

History of the British Cardiovascular Society

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ABSTRACT

In 2022, the British Cardiovascular Society celebrates the centenary of its foundation. Starting out as a small group of government-appointed physicians interested in heart disease, the Cardiac Club has grown and adapted to represent all those working in cardiovascular care and research. The historical stages of the organisation's development are outlined, alongside major innovations in science and technology providing context for a rapidly changing medical world. Only a small part of the history of cardiology in Britain is told, with greater emphasis on describing the broader need for services, skilled workforce, healthcare policy and continuing education. Above all, the history of the British Cardiovascular Society is a story of people and places. The people are those with vision, attitude and leadership to improve the care of communities across the world. The places are those that enabled conversation, innovation and freedom to bring about change. It is hard to believe the remarkable progress in diagnosis, prevention and treatment of heart disease over 100 years, but a thriving modern Society must be the greatest legacy of its founders.

INTRODUCTION

Modern cardiovascular medicine in Britain developed from an illustrious past. The groundwork was laid in 1628 by William Harvey's contribution to our understanding of the heart and circulation. Knowledge of anatomy and physiology led to achievements like blood pressure measurement by Stephen Hales (1778), description of angina by William Heberden (1772) and scientific study of digitalis by William Withering (1785). Huge advances in medicine and science followed in the 18th and 19th centuries; at the same time, Britain was dealing with a rising population and immense social change brought about by the Industrial Revolution.

THE MACKENZIE LEWIS ERA AND THE RISE OF SPECIALISATION

James Mackenzie inspired a generation of British cardiologists. The son of a Scottish farmer, Mackenzie worked most of his life as a busy general practitioner in Lancashire. He carefully observed the pulse of women in labour, while waiting by their bedside, and was wise to realise that he needed to record the simultaneous activity of the atria and ventricles to properly analyse the heart's rhythm. Mackenzie adapted the existing arterial pulse recorder of Dudgeon with help from a local watchmaker to also record the venous pulse ([figure 1](#)). His famous book on the pulse was published in 1902, before he devoted himself to research by an unconventional appointment to staff at the London Hospital¹. 'This uncouth Highlander was both in appearance and manner the antithesis of the fashionable Harley Street consultant—but this in itself

may have appealed'.² Mackenzie's work attracted a community of physicians interested in heart disease including John Hay, Liverpool, William Ritchie, Edinburgh and Joseph Emanuel, Birmingham who were early adopters of the clinical polygraph and published numerous papers on arrhythmias. Most important of all was Mackenzie's support to Thomas Lewis, a Welshman and graduate of University College Hospital London. Lewis used the ECG to characterise cardiac arrhythmias, taking Mackenzie's work to the next level. Age 29, Lewis published *The Mechanism of the Heart Beat*, which became known as the bible of electrophysiology.^{3 4}

The Mackenzie Lewis era marked a transition from appreciating anatomy and pathology of the heart to gaining a detailed understanding of physiology in relation to symptoms.⁵ Cardiac departments and specialist institutions such as the National Heart Hospital rose in status.⁶ Dedicated journals were needed to share knowledge and the first issue of *Heart*, edited by Lewis, was published on 1 July 1909. There was, of course, opposition from a few who were sceptical about new instruments threatening the diagnostic tradition of feeling the pulse.⁷

Around 1910, Mackenzie suggested physicians interested in heart disease should form a small club, but this was put on hold as the First World War broke out. During those years, thousands of cases of 'Soldiers Heart' needed specialist evaluation and a dedicated Military Heart Hospital was set up in Hampstead—William Osler, Clifford Allbutt and Mackenzie took charge.⁸

THE CARDIAC CLUB

After the war, the government appointed consultants in all regions of Britain to give advice about people with war-related cardiac problems. These consultants, many of them associates of Mackenzie, held a conference in 1921. William Hume of Newcastle and John Cowan of Glasgow suggested they reconvene the following year to discuss cardiography at the Association of Physicians meeting.⁹ The first meeting of the Cardiac Club was held in Oxford on Saturday, 22 April 1922.¹⁰ There were 15 original members and Mackenzie was an honorary member ([figure 2](#)).¹¹

"The Society shall be called the 'the Cardiac Club'. Its objects shall be the advancement of cardiology, and the promotion of friendship among those interested in the diseases of the heart."

