THE NINETEENTH-CENTURY PHYSICIAN AND CARDIOLOGIST THOMAS BEVILL PEACOCK (1812–82)

by

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The one duty we owe history is to rewrite it.
OSCAR WILDE

Thomas Bevill Peacock, a London physician, made many notable contributions to medicine during the nineteenth century, particularly to cardiology. He was born on 21 December 1812, in York, and died on 30 May 1882, in London. At the age of sixteen, after seven years of school in Scarborough, he wanted to go to sea; however, his father persuaded him to take up medicine. This was only natural; the middle class, to which his merchant father belonged, wanted their sons to enter the professions because of their rising prestige. Further, the Peacocks were Quakers, and so debarred from the ancient universities and the Church, while their pacifism excluded a career in the Army or Navy. The practice of medicine made a particularly strong appeal to the Quakers, with their tradition of philanthropy.

Thomas Peacock was a product of the old apprenticeship system. His master was the surgeon John Fothergill, with whom he stayed for five years. He received his university training at the newly founded University College Hospital in London, where he was taught medicine by Professor John Elliotson (1791–1868). In addition, he did a year's surgical dressing at St. George's Hospital. He spent a short time learning dentistry at his father's request, but soon gave this up to devote himself entirely to medicine. In 1835, at the age of twenty-three, he qualified as a Member of the College of Surgeons and a Licentiate of the Society of Apothecaries.

His friend Dr. Davies-Colley recorded the care with which he used to elaborate the extensive notes he had taken at the hospital. He was, one would imagine, a painstaking and diligent student, qualities that were to become abundantly manifest in him as an investigator, teacher, and clinician.

In 1835 and again in 1836 for reasons of health he travelled to Ceylon as a ship's surgeon and on his way back from the second voyage studied for a few months in Paris.

On his return he was appointed house surgeon to the Infirmary in Chester, where his family was now living. He stayed until 1841, and always looked back with pleasure on the years in Chester, regarding them as important in his professional experience. Afterwards he was for a time house physician and pathologist at the Edinburgh Royal Infirmary, where he later received his M.D. degree. This period of his life was valuable because of the tutelage of Dr. Alison, and because of the experience he gained in the fields of morbid anatomy and

infectious diseases. He is said to have worked with extraordinary zeal, taking copious notes of his cases, performing post-mortems and making exact records of his findings, and mounting beautifully prepared specimens.

These two appointments, covering six years of post-graduate training, gave him a wide basis as a foundation for a most productive and successful career. In 1844, at the age of thirty-two, he came to London, became a Member of the Royal College of Physicians and was given staff appointments at Aldersgate Street Dispensary and at the Royal Free Hospital.

Early Professional Life: 1844–64

Having obtained staff appointments in London, he started in private practice, settled down in his house at 20 Finsbury Circus, and began his voluminous contribution to the medical literature. At first his choice of subjects was wide. It included *Tables and Weights of the Brain and Some Other Organs of the Human Body*, 1847, for many years a standard reference book, a monograph on the great influenza epidemic of 1847, and numerous case reports to journals and transactions. In 1846 he became a founder-member, with Bence Jones among others, of the Pathological Society of London, since 1908 incorporated into the Royal Society of Medicine. This Society met every other week during the academic session and pathological specimens of interest were presented and discussed, the results being subsequently reported in the *Transactions*. During his active career he presented at least 158 cases to the Society. They included a great variety of diseases, the ones of greatest interest being those related to the cardiovascular system. In the year 1850–1, when Latham was President, he was the Secretary, and the following session he became the Vice-President.

In his early London days he founded a dispensary in Liverpool Street, which eventually, by his efforts and influence, developed into the Victoria Park Hospital for Diseases of the Chest. In 1849 he was appointed, as an assistant physician, to the staff of St. Thomas's Hospital and was elected a Fellow of the Royal College of Physicians. He taught students clinical medicine, lectured to them and the nurses on materia medica, and was in charge of the skin department for some years when it first opened. In 1854 and 1858 he published two major contributions to cardiology: *On the Weight and Dimensions of the Heart in Health and Disease*, and *On Malformations of the Human Heart*.

