Thomas Anderson, professor of chemistry in Glasgow University. This, surely, is a striking instance of the value of personal contact between the staff of university departments and those who work in the wards of hospitals. It is worth emphasis, too, that the true value of Lister's work was first appreciated in Germany and Scotland.

You must not assume that English medicine was stagnant until recent years. Good, even great, work was done by individuals—in the Guy's School by Bright and Addison, for example—but it was never developed coherently and systematically as it was in Germany and later by the Americans when, under the influence of Abraham Flexner, they adapted German methods in the organization of their medical schools.

Fleming's epoch-making discovery of penicillin would probably have been exploited earlier had there been close contact between his laboratory and a university department equipped to develop it as Florey and Chain subsequently did at Oxford.

Summary

In this outline of the history of English teaching hospitals I have put before you some reasons for my belief that the introduction of whole-time university units to their wards has been a healthy and valuable development. There are others which I have no time to mention, though it would be ungracious not to pay a tribute to the value of the research work that has already come from some of them and to the higher reputation that as a result English medicine now enjoys in world opinion. I can pay that tribute fairly because I was never of the elect and never held a whole-time chair.

The immediate problem before boards of governors is to what extent they should encourage in their hospitals further expansion of the university influence which has already proved its value. There is no simple solution. A great deal turns on the calibre and personality of the men recruited to the staffs of the academic units, on the inspiration they bring to their colleagues and their students; in short, on the schools they found.

There is a real danger in conveying too much power and influence into the hands of individuals; some of the decay of German medicine in the twentieth century was due, in Lord Acton's words, to the corruption that waited inevitably on absolute professorial power. On the other hand, a professor may need support from administrative authority in a difficult field. At the present time I do not think that clinical science is sufficiently developed to supersede all empirical approach and vocational experience in practice—particularly in the field of nosology.

The part-time clinical staffs of teaching hospitals are as essential to the development of academic units as are progressive schools of applied technology to pure science; it is a good thing that any advance in knowledge should be critically examined by those who may subsequently be responsible for its application. Again, a great hospital is the shrine of fine tradition; it has values and an existence of its own, which will be brighter and more effective if tempered by the scientific spirit of the academic units; but I have no wish to see a teaching hospital become a university department of human biology.

That the medical schools and teaching hospitals of England are deeply indebted to their universities for their progress I have freely admitted. The hospitals and schools can best repay that debt by constant demonstration that in their wards and laboratories it is possible to reconcile the claims of exact science with those of humane practice.