MEDICAL PRACTICE

Conference Report

Medical communication: the old and the new

The development of medical journals in Britain

C C BOOTH

The development of printing and the publication of books formed an integral part of the Renaissance. During the subsequent scientific revolution it was initially in published books that the new breed of scientists brought their work before the public, and for the most part they published in Latin, the lingua franca of their time. In England, however, it was some time before medical matters were published even as books, particularly if their authors were promulgating ideas which challenged contemporary thought. In 1628, for example, William Harvey published *De Motu Cordis* in Frankfurt in Latin, no suitable vehicle for publication being available to him in England. The increase in publication that occurred during the century and a half that followed Harvey's death in 1657, however, brought an increasing amount of medical material before the public, and by the end of the eighteenth century Latin had been virtually replaced by English as the language of medical communication.

The story of the publication of medical journals reflects the history of both medical practice and science. Medical papers were first published, usually in Latin, in the proceedings of learned societies, and societies subsequently emerged which were specifically devoted to medical subjects. Medical journals also became a vehicle for the expression of dissent and for the publication of medicopolitical ideas. During the first half of the nineteenth century, for example, both the *Lancet* and the predecessors of the *British Medical Journal* played leading roles in the reform movement that led to the Medical Act of 1858. Since that time medical journals have increasingly reflected scientific advances and the development of specialisation, so that the modern era has been associated particularly with the development of the specialist journal. It is only recently that the increasing subjugation of health to politics has again encouraged the appearance of a style of radical medicopolitical journalism associated with a previous era.

*Based on the Hastings Memorial Lecture delivered on 7 July 1982 at BMA House to celebrate the 150th anniversary of the BMA and on the Bishop Memorial Lecture of the Library Association for 1981.

Clinical Research Centre, Harrow HA1 3UJ
C C BOOTH, MD, FRCP, director

Philosophical Transactions

The first journal in which medical men chose to publish was the *Philosophical Transactions* of the Royal Society. The Royal Society, founded in 1660 by Charles II, began the publication of the *Philosophical Transactions* in 1665 and in its pages one can read Newton's *Principia* as well as the works of those Oxford physiologists who extended the horizons of Harvey's discoveries at the end of the seventeenth century. During the first half of the eighteenth century many medical men communicated their work to the Royal Society, frequently still writing in Latin. Some of the clinical contributions of that era are in fact of the most appalling banality, particularly when compared with the papers published alongside them. In 1720, for example, Edmund Halley published a communication on the magnitude of Sirius,[1] and in the same volume there is an affidavit sworn before a magistrate in Scotland to the effect that a boy had lived for three years without food,[2] a publication that does little credit to a society whose motto is "Nullius in Verba."

By the middle of the eighteenth century there was general dissatisfaction with the decline of scientific activity within the Royal Society and it was the Earl of Macclesfield, future president and a mathematician and astronomer of distinction, who persuaded his colleagues to set up a committee to review all papers before publication in an attempt to improve the quality of the *Philosophical Transactions*. The Royal Society therefore first introduced the concept of refereeing. Significantly

there was a medical member of the committee, William Heberden. The Royal Society owes to Heberden's influence the general improvement in the standard of medical and biological papers that were published in the second half of the eighteenth century, which include much of John Hunter's most important work.[3]

In Edinburgh in 1731 the first medical journal in Britain appeared. The Edinburgh Medical School had been founded in 1726 by a distinguished group of young professors who were trained by Boerhaave in Leyden. Edinburgh practised the same freedom from religious sectarianism and bigotry that had been a feature both of Harvey's alma mater at Padua and of Leyden. In contrast to Oxford or Cambridge, which accepted only those who belonged to the established Church, Edinburgh was a haven for the non-conformist. It was the medical men associated with the new medical school who first published the *Medical Essays and Observations* in Edinburgh. Appropriately they dedicated their new journal to the Royal Society.

By the middle of the eighteenth century an appreciable number of graduates of the Edinburgh Medical School were practising successfully in London, many of them licentiates of the London College of Physicians by examination. Since they were not graduates of Oxford and Cambridge, however, they were debarred from the fellowship of the Royal College of Physicians, a matter which led first to disgruntled murmurings and later to open rebellion.[4]

Observations, transactions, and proceedings

It was this group of disaffected Scottish graduates, Dr William Hunter, Sir William Watson, and Dr John Fothergill among them, who emulated their Edinburgh teachers by founding the first Society of Physicians in London, thus providing an alternative forum for medical discussion in the capital to the Royal Society and the Royal College of Physicians. The society met at the Crown and Anchor tavern in the Strand. John Fothergill, a Yorkshire Quaker who graduated in Edinburgh in 1736, was the moving spirit. In 1752, in the same year that the Royal Society reformed its practices, the Society of Physicians began to publish, at Fothergill's expense, a selection of the papers read before it. Six volumes, entitled the *Medical Observations and Enquiries*, were issued between 1757 and 1784. Fothergill wrote later that this small society had "communicated more useful knowledge to the world than the College has done in their corporate capacity since the time of their first foundation"[5]—perhaps something of an exaggeration.