Senior Professional Years: 1864–82

By 1864, at the age of fifty-two, Peacock had reached the zenith of his medical career. In that year he became a consulting physician at St. Thomas's Hospital, and was elected President of the Pathological Society.* He was also chosen to

* The list of Honorary Members of the Society for this year indicates the considerable reputation that the Society must have had.

Honorary Members 1864–5

Andral, G., M.D., Professor in the Faculty of Medicine, Paris.
Cruveilhier, J. C., M.D., Professor in the Faculty of Medicine, Paris.
Henle, J., Professor of Anatomy and Physiology in the University of Zürich.
Rokitansky, Carl, M.D., Professor of Pathological Anatomy in the University of Vienna.
Stokes, William, M.D., D.C.L., LL.D., F.R.S., M.R.I.A., Regius Professor of Physic in the University of Dublin, Physician-in-Ordinary to the Queen in Ireland.
Vogel, Julius, M.D., Professor of Clinical Medicine in the University of Giessen.

deliver the Croonian Lectures to the Royal College of Physicians of London the following year. These lectures were named after William Croone, M.D. (1647–84), a founder-member of the Royal Society, who left behind him a plan for two lectureships, one to the Royal Society which was to be 'upon the nature and laws of muscular action', and the other to the Royal College of Physicians coupled with a sermon to be preached at the Church of St. Mary-le-Bow.

He played an important role in the Royal College of Physicians and became Vice-President in 1867. At the Royal College of Surgeons he was the first appointed examiner in medicine.

In 1871 he became Dean of the Medical School of St. Thomas's Hospital, but had to retire from this and other public appointments in 1877, at the age of sixty-five, owing to a cerebrovascular accident which left him with a left hemiplegia. After a partial recovery he continued with his private practice and with his activities in the societies. He had a second attack fifteen months later, involving his right side, from which he apparently recovered. His last and fatal attack occurred on 30 May 1882, in St. Thomas's Hospital whither he had accompanied some friends after having attended a lecture by James Paget. 'He fell down in one of the corridors and was carried into the ward to which he had formerly been physician, and died that same evening in the very place which probably in health he would have chosen to die.'[55]

The Man

One might say that Thomas Peacock was a very ordinary man who put his powers to extraordinary use. Some people make their impact by their sheer force of intellect; others by enthusiasm coupled with industry; the latter were the qualities that carried Peacock to the fore. His worth was appreciated because of his honesty and integrity, his diligence and quiet enthusiasm. At a high level he was the prototype of the nineteenth-century physician. By his honest and objective observations, coupled with his great capacity for work, he made a series of solid, though not brilliant contributions to medicine. He was not elected a Fellow of the Royal Society, but rose to become one of the best-known and most respected members of the medical profession.

He possessed all the qualities that we associate with the Quakers: industry, single-mindedness, and a habit of austere life. He was a cultured man, and his wide interests included architecture, archaeology, and ethnology. For the age he travelled a great deal. He had been twice to Ceylon, to North and South America, and several times to the Mediterranean. On these travels he appears to have pursued his interests with the same thoroughness as he did his work, and he was an active member of a number of societies such as the Anthropological Institute and the Hunterian Society, to which he reported his observations.

To those who knew him well he was an extremely kind and generous man, but to those who did not come into close contact with him he appeared cold and distant. At the age of thirty-eight he had married Cornelia Waldrick, also a Quaker. He was devoted to her, but she had always been delicate and a constant source of worry to him, and to his disappointment had no children.

After her death in 1869 he was left a lonely and solitary man and his inherent reserve became even more evident.

He was slight in figure, sandy-haired, bearded, grave and reserved in manner. He took a very serious attitude to life, its duties and responsibilities. He was intellectually honest, and for that reason slow to form opinions, cautious with his interpretations, and careful about generalizations. His qualities as a writer are perhaps seen at their best in the Croonian Lectures delivered in 1865. They are simple, lucid, and accurate, the result of immensely hard work and faithful observation, and were elegantly presented with his own beautiful illustrations. As a teacher he was best at the bedside where he personally examined the patients and dictated his findings to the students, discussing their significance in the light of his very extensive autopsy experience. This was a new approach. His lectures, which were delivered in a clear and rapid speech, were regarded as valuable but were, however, somewhat dry, and one imagines lacked the spark that, for example, characterized his contemporary Latham's delivery.

He exemplified the spirit of his age perfectly; he expressed its scientific mood, and by his behaviour and character added status and respect to his profession.

