

Dr Richard Caton (1842 – 1926): Medicine, Education and Civic Affairs in Liverpool

A. H. SYKES*

Research in the mid- nineteenth century into the electrical potentials of nerve and muscle by du Bois-Reymond (1818-1869) and others led to the discovery in 1875 of the intrinsic electrical activity of the brain of animals by Richard Caton (1842-1926). Thereafter the topic lapsed until Hans Berger (1873-1941) cited him in 1929 when reporting the discovery of the alpha waves and the emerging clinical speciality of electroencephalography.¹ This discovery secured Caton's place in the history of physiology but in the ensuing fifty years he contributed notably to the betterment of Liverpool. Obituary notices appeared in the *British Medical Journal (BMJ)*, the *Lancet* and the *Times*, and fuller accounts have been given by Ormerod and by Larnier.²

Life

Caton was born in Bradford on the 26 July 1842, the son of Richard Caton (1809-1852), MD Edinburgh, and Mary Fawcett (1811-1873); he had a younger sister, Sarah (1846-1872). His father gave up practice through ill health and moved to Scarborough where he died. The family returned to Halifax, his mother's former home, and he became a boarder at Scarborough Grammar School. Leaving school at sixteen, he worked in the Halifax and Huddersfield Bank but had to leave owing to ill health. He was treated by Dr. Thomas Call and the experience aroused his interest in medicine. In 1863 he received a small legacy from an aunt which enabled him and his mother to move to Edinburgh where he entered the medical school qualifying MB in 1867, FRCP in 1868, and MD in 1870.

In 1869 they moved to Liverpool, his home for the rest of his life. His mother died at their house in Abercromby Square in 1873. In 1885 he

* Email for correspondence: alansykes@etherway.net

¹P. Gloor, *Hans Berger on the electroencephalogram of man* (Amsterdam, Elsevier, 1969); S. Finger, *Origins of Neuroscience* (Oxford, Oxford University Press, 1994), pp 41-45, 92, 131.

² W. E. Ormerod, 'Richard Caton (1842-1926): pioneer electrophysiologist and cardiologist', *J. Med. Biog.*, 14 (2006), 30-35; A. J. Larnier, 'Some Liverpool contributions to neurology and medicine', *Medical Historian*, 20 (2008-2009), 79-84 [at 80-82].

married Annie Ivory (1855-1912) a solicitor's daughter from Edinburgh; they had two daughters, Anne Rose and Mildred Robina. Anne, her father's companion in later years, remained unmarried; Mildred married H A Ormerod (1886-1964), Professor of Ancient History at Liverpool. Their son, W. E. Ormerod, preserved his grandfather's papers which now form the Caton archive at Liverpool University Library.

During his time in Liverpool, Caton lived at a number of addresses after Abercromby Square: Livingstone Drive Sefton Park, Balmoral Road Fairfield, Lea Hall Gateacre (the last tenant of the Hall in 1911 before its demolition), and finally Sunnyside Princes Park before he left for Surrey. For his practice he had consulting rooms at 36 and 78 Rodney Street. Caton died in Haslemere on the 2 January 1926 where, with increasing sciatica, he had gone to escape the more rigorous climate of the north. He was buried at All Saints Church, Childwall, Liverpool, on the 6 January 1926 with a gravestone which commemorates both him and his wife. A memorial service was conducted by Canon George Howson (1854-1943); the service sheet is in the Caton Archive but, unfortunately, it does not include the personal address.

In his Will Caton appointed his daughter Anne and his son-in-law Henry Ormerod as executors. His two daughters were the main beneficiaries but he made provision for possible grandchildren. Spanning the centuries, he left horses, carriages and saddlery from the nineteenth and motor cars from the twentieth. His portrait bust by C. J. Allen was left to the Liverpool School of Tropical Medicine and his portrait by R. E. Morrison to the University Art Collection. He left his valuable collection of books and manuscripts to the University but a bequest of £500 to found a scholarship in classical archaeology or medicine was revoked by codicil without any explanation.

A portrait by G. Chowne hangs in the Liverpool Medical Institution and a photograph of him as Lord Mayor in ceremonial dress is held by the Liverpool Record Office.