In 1767, however, stung to action by the activities of their rebel licentiates, William Heberden and his friend Sir George Baker persuaded the Royal College of Physicians to publish their own *Medical Transactions*. Heberden's influence can be discerned in the preface to the first volume, which demonstrates his adherence to Newtonian principles. "The experience of many ages," he wrote, "hath more than sufficiently shown that mere abstract reasonings have tended very little to the promotion of natural knowledge." The *Medical Transactions* provided a useful forum for the publication of medical papers but it was unfortunate for the college that the Scottish licentiates refused to submit papers in protest against their continued exclusion from the fellowship.

The Medical Society of London was founded in 1773 by another Quaker physician who was a protégé of John Fothergill and who had graduated at the University of Edinburgh, John Coakley Lettsom. This Society provided a forum for scientific discussion, but, more significantly, it was a meeting place for physicians, surgeons, and apothecaries, a unitarian concept of the medical profession far ahead of its time. It too published its proceedings, and if one excludes the *Philosophical Transactions* this is the only medical journal of the eighteenth century that survives to this day.

It is interesting to examine the extent to which medical journals had replaced books as a vehicle for publishing original work by the end of the eighteenth century. At that time much medical work was still being published in books despite the emergence of the published volumes of proceedings. The major discoveries of the Age of Reason were the belated recognition by the Royal Navy that scurvy could be prevented, the introduction of digitalis by Withering, the description of angina pectoris and its association with heart disease by Heberden and Fothergill, the replacement of inoculation for smallpox by vaccination, and the discovery of the new gases, among which nitrous oxide was to be the most medically significant. Lind and Withering both published their work as books, as did most of the discoverers of the new gases, including Humphrey Davy. Heberden described angina pectoris at a meeting of the Royal College of Physicians in July 1769 and then published his observations in the newly founded *Medical Transactions* in 1772. Fothergill, who first recognised the relationship between angina pectoris and heart disease, described two patients, the second of whom had undergone a necropsy by John Hunter, in the *Medical Observations and Enquiries* that he himself had founded.[5]

In the case of Jenner's work on vaccination, there is particular interest in the reason why the Royal Society failed to publish this epoch-making discovery. In 1796 Jenner first successfully showed that a boy vaccinated in the arm with cowpox could not then receive smallpox by inoculation of material from a case of smallpox, the method of prevention which had been popularised in the early years of the century by the famous Lady Mary Wortley Montague and practised since. He sent his account of this experiment to Sir Joseph Banks, who was well known to him, since Jenner when a student with John Hunter had been responsible for cataloguing Banks's remarkable collections made during the *Endeavour* voyage. Banks was then the President of the Royal Society and he sent Jenner's work for an opinion to Everard Home, John Hunter's brother-in-law. Home thought the account curious but very reasonably was satisfied neither with a single case nor with the apparent paradox that an individual might, according to Jenner, have cowpox on two separate occasions. If 20 or 30 children were inoculated for the cowpox and afterwards for the smallpox without contracting smallpox, he might be led to change his opinion. At that stage, however, he told Banks: "I want faith."[6] Banks therefore returned Jenner's paper without referring it to the publications committee, and the Royal Society was therefore not associated with the most important discovery of the eighteenth century, even though it was made by one of its own fellows.

Cutting edge of radicalism

The first half of the nineteenth century was associated with the movement for reform. Reform in England, however, was not limited to political matters but was felt across the whole spectrum of the nation's life, and there was nothing in that era more in need of reform than medicine and the medical profession. Apart from Edinburgh, there was no satisfactory system of university education in medicine. There was a multiplicity of schools in the Metropolis, where nepotism was rife. There were private schools such as the Clutterbuck School in Aldersgate and the Windmill Street School, which had been founded in the previous century by the Hunters. The privileged royal colleges wielded enormous power and both surgeons and apothecaries licensed their own practitioners. There was also tension between the provinces and the Metropolis. In this environment Thomas Wakley founded the *Lancet*, a radical journal whose carefully chosen name implied its future function of incising "the abscess on the medical body politic."[7]

