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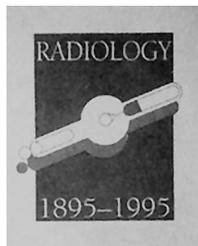
HISTORY

Edward Wing Twining, 1887–1939

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Edward Wing Twining (Fig 1) generally is regarded as the “father” of British neuroradiology. Born on March 18th 1887, he came from a line of doctors, his grandfather and father being in family practice at Salcombe, Devon, in the south of England. He was educated at Epsom College and University College Hospital where he qualified in medicine in 1913. As a student dresser (medical student on a surgical unit), he received what we now refer to as a “stick” injury from an infected needle, an event that set in train a succession of recurrent infections and chronic osteomyelitis of the hip. This crippling condition delayed his qualification and handicapped him throughout his life. He died in 1939, aged 52, as a direct result of the infection, tragically at a time without recourse to modern antibiotics, at the peak of an outstanding career (1–4).

At the outbreak of the Great War in 1914, Twining had been rejected as physically unfit for service in the Royal Army Medical Corps, but in 1915, after a spell in general practice, he managed to obtain a post as surgeon to a Red Cross ambulance train in France. The following year he was placed in charge of an x-ray and electrotherapeutic department at Netley Hospital on Southampton Water with the rank of captain. It was there that he began his lifelong interest in diagnostic radiology. After the war, he served until 1922 as radiologist to the Ministry of Pensions. During this time, he published, in collaboration with H. S. Souttar, a book on peripheral nerve injuries. A period of study in St Thomas’s and other London hospitals followed, and in 1923, he was successful in the newly instituted Cambridge Diploma in Medical Radiology and Electrotherapeutics (DMRE). The DMRE, the



first formally established radiologic qualification in the world, was the result of an effective campaign organized by A. E. Barclay, the first radiologist in Manchester. Barclay, appointed to the Manchester Royal Infirmary in 1908, had previously horrified the hospital authorities taking over the area in the basement designed for mud baths, “a vast space,” and ordering two new x-ray tubes at £2 (\$8 at the old rates!) each (5). He tried in 1916 to raise funds to establish a chair in radiology in Manchester, but monies were not forthcoming. Incidentally, this author came to occupy the first chair of radiology in Manchester almost 60 years later! Barclay therefore approached the University of Cambridge to consider setting up a structured course leading to a diploma in radiology as an alternative. The University, ever cautious about the financial implications, required Barclay’s personal guarantee against loss before agreeing to establish this unique systematic training course in 1920. The early lecturers and teachers worked without reward, and in 1941, when the Cambridge Diploma came to an end, his check was returned!

Twining was the outstanding candidate of the 1923 DMRE and so impressed Barclay the examiner, who recorded that “the viva became a friendly talk,” that Barclay invited him to Manchester to fill a specially created post in the x-ray department. Those were the days when salaries for radiologic assistants were few and far between, but Barclay found a little money left in a research fund to create a meager living for Twining until his position could be assured by his joining Barclay’s private practice and by his appointment to the honorary staff of the Manchester Royal Infirmary and as lecturer in radiology to the University of Manchester in 1928.

“E.W.” was essentially a logical thinker with a clear, inventive mind and a mechanical ability to carry out his ideas in his own workshop. His

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Fig 1. Edward Wing Twining (1887–1939).

skill with tools was remarkable. "Let's try it out" seems to have been his motto. When others were deterred by the cost of £800 for a tomographic unit, a relatively "new technology" in the mid 1930s, he simply designed and built one at the cost of £1 as an add-on attachment to a standard Potter-Bucky couch (6). This ingenious device enable tomography to be applied widely in many x-ray departments around the country and in many clinical situations, not least in the investigation of cranial and spinal disorders. Twining had a whimsical notion of a "thinkograph." This was to be a machine that typed out in masterly English all one's great sweeping thoughts while lying in the bath. All references to all other papers would be furnished automatically. When this was told to one of Twining's friends, he said, "If such a machine existed E.W. would have made a better one for about two shillings and eight pence!"

Twining wrote many papers, and his versatility was remarkable. An early and important publication in 1931 was on the mechanism of deep tenderness in gastric and duodenal ulceration. Then came his great section on diseases of the chest, which occupied almost an entire volume of the three-volume *Textbook of Radiology* edited by British authors. This contribution was considered by contemporaries to have been the best account of the radiology of the respiratory system ever written up to that time. It became a classic and won for him his mem-

bership of the Royal College of Physicians. There is no doubt, however, that the work in which he took the greatest pride and which made the greatest contribution to medicine was that on the brain and spine, in particular his studies of the cerebral ventricular system. He was awarded a Hunterian professorship of the Royal College of Surgeons on this subject in 1936 and gained international recognition from many authorities, including Erik Lysholm, as a pioneer neuroradiologist. His Hunterian lecture was illustrated with rotating lantern slides, which he made himself, containing mercury within hollow ventricular shapes to simulate the movement of air during pneumoencephalography in the inverted images (Fig 2). These slides, which made such an impression on the audience at the time, were on display again in the historical exhibition of the Röntgen Centenary Congress recently held in the United Kingdom. Many of us who were brought up in the heyday of pneumoencephalography learned to locate the fourth ventricle at the midpoint of "Twining's line" with the mnemonic "tuberculum, torcula, Twining, twice!" Exquisite ventricular models that he cast himself with a mixture of Wood's metal and solder made up in an old aluminium saucepan were the perfect teaching aids to convey complex three-dimensional anatomy and pathology to his students. One model still adorns this author's desk. Much of his work was carried out at a time when he was having recurrent pain and bouts of serious illness in which he regretted only that the periods of enforced idleness held him back from work he wished to pursue.