Medical career

Caton's first appointment, in 1869, was Assistant Medical Officer at the Royal Liverpool Infirmary for Sick Children and also Demonstrator in Comparative Anatomy at the Royal Infirmary School of Medicine, which at that time offered London degrees. He became a part-time Demonstrator in Physiology in 1871, his first connection with the subject, and he continued in office as part-time Professor of Physiology from 1882 to 1891. A new

physiology laboratory was opened in 1873 by John Torr, a Member of Parliament for Liverpool. Caton had been involved as a member of the building and finance committees and in his Introductory Address to students that year he reported that “no school in the country is more fully equipped for the work of medical teaching in all its scientific and practical departments”.³

University College Liverpool was established by Royal Charter in 1881 as a result of the exertions of public spirited men, including Caton, who, at a Town meeting in May 1878, lamented the fact that such an important city as Liverpool had no system of higher education. An appeal for funds in 1887 (£50 from Caton) made it possible to erect the Victoria Building in 1892 on the site of the former lunatic asylum on Brownlow Hill, made available by the City Council. The Royal Infirmary School of Medicine did not at first merge with the College but in 1884 University College was affiliated to the Victoria University which included Owens College, Manchester and the Yorkshire College, Leeds, with powers to award degrees in medicine. Caton was on the Court of Governors from the start. He and others lobbied hard for an independent University of Liverpool which was achieved in 1903.^{4,5} Manchester and Leeds followed in 1904.

When George Holt, the shipping line owner, endowed the Chair of Physiology at University College Liverpool in 1891 as a full-time appointment, Caton resigned in favour of Francis Gotch (1853-1913) who was succeeded in 1895 by C.S. Sherrington (1857-1952) whose eighteen-year tenure added greatly to the distinction in physiology held by Liverpool. In 1898 Lord Lister opened the new Department of Physiology laboratory provided through the generosity of the Reverend S. A. Thompson Yates (1842-1903) and named after him. Throughout this period Caton held clinical posts at Liverpool Royal Northern Hospital, from 1877, and at Liverpool Royal Infirmary from 1886. He maintained a strong interest in the University throughout his life, serving as Dean of the Medical Faculty, Chairman of the College Council, and representing the University on the General Medical Council from 1904 until his death. He was Vice-Chairman of the Liverpool School of Tropical Medicine from its foundation in 1899. In 1908, to mark his term of office as Lord Mayor of Liverpool, he presented

³ R. Caton, *Introductory Address at the Liverpool Royal Infirmary School of Medicine, October 1st 1873* (Liverpool Medical Institution, pamphlet).

⁴ R. Caton, ‘The Making of the University 1, The Darkness and the Dawn’, *Liverpool, Sphinx*, 14 (1907), 273-352.

⁵ T. Kelly, *For Advancement of Learning. The University of Liverpool 1881-1981* (Liverpool, University Press, 1981).

the University with a mace for ceremonial occasions. He was awarded an honorary LL.D degree from Edinburgh in 1908, from Liverpool in 1909 and from Padua in 1922 where, perhaps in recognition of his classical scholarship, he represented Liverpool at the 700th anniversary of the foundation of the University. His last honour was to be elected Pro-Chancellor of Liverpool University from 1921-1924. A committed Anglican, he served on the York House of Laymen and on the building committee for the new Anglican cathedral in Liverpool. The first stone was laid in 1904 and by 1926 the altar, chancel and transepts were in place but he did not live to see it completed (in 1978).

Research

Caton's first scientific papers date from his 1870 MD Thesis on cell migration, a study of the movement of blood cells across the capillary wall, first observed by Waller in 1846⁶ and termed diapedesis. Caton gave a summary of his findings to the British Association which was meeting in Liverpool that year⁷ and a fuller account appeared later.⁸ In this lengthy paper Caton made accurate drawings of blood capillaries showing white and red corpuscles outside the vessel walls.

As a teacher of physiology, he wrote a number of minor papers during the next fifteen years, many of them in the *Journal of Anatomy and Physiology*. The subjects included a new kymograph for class work, visualising transparent tissues, a warm stage for microscopes and cell migration theory but he made no important discovery until his work on the electrical activity of the brain.

The medical profession in Liverpool had advanced from the status of surgeon/apothecaries and dispensers to holders of diplomas or degrees from the universities and the Royal Colleges. Practitioners appreciated the need to keep up to date with the latest discoveries but textbooks were expensive and so they shared the costs between them where possible. This led to the founding in 1779 of the Liverpool Medical Library. Informal discussion among doctors about their cases was put on a more formal basis with the founding of the Liverpool Medical Society in 1833. In 1839 these two organisations came together to found the Liverpool Medical Institution with

⁶ A. V. Waller, 'Microscopic observations on the perforation of the capillaries by the corpuscles of the blood,' *Philosophical Magazine*, 29 (1846), 397- 405.