Its founding principle was to enhance knowledge and unite physicians across the country to support the Ministry of Pensions. Club business was private and conducted by an executive of four members elected at the annual meeting ([figure 3](#)). The first secretary was Cowan who was joined by Hume,



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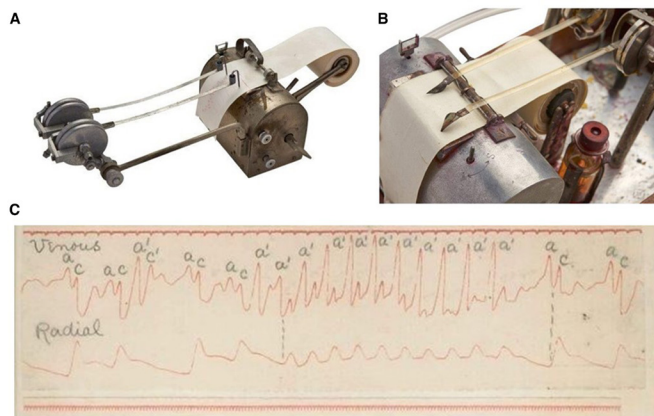


Figure 1 (A) The Mackenzie Lewis polygraph, 1914. (B) Simultaneous jugular venous and radial arterial tracings could be used to analyse arrhythmia. (C) Paroxysmal nodal tachycardia recorded by Thomas Lewis in 1909—note the giant a waves. This instrument belonged to Professor JG Emanuel, a founding member of the Cardiac Club; donated by his son Dr Richard W Emanuel, honorary secretary of the British Cardiac Society.

Carey Coombs and Thomas Cotton.⁷ Each meeting was chaired by a local member. The rules clearly stated from the outset that newspapers and journals should not be party to club discussions.¹⁰ The number of members was initially limited to 25 but from 1927, extraordinary members were allowed. Subscriptions were half a guinea.

The Cardiac Club was the start of an organised profession in Britain and the first group of its kind in the world. In the USA, the James Mackenzie Cardiological Society formed in 1926, later to become the New York Cardiological Society and the American College of Cardiology (ACC) in 1949.¹² The American Heart Association (AHA) was founded in 1924 and the German Cardiac Society in 1927.^{13 14}

EVOLUTION AND GROWTH OF THE CARDIAC SOCIETY

Crichton Bramwell of Edinburgh was tasked with chairing the 1936 meeting in Manchester where the issue of expanding the scope of the Cardiac Club was discussed: 'Cardiology has become recognised as a special branch of medicine and is attracting an



Figure 2 The Founding members of the Cardiac Club. Top row, left to right: William E Hume (1879–1960), Newcastle; John Cowan (1870–1948), Glasgow; Sir James Mackenzie (1853–1925), St Andrews; Arthur G Gibson (1875–1950), Oxford; Carey F Coombs (1879–1932), Bristol; John Parkinson (1885–1976), London; Kenneth D Wilkinson (1886–1951), Birmingham; Joseph G Emanuel (1871–1958), Birmingham. Bottom row, left to right: Sir Thomas Horder (1871–1955), London; Thomas Forrest Cotton (1884–1965), London; John Hay (1873–1959), Liverpool; Henry J Starling (1873–1950), Norwich; John E MacIlwaine (1874–1930), Belfast; T Wardrop Griffith (1861–1947), Leeds; William T Ritchie (1873–1945), Edinburgh; Sir Thomas Lewis (1881–1945), London.