Twining was the counselor to whom everyone came for help and advice. However much they knew about their special subject, they felt that Twining knew more or could help them to clarify their own views. He had the knack, of which he was quite unaware it is said, of making people think better in his presence. Barclay records that he would go to endless pains to understand the other person's point of view but would never take anything for granted. He had the good fortune during the 1930s to work closely in Manchester with another original thinker of rare quality, Geoffrey Jefferson, who also influenced everyone with whom he came into contact and did so much to create the specialty of neurosurgery. Both were clear-sighted gifted men of genius, each in their own way contributing both individually and in collaboration to the rapidly developing field of neuroscience. Twining's major work on the ventricu-

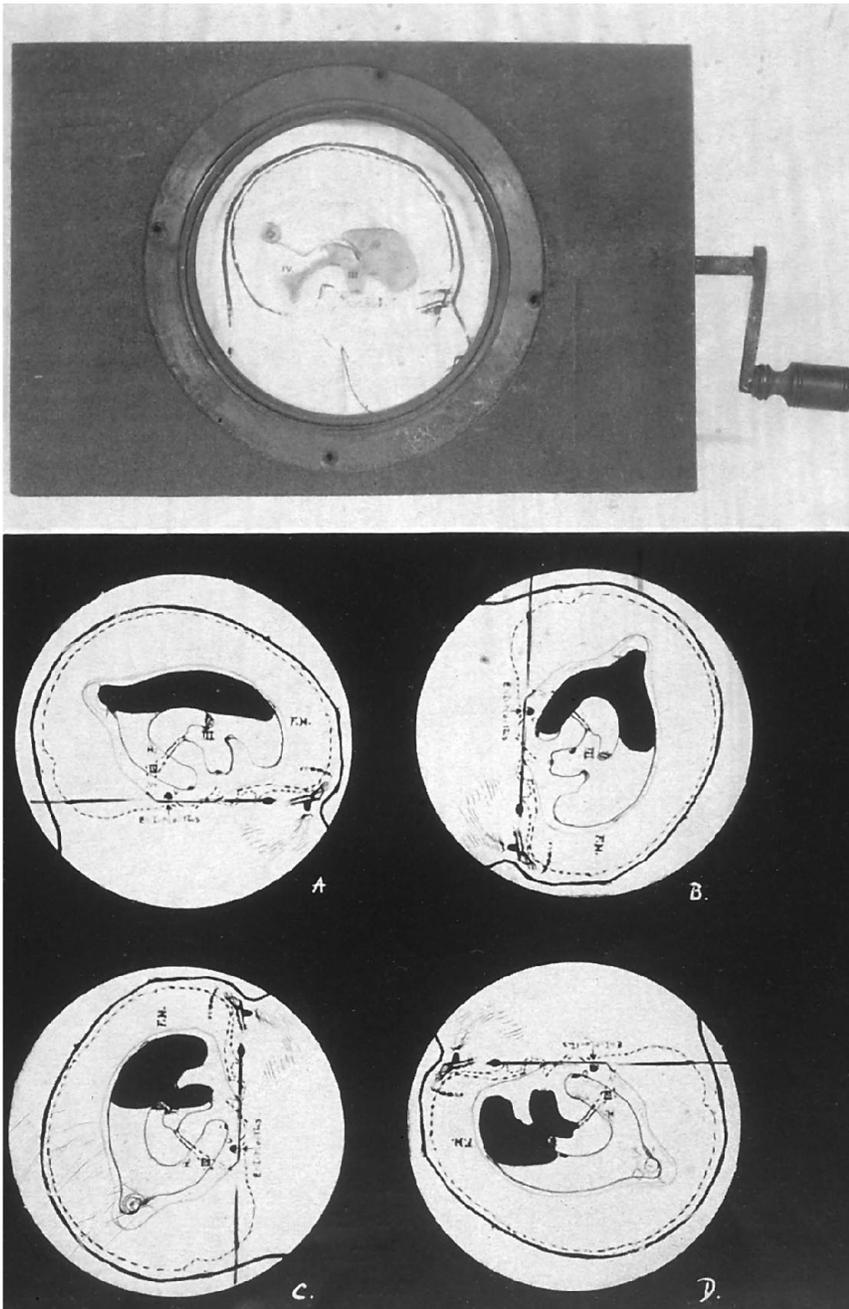


Fig 2. Twining's partially filled mercury slides, which he made to elucidate the problems encountered in displaying the third ventricle during pneumoencephalography. The inverted projection image of the rotating model gave the illusion of air moving within the ventricular system (from Twining [7]).

lar system, "Radiology of the Third and Fourth Ventricles" (7, 8), illustrated with his own beautifully executed drawings, ventricular casts, and slides, was published posthumously in 1939, thanks to the efforts and persistence of Geoffrey Jefferson. This two-part treatise still can be read with profit by neuroradiologists, even today in the era of magnetic resonance.

Shortly before his death, Twining was chosen as president-elect of both the Faculty of Radiologists (later to become the Royal College) and

the Section of Radiology of the Royal Society of Medicine, a fitting climax to a unique career. His name and image are commemorated by the Twining Medal of the Royal College of Radiologists and by the Presidential Medal of the British Society of Neuroradiologists.

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