⁷ R. Caton, *Contribution to migration theory* (Liverpool, British Association, 1870).

⁸ R. Caton, 'Contributions to the cell-migration theory', *Journal of Anatomy and Physiology*, 5 (1870), 35-47.

its library and lecture rooms in a new building on Mount Pleasant.⁹ Caton was elected President of the Institution in 1896 and there was a special meeting on the 27 February 1919 to celebrate the jubilee year of his membership.¹⁰

In January 1875 Caton, then Professor of Physiology at the School of Medicine, gave a demonstration to the Liverpool Medical Society on the electrical relations of frog nerve and muscle.¹¹ He used a Thomson reflecting galvanometer projected on to a large screen by means of an oxyhydrogen lamp, an induction-coil stimulator and du Bois non-polarisable recording electrodes. The resting muscle currents diminished when the motor nerve was stimulated. Similarly, the heart showed a strong current during diastole which was reduced during systole.

He did not mention the existence of cerebral potentials so presumably he had not completed his work under the grant from the British Medical Association (BMA) which he had been awarded in 1874. His letter of application for this grant and the BMA response have not survived so it is not clear whether the BMA specifically asked for an investigation of the brain or left it to Caton to decide how to use the grant. He commenced work later that year or early in 1875 and soon after he wrote to Burdon Sanderson (1828-1905), then Professor of Practical Physiology at University College London and Vice-President of the Royal Society, about giving a paper to that Society. The Physiological Society, now the obvious place for publication, was not founded until 1876. Sanderson supported the idea and in his reply of the 5 May 1875¹² he suggested that Caton should inform Hart (1835-1898), editor of the *BMJ*, of the forthcoming meeting and acknowledge the BMA grant that he had received. In the event Caton did not speak at the Royal Society but gave a communication to the BMA at its Edinburgh meeting on 4 August 1875 which was published in the *BMJ* on the 28 August. Although he was a professor of physiology until 1891 he never made any further scientific discoveries which would have made him a candidate for Fellowship of the Royal Society.

⁹ J. A. Shepherd, *A History of the Liverpool Medical Institution* (Liverpool Medical Institution, 1979).

¹⁰ Liverpool Medical Institution, 'Jubilee Membership of Dr. Richard Caton', *Br. Med. J.*, I (1919), 290.

¹¹ 'Abstracts of the Proceedings of the Liverpool Medical Society', *Liverpool and Manchester Medical and Surgical Reports*, 4 (1876), 274-5.

¹² W. E. Ormerod, 'Richard Caton (1842-1926): pioneer electrophysiologist and cardiologist', *J. Med. Biog.*, 14 (2006), 30-35

Caton stated that the aim of his investigation was to determine if there were sensory inputs to those parts of the brain which Ferrier identified as having discreet motor functions. For example, stimulation of the masticatory area resulted in mastication; conversely, Caton speculated, when normal mastication took place, could a sensory input be detected at that site? In the summary of his paper to the BMA¹³, he wrote:

After a brief resumé of previous investigations, the author gave an account of his own experiments on the brains of the rabbit and the monkey. The following is a brief summary of the principal results. In every brain hitherto examined the galvanometer has indicated the existence of electric currents. The external surface of the grey matter is usually positive in relation to the surface of a section through it. Feeble currents of varying direction pass through the multiplier when the electrodes are placed on two points of the external surface or one electrode on the grey matter and one on the surface of the skull. When any part of the grey matter is in a state of functional activity, its electric current usually exhibits negative variation. For example, on the area shown by Dr. Ferrier to be related to rotation of the head and to mastication, negative variation of the current was observed to occur when ever these two acts respectively were performed. Impressions through the senses were found to influence the currents of certain areas; e.g., the currents of that part of the rabbits brain which Dr. Ferrier has shown to be related to movements of the eyelids, were found to be markedly influenced by stimulation of the opposite retina by light.

This is the original statement of the discovery of the electrical activity of the brain; a landmark in the history of physiology.

The work of Ferrier (1843-1928), to which Caton referred, was probably Report no. 3 of the West Riding Pauper Lunatic Asylum, Wakefield,¹⁴ where Crichton-Browne (1840-1938), the Superintendent, had a laboratory for experiments on animals. The Report was published in 1874, earlier enough for Caton to have read before commencing his own experiments; Ferrier's classic book, *The Functions of the Brain*, was not published until 1876 but the two knew each other from their Edinburgh days and may have been in personal communication. By direct stimulation of the

¹³ R. Caton, 'The Electric Currents of the Brain', *Br. Med. J.*, ii (1875), 278.