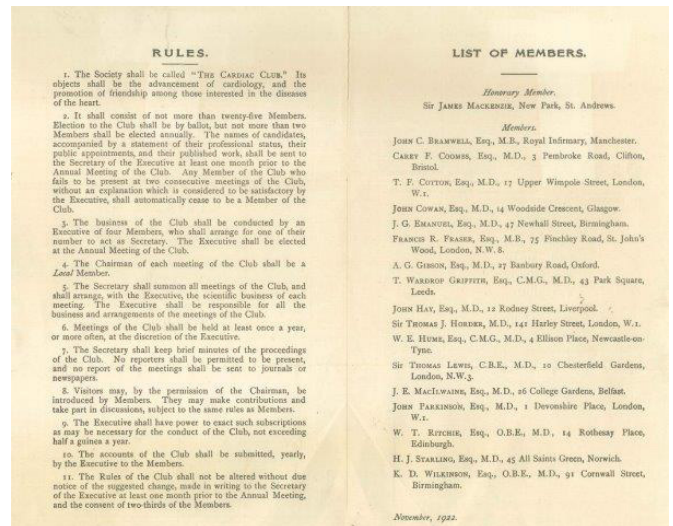


Figure 3 The original rules and list of members of the Cardiac Club, November 1922. BCS Archives

increasing number of younger men. The existence of an exclusive private Club, which includes those who should naturally take the lead in forming a Cardiological Society, might stand in the way of progress if it failed to consider the interests of Cardiology as a whole.¹⁰ The new society was envisaged to include more members and be governed by an elected council. The first meeting of the Cardiac Society of Great Britain and Ireland was held on 15 April 1937 in Edinburgh.¹⁰ The name changed to the British Cardiac Society (BCS) in 1946.¹⁵ The executive felt the new society should have a journal, and the British Heart Journal (BHJ) was launched in 1939. The first issue featured an article documenting the details of the original Cardiac Club and its members.¹⁶

Membership

Ordinary and associate members had to be proposed and elected to the new Society. Extraordinary members were senior physicians exempt from the strict rule mandating that 'any member who fails to be present at two consecutive annual meetings without an explanation shall automatically cease to belong to the Society'.¹⁷ Men or women of distinction, at home or abroad, could be recommended for Honorary Membership: Arthur Keith, Frederic John Poynton and Graham Stell were elected in 1937; Maude Abbott, Louis Gallavardin, Charles Laubrey, Karl Wenckebach and Paul White in 1938.^{17 18} A rule change, suggested by Bramwell, in 1948 enabled surgeons to join: Russell Brock, Clement Thomas, Thomas Holmes Sellors, Phillip Allison, Oswald Tubbs and Vernon Thompson were the first elected.^{18 19} Doctors in training were not eligible to join but met independently as the Junior Cardiac Club, founded by Walter Somerville in 1948, which later became the British Junior Cardiologist's Association (BJCA).²⁰

Annual scientific meetings

A major focus of the Society from the start has been its annual meeting (figure 4). Numbered from the first meeting of the original Cardiac Club, these initially rotated wherever the Association of Physicians met (online supplemental material 1). During the Second World War, Commonwealth and American cardiologists serving in Europe were invited to become temporary members and join meetings. A non-compulsory autumn meeting

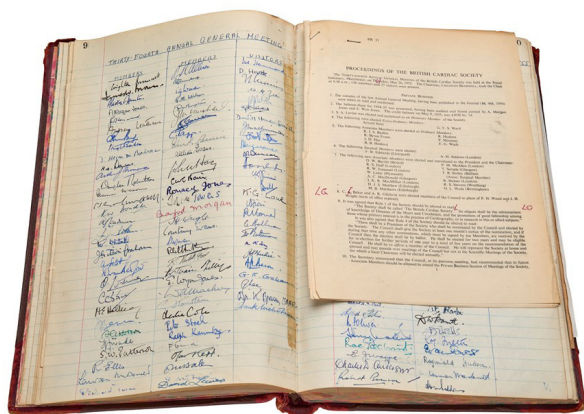


Figure 4 The annual meeting book. Attendance signatures were required from members and their guests. Speakers had to adhere to strict timekeeping and were referred to by surname only. Proceedings of Annual General Meeting and abstracts were published in the *British Heart Journal*. BCSArchives.