Thomas Wakley[8] passed the examination of the Royal College of Surgeons in 1817, at the age of 22. He married well and settled down to practise as a surgeon in Argyll Street. Here he might have had a successful if undistinguished professional career if it were not for the events of 1820. In January of that

year the old mad King died. The following month a group of radical desperadoes, intent on murdering the Prime Minister and his entire Cabinet, were apprehended. The five ringleaders of what came to be known as the Cato Street conspiracy were duly hanged on May Day 1820 outside Newgate Prison. As their bodies were cut down, a figure dressed in sailor's clothes and with face masked appeared on the scaffold and skilfully decapitated the corpses. Obviously an expert, he was in fact Tom Parker, anatomy assistant at St Thomas's. Rumour put it about, however, that the masked man had been a surgeon from Argyll Street, and the only surgeon then living there was Wakley. In August a gang of men supposedly sympathetic to the Cato Street conspirators burst in on Wakley, assaulted him, and burnt his house to the ground. Subsequently the unfortunate Wakley was accused of having been his own arsonist to obtain the insurance, a calumny he successfully contested in court with the insurance company, but he had lost his house and his practice, a disaster to a young man within six months of his marriage.

It was at this time that Wakley met William Cobbett, the radical reforming journalist, then editor of the *Weekly Political Register* and the *Evening Post*, who had exhumed the bones of Tom Paine and preserved them in his home. Cobbett had some experience of attacking the medical establishment during an earlier part of his life in the United States. In his periodical *The Rush Light* he had for two years "flung the worst abuse that any honest physician had to bear" at Dr Benjamin Rush of Philadelphia, violently attacking the murderous regimen of bleeding and purging for which he was famous.[8] Cobbett, like Wakley, believed himself to be a target of the Cato Street conspirators' friends and this was the bond that brought the two men together. Cobbett, as ardent a supporter of political reform as Wakley was to be for the reform of the medical profession, played an important role in encouraging Wakley to take up radical medical journalism.

The year 1823, recorded by Smart in his *Economic Annals* as "a quietly prosperous year," was memorable to Harriet Martineau as the year in which Birkbeck founded the London Mechanics' Institute, the starting point for the Mechanics' Institute movement in England.[18] For medicine, however, the truly momentous event was the publication of the *Lancet*, which first appeared on 5 October, a Sunday. The objectives of the *Lancet* were clearly set out in the opening issue. Most importantly, it was to publish for the first time the lectures of the distinguished men who taught in the London medical schools. There was also to be medical and surgical intelligence, to encourage the publication of case reports. Finally, there were to be non-medical topics, including comments on the current political scene and drama and chess, interests of the editor, but these did not last long. It was the decision to publish the lectures of the London teachers which at once brought Wakley into conflict with the profession, and particularly with the surgeons and their college, since it threatened both their power and their pocket.

Although Astley Cooper did not object to his lectures being published anonymously, Abernethy, senior surgeon at St Bartholomew's, applied to the Court of Chancery for an injunction against publication on the grounds that it infringed copyright. His lectures were published by Wakley so accurately that they included all his well known nautical expletives. Abernethy lost his case, and Wakley, who had retained the future Lord Brougham as his counsel, at once found his position greatly strengthened. The circulation of the *Lancet* increased and at the same time the venomous nature of Wakley's attacks against nepotism and privilege continued. There were repeated lawsuits, nine in all in a six-year period, with results which were overall favourable to Wakley.

During the years that preceded the Medical Act of 1858, the *Lancet* poured out a stream of malevolence and vitriol against the Royal College of Physicians, the Royal College of Surgeons of London, and the Worshipful Company of Apothecaries, who were castigated as "the old hags of Rhubarb Hall." Not unnaturally Wakley was subjected to equal abuse. The *Medical Gazette*, founded by Brodie and Abernethy, described unhappily how a set of literary plunderers had "broken in on the peace and quiet of our profession."

Charles Hastings

Charles Hastings,[11] whom we honour in this lecture, was an almost exact contemporary of Thomas Wakley. Born in 1794 in Ludlow, he graduated MD in Edinburgh in 1818. He was then elected as physician to the Worcester Infirmary and within six weeks was involved, like Wakley, in controversy, for he charged the junior surgeon, Thomas Stephenson, with professional misconduct. The character of Hastings, however, was in striking contrast to that of Wakley. He worked diligently throughout his life as a respected physician in Worcester, and it was through the institutions that he created and the committees that he served that he influenced the cause of medical reform, to which he was no less dedicated than Wakley. More successful than Wakley in the corridors of power, he was a conventional figure who began his public career as an officer of the local Worcestershire Medical and Surgical Society. When he died in 1867 he had played the major role in founding the British Medical Association, had been knighted, and had become the most respected medical man in the Kingdom. The *Lancet*, at the time of his death, graciously commented that he was an amiable physician "who has rendered good service to his profession and has never, so far as we know, made himself an enemy."