¹⁴ D. Ferrier, 'Experimental researches in physiology and pathology', *West Riding Lunatic Asylum Medical Reports*, 3 (1873), 30-93.

exposed cerebral cortex of dogs and monkeys, Ferrier showed that certain functions, e.g. movement of the limbs, mastication, dilatation of the pupil, could be localised in specific areas of the brain and abolished by lesions.

In a supplement to the *BMJ*, which was not published until 1877,¹⁵ Caton provided the only full account of his work, which occupied a single page. He worked mainly on rabbits and on a few cats and monkeys, about forty animals in total, but he obtained clear-cut results in only half of them. Under ether anaesthesia, the skull was opened and non-polarisable clay electrodes were screw-clamped onto the bone and on different sites of the brain so that they were not affected by movements of the animal. On recovery from the ether the animals were free to feed and move about on a table. Currents were observed with a Thomson galvanometer but no numerical values were provided; Caton's results were only descriptive. Different sites were selected by reference to Ferrier's work on the responses to electrical stimulation. The strength of the currents varied; sometimes it was necessary to use a shunt. The currents were reduced during sleep or anaesthesia and abolished by death. Changes occurred in relation to specific functions such as head rotation, mastication, touching the skin, odours, and bright light but only in a proportion of the experiments; swelling, haemorrhage and congestion of the brain were put forward to explain failures. He concluded, prophetically:

The investigation thus far tends to indicate that the electrical currents of the grey matter have a relation to its function similar to that known to exist in peripheral nerves, and that a study of these currents may prove a means of throwing further light on the function of the hemispheres.

Caton returned to the subject in 1887¹⁶ at the 9th International Medical Congress in Washington DC, USA, but his paper, although providing more detail, was not the result of any further work and it attracted little attention.

Confirmation of the electrical activity of the brain came in 1890 from three laboratories in Europe: Beck in Crakow, von Markov in Vienna, and Danilevski in Kharkov.¹⁷ None of these authors was aware of Caton who felt

¹⁵ R. Caton, 'Interim Report on Investigation of the Electric Currents of the Brain', *Br. Med. J.*, Suppl 1 (1887), 62.

¹⁶ R. Caton, 'Researches on electrical phenomena of cerebral gray matter', *Transactions of the 9th International Medical Congress*, 3 (1887), 246-49.

¹⁷ *Op.cit.* ref.. 12.

the need to assert his priority which he did in a letter in German to a European journal,¹⁸ translated by Brazier:¹⁹

In the year 1875 I gave a presentation before the Physiological Section of the British Medical Association in which electrical currents of the brain in warm-blooded animals were demonstrated and, in addition, their undoubted relationship with regard to function was established. May I be permitted to draw your attention to the following publication (*Brit. Med. J.*, 1875, 2, 278). In the transactions of the 9th Medical Congress in Washington there is yet another published communication (Vol. 3, 246) under the title “Researches on the electrical phenomena of cerebral gray matter.”

It is by no means my intention to detract from these learned physiologists, nevertheless I have made these observations as described above, I have published them, so I think it must be conceded that I am already an earlier discoverer.

Ormerod later suggested that Caton tried to conceal his work on the brain. He did not refer to it in his later writing and he did no further experiments on animals during his lectureship in physiology. In 1875 he held a clinical appointment and there is no reason why he should keep his laboratory notebooks on what, for him, was a peripheral interest. The subject is not found in his extensive archive held at Liverpool but this does not amount to deliberate concealment. Caton’s priority as the first to record the electrical activity of the brain is now recognised by many later authorities (e.g. Brazier, Cohen,^{20,21} Schoenberg,²² Spillane²³). The clinical importance of Berger’s work was not appreciated until after it was confirmed by Adrian and Matthews.²⁴

¹⁸ R. Caton, ‘Die Strome der Centralnervensystems’, *Centralblatte der Physiologie*, 4 (1890-1891), 785-86.

¹⁹ M. A. B. Brazier, *A History of Neurophysiology in the 19th Century* (New York, Raven Press, 1988), p. 207.

²⁰ Lord Cohen of Birkenhead, ‘Richard Caton (1842-1926) Pioneer Electrophysiologist’, *Proc. R. Soc. Med.*, 52 (1959), 645-50.