was held in London most years between 1948 and 1988 to accommodate demand. Proceedings and meeting papers were published in the *BHJ* and provide a fascinating insight into bedside diagnosis and key developments from all regions of the country. One rule has survived to this day, namely that communications ‘shall be spoken and not read, and all speakers shall adhere to the timetable and agenda’.²¹ The annual dinner was an important element and often features in Council minutes—the question of dinner jackets, whether to invite guests and wives were recurring themes and discussed at length on some occasions.¹⁸ Annual meetings have been held every year except 1944 due to the Second World War and 2020 due to the COVID-19 pandemic. Only one meeting was held overseas, in Amsterdam 1970, jointly with the Netherlands Society of Cardiology.

Leadership at home and abroad

The landscape of healthcare in Britain changed radically when the National Health Service (NHS) Act was implemented. As cardiology and cardiac surgery became identifiable specialties, professional leadership was crucial, particularly on the international scene. In 1949, Evan Bedford joined representatives from 14 National Societies in Brussels to discuss forming a European Society of Cardiology (ESC) which was constituted at the first World Congress meeting in Paris the following year.²² Sir John Parkinson was unanimously put forward by Council for election as the BCS’s first president and headed the first ESC meeting, held over 3 days in London in 1952.¹⁸ There have been 23 Society presidents to date, including one surgeon, Mr John Parker, and one female cardiologist, Dr Sarah Clarke (online supplemental material 2).

THE NHS BRINGS CHALLENGES AND OPPORTUNITIES

The first decade of the NHS coincided with major advances in engineering, physiological measurement and imaging. The introduction of the heart lung machine in the 1950s transformed treatment of valvular and congenital heart disease. Multidisciplinary groups, like the Peacock club at Guy’s Hospital, ensured vital collaboration not just for physicians and surgeons, but also those working in anatomy, pathology, anaesthetics and radiology.²³

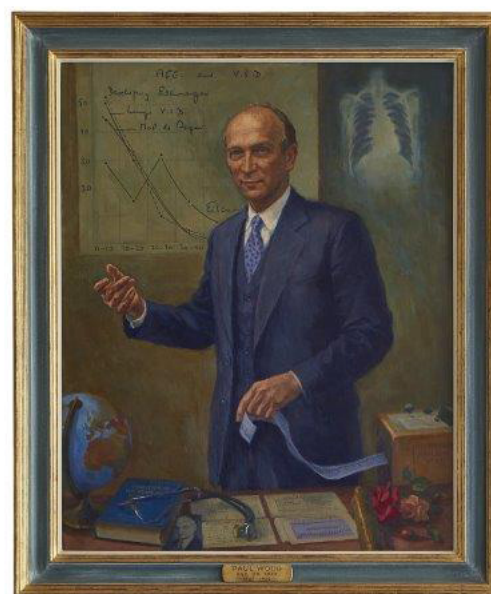


Figure 5 Portrait of Paul Wood (1907–1962). Commissioned by the British Cardiac Society and painted 34 years after his death by his artist daughter, Juliet Wood. He is depicted as a thinker—combining his skills as a writer and teacher with his pre-eminence as a diagnostic clinician. The painting illustrates the tools of his trade: the X-ray, stethoscope and ECG machine as he explains Eisenmenger syndrome, which he researched in the late 1950s, the age at which he is represented. Wood was always evaluating and numbering things—the graph behind is enlarged from one of his many meticulous handwritten cards. The foreground objects symbolise his life and work—a globe, his book and a photograph of Sir John Parkinson—his mentor and a father figure to many cardiologists. After careful thought, his characteristic cigarette-in-hand was not featured in case it might invalidate the whole picture for a profession that now campaigns about the dangers of smoking.