Nineteenth-century cardiology

> Only by the historical route can many problems in medicine be approached profitably.
>
> SIR WILLIAM OSLER

The notion handed down from writings attributed to Hippocrates that the heart was immune to disease—*cor aegrotari non potest*—persisted until the eighteenth century when considerable alarm was expressed as it became known that many sudden deaths were due to heart disease; at the request of Pope Clement XI, Giovanni Lancisi of Rome wrote a treatise *De subitaneis mortibus* (On Sudden Death) in 1707. One might set this as the birth-year of modern cardiology.

The subsequent development of cardiology might be divided into the epoch of pathology in the eighteenth, of physical diagnosis in the nineteenth, and of physiology in the twentieth centuries.

The first textbook of cardiology in English was published in 1809 by Allan Burns of Glasgow, *Observations on some of the most Frequent and Important Diseases of the Heart*, in which he gave one of the first clear descriptions of cardiac murmurs and divided disease of the heart into three categories: (1) sympathetic, deriving from other organs of the body, (2) 'malformations' or congenital defects, and (3) organic diseases of the heart.

It was in Paris, early in the nineteenth century, that the first great school of cardiology evolved with Corvisart (1806), who popularized Auenbrugger's new invention, percussion, and his pupil Laënnec (1819), who introduced auscultation as a clinical technique by which he classified intrathoracic sounds.

The sphere of influence next moved to Vienna where the school was headed by Rokitansky, the iconoclastic pathologist, and Skoda, the brilliant clinician. The relationship between diagnosis and pathology was greatly stressed, and the

reputation of a physician rested on how accurately he could predict the necropsy findings. Skoda's real contribution lay, however, in correcting Laënnec's mistaken notion that each disease had a special group of physical signs. He pointed out that they in fact depended on the underlying physical properties (*Abhandlung über Perkussion und Auskultation*, 1839).

Although many other individuals contributed to cardiology, Traube in Germany and Austin Flint in America, for example, it was a group of physicians in Dublin that dominated cardiology in the English-speaking world in the mid nineteenth century. Stokes, Graves, Corrigan, and Cheyne extended the knowledge of physical signs and revived interest in treatment.

The emphasis throughout the first half of the nineteenth century had been on clinical diagnosis verified by post-mortem findings. Little attention had been paid to ætiology, although in 1774 John Fothergill and John Hunter described and demonstrated the cause of angina pectoris,[56] and Pitcairn in 1788 had pointed out the association of acute rheumatic fever with heart disease.[57]

It was Virchow with his revolutionary ideas and brilliantly simple experiments who advanced cardiology into the next phase, which in essence was a change of emphasis from the study of the change in anatomical structure to the study of functional change.

One of Peacock's famous contemporaries in London was James Hope (1801–41) of St. George's Hospital, who published *A Treatise on the Diseases of the Heart and Great Vessels* in 1831. Another was Peter Latham (1789–1875) of St. Batholomew's Hospital, who was among the earliest to advocate auscultation in England, a noted authority on rheumatic heart disease, and known as an outstanding epigrammatic and entertaining lecturer (*Lectures on Subjects Connected with Clinical Medicine Comprising Diseases of the Heart* (1845–6)).

Peacock's major contributions in cardiology were made in the years 1846 to 1862, his most notable being his works on: (1) dissecting aneurysm, (2) valvular heart disease, (3) congenital heart disease, and (4) measurements of the normal and diseased heart.

On Dissecting Aneurysm

Thomas Bartholin (1616–80) wrote the first monograph on dissecting aneurysm, *Anatomica aneurysmatis dissecti historia* (1644), but Maunoir (1802)[58] was probably the first to describe clearly the process of dissection of the aorta by the blood, and Laënnec (1826) revived the interest in 'anevrysme disequent'.[59] Elliotson (1830), one of Peacock's former professors, reviewed the subject and gave a good description of the disease.[60] In 1839 Pennock demonstrated the characteristic pathological findings.[61] Between 1843 and 1874 Peacock published a series of papers in which the knowledge of dissecting aneurysm was clearly summarized and he presented on the basis of clinical observation, pathological findings, and experimental evidence a well-reasoned account of the lesion and its development, and he cleared up the earlier confusion between dissecting and saccular aneurysm. In one of his papers on this subject (1863),[27] in which he reviewed eighty cases, he refers to the first case to be diagnosed during life