²¹ Lord Cohen of Birkenhead, ‘The Liverpool Medical School and its Physicians (1642-1934)’, *Med. Hist.*, 16 (1972), 310-320.

²² B. S. Schoenberg, ‘Richard Caton and the Electrical Activity of the Brain’, *Mayo Clin. Proc.*, 49 (1974), 474-81.

²³ J.D. Spillane, ‘A Memorable Decade in the History of Neurology 1874-84’, *Br. Med. J.*, 2 (1974), 757-59.

²⁴ E. D. Adrian, B. H. C. Matthews, ‘The interpretation of potential waves in the cortex’, *J. Physiol.*, 81 (1934), 440-71.

Caton was a founder-member of the Physiological Society on the 31 March 1876 at Burdon Sanderson's house in London. The members met for dinner on 26 May at the Criterion restaurant in London and all present, including Caton, signed the minutes of the meeting, reproduced in Schafer's history of the Society.²⁵ In the following years Caton attended a number of meetings in London, Oxford and Cambridge but he gave only one paper to the Society, at Oxford on 17 March 1888.²⁶ No abstract was provided but he referred to it in a later paper.²⁷ He showed that stimulation of the thoracic skin produced changes in the calibre of the arterioles of the lung. He gave no information about his methods or which animals he used and he saw no therapeutic value in the work other than demonstrating that external stimuli can affect visceral function; for example when a dash of cold water can promote breathing in a new-born child.

As a physiologist, Caton attracted the opprobrium of the anti-vivisection movement, one of whom, the Reverend T. A. Howard of Liverpool, issued a pamphlet²⁸ in reply to a letter Caton had written to the chairman of an anti-vivisection meeting in 1897 defending experiments on animals. Caton had pointed out that most procedures were nothing more than simple injections, otherwise anaesthetics were used, but sometimes an animal sacrifice was essential if medicine was to advance. Howard made a line-by-line refutation of every point on the grounds that the ends do not justify the means but by that time Caton was a clinician and held only the title of emeritus professor of physiology. Since the Cruelty to Animals Act did not come into force until 1876 he would not have needed to hold a licence for his work on cerebral potentials and he was not involved with experiments on animals after that date.

Other interests

In the following years, Caton wrote a number of clinical papers for the *BMJ* but he did not establish himself as a specialist in any one field; the papers arose from observations during his practice: intestinal antisepsis,

²⁵ E. S. Schafer, *History of the Physiological Society during its First Fifty Years 1876-1926* (Cambridge, Cambridge University Press, 1927).

²⁶ 'A communication was also made by Dr. Caton on the transmission of impulses from the nerves of the skin to the organs of the thorax and abdomen', *J. Physiol.*, 11 (1888), Proceedings of the Physiological Society 10.

²⁷ R. Caton, 'On the prevention of valvular heart disease', *Edinburgh Medical Journal*, 5 (1899), 329-33.

²⁸ T. A. Howard, *Vivisection – a reply to Dr Caton* (Liverpool, Howell, 1897).

acromegaly, and rheumatic endocarditis were some of the topics. In a paper on cardiac dilatation and hypertrophy²⁹ he refers to his own experience climbing the Grossvenediger, Austria's fourth highest mountain, when the altitude and the snow made great demands upon his circulation. In 1885 he was elected to the Clinical Society of London and gave three papers in the following years,^{30,31,32} and he also wrote his only book³³ in which he argued that rheumatic heart disease was best treated by prolonged bed rest with the patient's cooperation obtained, if necessary, by various mild procedures or placebos.

Caton was involved with a number of cultural organisations. He was President of the Royal Infirmary School of Medicine Debating Society in 1874, President of the prestigious Liverpool Athenaeum Club and a member of the Philalethians,³⁴ lovers of the truth, a discussion group named after the 17th century alchemist Eirinaeus Philalethes. There were only fifteen members who met in each others homes for dinner and to discuss topics of pressing human interest. There were only two rules: no one to be shocked by anything that was said and nothing was to be disclosed to outsiders. The club was founded in 1888 and lasted until 1922. Caton was President in 1900 and other members included Sir Oliver Lodge, Professor Raleigh, and the Bishop of Truro. A record of some of the meetings between 1901 and 1922 shows the wide range of subjects: asceticism, incunabula and printing, the problem of the slums, and medicine in ancient Greece and Egypt. The latter reflects Caton's scholarly interest in the origins of modern medicine in Egypt, Greece and Rome, perhaps encouraged by his son-in-law Henry Ormerod, a classical scholar. In 1898 he wrote a new description of a model of ancient Rome that had been constructed about 1850 by G. D. Brunetti and later reconstructed by the curator of the Walker Art Gallery in Liverpool with Caton's advice and illustrated by his photographs.³⁵ He wrote notes on the existing sites and those which he recreated. There were 230 of them

²⁹ R. Caton, 'Cardiac dilatation and hypertrophy', *Practitioner*, (1902), 1-8.

