

Book Reviews

One of the book's strengths is to discuss less-cited examples: the Shah of Persia, for instance, whose plans to modernize his country foundered with his leukaemia, concealed from all except the French secret service (was this why France supported the Ayatollah Khomeini?); or Ferdinand Marcos, whose systemic lupus erythematosus and renal failure led to a repressive regime largely dominated by his wife, Imelda, who may have ordered the assassination of Corazon Aquino's husband. And in even more totalitarian states the results of paranoia have been horrendous: 100–300,000 people killed during Idi Amin's reign in Uganda and 40–50,000 in Marcias Nguenna's in Equatorial Guinea.

After J. F. Kennedy's assassination, the USA passed the Twenty-fifth Amendment to deal with any future incapacity of a President. Though not invoked—and mentioning neither the words medical nor physician—it remains, the authors say, a model of precision compared with provisions elsewhere. Nevertheless, our best safeguard is a free investigative press. In the midst of a financial crisis in 1893 President Grover Cleveland was “taking a pleasure cruise”, but was in fact on the boat having a (successful) removal of cancer of the palate. A newspaper report was convincingly repudiated and the truth did not emerge until 1928. We have come a long way.

Stephen Lock, Wellcome Institute

ALEXANDER G. BEARN, *Archibald Garrod and the individuality of man*, Oxford, Clarendon Press, 1993, pp. xvii, 227, illus., £35.00 (0–19–262145–9).

To write the biography of a distinguished scientist is no easy task. It requires a detailed understanding of the scientific achievements of the subject of the biography, as well as a facility with words that is capable of creating a work not only of scientific history but also of literature. If in addition the scientist was a medical man, then the biography requires an understanding of the closed world of medicine, its ideals and its practice. In Alexander Bearn, Sir Archibald Garrod (1857–1936) has found an admirable biographer with all these attributes.

This account of the first individual in Britain to bring biochemistry and genetics to the bedside is remarkable for its understanding of not only Garrod the man, deeply afflicted in his later years by the loss of his three sons as a result of the horrors of the First World War and its aftermath, but also the clinical scientist whose studies of inborn errors of metabolism such as alkaptonuria, cystinuria, pentosuria and glycosuria so clearly demonstrated the link between Mendelian genetics and human disease. Even after his election to the Fellowship of the Royal Society at the age of fifty-two, many of his colleagues regarded his work on rare diseases as esoteric, but his outstanding achievement, the combination of laboratory work of the highest order with that in the clinic, did more for the establishment of clinical research as a discipline than that of any of his contemporaries. Sir Thomas Lewis was to be hailed in later years as the pioneer of clinical science in Britain. The passage of the years has shown that Garrod's influence was much greater, for he founded a science of biochemical genetics that has been of enormous significance in the modern era, several Nobel Laureates referring admiringly to his influence upon their own work.

Garrod, educated first at Oxford, became the most outstanding of St Bartholomew's Hospital consultants in the early years of this century. His original publication on *Inborn errors of metabolism* was based on his Croonian Lectures to the Royal College of Physicians of London in 1908. During the First World War, he joined the Royal Army Medical Corps and was posted to Malta where he was a distinguished member of the British medical fraternity. In 1918 he was knighted, becoming a Knight Commander of the Order St Michael and St George, in recognition of his work. Returning to St Bartholomew's at the end of the war, he was the first consultant at a London Medical School to be nominated to a full-time Professorship in Medicine. It was then that the London medical schools were, for the first time, to develop teaching units in the clinical subjects on the University model that had been developed in both Germany and the United States. He never took up the post, however, for on Sir William Osler's death at the end of 1919 he was appointed to the Regius Chair of Medicine in Oxford, and his Assistant Director, Francis Fraser, later to play so important a role in the foundation of the Royal Postgraduate Medical School at Hammersmith, took over at Bart's. Garrod spent his declining years at Oxford, continuing to publish works on inborn errors of metabolism that were at

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that time not given the credit that they now receive. Garrod was an individual who was far ahead of his time. He owed much to fellow scientists such as Sir Frederick Gowland Hopkins, whom he had known at Guy's Hospital before he went to Cambridge. There was also a close affinity between his own ideas and those of J. B. S. Haldane.

On a personal level it is not surprising that in later life he became somewhat withdrawn, but he always inspired the greatest respect and regard for his scientific work. The single gene, single enzyme hypothesis for which Beadle and Tatum are so rightly regarded owed much to Garrod's work, although Bearn believes that in his tribute to Garrod in his 1958 Nobel lecture, Beadle was "almost overgenerous".

Alexander Bearn's biography, prefaced by an adulatory account of Garrod by the Nobel Laureates Joseph L. Goldstein and M. S. Brown, themselves clinician scientists in the Garrod tradition, is an outstanding contribution to modern scientific biography.

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STEWART WOLF, *Brain, mind, and medicine: Charles Richet and the origins of physiological psychology*, New Brunswick and London, Transaction Publishers, 1993, pp. xix, 214, illus., £38.95 (1-56000-063-5).

Unfortunately, this is not a good book. The author, a professor of medicine at Temple University School of Medicine, has worked on the family history, talked with descendants, tracked down sources, and assembled a Richet bibliography of nearly 750 items. But the result does not really go beyond a surface commentary. The book is rather wooden as biography—there is little of the depth of insight into a person's private world, professional and political circumstances, and wider culture that makes a subject memorable. Admittedly, Richet is not an easy historical subject to pin down: "His curiosity was boundless, as was his desire to excel in each of his endeavors, but he shifted from one to another at his whim as each seemed important to his goal of human improvement" (p. 3). The study is also unsatisfactory as a history of scientific medicine since, though Richet's career and activity is detailed, there is little critical examination of what his contemporaries perceived his contributions to be or of how Richet's work related to research as a communal activity. I did not come away from this book with a clear idea of Richet's place in the development of knowledge (especially immunology). Finally, the book has not been properly proof-read and elementary errors remain.

Charles Richet was a highly individualistic man with a vast range of interests, who lived his own life—often away from the laboratory. Appointed professor of medicine in 1887, a position he held until 1925, and elected to the Académie des Sciences in 1914, he nevertheless remained a mercurial and even marginal figure in relation to the medical establishment. His Nobel Prize in 1913 was for the discovery of anaphylaxis, the sensitization of animals to repeated weak injections, allowing for a period of incubation, of a toxin. This now appears one of many studies revealing aspects of the extremely complex immune system. Richet's contribution—though it seems his contemporaries never saw it—was to conceive of symptoms of illness as the body's protective response to disease rather than as the direct effect of invasive agents. For Richet, it exemplified his long standing interest in what he called "the defence of the organism", the body's adaptive efforts to protect itself. Stewart Wolf makes this the leitmotiv of Richet's work, using it suggestively to link Richet's experimental studies with his social values—his crass advocacy of eugenics and his pacifism (also a means to preserve human potential). Because Richet concluded that the nervous system is central to defence, Wolf hails him as a founder of physiological psychology. What I miss is a picture of how such a subject was constituted and where Richet fits in. Little of the existing literature is referred to and where there are comments on the intellectual background they are badly unreliable.

Richet was probably best known to the public of his day for his support of the reality of psychic phenomena, notably, the materialization of ectoplasm. There is a French literature, especially by Jacqueline Carroy which is not referred to, on the significance of this for psychology in France. Richet is interesting as a materialist supporter of "spiritualist" phenomena, someone who—as in his support for eugenics—saw no limits to the scientific world-view and had a deep ambition to show his colleagues that he had opened up new areas and contributed to the future of mankind.

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