OBITUARY NOTICE

Stephen Dyonis Elek
24 March 1914–21 January 1992

Stephen Dyonis Elek, who was emeritus professor of medical microbiology in the University of London and honorary consulting bacteriologist to St George's Hospital, died on 21 January 1992. His interests spanned not only bacteriology, immunology and virology but also the arts, the law and business. He was an international authority on the staphylococcus, his book on the subject being the authoritative one.

He was born in Budapest on 24 March 1914. After attending the Lutheran High School there, he studied medicine at St George's Hospital Medical School, London, qualifying in 1940 and gaining the Thomson Medal and the Brodie prize in Surgery. He formed an attraction to bacteriology, and was made assistant bacteriologist to the hospital in the same year. During 1946–47, he was clinical pathologist to the Maida Vale Hospital for Nervous Diseases, and was then appointed consultant bacteriologist to St George's Hospital in 1947. In 1950, he became Reader in Bacteriology at the University of London. At that time, bacteriology at St George's was a sub-department of pathology. Elek fought vigorously for independence and, in 1957, he was appointed to a new Chair of Medical Microbiology and became Head of his own department.

He often stated that his primary interests were actually in immunology which, in the 1940s, was still a largely embryonic discipline, subservient to the other branches of pathology. He recognised the potential of agar diffusion for the study of bacterial antigens and antibodies and, in 1949, he described the plate test for virulent, toxin-producing diphtheria bacilli, which became popularly known as the Elek-plate test. This was, of course, an early example of an in-vitro technique displacing the need for laboratory animals for diagnostic purposes. Of even greater fundamental importance was his development of the double-diffusion gradient technique for the serological analysis of mixed flocculating systems. This allowed the separation of multiple antigens and antibodies in crude mixtures and their resolution as lines of precipitate in the agar gel, or, as Elek, himself, vividly described it — "The double-density gradient is comparable in its action to a prism: the constituent systems are separated into individual lines, as are the colours of the spectrum". He used the method for detailed studies of staphylococcal, diphtheria and clostridial toxins. In researches into the pathogenesis of staphylococcal wound infection, he had the courage (although he always demonstrated caution, too) to involve medical students in inoculation experiments, at a time when this was still ethically possible. These showed the importance of foreign bodies, such as sutures, for

abscess formation. In 1959, his book, *Staphylococcus pyogenes and its relation to disease*, was published, which confirmed him as an authority on the subject. He later became interested in typing staphylococci and other bacteria, and his studies led him to believe that a pattern of sensitivities against a range of simple chemical compounds, determined by agar-plate diffusion, could be as reliable as, and technically much simpler than, phage typing.

He was always intrigued by the more intractable problems of microbiology. In the early 1950s, the leprosy bacillus was one of the few known bacteria that had still not been grown in the laboratory. His own attempts to achieve this with a variety of solid and liquid media were fruitless. However, appreciating the possibilities of recently developed methods of tissue culture, he took himself off to Boston in 1956, with a Fulbright fellowship, to work with John Hanks at Harvard Medical School, to learn these techniques at first hand and to apply them to the cultivation of the bacillus. Although this, too, proved largely disappointing, it did lead to the establishment of a leprosy

research group at St George's which is, even now, carrying out significant investigations into the treatment and prevention of this major disease. He recognised, early, the importance of bacterial genetics for the study and management of antibiotic resistance, and set up a small but flourishing laboratory of molecular genetics. His drive also led to the development, at St George's, of the first comprehensive virology diagnostic service in any London teaching hospital. With remarkable foresight, he persuaded the Public Health Laboratory Service to set up, in 1965, a joint bacteriology department on site, only the second such linkage with a Medical School at the time, and without which the hospital would certainly have been unable to provide the high quality diagnostic service now available to underpin the major expansion of modern clinical services at the new St George's Hospital at Tooting.

He was awarded the DSc (Lond) in 1958, on the basis of his published research, and became FRCP in 1971. He was a founder member of the College of Pathologists at its inauguration in 1962, and was made FRCPath in 1964.

A great achievement was his role in the creation of the *Journal of Medical Microbiology*. For long, he had argued that the *Journal of Pathology and Bacteriology*, the original journal of the Pathological Society of Great Britain and Ireland, had become unattractive for the publication of papers on microbiology and that only dichotomy would remedy the situation. He did eventually, with the support of Tom Parker, convince the editorial board and the Society, against the more conservative wishes of C. L. Oakley, then chairman of the board and chief editor of the *Journal*, to split it into the *Journal of Pathology* and the *Journal of Medical Microbiology*, with the registry for the latter at St George's, where it remained until recently. Elek's vision was entirely vindicated as the *JMM* went on to become a highly successful and reputable journal, attracting quality papers on all aspects of microbiology from all parts of the world. He was a senior editor of the *Journal* from its inception in 1968 until 1973, when he retired from active practice.

He was widely read and also paid close attention to problems raised by his clinical colleagues, so that he was able to maintain a veritable flood of new ideas for research for his more junior colleagues. This quite often overburdened them, already hard at work on other problems, and he could cause exasperation by the setting of deadlines, usually by submitting their

names to read a paper at the next meeting of the Pathological Society. However, there is no doubt about the lasting respect for his intellect and the affection held for him by all members of his department. He was a generous benefactor both to his own department and to the Medical School. He endowed a microbiology research fund, as well as annual undergraduate prizes and a research fund for the newly established department of immunology. On more than one occasion, he quietly met the cost of course and examination fees for junior workers in his department, out of his own pocket. In recognition of his qualities both as an individual and as head of his department, the microbiology laboratories in the new Medical School built at Tooting were named the Stephen Elek Laboratories.

Stephen Elek was a bon viveur, enjoying gourmet meals, even occasionally himself preparing Hungarian dishes for the delectation of colleagues, and he was a habitual teller of stories. These almost invariably related to his Hungarian background, and he always took a delightfully tongue-in-cheek pride in the success and reputation attained by his fellow expatriates worldwide, in medicine, science, the arts and business but not, apparently, in politics. He was a keen collector of fine paintings, especially 17th century Dutch, delft pottery and English antique furniture, on all of which he displayed considerable erudition and expertise. He was, himself, a sculptor of no mean achievement, producing both remarkable caricature busts of colleagues and a classical bronze head of Dr Anthony Feiling, a senior neurologist of the hospital, which was accepted by the Royal Academy for viewing at the Summer Exhibition of 1950. An interest in law induced him to undertake a 2-year part-time course in legal studies at the University (one of his daughters became a lecturer in law), and he had an important role in the development and management of Copydex, the business established in this country by his late uncle.

He was a scientific fellow of the Zoological Society of Boston, USA, a vice-president of the section of pathology and a member of council of the section of comparative pathology, Royal Society of Medicine, a member of the colonial medical research council, and a member of the committee of the Pathological Society of Great Britain and Ireland. He married, in 1947, Sarah Joanna Hall; they had three daughters.

HAROLD STERN