³⁰ R. Caton, 'A case of aneurism of the hepatic artery', *Trans. Clin. Soc. London*, 19 (1886), 275-78.

³¹ R. Caton, '133 Cases of Narcolepsy', *Trans. Clin. Soc. London*, 22 (1889), 133-37.

³² R. Caton, 'On the Prevention of Vascular Disease', *Trans. Clin. Soc. London*, 33 (1900), 127-29.

³³ R. Caton, *The Prevention of Valvular Disease of the Heart* (Liverpool, Liverpool University Press, 1900).

³⁴ T. W. M. Lund, 'The Philaethian Brotherhood', in W. T. Pike, *Liverpool and Birkenhead in the 20th Century* (Brighton, W. T. Pike & Co., 1911).

³⁵ R. Caton, *Description of the model of the central part of ancient Rome as it existed at the close of the reign of the Emperor Constantine, about A. D. 335; exhibited at the Walker Art Gallery* (Liverpool Museums, 1899).

including the Forum, the Palatine, the Circus Maximus, the Colosseum and many others.

His first lectures on the classics were given at the Royal Institution, London, in 1898.³⁶ He reviewed the excavations carried out by European and American archaeologists who deciphered the inscriptions and restored many buildings including the temple of Asklepios at Epidaurus. In his second lecture he described the buildings of the hospital and the treatment of patients. In 1904, the first of his two Harveian lectures to the Royal College of Physicians of London was on early Egyptian medicine³⁷ illustrated with his photograph of an ancient bronze statue of I-EM-HOTEP, the god of medicine, whose name translated as “he who cometh in peace.”

In April 1911 Caton joined, as guest lecturer, one of the first Hellenic cruises in the Mediterranean organised by Henry Lunn MD (1859-1939). He spoke about three sites of medical interest: Delphi (sacred to Apollo), Delos (the birthplace of Apollo), and Cos (the shrine of Aesculapius, the god of medicine, and Hippocrates, the father of modern medicine). The texts of these lectures were published later.³⁸

In 1913, at the 17th International Medical Congress in London, Caton gave a paper on “The temples, hospital and medical school at Cos”³⁹ in which he described the recent excavations which had revealed the sites of baths fed by earthenware pipes from the spring of Hippocrates, operating rooms, a library, a dispensary, and, on the highest terrace, the temple of Asklepios. In 1914 he gave two lectures at the Royal Society of Medicine: the first on the health temples of ancient Greece and the work carried out in them and the second, with W H Buckler, on medical and surgical instruments found at Kolophon in Ionia.⁴⁰ Forceps, knives, elevators, cupping vessels and many others were identified on the site. He became a member of the Hellenic Society and chairman of the Liverpool Classical Association.

Although he was not a working archaeologist, undertaking excavations or interpreting classical manuscripts, he was thoroughly conversant with work that had a bearing on the history of medicine. He

³⁶ R. Caton, ‘The temples and rituals of Asklepios at Epidaurus and Athens’, *Br. Med. J.*, i (1898), 1509-13; 1572-75.

³⁷ R. Caton, ‘I-EM-HOTEP, the Egyptian God of Medicine’, *Br. Med. J.*, i (1904), 1473-77.

³⁸ H. S. Lunn, *Aegean Civilization* (London, Epworth Press, 1925).

³⁹ R. Caton, ‘The Temples, Hospital and Medical School of Cos’, *Lancet*, ii (1913), 812.

⁴⁰ R. Caton, ‘Health Temples in Ancient Greece and the Work Carried out in them’, *Proc. R. Soc. Med.*, 7 (1914), 57-60; 235-42; R. Caton, ‘Notes on a group of medical and surgical instruments found near Kolophon in Ionia’, *J. Hellenic Studies*, 34 (1914), 114-18.

would have enjoyed the great collection of medical artefacts assembled by Henry Wellcome (1853-1936) but the museum was not opened until 1932.

