Medical History

Medical education and practice in Britain 150 years ago: a verbatim testimony

NORMAN HOWARD-JONES

On 11 February 1834 the House of Commons ordered that a select committee be appointed to inquire into and consider the laws, regulations, and usages regarding the education and practice of the various branches of the medical profession in the United Kingdom, and on 13 August it ordered the committee's report to be printed. This appeared in three volumes totalling over 800 pages and comprised more than 8000 questions and answers with over 170 pages of appendices.¹

The medical profession was formally divided into three orders at that time—namely, physicians, surgeons, and apothecaries—the corresponding professional corporations being the Royal College of Physicians, the Royal College of Surgeons, and the Society of Apothecaries.

Physicians

The Royal College of Physicians was founded not for the pursuit of medical knowledge but exclusively as a regulatory body for supervising medical practice. Its statute would have enabled it to regulate medical practice of any kind, but from the earliest years it preferred to dissociate itself from surgeons and apothecaries, whom it considered to be intellectual and social inferiors.

In 1830 J W Willcock, a barrister at law, stated, in an exhaustive treatise on laws relating to the medical profession, that the practice of a physician was "confined to the prescribing of medicines to be compounded by the apothecaries."² Prescriptions usually contained innumerable ingredients and would be made up by the apothecary in accordance with the state of his inventory and his conscience. Prescription of irrational medleys of clinically inert substances was to continue for many years.

Sir Henry Hallford testified before the select committee that the officers of the Royal College of Physicians consisted of himself as president, four censors, eight elects (including the president), a registrar, and a treasurer. Elects rotated the presidency among themselves, and four, including the president, examined applicants for the extra licence to practise medicine outside a seven-mile radius of London. Applicants for a licence to practise in London and within a seven mile radius were examined by the four censors and the president. The censors were also responsible for inspecting apothecaries' shops and summoning and fining those practising physic without a licence.¹ A third category of licentiates were candidates whose licences noted that they had been admitted to this order. This represented an "intention of making them the peculiar objects" of a future election to the fellowship.² An applicant for a licence of the Royal College of Physicians who was a member of the Royal College of Surgeons or a licentiate of the Society of Apothecaries could not be considered until he had disfranchised himself from these bodies, for which they required a fee. Hallford said that links with such bodies would "diminish somewhat the high respectability of men of education, who stand on the same ground as members of the English universities."¹ He had previously stated that there were 60 fellows and 136

The fictitious Joseph Muff made his first appearance in the first (1841) volume of *Punch* as a medical student. By 1842 he has completed his studies and become a dispensing general practitioner in a rural area in which many of his patients are illiterate. Muff's consternation is due to the announcement by the little girl returning the empty bottles that her mother has dutifully drunk the lotion and rubbed the contents of the bottle of medicine on her legs. (*Punch* 1842;2:87.) (Reproduced by kind permission of the editor.)

licentiates in London at the time. The licentiates were disgruntled that they had no say in the affairs of the college or access to its library.

When asked how many of the fellows of the college had written great works on medicine William MacMichael, best known as the anonymous author of *The Gold-Headed Cane*, replied: "It is not so necessary to write great works now: the science is advanced so much that it is not to be expected that we would have voluminous publications." Thirteen years later Claude Bernard, who succeeded François Magendie in the chair of medicine of the Collège de France, was to state more accurately that scientific medicine did not exist.³

The "inferior grades"

During the committee's sessions members often referred to surgeons and apothecaries as the "lower," "humbler," or "inferior" grades of the profession, but in the case of the surgeons such appellations were not just. Since 1745 they had been separated from the barbers, and, in contrast to the complacent stagnation that characterised the physicians, their continuing progress in their art and science was reflected in the increasing influence of

28 Chemin Colladon, 1209 Geneva, Switzerland

NORMAN HOWARD-JONES, MRCS, LRCP, formerly director, Division of Editorial and Reference Services, World Health Organisation, Geneva

their college. Membership of the college conferred the exclusive right to practise surgery in London and for seven miles around and also anywhere within the king's dominions, but this last entitlement was not exclusive as it could also be granted by the bishop of the relevant diocese.²

The president of the college, George James Guthrie, stated before the committee that its council consisted of 21 members, including himself and the vice presidents; the 10 senior members constituted a court of examiners. Total membership of the college was 8000, of which not more than 200 were engaged full time in operative surgery.¹ His view was that "a surgeon has an equal right to practise physic" as one who had a licence to that effect. This view was supported by leading surgeons of the day, including Sir Astley Cooper, who said that "without anatomy there can be no good diagnosis." Sir Charles Bell agreed that a large share of the practice of surgeons was that of consultant physicians. Sir Anthony Carlisle thought that the distinctions between what ought to belong to physicians and to surgeons, respectively, were quite indefinable. William (later Sir) Lawrence maintained that it was impossible to draw a line between medical and surgical science.

