JOHN BELL, 1763–1820*

by

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JOHN Bell was a Lowland Scot, born in 1762, the second of four sons of a somewhat elderly, and certainly impoverished, clergyman. Set forth thus, his origins seem humble enough, but when reference is made to his ancestry it becomes abundantly clear that he sprang from a stock which for upwards of two centuries had made its mark upon the affairs of Scotland.[1]

John Bell's father, the Rev. William Bell, was a man of considerable moral courage who, on the dictates of conscience, transferred his allegiance from the Church of Scotland to the Episcopal Church in Scotland—a big step in those days, and one which brought great financial hardship in the years following Culloden and the failure of the Stuart cause to which the Episcopal Church had been sympathetic. His strength of character he handed on in full to John, and indeed to all his sons, each of whom was destined to win renown in his chosen career. Robert, the eldest, became Professor of Conveyancing to the Society of Writers to the Signet; George occupied the Chair of Scots Law in Edinburgh University, and was an acknowledged master of commercial jurisprudence; while of Charles it is surely not necessary to say one word.

Of their mother we learn most from the correspondence which Charles conducted with George over many years. Well-educated for her day, she had inherited the artistic gift of her grandfather, Bishop White, and in due course this was to reveal itself anew in John and Charles. Widowhood found her very slenderly provided for, and she had a hard struggle keeping the home going and in seeing to it that her two younger sons were properly educated. It is of interest that Charles, in referring to his childhood, speaks most warmly of the affection he felt for his mother, and for his brothers Robert and George; but of John in those days he says nothing, and it seems likely that they saw little of one another until Charles became bound apprentice to John in his 'calling of Surgery and Pharmacy'. The phrase is taken from the deed of indenture between them, a lengthy document signed by all four brothers on 26 September 1792, and one which on being read today seems very one-sided, such are the terms by which the apprentice was bound to his master for a period of five years.

In fact, John and Charles seemed to get on very well together. The third volume of John's *Anatomy of the Human Body* is the work of Charles[2]—appropriately enough it deals with the nervous system—as is the book of engravings illustrating the second volume, in which the heart and arteries are described. Which of the brothers was the better artist is a nice point, but for those capable of making a judgement the books of *Engravings*[3] afford the opportunity; for that which illustrates volume I of the *Anatomy*[4] is the work of John. After John's death Charles brought out a new edition of the *Principles of Surgery*,[5] and in

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witness of his feelings towards his brother only the concluding words of his preface need speak: 'and, did it not sound like vanity, I would express a wish that the content of these volumes may prove to the reader of the same value that the lessons of a brother have been to me'.

Little is recorded of John's early life, and even the year of his birth in Edinburgh is somewhat in doubt, for although the standard works of reference give it as 1763 the Celtic cross that marks his grave in Italy bears the date 1762.* But of this we are certain: an atmosphere of scholarship and a love of art surrounded his boyhood, and though there was financial hardship its effect upon three of the four sons was to develop a sturdy self-reliance that was to serve them well throughout their lives. Perhaps upon Charles it left its mark, for until the day he died he appears to have sought George's counsel in all manner of affairs, even those of a purely medical nature.

In 1779, when seventeen years old, John became apprenticed to Alexander Wood (1725–1807), the leading surgeon in the Edinburgh Royal Infirmary, who was as highly regarded for his skill as he was loved for his kind, genial nature. At a time when disputation was fashionable his influence as a peacemaker was considerable, and after his death the regret felt for his passing was summed up in this neat couplet:

> Oh, for one hour of him who knew no feud,
> Th'octogenarian chief, the kind old Sandy Wood.[6]

The terms in which John Bell was later to dedicate two of his books to Wood leave no doubt as to the depth of his feelings for him, and it might be thought that Bell would have absorbed something of his master's gentle nature; but history tells otherwise, for he later revealed himself to have a combative temperament which would not suffer fools gladly, and as we shall see his professional life was one of unending, bitter controversy.

