it is the first concise account of the subject in English. A two volume work on insect pathogens published a few years earlier by the same firm covers much of the same ground in considerably greater detail. It has, however, the serious disadvantage of being approximately four times as expensive and for virologists there is the additional problem that other pathogens are dealt with in the same detail.

Despite the few errors and omissions and the low quality of some of the photographs, the book is informative and very easy to read. It provides a factual and concise account of two of the main groups of viruses associated with insects and as such can be recommended.

T. W. TINSLEY

OBITUARIES

Professor Jaroslav Heyrovsky

PROFESSOR J. HEYROVSKY, the founder of the technique of polarography, who was awarded the Nobel Prize in 1959 for this massive contribution to scientific progress, died on March 27, 1967, in Prague, at the age of 77.

The feature that differentiates the development of polarography from that of most other methods is the relationship between the technique and its originator. It is difficult to find any other technique where a single man not only discovered the principle of a method, but remained in the centre of its development from the very beginning to its full maturity. Few chemists have shown such enthusiasm in the dissemination of the understanding of their discoveries and such ability to surround themselves with collaborators, eager to develop both the theoretical and practical aspects of the methods they have originated.

The relation between the current flowing between two electrodes immersed in a conductive solution and the applied voltage intrigued the electrochemists from the beginning of this century. The introduction of the dropping mercury electrode, realized by a drop of mercury at the orifice of a glass capillary from which the mercury regularly dropped out, facilitated in 1922 the recording of the first reproducible current–voltage curves. The clean, smooth, continually renewed surface of the dropping electrode initiated the great step forward that led to the renaissance of electrochemistry.

This discovery was due to the work of young Heyrovsky in 1912 at University College, London, under Professor F. G. Donnan, where he used a hanging aluminium amalgam drop electrode for measurements of electrode potential of aluminium, and his later work, under the guidance of Professor B. Kučera at the Charles University, on electrocapillary curves, using a dropping mercury electrode.

From 1922 onwards Heyrovsky devoted his life to the interpretation and application of current–voltage curves obtained with a dropping electrode. With his Japanese co-worker Masuzo Shikata (later a professor at Kyoto) he developed in 1925 an automatic polarograph, for recording current–voltage curves, which helped to promote the rapid development of a new branch of electrochemistry, that is, polarography. More than 20,000 research papers published in this field reflect the success of this technique. It is no exaggeration to state that few living chemists contributed so much to the development of electrochemistry as Heyrovsky. After teaching for three decades at the Charles University he was made in 1950 the first Director of the Polarographic Institute of the Czechoslovak Academy of Sciences which now bears his name.

Heyrovsky's interest in the development of polarography did not overshadow his interest in human beings, especially when they were interested in polarography. This interest in the work of his co-workers was deep and genuine and his hospitality was proverbial. All his pupils and friends could always depend on his support. All of them lost something when Heyrovsky died after a long illness. They will remember the stimulus and inspiration he provided and the excitement of the new discoveries. Heyrovsky's scientific creed was summarized in two quotations, which he found in the writings of his hero Faraday—"Work, finish, publish"—and of Newton—"A man must resolve either to produce nothing new or to become a slave to defend it".

R. BELCHER

Academician A. N. Terenin

ACADEMICIAN ALEKSANDR NIKOLAEVICH TERENIN, who died on January 18, 1967, at the age of 70, showed his scientific bent early. At school in Kaluga he became interested in the photography of electrical discharge spectra, and he carried out spectrographic analyses for the army during the First World War. Soon after entering the physics department of the University of Petrograd he was experimenting with methods of sensitizing spectrophotographic plates for work in the near infra-red, and his interests in light quanta, energy levels, dyes and basic photochemical processes engaged him for his whole career.

His earliest published work concerned resonance fluorescence of atomic vapours, with studies of step-wise excitation, collisional quenching and Stark effects. Observations of the fluorescence of salt vapours followed, with recognition of photo-dissociation processes and of fluorescent emission from radical products. Terenin pointed out how diatomic molecules showed sharp spectral structure below their dissociation thresholds, while increasing molecular complexity led first to blurring and then to continuous spectra. Recognizing the sensitivity of fluorescence to impurities he explained that observed for such substances as aliphatic hydrocarbons as caused by trace oxidation effects. He turned later to the spectroscopy and photochemistry of adsorbed molecules and of molecules embedded in rigid glasses, identifying the triplet state of organic substances as an important entity and interpreting condensed-phase reactions in terms of electron transfer and migration. The discovery, with V. L. Ermolaev, of the migration of energy from triplet states of molecules opened up a new field of the greatest importance in photochemistry. Observations of the photo-electronic effects in dyes—as films or adsorbed on inorganic semi-conductors—led to concepts applicable by biochemists to the photosynthetic behaviour of chlorophyll. Later Terenin directed the work, in the department of biomolecular photon physics at the Leningrad State University, on rapid-flash photochemistry and problems of double excitation. His book, *The Photochemistry of Dyes and Related Organic Compounds*, published in 1947, remained until recently a unique account of the subject.

Terenin was the recipient of many honours and state orders, including that of Hero of Socialist Labour, given in 1966, election to the USSR Academy of Sciences in 1939, the State Prize in Chemistry in 1945, the S. I. Vavilov Gold Medal in Physics in 1954, the Ciamician Gold Medal in 1959 and the Finsen Gold Medal, presented at the International Congress of Photobiology held in Oxford in 1964. He was a brilliant teacher, with fluent English and French, and devoted to the encouragement of his staff, many of whom now occupy important research positions. Photochemists of all nationalities who had the good fortune to meet him will long remember his supreme qualities as a man of character, strength and reason—he was friendly, humane and motivated by a high sense of duty.

E. J. BOWEN