In the course of his testimony Sir Astley Cooper affirmed quite bluntly: "I consider surgery to be the most useful and the most scientific branch of the profession." Three decades later this view was not only endorsed but amplified by the great German surgeon, Theodor Billroth:

"From the time of Hunter to the present day, English surgery has about it something noble. Surgery owes its great revolution in the nineteenth century to its attempt to unite all medical knowledge in itself; the surgeon who succeeds in this . . . may feel that he has attained the highest ideal in medicine."⁴

Not only the surgeons but also the apothecaries had improved their status, for the Apothecaries Act of 1815 formally established them as general medical practitioners, their licensing body being the Company (later Society) of apothecaries.² The company consisted of a master, two wardens, and 21 assistants. The act required that the company should choose 12 properly qualified persons yearly to examine candidates for a licence for their skill and abilities in the science and practice of medicine.

In 1829 a judge ruled that an apothecary could charge either for attendance or for medicines but not for both. A subsequent decision of the courts was that the charge for attendance could not exceed two shillings and sixpence (12½p). This encouraged apothecaries to charge for medicines and to furnish as much and as many of them as possible in their most voluminous forms. When asked their opinion of this practice all witnesses deplored it. Dr Neill Arnott added that it had "rendered very remarkable the forms and bulk of medicine which English people swallow."¹ Guthrie, president of the Royal College of Surgeons, said:

"I have been called in with a general practitioner to see a patient, and it has happened that he says to me, 'Sir, are you going to order that person a pill?' 'Yes sir, I hate physic myself, and I never take any, and I am going to give him the least possible quantity.' 'Yes sir,' says he, 'that is all very well for you, but it is not very well for me. This gentleman is a very parsimonious person and he will give me but 2d for the pill, and in addition to having me here now, he will probably have me here again in the morning, to know the effect of it.' 'Well,' I say, 'what is to be done?' He says, 'At all events, put it into a bottle.'"

Thus was born the "bottle of medicine" tradition.

According to a hilarious series of anonymous articles by Albert Smith, the typical London medical student aspired to both the licence of the Apothecaries Hall and the membership of the College of Surgeons,⁵ but Benjamin (later Sir) Brodie deplored this regime on the ground that it caused students to spend too much time at lectures and not enough in hospitals.¹

Studies and restrictions

At the time of the select committee's hearings London had no institution from which a medical degree might be obtained, though its numerous hospitals and the private medical schools attached to them offered unrivalled opportunities for the study of medicine. In 1828 a body describing itself as London University was founded, and six years later it applied for a royal charter of incorporation to give it the power to confer medical degrees. In March 1834, however, the Royal College of Surgeons addressed a counter-petition to the king, contesting the award of such a charter on the grounds that the university was a "joint stock association, established by the subscription of money in shares, which may be bought and sold in the share-market." Moreover, the worth of its shares had fallen from their nominal value of £100 to £25, so that anyone could influence its affairs at little cost.¹

It was not until the Medical Graduates Act of 1854 that the established London University was empowered to award medical degrees, which were valid for practice except in London and for seven miles around, the inhabitants of this area still being reserved as the prey of the two royal colleges.⁶ Meanwhile, London medical students wishing to take a degree

were obliged to go to Scotland, Dublin, or a continental university, a state of affairs that Sir Astley Cooper denounced as absurd.

A bylaw of the Royal College of Physicians restricted eligibility for its fellowship, or for a licence as candidate for that distinction, to medical graduates of Oxford or Cambridge, though as Willcock pointed out in his treatise and his testimony to the select committee, such a restriction was in the teeth of the statute and illegal. Not only was this restriction illegal but there was no medical justification for it. The only purpose served was to restrict the fellowship of the college to those who had had the opportunity to come into contact with the nobility and the wealthier classes at one of the two English universities—from which Dissenters, Roman Catholics, and Jews were excluded.