Hastings' first venture into medical journalism was in 1828 when he persuaded his fellow members of the Worcestershire Medical Society to launch the *Midland Medical and Surgical Reporter*. It was specifically aimed at providing a forum for the publication of medical reports from the provinces since at that time medical journals were confined to London, Edinburgh, and Dublin. In 1829 Sir Henry Halford, the President of the Royal College of Physicians, known as the "Eel-backed baronet" by virtue of his courtly manners, wrote to congratulate the Society of Physicians and Medical Practitioners in the Midland Counties on their endeavours and he did them the honour of asking permission to join their Society.

Meanwhile, in the Metropolis there had been attempts to form a Metropolitan Society of General Practitioners of Medicine, as well as a movement towards a national College of Medicine, supported by Wakley. Hastings was aware of these developments and it was in 1832, appropriately the year when the great Reform Bill was passed enthusiastically by the House of Commons but reluctantly by a House of Lords threatened with the creation by the Monarch of an excess of radical peers, that he decided in consultation with Edward Barlow of Bath and other colleagues, to form the Provincial Medical Association. The provincial practitioners considered that they could make a contribution to medical science just as significant if not greater than that of their colleagues in the Metropolitan hospitals. Haygarth in Chester, Percival in Manchester, and Withering in Birmingham had all been provincial practitioners. In Hastings's own city of Worcester, Dr Wall had made important contributions to medicine as well as to porcelain. In addition they had the shining example of Edward Jenner, a country surgeon who had made the most important discovery of the age.

At the same time the publisher of the *Midland Reporter* was going into liquidation, and it was for these reasons that its successor became the *Transactions of the Provincial Medical Association*, which continued until 1853. Meanwhile, after considerable thought and with Hastings's active support, the Association decided to establish a regular weekly journal and in 1840 they founded the *Provincial Medical and Surgical Journal*, later to become the *British Medical Journal*. The Association and the *Journal* were almost immediately successful for they sought to cater for medical practitioners nationwide and bring together physicians, surgeons and apothecaries under one

umbrella. It was not all plane sailing, however, for it took some years before the various regions of the provinces were united. Wakley, who was not always a supporter of Hastings, was soon writing that the Association should become the British Medical Association.

By the early 1850s the movement for a national association had become almost irresistible, particularly in the Metropolitan counties. Sir Charles Hastings, who had been knighted in 1850, was initially uncertain of the need for change since he felt there might be a lessening of the esprit de corps in the provinces. But he withdrew his objections, and at a momentous meeting in Dee's Hotel in Birmingham in 1855 the decision was taken that gave birth to the British Medical Association, the creation of Charles Hastings, which has now served a united profession for 150 years.

The rise of specialist journals

In 1853 the *Provincial Medical and Surgical Journal* amalgamated with the *London Journal of Medicine* to become the *Association Medical Journal*. In 1857, following the foundation of the British Medical Association, it became the *British Medical Journal* that we know today. During the remainder of the nineteenth century, the *Lancet* and the *British Medical Journal* were the leading medical publications in Britain and in 1881 the *BMJ* had the privilege of publishing the proceedings of the great International Congress of Medicine in London presided over by Sir James Paget, at which both Lister and Virchow were present. The Prince of Wales and the future German Kaiser were also there.

The later years of the nineteenth century and the first decades of the twentieth were associated with the development of journals which reflected the new scientific discoveries in physiology and medicine, the cellular pathology of Virchow and Rokitansky, and the bacterial origin of disease. The *Journal of Physiology*, for example, was founded in London in 1878 and the *Journal of Pathology and Bacteriology*, forerunner of the present *Journal of Pathology*, in 1892. The *Quarterly Journal of Medicine* continues to be the official publication of the Association of Physicians of Great Britain and Ireland and was first published in 1907; the *British Journal of Surgery* first appeared in 1913.

In the history of the United Kingdom there had always been an important imperial influence on the Mother Country. Physicians and surgeons had followed trade and the flag to far-flung corners of the globe. William Hillary had published his book on the *Diseases of the West India Islands* in London in 1759.[12] By the end of the nineteenth century there were to be journals reflecting the discoveries of Manson, Ross, and others. The *Journal of Tropical Medicine and Hygiene* first appeared in 1898, and the *Transactions of the Society for Tropical Medicine and Hygiene*, later to be Royal, have been published since 1907. Sir James Mackenzie founded the journal *Heart* in the following year as a reflection of his own scientific interests, and he appointed the future Sir Thomas Lewis as its first editor, at the tender age of 27. Lewis, however, was more interested in later life in the general than the specific and he changed its name in 1931 to *Clinical Science*; the journal continues with this name despite a brief flirtation with molecular medicine.