by Swains, Keyworth, and Latham (1844)[62] and deals with the diagnostic signs of the condition. On pathological grounds he described three stages in the development of a dissecting aneurysm: (*a*) an incipient stage in which there was rupture or destruction in part of the intimal coat, (*b*) the early stage, in which there is extravasation of blood into the laminae of the media for a variable distance, often with involvement of its primary branches and sometimes with rupture into adjacent cavities, and (*c*) the advanced stage, when a distinct sac is formed, communicating at the distal end with the original canal and lined by a membrane. He described this as constituting an 'imperfect natural cure'. He confirmed Pennock's pathological findings and his own concept of the pathogenesis by experiments on the cadaver, in which he succeeded in producing an artificial dissecting aneurysm.[2]

On Valvular Heart Disease

In 1865, when Thomas Watson was the President, Peacock delivered the Croonian Lectures to the Royal College of Physicians of London. His topic was valvular disease of the heart. These lectures were subsequently published as a monograph and represent his accumulated experience in this field. He classified the causes of valvular disease or defect into four categories: (1) malformation of valves, (2) injuries of the valves, (3) alteration in capacity of orifices and cavities, and (4) inflammation. In the monograph, however, he dealt with the first three categories only. His main aim was to draw attention to valvular lesions caused by the first two groups, as these were not well known. He described in detail the varieties of congenital abnormalities of the cardiac valves, pointing out that the abnormalities arise most frequently in the aortic valves, and he speculated that these were due to intra-uterine disease. He mentioned their liability to become the seat of chronic inflammation and also pointed out their liability to become sclerosed with advancing years. He did not notice the frequent association of bicuspid aortic valves with coarctation of the aorta.

The first case of rupture of an aortic cusp was described during the early part of the French Revolution by Corvisart. In 1851 Peacock reported his first case,[12] and in the Croonian Lectures he described four cases of his own and summarized the literature. He pointed out that, owing to their position and the pressure to which they are subjected, the aortic valves are the most commonly affected, though cases of rupture of both the mitral and tricuspid valves had been reported. Every such patient gave a history of direct trauma to the chest associated with heavy muscular effort. The onset was characterized by sudden severe chest pain radiating to the back, shoulders, and arms, shortness of breath, palpitations, and 'a sense of impending dissolution'. He pointed out that syncope was common with aortic rupture, and a sense of oppression and suffocation was more evident in rupture of the mitral valve. Haemoptysis occurred occasionally, and sometimes shortly after the accident the patient became aware of peculiar sounds extending up the neck and in the ears.

He demonstrated that the rupture may occur in different parts of the valve.

All his cases were male, and the injury happened in the age range nineteen to fifty-four years. The prognosis was usually poor.[13, 14] The following is an illustrative case:

The second case of injury of the valves which I have met with, occurred in a dock-labourer, thirty-six years of age, who was also a patient of mine at St. Thomas's, in November, 1858. When admitted he was suffering from cardiac symptoms, and stated that he had been suddenly attacked about two months before. He was previously in good health, and had not had rheumatism or any other serious illness.

His attack occurred while he was pulling with other men at a sugar hogshead; his hand slipped and struck him a severe blow on the left side of the chest and he fell backwards. He immediately felt severe pain in the region of the heart and became faint, and in the evening his breathing became difficult. These symptoms subsided in a few days but never entirely ceased, and he afterwards got worse till the time at which he was admitted into the hospital. He then had marked symptoms of cardiac disease, a double murmur was heard over the aortic orifice, the pulse was characteristically regurgitant, and he was dropsical.

He died in December, somewhat more than a month after his admission, or three and a half months from the commencement of his attack.