THE MEDICAL STUDENT

A typical medical student as seen by *Punch* in 1842, his hallmark being smoking, drinking, and a liking for the company of "gay women." A *Punch* writer of 1841 depicted the typical medical student as being "careless," "dissipated," and characterised by "reckless gaiety," "wild frolics," and an "open disposition." (*Punch* 1842;2:71.) (Reproduced by kind permission of the editor.)

Examination requirements

The president of the Medicochirurgical Society, John Elliotson, had graduated in Edinburgh and taken the licence of the Royal College of Physicians. Wishing to become a candidate for the fellowship, he enrolled as a student at Cambridge, where he resided for three years, returning in the sixth year to be examined for the degree of bachelor of medicine. When asked what medical studies were requested for such a degree he replied: "None at all." His examination consisted of a discussion with the regius professor on a thesis that he had composed in Latin. Elliotson said that the examination for his original licence from the Royal College of Physicians had been in Latin on the writings of Celsus and Sydenham and had lasted about 20 minutes. The subsequent examination for the candidateship was on the works of Hippocrates and Aretaeus.

An illuminating picture of medical education at Oxford was given by its regius professor of physic, John Kidd. An Oxford medical student who had taken a degree to become a bachelor of arts would then go to Edinburgh, London, or any foreign university where medicine was taught. After eight years he would again present himself at Oxford to become a bachelor of medicine. For a doctorate a further three years' absence was required. No proof of studies elsewhere was necessary but the candidate's word. A candidate did not need to write a thesis "for nobody is present but himself and the bedel [sic]." Instead of a thesis any scrap of paper or book would do, and for a candidate who had lost his scrap of paper the beadle would obligingly produce one. Kidd admitted that such rites might become the subjects of ridicule but argued that a stricter interpretation of university statutes "had become of no use when its students resorted to better schools of medicine."

To justify the restriction of the fellowship to Oxford and Cambridge graduates Halford said that the preliminary general education and domi-

ciliation at these universities produced moral and intellectual qualities that could not otherwise be obtained. Asked whether it would not be desirable for the lower grade of practitioners, who treated many more patients than the physicians, to receive such a preliminary education, Halford replied that the multitude would not appreciate such advantages and that not everyone could "be expected to have bent their minds to those abstruse inquiries that would enter the mind of a physician." A more cogent reason for not subjecting the poor to medical care inspired by high moral and intellectual standards was that "physicians will not be prevailed upon to expend pounds upon their education, when they are to expect to receive only pence in return."

Those who practised midwifery were ineligible for appointment to the governing bodies of both the royal colleges. Halford explained on behalf of the physicians: "We should be very sorry to throw anything like a discredit upon the men who had been educated at the universities, who had taken time to acquire their improvement of their minds in literary and scientific acquirements, by mixing it up with this manual labour." Speaking for the surgeons, Sir Anthony Carlisle asserted that it would be derogatory for a surgeon to assume the office of an old woman and that such action would mean "imposture, mischievous interference, and gross indecency."

Examinations for intending licentiates of the Royal College of Physicians were obviously a farce, and the Oxford and Cambridge medical degrees, required for admission as a candidate for the fellowship of the college, were utterly worthless.

In November 1830 the college had appointed a committee on medical education, which adopted the resolution:

"That it is expedient that the college should make the details of medical education, in future, a subject of express regulation and further define the nature and extent of the previous studies, which should be considered indispensable for all persons presenting themselves for examination at the censors' board."

In the report of the select committee I have not found any indication as to whether action had been taken on this resolution by 1834, but at least the resolution represented a recognition of the need for reform.

In contrast, the requirements for admission to either of the humbler orders—surgeons and apothecaries—had been quite exacting for some years. On the date that the select committee was appointed, the regulations for admission to examination for membership of the Royal College of Surgeons were that candidates should furnish proof of being 22 years of age; having spent six years acquiring professional knowledge; having studied anatomy and physiology by attendance at lectures and demonstrations, and by dissections, during two anatomical seasons, each from October to April; having attended two courses of surgical lectures, each of not less than 60 lectures; having attended lectures on the practice of physic, on chemistry, and on midwifery during six months; and having attended the surgical practice of a recognised hospital in London, Dublin, Edinburgh, Glasgow or Aberdeen for 12 months, or for six months in one such hospital and 12 months in any recognised provincial hospital.¹ Similar regulations had been in force for some years. Recognition of hospitals by the college was far from a mere formality and meant on site inspections by one or more members of its council. There was no mention in the regulations of Latin or Greek.