International exchanges brought skills to Britain such as angiography—introduced on return from Harvard, by Frances Gardner, first woman elected to BCS Council.^{24 25} The nationalisation of health services meant strategic planning was necessary to deliver high-quality services with geographical equity.

Workforce planning

The first data on cardiac service infrastructure were gathered by BCS in 1980.^{26 27} There was major regional variation in both manpower and cardiac facilities prompting a major effort to rationalise the existing London-centric model and develop cardiac departments in district general hospitals where physicians could investigate patients non-invasively. The cardiologist was defined by performance of cardiac catheterisation and the British Cardiovascular Intervention Society played an important role in the publication of angioplasty practice guidelines, ‘each centre should have a minimum of two trained operators and be able to provide a reliable emergency service. Operators should perform >60 procedures a year to maintain competence. The numbers should increase if the centre wants training recognition’.²⁸ Cardiologists have had a rich and rewarding relationship with allied health professionals. In 1948, the Society of Cardiological Technicians (later the Society for Cardiological Science and Technology (SCST)) was formed with a grant from BCS. Technical help was much needed initially for ECGs and later for pacing and echocardiography. A major concern, then as now,



Figure 6 The Mackenzie Medal. Awarded by the Society to recognise outstanding service to British Cardiology. Professor Sir Magdi Yacoub and Dr Douglas Chamberlain were its first recipients in 2002. The medal features *Digitalis purpurea*, whose leaves were reported to have a beneficial effect on dropsy in 1785. William Withering's account of the foxglove is a British cardiology classic and poignantly advises honesty and transparency in reporting new scientific discoveries.⁴⁹

was the difficulty recruiting and retaining trained staff. Nurses were an intrinsic part of the team, not just in the coronary care unit, but later in providing emergency thrombolysis, cardiac rehabilitation and heart failure services.^{29 30}

Affiliated societies

As cardiology flourished, sub-specialty groups began to emerge. By the end of the 20th century, these groups assumed an increasing role in BCS, providing leadership and advice in their fields. Arrangements for affiliation were not formalised until 1992 and a growing number of groups applied for recognition (online supplemental material 3). The only affiliated group to be set up by the Society, thanks to John Camm and Jane Flint, was the now Cardiovascular



Figure 7 Office of the British Cardiovascular Society, 9 Fitzroy Square, London. The English Heritage blue plaque outside recognises it as the home of August Wilhelm von Hofman (1818–1892), the first professor at the Royal College of Chemistry (later Imperial College) notable for his contribution to understanding components of coal tar.

Care Partnership (UK), a unique group representing the views of patients, families and carers.

Medical training in cardiology

The changing trends in cardiac investigations and treatment had implications for training. Postgraduate medical education in the early days of the NHS was provided by designated teaching hospitals and training was by apprenticeship. The first structured programme was delivered by the Institute of Cardiology, whose director Paul Wood was admired worldwide for his skills as a teacher and clinical cardiologist (figure 5). In 1946, BCS Council approached the Royal College of Physicians (RCP) to appoint a standing committee—the purpose was to make recommendations on training, define consultant status and recognise cardiology as a specialist branch of medicine.³¹ This evolved into the specialist advisory committee (SAC), which continues to advise the Joint Royal Colleges of Physicians Training Board on all aspects of cardiology training today. Standards for specialist registration within the European Economic Community (EEC) were proposed in 1975, but rejected by Council who felt 4 years post-registration training ‘would lower standards to an unacceptable level’.³² Implementation of Calman training in 1996 saw registrar and senior registrar roles replaced by national training numbers and doctors had to compete for entry to specialty training.³³ In 1995, Roger Boyle and colleagues set out their vision for coordinated cardiology training with BCS now taking a leading role in providing education mapped to the cardiology curriculum.^{34 35} Twenty years ago, Charles Pumphrey predicted: ‘Cardiologists of the future will be less committed to an individual institution and more committed to providing a specialist service to a defined area’.³⁶

