

Apart from these omissions, and the more general criticism that there are no detailed case histories of material selection and associated design improvement, this book can be recommended as a useful concise source book for designers, and a refresher for metallurgists who wish to be reminded of the uses of their science.

R. W. CAHN

Advances in Enzymology and Related Subjects of Biochemistry

Vol. 28. Edited by F. F. Nord. Pp. v + 547. (New York and London: Interscience Publishers, a Division of John Wiley and Sons, 1966.) 115s.

VOLUME 28 of this series contains seven chapters. Laylin K. James and Leroy G. Augenstein discuss the adsorption of enzymes at interfaces. This is timely, because biochemists are increasingly conscious that the dilute aqueous solution in which they study enzymes is an artificial environment compared with the gels in which those enzymes occur in nature.

E. R. Stadtman deals with the allosteric regulation of enzyme activity. His article is restricted to a consideration of those regulatory processes that involve reversible metabolic activation or inhibition of the enzyme activity. Tsao E. King considers the problem of the reconstitution of the respiratory chain, but limits himself to the mitochondria of animal tissues.

Nathan Citri and Martin R. Pollock review the biochemistry and function of β -lactamase (penicillinase). Alan T. Bull and C. G. C. Chesters deal with laminarin and laminarinase and focus attention on the biosynthesis and depolymerization of β -1,3-glucans. Von Ed. Hofmann and Gg. Hoffmann review (in German) the estimation of biological activity in soil using enzyme assays. Henry Z. Sable gives an account of the biosynthesis of ribose and dooxyribose excluding those studies which attempt to assess the relative proportions of glucose metabolized by the glycolytic and pentose cycle pathways. The volume maintains the standard to which biochemists have long been accustomed in this series.

T. J. BOWEN

OBITUARIES

Dr. J. Raymond Hodkinson

RAY HODKINSON was drowned in the Baltic on August 24, 1966. He had planned to spend a year in Sweden and write a book about the measurement of airborne dust.

From the Grammar School he went to the University in Manchester and graduated in physics in 1949. He worked briefly with Associated Electrical Industries and at Jodrell Bank, before his national service in the Royal Air Force. He entered the Safety in Mines Research Establishment at Sheffield in 1952, and here he rose rapidly. His work was concerned with dust physics and the use of radioactive tracers to investigate the ventilation of mines. On his promotion to principal scientific officer he was allowed to spend nearly three years at the London School of Hygiene to undertake research into the scattering of light by particles. Some of his ideas he put into effect on his return to Sheffield.

In 1962 he obtained his Ph.D., and in the same year he went to the Department of Radiation Biology at the University of Rochester, to take charge of aerosol physics. He stayed there until June 1964. During this time he travelled extensively in the United States and Canada to visit laboratories and speak at scientific meetings. His knowledge of the optics of particles was useful to the U.S. Public Health Service, for whom he became a consultant, and he went to Canada with an eclipse expedition. With Judith Greenfield he used a computer to calculate the response of optical particle counters using a variety of light systems.

Dissatisfaction with students who only wanted a qualification from his course, repugnance for biological work, and the wish to run his own department encouraged Hodkinson to accept the post of professor and head of the Department of Physics at Virginia State College. He was the first full-time white faculty member to be appointed. During his two years in this Negro college the benefit to the students was immense. He gave them first class visiting lecturers and a Federal research grant, revived his department, and, revealing a musical and poetic talent, contributed to the artistic life of the college. He was, however, impatient with the college administration and criticized it for its acceptance of low academic standards, an authoritarian rule and the assignment of funds to architectural features rather than to learning. When last year he decided to take a sabbatical year he was dismissed from his post. He went to Sweden, and it was while sailing alone in his yacht that he died.

C. N. DAVIES

Isaac Pomeranchuk

ISAAC YAKOVLEVICH POMERANCHUK, who died on December 14 aged 53, was one of the outstanding theoretical physicists of the Soviet Union. Born in 1913, he graduated from the Polytechnical Institute in Leningrad in 1936, and then did research in several institutes of the Academy of Sciences. His last appointment was in the Institute of Experimental and Theoretical Physics. He was awarded the Stalin Prize, and since 1953 had been a corresponding member of the U.S.S.R. Academy of Sciences.

His interests ranged widely over the whole of theoretical physics. His earliest known contributions concerned the theory of solids and in particular the problem of the thermal conductivity of dielectrics, for which he pointed out a number of important facts which had been overlooked. He worked also on the related problem of the absorption of sound waves, and did some early work on the scattering of neutrons by crystals. Other papers relate to such diverse subjects as the properties of liquid helium, the "Delbrück scattering", and the effect of the emission of radiation in limiting the energy of primary cosmic ray electrons reaching the Earth. In recent years his work was mainly concerned with the physics of elementary particles and in particular with the theory of collisions at high energy. His best known result in this field is the proof, surprisingly simple and powerful, that collision cross-sections at high energy, if they reach finite limits for infinite energy, must become the same for particles and antiparticles on the same target. Another important result is contained in joint work with Gribov, which showed that scattering amplitudes regarded as analytic functions of angular momentum may contain not only poles ("Regge poles") but also essential singularities which invalidate some of the conjectures fashionable at the time. These are a few examples of a prolific output of work, which was broken only by his final and fatal illness.

His approach was always to emphasize simple physical arguments and to pick out the general features of the type of situation which could throw light on the physical problems, without becoming involved in too much detail. He was capable of carrying through a sophisticated mathematical argument when this was necessary, but he never regarded this as an aim in itself. In this respect his attitude showed very much the influence of L. D. Landau, with whom he collaborated on many occasions.

As a person he was held in deep affection by all his colleagues. He was modest to the point of self-deprecation and careless about appearances. The figure in a crumpled suit who always managed to look as if he had last shaved two days ago, but who always had something sensible and relevant to say, will be sadly missed at all gatherings of physicists.

R. E. PETERLS