It might be assumed that the general journals would feel threatened by the modern development of the specialist journal. It is therefore all the more to the credit of the *BMJ* that this journal has played a generous and pioneering role in encouraging specialist journals, usually in association with the relevant society or association. The first of these, the *Archives of Disease in Childhood* and the *Journal of Neurology and Psychopathology*, were founded in 1926, late in Dawson Williams's time as editor. There are now 13 specialist journals, as well as six professional and scientific publications published by the *BMJ* on an agency basis. The most recently founded was *Psychological Medicine* in 1970, now transferred to Cambridge University Press. Other general journals, such as the *Journal of Physiology*, have successfully resisted the fragmentation that has afflicted both medicine and pathology in the modern era. The *Quarterly Journal of Medicine*, with a declining circulation, has been less successful; its preservation of archaic editorial practices, until very recently, has probably reflected the conservatism of its parent body.

The development of what has come to be known as the "throw-away journal" is a feature of recent years which may perhaps owe something to the increasing interplay between politics and health that followed the foundation of the National Health Service in 1948. One of the best known is *World Medicine*, whose style of radical journalism on subjects such as the reconstitution of the General Medical Council or the alleged skeletons in the cupboards at the Royal Society of Medicine is reminiscent of Thomas Wakley. It has also published material that has produced from many established figures of the profession a similar chorus of orchestrated outrage to that provoked by Wakley in his prime. The significance to the story of medical publishing of *World Medicine* and its contemporaries remains to be assessed by historians. It is well to remember, however, that for many established members of a conservative profession in the 1820s the *Lancet* was a throw-away journal too.

Medical journalism has been of vital importance for the diffusion of knowledge and of new ideas in this country. The story of medical journals and the characters of the men who made them is as fascinating as any other aspect of medical history. For many the contemporary scene may seem staid and conservative by comparison with previous eras. There is, however, one lesson that can be learnt. Nothing great was ever achieved unless by a radical.

References

1 Halley E. Some remarks on a late essay of Mr Cassini, wherein he proposes to find, by observation, the parallax and magnitude of Sirius. *Philas Trans* 1720;**31**:28-30.

2 Blair P. A copy of an affidavit made in Scotland concerning a boy's living a considerable time without food. *Philas Trans* 1720;**31**:28-30.

3 Booth CC. Clinical science in the age of reason. *Perspectives in Biology and Medicine* 1981;93-114.

4 Stevenson LG. The siege of Warwick Lane. *J Hist Med Allied Sci* 1952;**8**:105-22.

5 Corner BC, Booth CC. Chain of friendship. In: *Letters of Dr Fothergill 1735-1780*. Cambridge, Mass: Harvard University Press, 1971.

6 Banks Manuscripts. Everard Home to Sir Joseph Banks, April 21 1797. Kew; Library of the Royal Botanic Gardens.

7 Frogatt P. The Lancet: Wakley's instrument for medical education reform. *J Soc Occup Med* 1979;**29**:45-53.

8 Sprigge SS. *The life and times of Thomas Wakley*. London: Longmans Green and Co, 1897.

9 Corner GW. *The autobiography of Benjamin Rush*. Princeton, NJ: Princeton University Press, 1948.

10 Kelly T. *George Birkbeck, pioneer of adult education*. Liverpool: Liverpool University Press, 1957.

11 McMenemy WH. *The life and times of Sir Charles Hastings*. Edinburgh and London: Livingstone, 1959.

12 Booth CC. William Hillary, a pupil of Boerhaave. *Med Hist* 1963;**7**:297-315.

A middle-aged diabetic patient, who suffers from occasional heartburn, has been advised to take nicotinic acid for mild deafness. He has no retinopathy. Would this treatment be hazardous for him?

The only side effect to be expected from using nicotinic acid would be transient flushing and then only if more than 50 mg of nicotinic acid was given at once. Larger doses may be given in slow-release forms, such as Bradilan. Large doses of nicotinic acid may raise the blood glucose concentration as well as lower that of the serum cholesterol. There should be no danger to the eyes in a patient without known retinopathy, though the vasodilator action of the drug would contraindicate its use if the patient had retinitis proliferans or a history of vitreous haemorrhage. Nicotinic acid by mouth is unlikely to accentuate heartburn and is too weak in acid to contribute to any increased risk of a peptic ulcer.—J M STOWERS, professor of diabetes and endocrinology, Aberdeen.