Clinical standards and audit

The Society often set up committees and working groups to look in more detail at specific topics and activities relevant to members. Early initiatives were standardisation of precordial leads and blood pressure readings with recommendations jointly published by the AHA.^{37 38} More recent projects have looked at gender balance within the specialty and the unique challenges presented by the COVID-19 pandemic.^{39 40} BCS launched its own peer-review process in 1995 with two-thirds of adult cardiac units signing up. Such initiatives emphasised the need for high-quality data to draw comparisons and benchmark services. David Cunningham led the development of the Central Cardiac Audit Database to collect data on all patients undergoing invasive cardiac procedures.⁴¹ The aim was to reduce duplication and allow national evaluation by combining local datasets.

THE MODERN BRITISH CARDIOVASCULAR SOCIETY

The BCS became a UK-registered charity in 2002. In 2006, Cardiac was replaced with Cardiovascular and a new BCS logo adopted. The executive was restructured with creation of four new vice president (VP) posts to join the secretary and president. The first non-executive trustees were elected in 2007 (Dame Carol Black and Mr Graham Meek).

Council

The key activities of the Society are documented in Council minutes and from 2006, an annual report to allow more time for strategic discussions. Much is concerned with changes to rules and the policy of selecting prospective members of the Society. More vibrant discussions relate to ‘the question of implementing the EEC recommendation to use the kilopascal instead of the mm Hg for blood pressure measurement’ and what to do with ‘time-expired senior registrars’.³² Members on council today include the president, secretary, VPs and their respective elect positions; six ordinary members



Figure 8 Items from the BCS Museum. (A) Pericardial aspiration kit, 1950, owned and donated by Dr Evan Bedford. (B) Cambridge Instrument Company portable ECG, 1929, donated by Dr Patrick Cadigan. It comprises not only the working parts of the galvanometer and camera but also the trolley, skin electrodes, patient cable, battery case and an unopened box of photographic film. This was the standard ECG in all British hospitals until c.1950 when direct writing machines were introduced. (C) Augustus Waller's model train, track and replica of photographic plate used in recording the first human ECG in 1887.

elected by the membership (at least two in district hospitals and at least one female member); four nominated persons representing the Society for Cardiothoracic Surgeons, the Irish, Welsh and Scottish Cardiac Societies, two chairs of the RCP committees—the SAC for Cardiology and the Joint Specialty Committee for Cardiology, the British Heart Foundation medical director, the editor of *Heart*, and the chair or president of each affiliated group.

National and international links

The 1970s and 80s saw a huge growth in joint meetings with other European national societies. British cardiology representation was strong on most of the ESC committees. The Society developed formal ties with strategic partners like the American College of Cardiology (California 2009 and Virginia Chapter 2017) enabling preceptorships at various hospitals to bring skills and expertise back to the UK. The first BCS/Mayo course was held in 2009 and Professor Catherine Otto was appointed as first US editor of *Heart* in 2013. The internet has opened the door to new and innovative ways of delivery education. The BJCA has prospered with the launch of their own TV channel in 2020 with a proliferation of resources that has had global impact.

PRESERVING THE PAST AND PLANNING FOR THE FUTURE

Study of history brings a sense of perspective and humility to the challenges we face today. From its inception, the Society has recognised the contributions of its visionary leaders and hard work of past members.