The heart was found to be greatly enlarged, weighing 23 oz. avoirdupois, and the cavity of the left ventricle was especially dilated and its walls hypertrophied. The left angle of the posterior semilunar segment at the aortic orifice was found to be torn from its attachment, so that it was quite loose and readily admitted of retroversion, allowing free regurgitation from the artery into the ventricle. The valves were all considerably thickened.[21]

The section on the alteration in capacity of orifices and cavities is of topical interest in that he gives an explanation of what we now know as relative insufficiency and explains the term 'safety valve function', coined by Wilkinson King, in which tricuspid regurgitation occurs secondary to considerable right ventricular dilation. By allowing reflex from the right ventricle into the systemic veins the 'stress on the lungs is lessened'. He also points out that the mitral valve might be involved in a similar process:

Probably most practitioners have met with cases in which during life there have been symptoms and signs of mitral defect, but after death the valves have been found free from disease and the aperture retaining its natural capacity. Several cases of the kind have at different times fallen under my own notice, and I was formerly much puzzled to account for them. On the supposition that the valves are in such instances imperfectly adjusted, their explanation is, however, easy. I believe that in all cases of the kind, the left ventricle is considerably dilated and usually much altered in shape, being broader at the apex than is natural. The valves and tendinous cords are often much stretched, and the fleshy columns are considerably reduced in size, and, sometimes, are almost entirely absent, being blended with the enlarged ventricular walls. The left auricle is generally dilated, as in cases of ordinary mitral regurgitation; the lungs, also, are engorged and are not unfrequently the seat of apoplectic extravasation; and the right ventricle and auricle are enlarged and their walls thicker than natural. There is, perhaps, in the animal frame no more beautiful example of the adaptation of structure to the function to be accomplished than is afforded by the auriculo-ventricular valves. The insertion of the cords into the fleshy columns, instead of directly into the muscular walls, is apparently not to give greater power of resistance to the pressure of the blood during the systole, but to furnish a means of shortening the attachments of the curtains, when, with the contraction of the ventricle, the walls are more closely approximated. Were it not for this arrangement, the free fold of the mitral, for instance, would fall back towards the auricle during the systole, and the two curtains not being properly adjusted, the blood would flow into the auricular cavity. By the action of the muscular columns, however, the cords are drawn upon as the parietes of the ventricle approximate, and the curtains

are kept in apposition and tightly stretched across the aperture, so as effectually to close it. It is, I think, clear, that when the ventricle becomes enlarged, unless the cords and columns undergo a proportionate alteration so that their just relations are maintained, the perfect adaptation of the curtains will be interfered with, and the free fold of the mitral will be held down or allowed to fall back, and the aperture be so kept more or less open.[31]

On Weights and Dimensions of the Heart

Considering the great interest in anatomy and pathology it is extraordinary that adequate data on the size and weight of the heart in health and disease were not available until 1843 when Professor Reid produced his Tables.[17] Corvisart was unable to suggest a satisfactory means of comparing the healthy and diseased heart, although he realized the importance of it, and Laënnec compared the size of the heart to the closed fist. Lobstein suggested that the relative weight of the organ would give a more accurate standard and in 1835 Bouillaud recorded weights of the heart in healthy people of different ages and sex; however, there were too few to form adequate standards.[63] In 1846 Peacock published *Tables and Weights of Some Organs of the Body*,[4] in 1858 *The Weight and Dimensions of the Heart in Health and Disease*,[17] and in 1865 he returned again to the subject in the Croonian Lectures. After his publications appeared papers usually gave details regarding the weight of organs, and his work remained for many years the standard reference.

On Congenital Heart Disease

In 1858 Peacock published his *magnum opus*, *On Malformations of the Human Heart*.[20] The basis of the book was a series of lectures that he started to give the students of St. Thomas's Hospital in 1854. Owing to the great interest that the subject evoked at the time, he published them in the *Medical Times and Gazette* and after careful revision and greater elaboration he produced his book. As late as 1908 Maude Abbott wrote: 'The first comprehensive study, covering the whole field and reviewing the earlier literature may be said to be Peacock's, which remains a classic and is still the leading authority in English upon the subject.'[64] There had been contributions in this field by Hunter, Farre, Paget, Chevers, Corvisart, Laënnec, Burns, and others, but they alluded simply to the different forms of defect which they had come across without making any attempt at an orderly presentation of the subject. Hope regarded them as 'so irregular in their combinations as scarcely to admit of being classified on general principles'. The problem of classifying the many defects that were being described into an orderly arrangement must have been difficult in the absence of physiological knowledge; for example, the cause of cyanosis was completely unknown. In fact, Peacock sharply, and apparently successfully, denied the idea that the cyanosis in congenital heart disease was due to admixture of arterial and venous blood.[16] He thought it was due to venous stasis, and this was the opinion generally held. If the defects were grouped entirely on an anatomical basis the subject would merely have become a series of case reports with a great deal of overlap, and of little or no help as an intelligent clinical guide to diagnosis and prognosis. Realizing the shortcomings of this approach, some,

including Peacock, combined an anatomical with an embryological classification. The following is the table of contents of his book:

I. Misplacements of the Heart.
II. Deficiency, etc., of the Pericardium.
III. Malformations of the Heart.
  1. Malformations consisting in arrest of development occurring at an early period of life.
    Heart consisting of two cavities.
    Heart consisting of three cavities.
  2. Malformations consisting in arrest of development occurring at a more advanced period of foetal life.
    Heart consisting of four cavities—One or both of the septa imperfect—Pulmonary artery and aorta more or less completely developed.
    Defect in the inter-ventricular septum—Constriction or obliteration of orifices—Misplacement of the primary vessels.
  3. Malformations occurring during the later periods of foetal life.
    (*a*) Defects preventing the heart undergoing the changes which should ensue after birth.
    Premature closure of the foetal passages.
    Permanent patency of the foetal passages.
    (*b*) Defects which do not interfere with the functions of the heart at the time of birth, but may lay the foundation of disease in after-life.
    Irregularities of the valves.
    Disproportion in the capacity of the cavities, orifices, and vessels, and defects in the size and form of the heart.
IV. Irregularities of the Primary Vessels
  Transposition of the aorta and pulmonary artery.
  Descending aorta given off from the pulmonary artery, etc.
  Deviations from the natural arrangements of the venous trunks.
  Irregularities of the coronary arteries and veins.
V. Mode of Formation, Symptoms, Duration of Life, Cause of Death, Diagnosis, and Medical Treatment.

Of particular interest in the book is his description of two cases of Fallot's tetralogy. Fallot, who is generally accredited with the original report, described his case in 1888,[65] forty-two years after Peacock.[5]

MALFORMATION OF THE HEART, CONSISTING IN CONTRACTION OF THE ORIFICE OF THE PULMONARY ARTERY WITH DEFICIENCY AT THE BASE OF THE INTERVENTRICULAR SEPTUM.

In this case there existed extreme contraction of the orifice of the pulmonary artery, with a deficiency in the interventricular septum, and the aorta arose in chief part from the right ventricle. The right auricle and ventricle were of large size, and the walls of the latter thick and very firm. The left ventricle was, on the contrary, small, and its walls thin and flaccid. The left auricle was also small. The foramen ovale and ductus arteriosus were both closed. The heart was taken from a child two years and five months old, who had exhibited well-marked symptoms of cyanosis, which commenced three months after birth. It was remarked that though the recorded cases are numerous in which, with more or less contraction of the orifice of the pulmonary artery, the septum of the ventricles is found deficient, it is far from frequent to meet with these malformations, with, as in the present instance, a closed state of the foramen ovale; and especially so, when the degree of contraction of the pulmonary artery is extreme. The intensity of the cyanosis, and the duration of life in these cases, bears a general relation to the amount of contraction of the pulmonary orifice and the freedom of communication between

the right and left cavities of the heart, through the medium of the open foramen ovale and the aperture in the interventricular septum. Dr. Peacock, *7th of December*, 1846.

There had, however, been at least one report before his, and he refers to it in later surveys of the literature.[20,77] The first pathological description was published in 1673 by Niels Steensen.[66] Some, however, credit Sandifort with the first clinical and pathological description. The case he described in 1777 had, in addition to pulmonary stenosis, ventricular septal defect and an overriding aorta, a patent foramen ovale.[67] As Peacock noted: 'Failure of obliteration of the foramen ovale may occasionally be added in a wholly accessory manner'.[20] In addition to the previous case reported, Peacock included a similar case which he had followed, with the post-mortem findings. He mentions several points of interest: e.g. the difference between valvular and infundibular type of pulmonary stenosis,[47] that the pulmonary valves often became the seat of subsequent disease 'and display recent deposits or vegetation . . . in some cases, indeed, the obstruction is mainly due to warty growths from the valves.'[20] He noticed the susceptibility of congenitally abnormal aortic and pulmonary valves to chronic inflammatory changes. He, however, makes very little of this point. Although descriptions that are suggestive of it go back to Fernel (1554),[68] those of Riverius (1646), who gave a graphic description of vegetations on the aortic valve are more convincing.[69] Henderson (1835) thought they might be inflammatory in nature.[70] Baillie (1797),[71] Wells (1810),[22] and less definitely Bouillaud (1835)[72] pointed out the difference between rheumatic carditis and bacterial endocarditis and Winge (1869) was the first to observe the chains of cocci in the vegetations.[73] Sir James Paget's somewhat nonchalant observation (1844) is probably the first to indicate the liability of congenitally abnormal hearts to become the seat of infection.[74] Jaccoud (1887) emphasized the significance of valves previously affected by rheumatic fever as an important ætiological factor in bacterial endocarditis.[75] The whole problem of bacterial endocarditis remained ill understood until 1885 when Osler gave an analysis of 209 cases in his Gulstonian Lectures.[76] In 1860 Peacock reported a case to the Pathological Society which had all the features suggestive of subacute bacterial endocarditis. The comments at the end of the report read:

The great interest of the case Dr. Peacock considered to be:
1. The existence of disease both in the aortic and mitral valves, which had been manifested by distinct physical signs, so that a correct diagnosis had been effected during life.
2. The musical character of the murmur heard at the base with the diastole of the heart, and which was clearly traceable to the loose retroverted edge of the posterior semilunar valve.[25]

The real point of interest is the great concern with the physical signs leading to a correct anatomical diagnosis without any mention of the ætiological possibilities.

One of his cases of Fallot's tetralogy appears to have died of meningitis (probably due to a brain abscess which had ruptured into the ventricles),[77] and he mentions a case in Sir Ashley Cooper's museum, which was found to have a brain abscess at necropsy.[20] He noted later:

The death of the patients is, in the largest proportion of these cases, as in the present instance, caused by cerebral disease. Two of my previously published cases died in attacks of convulsions.

It would have been interesting to have ascertained the precise seat and nature of the brain disease in the case, but permission was with difficulty obtained for the examination of the body, and examination of the heart only was allowed.[53]

This is an interesting observation considering that the susceptibility of patients with congenital cyanotic heart disease to brain abscess was not firmly established until the 1950s.[77] In his introductory remark to the section on ventricular septal defects, he writes that

in one of the most interesting forms of anomaly the deviation of the septum is to the left, so that the right ventricle is of large size, and the aorta arises wholly or in part from that cavity; and this condition is most generally associated with obstruction to the passage of the blood from the right ventricle.[20]

He saw and reported many cases of the tetralogy to the Pathological Society of London, reviewed the literature,[33] and made many astute observations about the condition.

In November 1880, he presented his last case of malformation of the heart to the Society, and he said:

The malformation of the heart in which the pulmonary artery is constricted and the septum of the ventricles defective, so that the aorta communicates with both ventricles, of which this case affords an instance, was first described by Sandifort in 1777 (*Observationes Anatomico-pathologicae*, Ludg. Bat., 1777), and a considerable number of cases of the kind have since been placed on record in this country, France, Germany, and the United States. Indeed, as stated by Dr. Farre in 1814, it is the most common kind of deviation from the natural conformation of the heart. I have myself described four cases, and in 1866 I had no difficulty in collecting reference to upwards of sixty published cases.[53]

In view of this, it is surprising that the tetralogy of Fallot should have acquired this eponymous title when presumably many more had been seen and described.

Peacock was not a specialist in the modern sense of the word. He was essentially a general physician with a particular interest in pathology. His main contributions were in cardiology, to which he added knowledge by keen observation, punctilious description and illustration, and a flair for arranging his material in a neat and orderly fashion. His contribution on congenital heart disease remained valuable until a clearer understanding of the underlying physiological mechanisms involved was obtained through the use of new techniques. This allowed a more practical classification, and made clinical diagnosis more certain in preparation for the eventual possibility of surgical correction.

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ACKNOWLEDGMENTS

I am indebted to Mr. L. M. Payne for providing me with the portrait of Peacock from the collection in the Royal College of Physicians, London. I would like to thank Drs. Edwin S. Clarke, Victor A. McKusick, and Ingrid N. Porter for helpful criticism, and Mrs. Ruth Kimmerer for typing the manuscript.

T. B. Peacock

https://doi.org/10.1017/S0025727300027393 Published online by Cambridge University Press