Civic affairs

On reaching age 60 in 1902, Caton retired from his post at the Royal Infirmary and devoted himself to civic affairs. He would see the creation of the now iconic pierhead panorama: the Port of Liverpool Building (1907), the Royal Liver Building (1911) and the Cunard Building (1916). He was appointed a magistrate and was elected as a Conservative councillor for the Dingle ward. He was chairman of the housing committee,⁴¹ which worked to alleviate the slum conditions of many dock workers and immigrant Irish,⁴² and deputy chairman of the education committee where he promoted the study of science in schools.⁴³ He believed that physiology had a role in everyday life and this was the theme of his inaugural address to medical students in 1873.⁴⁴ He made a plea for greater Government support for physiology which would be more in the national interest than investigations into the best methods of casting of guns, the speed of projectiles or the penetration of shot. It was a subject to which he returned in a booklet for schools on the principles of health and hygiene.⁴⁵ He pointed out the eight requirements of the body (air, water, food, light, exercise, sleep, cleanliness and clothing) and the need to protect against fire, infections, damage to eyes and the danger of tobacco.

His work as a councillor culminated in his being elected Lord Mayor of Liverpool in 1907. As a token of his year in office, Caton presented a ceremonial mace to the University which was carried before Lord Derby on his installation as Chancellor in 1909, but surprisingly little remains on record in the city archives of Caton's term of office. He was concerned about poverty among the unemployed and he authorised a payment of £200 from Town Hall funds to alleviate distress. The Director of the fund, H. L. F. Jones, complained to Caton in 1908 that some men were claiming benefit which might be better spent by their wives, i.e. not on beer.⁴⁶

⁴¹ 'Liverpool. New Chairman of the Housing Committee', *Br. Med. J.*, ii (1906), 1836.

⁴² R. Caton, 'Liverpool Housing, 1907', *Br. Med. J.*, ii (1907), 2434.

⁴³ R. Caton, 'Teaching in secondary schools', *Br. Med. J.*, i (1912), 1455-56.

⁴⁴ R. Caton, 'Physiology in relation to the Health of the Community', Liverpool Medical Institution, Pamphlet, 1873.

⁴⁵ R. Caton, *How to live. A simple manual of hygiene for older pupils in primary school* (London, Williams & Norgate, 1905).

⁴⁶ Liverpool Record Office, M364LWD/36/30 and 31



At the end of his year in office as Lord Mayor, as a mark of their appreciation of his services to the City and the University, the City Council commissioned the marble bust of Caton, now at the School of Tropical Medicine. It was unveiled at the Town Hall on 6 November 1908 “amid loud applause”.⁴⁷

His continued support for the University was recalled by Pares who wrote: “In 1907 the Liverpool School of Russian Studies was founded in the Town Hall by Dr. Richard Caton, one of the most beloved professors in the University”.⁴⁸ Pares, a distinguished historian, occupied the Chair from 1908 to 1917.

⁴⁷ ‘Interesting presentation to Dr. Richard Caton’, *Lancet*, ii (1908), 1460-61.

⁴⁸ B. Pares, *My Russian Memories* (London, Cape, 1931).



Caton's experience in local government led him to write a paper for an American journal on "Municipalities and Infant Life".⁴⁹ He described the activities of the Health Committee and the Medical Officer of Health in Liverpool in the welfare of the infant and mother. Most births took place at home under the supervision of a midwife certified under the 1902 Act. Compulsory registration of the birth within 36 hours was followed by a visit from a female Sanitary Inspector who advised on infant feeding. If breast milk was deficient a substitute, tuberculin tested, was provided by the City. Public health measures such as providing dust bins, the inspection and fumigation of rooms, demolition of insanitary dwellings, building new houses to be let at affordable rents, a pure water supply and the provision of playgrounds had led to a reduction in infant mortality from diphtheria,

⁴⁹ R. Caton, 'Municipalities and Infant Life', *Pediatrics*, 26 (1914), 75-81.

smallpox, scarlet fever, whooping cough and measles. As a result of these municipal actions the death rate of infants had fallen from 230 per thousand births to 125, but that rate was still too high

Caton had been involved with public health as early as 1872 when he and a few others rented a house in Netherfield Road for use as a fever hospital for non-paupers, men with sufficient means who did not qualify for accommodation by the Sanitary Authority which recognised only the destitute. The City Council recognised the need and granted this hospital a subsidy of £250 a year and in 1888 took over and extended it.⁵⁰

During the war of 1914-1918 Caton was an honorary colonel in the R.A.M.C. and chairman of the nursing services committee of the British Red Cross in the North West, for which he received the decoration of the CBE bestowed on him by King George Vth at Buckingham Palace on 2 November 1920.

