



Cephalosporin C ($\text{C}_{16}\text{H}_{21}\text{O}_8\text{N}_3\text{S}$) behaves like a penicillin in some respects but not in others. Like cephalosporin N, it contains a residue of D- α -amino-adipic acid in the side-chain and has an absorption

band in its infra-red spectrum characteristic of a penicillin. Unlike cephalosporin N, it shows an absorption band (ϵ_{max} 9,000) at 260 m μ , is not inactivated by penicillinase and gives no penicillamine on hydrolysis with hot acid. However, DL-valine has been isolated from the hydrolysate of cephalosporin C treated with Raney nickel.

The papers of the symposium, with bibliographies, will be published by the Chemical Society as "Special Publication No. 5", which will include also an account of the discussions following each paper.

A. W. JOHNSON

OBITUARIES

Dr. Stanley Whitehead

By the death of Stanley Whitehead on May 5 at the early age of fifty-three, electrical engineering has lost one of its far-sighted leaders in the research field and the Electrical Research Association a director who has considerably widened its scope and activities. He entered Oxford with an open scholarship, where he took firsts in the Final School in Physics and Mathematical Moderations. In 1925 Whitehead accepted the post of physicist in the Electrical Research Association and proceeded to a part-time study of electrical engineering at East London (Queen Mary) College, which led in 1930 to a Ph.D. and in 1952 to a D.Sc. degree of the University of London.

His early work with the Electrical Research Association led to the production of three critical surveys of dielectric phenomena covering breakdown phenomena in solid, liquid and gaseous dielectrics. This interest in dielectrics was maintained throughout his career and culminated in the monograph "Dielectric Breakdown of Solids" (Clarendon Press, Oxford, 1951), in which dielectric failure in all its aspects, for example, electronic breakdown, breakdown through thermal effects and by discharges in gaseous voids, was surveyed. His own theoretical researches on thermal breakdown and his experimental researches with colleagues on void discharges have proved useful contributions to knowledge. Problems of electrotechnical interest to which he has made contributions include those concerned with electrical transmission, cable ratings, and telephone and radio interference. During the Second World War he took a leading part, often at considerable personal risk, in the work of the Electrical Research Association on mine and bomb location.

Whitehead shouldered many responsibilities. He was chairman of the Science Abstracts Committee of the Institution of Electrical Engineers and a past chairman of the Measurements Section, honorary treasurer of the Institute of Physics, and a past vice-president and chairman of the London Branch, a past joint-secretary of the Parliamentary and Scientific Committee, and the chairman of the Committee of Directors of Research Associations. He was the chairman of the governors of his old school, Sir Walter St. Johns, of Battersea, and a governor of Battersea Grammar School. But his interest in education did not stop there; many young graduates about to embark on a career in research received guidance, and often he was instrumental in securing

for them financial support. One of the rewards accorded him in 1952 which gave him great pleasure was his fellowship of Queen Mary College.

Stanley Whitehead married in 1929 Mary Lyon Morehead; they had met at Oxford, where she too had a distinguished academic career, but on the classical side. There are two children of the marriage, a boy and a girl.

R. DAVIS

Dr. T. Richards

TALIESIN RICHARDS, senior lecturer in the Department of Microbiology, University of Reading, died on January 13 at the early age of forty-two, having been born on November 26, 1913; his loss to the Department is great. Richards read chemistry at King's College, University of London, and obtained a B.Sc. with first-class honours in July 1936. He then entered the London School of Hygiene and Tropical Medicine to read for the postgraduate diploma in bacteriology, which he obtained in July 1937. Thus he entered the field of microbiology by postgraduate study, building upon a foundation of general chemistry a knowledge of microbial physiology and microbial forms and the techniques for studying them. He continued at the London School of Hygiene, doing research in the department of Prof. H. Raistrick, for which he obtained a Ph.D. in 1939.

In September 1939 Richards was appointed independent lecturer in charge of the, then, Agricultural Bacteriology Laboratory in the Faculty of Agriculture, University of Reading, where students reading for the degree of B.Sc. in dairying received instruction in microbiology. Richards and his colleagues were also responsible for the course for the postgraduate diploma in general bacteriology (now discontinued). These courses owed much to Richards, who moulded them during the difficult war period and after. The experience gained in the design and teaching of these courses was of much value when later (March 1951) the laboratory was absorbed into a new Department of Microbiology in the Faculties of Science and of Agriculture. Richards was appointed senior lecturer in the new Department and continued to be particularly concerned with the courses for the B.Sc. (Dairying) degree. In planning the courses for the new degree subject of microbiology in the Faculty of Science, Richards's knowledge and experience were drawn upon to great advantage, and he himself did a considerable amount of teaching in these new courses. Richards was a good teacher and took much