While still an apprentice he attended classes in the University where he studied under Cullen, Black and Monro *secundus*, all great teachers and, in the cases of Black and Monro, men who won an enduring celebrity by their discoveries in chemistry and anatomy. William Cullen (1710–90) had gone to Edinburgh from Glasgow, where, having founded the School of Medicine, he became its first Professor of Medicine. In the capital he graced the Chair of Chemistry for eleven years until, in 1766, he resigned in favour of Black who had been his student in Glasgow. However, so wide was Cullen's range and so tough his fibre, that he continued in Edinburgh till 1788, first as Professor of the Theory of Medicine (or Physiology as it is now known) and later as Professor of the Practice of Medicine as well. Joseph Black (1728–99) whose name will ever be linked with the discovery of carbon dioxide and with the theory of latent heat, lectured with great acceptance and his class became one of the most popular in the University. His aim of the utmost degree of perspicuity was achieved with brilliant success, and there can be little doubt that John Bell owed much of his flair for unambiguous statement to the time he

* Cf. p. 77. Dr. Avery's discussion of this problem.

spent at Black's feet. In a word, Bell was as fortunate in his teachers as his own students were to be in him.

Following his time with Wood (presumably the customary five years) he travelled for a period in Russia, returning to Edinburgh in 1786. In visiting Russia he was merely one of a large company of Scottish doctors who at the end of the eighteenth and beginning of the nineteenth centuries contributed a great deal to Russian medicine; men like Sir James Wylie who became Physician General to Czar Alexander I, whom he accompanied in the advance of the allies on Paris in 1814, and Sir William Burnett, who served at Trafalgar and later became the first Medical Director-General of the Royal Navy.

Back in Edinburgh John Bell lost no time in becoming admitted a Freeman Surgeon Apothecary by the Royal College and Corporation of Surgeon Apothecaries of Edinburgh, which until 1778 had been the Incorporation of Barber Surgeons. As a member of the College Bell enjoyed the right to practise in the Royal Infirmary, a *sine qua non* for a young man with experience to be gained and a reputation to be won. However, he soon sought a further outlet for his energies, and one in which his undoubted gifts as anatomist, speaker and draughtsman would have full play. In brief, he set up as a teacher of anatomy in opposition to Monro *secundus*, then at the height of his deserved fame, who had succeeded his father in the University Chair of Anatomy in 1758. It was a bold step, because for more than sixty years the University had had a monopoly of teaching, and moreover both Monros were able men who had added lustre to the reputation of the Edinburgh medical faculty. But this has to be borne in mind—neither was an operating surgeon, indeed *Secundus* had a large practice as a consultant physician; accordingly, throughout their successive tenures of the Chair, the teaching of anatomy had become formal and systematic, and though done well the emphasis was not directed towards the needs of the practising surgeon. John Bell saw his chance, and, so clearly had he gauged the need, his venture met with immediate success and by 1790 he was able to build his own school of anatomy adjoining Surgeons' Hall. Years later he was still able to write the following trenchant observations in his *Letters on the Education of a Surgeon*:[7]

> In Dr. Monro's class, unless there be a fortunate succession of bloody murders, not three subjects are dissected in the year. On the remains of a subject fished up from the bottom of a tub of spirits are demonstrated those delicate nerves which are to be avoided or divided in our operations; and these are demonstrated once at the distance of 100 feet!—nerves and arteries which the surgeon has to dissect, at the peril of his patient's life.

The paucity of subjects for dissection was not to be met—legally at any rate—for another twenty-two years, for it was only in 1832 that the Anatomy Act was passed. But, that apart, John Bell was railing against the way in which available material was being used, and as always when he felt there was a wrong to be put right, he did so in terms that were quite unambiguous.

It is fair to say that the subject of surgical anatomy was given its birth by Bell, for both in his writings and illustrations he catered for the operating surgeon. This was a fresh approach in his day, for although there were the great

eighteenth-century anatomical volumes and atlases, such as those of Cheselden and Scarpa, these works did not indicate the application of anatomy to practice.

John Bell continued to teach for thirteen years, but in 1799 powerful opposition succeeded in excluding him from serving further as surgeon to the Royal Infirmary; and with that door closed to him he chose to give up teaching anatomy. Thereafter he confined himself to surgical practice, in which for nearly twenty years he continued as the leading operator and consultant in Scotland, until ill health forced him to seek peace in Italy.