Eponymous lectures

In 1960, Samuel Levine of Boston gave a generous donation to the Society in gratitude for what he and other American physicians had learnt working with Thomas Lewis. Tom Cotton of Canada also contributed to this important endowment. The inaugural Thomas Lewis Lecture was delivered in by Sir George Pickering in 1963 and has been biennial since. The Society has hosted two lectures of other bodies, namely the St Cyres Lecture of the National Heart

Hospital (founded 1926) and the Strickland Goodall Lecture of the Worshipful Society of Apothecaries (founded 1936).⁴² The Paul Wood Lecture was founded by BCS to recognise his contribution to modern cardiology and first delivered by Dr Jane Somerville in 1995.⁴³ Named Society lectures have also been held to commemorate Ronnie Campbell and Walter Somerville (past presidents), Michael Davies (pathologist and editor of *Heart*), Keith Jefferson (renowned cardiac radiologist) and Joy Edelman (a pioneer of district general hospital cardiology). This year, five centenary lectures will acknowledge the lasting relationship between BCS and the home nations, Royal Colleges and the ESC.

Awards

The Young Research Workers' Award/Prize (now the Young Investigators Award) was established in 1974 to recognise excellence among young researchers and first won by Dr Bheeshma Rajapalan. In its first decade, there was concern about the quality and quantity of scientific content and despite entries, no prize was awarded in 1982. Since 2001, the award has evolved into separate basic and clinical science categories, reflecting the mixture of work being submitted. The Michael Davies Early Career Award, established in 2007, honours researchers who have made an outstanding contribution to cardiovascular science and recently established themselves as independent investigators. The highest award of the society is the Mackenzie Medal, awarded since 2002 to 'those around or soon after retirement age' for outstanding service to British cardiology (figure 6; online supplemental material 4).

Headquarters of BCS

The administrative side of the Society was originally run from the honorary secretary's hospital department. From 1974, the Society had its own office and executive secretary at the Royal Society of Medicine, and in 1985 moved to the RCP. Thanks to the vision of Mr John Parker, BCS acquired a town house in 1991. No 9, Fitzroy Square is a grade II listed building in Fitzrovia, London W1 (figure 7) designed and constructed in 1798 by the famous Adam brothers, James and Robert. Its imposing Georgian architecture reaches four storeys high above a basement. The purchase was signed off by President, Dr Douglas Chamberlain, subsequently horrified to learn that he owned it.²¹ Fortunately, he was able to sell it to the Society for £1 and it continues to be home to staff, members and affiliated societies. As elected officers come and go, it is the staff of BCS that provide continuity and resilience today. The organisation is close knit with shared values and common purpose.

The BCS Archive

The historical archive of the British Cardiovascular Society provides a unique insight into British cardiology and the development of our specialty. The collection was the brainchild of Dr Arthur Hollman (1923–2014), a former BCS secretary who bequeathed many items and promoted the importance of history and plants in medicine.⁴⁴ He followed in the footsteps of Maurice Campbell and Evan Bedford, who had carefully ensured the story of the Society and specialty was maintained for future generations.^{9 45 46} In 2013, a formal museum and library was designed and integrated into the Society's offices at 9 Fitzroy Square. The Arthur Hollman BCS Archive aims to acquire, organise and preserve material relating to past and present members of the Society and British cardiology. Exhibited over several floors, the main rooms are named after pioneers of British cardiology: Mackenzie, Lewis and Wood. Important items include the original toy train used by Augustus Waller in 1887 to record the

first human ECG, a complete 1929 portable ECG made by the Cambridge Instrument Company and an early pericardial aspiration kit (figure 8).

CONCLUSION

A centenary provides opportunity to reflect on how science and society shape our modern world. From the First World War to a global pandemic, the British Cardiovascular Society has gone from strength to strength. While the value of professional societies has changed enormously over the last 100 years, BCS has remained true to its founding principles and continues to educate and advance knowledge while cultivating the next generation of cardiologists.

There is no stronger tradition, concerning work upon the heart, than the British. The members [of the Cardiac Society] are the chief trustees of its legacy, and its weighty responsibility. —*Thomas Lewis, Foreword British Heart Journal 1939.*⁴⁷

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