Caton enjoyed foreign travel. In June 1880 he and some friends, including George Holt, visited Iceland, the Faroe Islands and Norway and an account of their five week journey appeared as “A Narrative of the Voyage of the Argonauts”.⁵¹ Sailing from Liverpool on a chartered ship, they travelled via Stornaway to Iceland where, after exploring Reykjavik, they rode on the native ponies to see the geysers. They sailed through the Faroe Islands to the Shetlands and then across to Norway where they travelled north from Bergen to view the fjords before crossing the North Sea to the Pentland Firth and down the west coast back to Liverpool.

International medical meetings gave him the opportunity to see more of the host country and he wrote accounts of his visits to the USA for the 9th International Medical Congress in 1887 and to Russia for the 12th International Medical Congress in 1896. He writes with style, humour and a lively appreciation of different cultures; both are well worth reading in full. The 9th Congress was held in Washington, Caton was one of the delegates from the Liverpool Medical Institution and on his return he gave a lecture about his experiences.⁵² His route was from Quebec via Niagara, the Catskill mountains, Boston and New York to Washington. He visited the Johns Hopkins Medical School and Hospital, which had highly qualified

⁵⁰ T. H. Bickerton, *Medical History of Liverpool from the Earliest Days to the Year 1920* (Liverpool, Liverpool University Press, 1936).

⁵¹ The Bard, *A Narrative of the Voyage of the Argonauts compiled by the Bard from the most authentic records and illustrated by the photographs of Richard Caton* (Edinburgh, 1881). The Bard was William Mitchell Banks (1842-1904), surgeon at the Royal Infirmary and Professor of Anatomy at University College Liverpool.

⁵²R. Caton, ‘The Ninth International Medical Congress’, *Liverpool Med. Chirur. J.*, 14 (1888), 64-78.

doctors whom he compared with many of the homespun practitioners from the country who obtained a medical qualification in only two years. He was reminded of Ephraim McDowell (1771-1830), also a country surgeon, who performed the first successful ovariectomy in 1809. Owing to a shortage of suitable lecture rooms some of the talks were given in a variety of halls and churches. He comments: "It would have amazed a devout member of the Tenth Street Congregational Church, host to the Syphilography section, to hear from the pulpit doctrines to which he was unaccustomed and have beheld drawings and diagrams which were far from ecclesiastical". Caton and his companion, Dr. Thomas Chavasse (1854-1913) from Birmingham, often played truant from the formal sessions and explored the sights of the city.

From Washington they went to Saratoga Springs, a spa with twenty-eight mineral springs dispensing a range of medicinal waters. Having read Fenimore Cooper's *The Last of the Mohicans* (1826) they thought they would risk their lives among the bloodthirsty Iroquois on an Indian reserve where they met a squaw wearing Manchester cotton, speaking excellent English and living in a house not a tepee. Her husband was in business and both were devout Wesleyan Methodists. "Not a trace of war paint, no tomahawk and not a scalp in the place." Much had changed since Cooper wrote his classic book.

The 12th Congress in Moscow was the subject of a lecture at the Liverpool Medical Institution in August 1897.⁵³ There was, he said, little of medical interest; for him it was a holiday and a rest despite being one of eight British Vice-Presidents. He spent time walking in the Harz mountains and the North German cities and paid visits to Torun, home of Copernicus, and Warsaw before taking the three day journey by train to Moscow retracing, as he observed, Napoleon's ill-fated route. The opening ceremony was held in the Grand Opera House with a thousand delegates in evening dress patiently listening to tedious welcoming addresses. He was entranced by the architecture of the Kremlin: "How can we talk of tuberculosis and malaria in the presence of all this? Give physic to the dogs – I'll none of it until my holiday is done". In this spirit he explored the city and its surroundings. He found the country people devout, attending churches and monasteries as they did in medieval times which contrasted with the modern Clinical Hospital complex with its range of specialised departments. At the close of the Congress many of the delegates went by train to St. Petersburg

⁵³ R. Caton, 'Russia and the Twelfth International Medical Congress', *Liverpool Med. Chirurg. J.*, 18 (1898), 119-30.

where they visited the Hermitage, the Winter Palace and other sights. He found the Russians of all ranks to be a kind and courteous people.

Conclusion

Richard Caton served Liverpool all his life: in medicine, education, civic affairs and culture. In the words on his gravestone “He was a man greatly loved”.