The reason for the attacks made on Bell was almost certainly jealousy, for his continued success as a teacher was growing with the years and the University department was beginning to feel the pinch. In 1798, when Monro *secundus* had been the University Professor of Anatomy for forty years, the appointment was renewed with *Secundus* and his son (Monro *tertius*) as joint holders of the Chair. This strange arrangement was to continue for ten years, and thereafter *Tertius* carried on alone until 1846, thereby completing a period of 126 years during which the Monro dynasty had held sway. Had either John or Charles Bell been given the University Professorship in 1798 it is certain that the fame of Edinburgh would have been enhanced; the appointment of *Tertius* was a mistake and a misfortune, and even as generous-minded a man as Charles Darwin said of the time he spent as a medical student in Edinburgh: 'Dr. Monro made his lectures on human anatomy as dull as he was himself'.[8]

The opposition to Bell was headed by Dr. James Gregory, Professor of the Practice of Medicine in the University, who not only issued a pamphlet warning students against attending Mr. Bell's lectures, but also had it posted on the gates of the College and at the entrance to the Infirmary. 'Any man, if himself or his family were sick, should as soon think of calling in a mad dog as Mr. John Bell' is a sample of the sort of thing that was said, a form of attack which for sheer scurrilousness would be hard to equal.

Such behaviour is unforgivable, and yet there is the opinion of Lord Cockburn, the great judge, that the controversies pursued by Gregory were never for a selfish end, and also that he was never entirely wrong. The sting of that remark is in the tail, but in one matter at least Gregory was unquestionably right—in urging the appointment of a small number of permanent staff to the Infirmary.[9] It was a reform long overdue, and when carried replaced a system in which the members of the Royal College of Surgeons served in rotation at short intervals. In the event, alas, John Bell was not appointed.

In Garrison's *History of Medicine*[10] it is stated that Gregory, under the pseudonym of Jonathan Dawplucker, attacked Bell in a bulky volume. The volume (a slim one actually) is entitled *Remarks on Mr. John Bell's Anatomy of the Heart and Arteries*,[11] but its authorship is uncertain. Gregory himself denied being Dawplucker (1803), and the author may have been John Barclay, who had been assistant to Bell for one year in 1796.*

At this interval of time it is difficult to understand just what it was about

* In Halkett, S. and Laing, J., *Dictionary of Anonymous and Pseudonymous Literature*, London, 1926–34, Dawplucker is identified with Barclay.

Bell that so aroused people against him. Gregory certainly could not have regarded him as a professional rival, for his own position was that of a physician, and a very successful one too; moreover Gregory was a great favourite with the students, and amongst the generality of his colleagues he was looked upon as one who had advanced the reputation of the University. Maybe, all in all, he was acting from worthy motives, though using for his purpose methods which must for ever stand condemned. Barclay's case is somewhat different. He was four years Bell's senior in age, but, having first studied for the ministry, was his junior in medicine. After assisting Bell for a year he set up on his own as a teacher of anatomy, and sheer jealousy of Bell's large classes may have been the trigger that fired off his attack.

John Bell was well able to stand up for himself, but he did more. In his *Answer . . . to the Memorial of Dr. James Gregory*,[12] and in his *Letters on Professional Character etc.*,[7] he revealed himself as one for whom the highest standards of professional skill and personal conduct were matters of deep seriousness, and by whom deviations from such standards must be assailed and shown to be unworthy. And in all this he was no respecter of persons. Unpopularity in some quarters was a sure outcome and, when these included powerful figures, exclusion from Infirmary practice inevitable. Fortunately his great surgical skill did not lack appreciation, and many patients were sent his way. That he prospered financially is clear, for he was able to give up practice and repair to Italy while still in his fifties.

Bell will not be remembered for any single major discovery, but in the sum his achievements assure him of his place amongst the great ones of our profession.