The Apothecaries Act of 1815 required that all candidates for a licence

should have served an apprenticeship to an apothecary for not less than five years and could produce testimonials of a sufficient medical education and good moral conduct. On 1 January 1829 a bylaw came into force with more specific educational requirements. Candidates had to have a competent knowledge of Latin and to have attended two courses of lectures each on chemistry, materia medica, anatomy and physiology, the theory and practice of medicine, and midwifery. They also had to have attended two courses of anatomical demonstrations and at least nine months at a physician's practice in a hospital with no fewer than 60 beds.

Before presenting themselves for examination candidates had to obtain from the beadle a printed certificate of all the lectures they were required to attend and of the physician's practice. Blanks were provided so that lecturers and physicians could certify that the courses had been attended. Candidates were then examined on these subjects and required to translate from the Latin of Celsus and Gregory.

From the passing of the Apothecaries Act in 1815 until 31 July 1834, 7028 candidates passed the examinations and 795 failed.

The report's effect

The report of the select committee does not seem to have led directly to new legislation. Medical education and practice continued to be discussed in parliament and by the press, and several medical reform bills were unsuccessfully put forward between 1834 and the passing of the Medical Act in 1858. In fact the report was nothing but a brief letter transmitting the verbatim transcript of the committee's proceedings and the appendices and suggesting that the committee be reappointed to comment on this material. In the history of the first 100 years of the British Medical Association there is a chapter on medical reform.⁷ In this it is mentioned that in 1841 a member of parliament, in sponsoring a medical reform bill, referred to the 1834 committee. If there had been a sequel to it this would surely have been mentioned.

References

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Is there any danger from cavity wall insulation?

The recent concern, particularly in North America, over cavity wall insulation concerns the release into the home of formaldehyde from urea formaldehyde resin. Two points are relevant. Firstly, urea formaldehyde resin systems have been widely used, not only as foam in cavity wall insulation but in the manufacture of chipboard (widely used in construction) and as a textile finish. Furthermore, combustion of methane (North Sea gas) and tobacco may give rise to formaldehyde. Thus there are several sources of formaldehyde. Secondly, construction practices differ. In the United Kingdom the foam is generally injected into the "cavity" between two layers of brick, whereas the United States mobile homes, which have given rise to most concern, have an inside lined with chipboard and an outside weatherskin of aluminium sheet or plastic sheet, both vapour impermeable.

A recent survey by L H Everett of the Building Research Station found formaldehyde concentrations of about 0.008 ppm outside (higher near high density traffic), 0.05 ppm in non-insulated buildings, and about 0.09 ppm in buildings insulated with urea formaldehyde foam.¹ (The distributions of the results were, of course, considerably skewed and so the foregoing figures are only a guide.) Another major difference between the United Kingdom and the United States lies in the perception of the hazard. Formaldehyde is accepted to be an irritant and a sensitiser, particularly of the upper respiratory tract. A few years ago it was shown that rodents exposed for some

time to formaldehyde developed nasal cancer (6 ppm for rats; 15 ppm for mice). Since then the two countries seem to have moved in different directions. In May 1984 the Environmental Protection Agency in the United States gave notice of proposed rules, apparently based on these findings. In the United Kingdom Acheson's group have reported on a study of chemical plants where formaldehyde had been manufactured and used (and consequently higher exposures could be expected).³ They found no deaths from nasal cancer but in one factory the mortality from lung cancer, while greater than that from taking England and Wales as a standard, was not greater when the comparison was made with the local area. It is right to add, as the authors did, that (a) only a few men had been exposed to more than 2 ppm for more than five years and followed up for more than 20 years (important because occupational cancers tend to have a long latent period between exposure and appearance) and (b) smoking by exposed workers was not accounted for. They conclude that these results are "against the view that formaldehyde is a lung carcinogen in man, but do not exclude the possibility."—W R LEE, professor of occupational health, Manchester.

- 1 Everett LH. *Urea formaldehyde foam and formaldehyde emissions: UK experience with cavity wall insulation.* Little Rock, Arkansas: Formaldehyde Workshop. (In press.)
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