As an anatomist he took the entire body as his province, and in his writings the details of topographical anatomy manifest themselves as a source of unfailing strength to the surgeon. Before his time the anatomy of the human body was well known, but a signal service he performed for surgery was, metaphorically speaking, to render polychromatic what had been monochromatic. Facts long established were given a new significance, and those that were nebulous or equivocal a new clarity. Of the latter one instance will stand as example—the arteria profunda femoris—which both Heister and Gooch believed to be an inconstant vessel, an error that Bell clearly and forcibly amended in his *Discourses on the Nature and Cure of Wounds*.[13]

As an artist he was one of the few eminent medical men who illustrated their own works, and one to whom drawing, etching or engraving came equally easily. Nor was this talent limited to scientific subjects, for his drawings made in Italy have a rare beauty which declares the depth of artistic feeling that his tempestuous spirit possessed.

For his day he was a bold and resourceful surgeon, able and self-confident. Yet of operating he had this to say: 'Operations have come at last to represent as it were the whole science, and a surgeon, far from being valued according to his sense, abilities and general knowledge, is esteemed excellent only in proportion as he operates with skill.' There is a world of wisdom in these words but, even so, there is great comfort in the knowledge that a surgeon operates well.

John Bell's *Principles of Surgery*[5] has been truly described as monumental. Within its four volumes is presented not only the surgical knowledge of the period, but also a scholarly, historical review of the treatment of the conditions dealt with, together with a wealth of clinical description and shrewd comment. His own experience illuminates every part of the discourse, and the lasting impression is of a man seeking to convey a rational, scientific mode of thought from which appropriate action, operative or conservative will follow. For all the work's great length of 2,000 pages, the number of topics considered is surprisingly few—trauma in its varied forms, ulcers, wound healing, the uses of bandages, aneurysm, lithotomy and tumours—and much of the writing is philosophical and, if truth be told, in places somewhat sententious. Nor do the caustic references to the opinions of others, for example Benjamin Bell, find favour with modern readers; but, with that criticism voiced, only admiration remains, for his *Principles* is, quite simply, a *magnum opus*.

In the field of arterial surgery he made, perhaps, his greatest contribution, and with Desault and John Hunter is regarded as a founder of the modern surgery of the vascular system. He was the first to ligate the superior gluteal artery, and his account of the case makes fascinating reading. The patient, a leech-catcher by trade, had suffered a penetrating wound of the buttock inflicted by the long scissors used in his work, and when seen by Bell six weeks later presented with a huge swelling of the entire gluteal region. There then follows the description of the operation—the incision, at first a mere eight inches in length, but soon to be extended to two feet; then the removal of the extravasated blood, eight pounds in all; and finally the successful ligation of the severed vessel. The patient made a good recovery, albeit a slow one, and left hospital seven months later.

Bell is often hailed as the father of surgical anatomy, but surgical pathology too owes him a debt, and some of his aphorisms stand to this day—blood in a wound is a foreign body; let pus out early; sequestra must be removed; whenever possible assist wounds to heal by direct adhesion. It has to be remembered that the science of pathology was still in its infancy, for Matthew Baillie's splendid *Morbid Anatomy* only appeared in 1793.

Although never unmanned by the suffering occasioned by surgery in those pre-anaesthetic days, John Bell was ever mindful of it, and fulminated against those who either by ineptitude or a craven adherence to unsound procedures inflicted unnecessary pain. The truth is that in his character the great moral courage that lashed professional ignorance and arrogance was wedded to the one quality that lies at the very heart of medicine—compassion.

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JOHN BELL'S LAST TOUR*

by

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THIS paper deals with the last three years of John Bell's life, three years which he spent as an invalid in Italy. Paucity of real biographical material makes it practically impossible to get a full appreciation of Bell as a personality, but we get illuminating glimpses of him through some of the notes and descriptions that he made during his travels abroad, which were later collected by his wife and posthumously published.

The *London Medical and Physical Journal* in 1817,[1] contained the following notice:

> We have received from a publisher an account of Mr. J. Bell's health, and of his future intentions. If that gentleman will favour us with the history of his illness, we have no doubt, that, coming from an experienced physiologist, it will afford improvement to our readers and advantage to the public.

John Bell did not oblige. It was true, however, that he was a sick man. Early

* Osler Club Meeting 27 March 1963, commemorating John Bell, F.R.C.S.E., 1763–1820.