

all in some degree dogmatic. Undoubtedly one of these was Voisin. He came of Norman farming stock and trained as a biochemist in Paris and at Heidelberg. It was as a practical dairy farmer in his native Normandy, however, producing milk from grass, that he gained the experience synthesized in his philosophy of 'rational' or 'timed' grazing.

Voisin burst upon the British farming scene in 1957 with the publication of possibly his best book, *Grass Productivity*. Its translation into English was followed by translation into Russian, German, Japanese and Hungarian. Here he propounded his philosophy of grassland management, the 'rational' system, basically a rotational grazing system strictly governed by defoliation frequency in relation to rate of herbage growth. The success of this work stimulated further publications—*Better Grassland Sward*, and *Soil, Grass and Cancer*, and finally, *Grass Tetany*.

Throughout his writings Voisin stressed that the grass crop must not be considered in isolation. The sward, which in turn depends on the soil, should always be related to the needs of the grazing animal, its health, well-being and production. Sward management can favour the grazing animal or the sward at any point in the grazing season without much difficulty. The results, however, may not be ultimately satisfactory. Voisin's great contribution was the evolution of a simple grazing system, soundly based, which sought and obtained the best, at one and the same time, from both sward and animal within the limits of the potential available. His reasoning quickly found favour with progressive dairy farmers, who applied his ideas with advantage. Present-day research work in plant breeding and herbage variety testing, through the use of new techniques, particularly *in vitro* studies of digestibility, is directed at taking into account the elusive 'quality' factor in fodder: in other words, the ultimate value of the feed to the animal in terms of net output. Voisin realized at an early stage that production of dry matter *per se* was not the whole answer. All his writing emphasized consideration of the needs of the animal in order to obtain optimum results.

It was unfortunate that most of his thinking centred on the permanent pasture as the most suitable medium for the dairy cow. His philosophy, moreover, hinged on only moderate use of fertilizers. Under conditions in

Britain, however, the permanent sward, because of its normally small legume contribution, is dependent on heavy fertilizer input for high herbage production, and for this reason Voisin, perhaps unknowingly, never quite completely reconciled his approach from his continental background with the fundamental economic needs of the dairy farm in Britain. These have been clear-cut over the years and have given rise to marked intensification of production determined largely by high fertilizer nitrogen application and a growing dependence on the short-term ley as a means of lengthening the growing season. In this context, Voisin's views on the 'sacrifice' of animal and plant in the cause of blind intensification of production were timely.

His brisk, forceful style and completely convincing manner, both as writer and lecturer, gained him wide popularity while provoking much controversy, to the benefit of farmer and scientific worker alike, for he gave even the most experienced grassland and animal workers cause to stop and think. From his wide knowledge of the literature, Voisin made more than a reasoned case for most of his conclusions, including those on human health arrived at in his highly controversial work, *Soil, Grass and Cancer*. His omnibus approach obviously caused him to conflict with many specialized views, but one of his great attributes was that, although acutely aware of the trees, his great concern was with the wood: the conclusions he reached were most difficult to dismiss lightly.

Above all, Voisin was a master in public relations. He aimed directly for his audience, the farming community, and being a farmer himself, he knew exactly how to orientate his arguments to gain the most telling effect. His boundless energy and enthusiasm, not forgetting his humanity, are reflected throughout his work. Voisin's contribution to grassland farming practice was very large: Normandy may well be proud of her son, who found world favour in his chosen field.

Among the many honours he received abroad was an honorary degree from the University of Bonn. He was a member of the Académie d'Agriculture of his own country and also held the Croix de Guerre gained during the Second World War.

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## NEWS and VIEWS

### Chemical Crystallography in the Imperial College of Science and Technology : Prof. D. Rogers

DR. D. ROGERS, reader in chemical crystallography in the Imperial College of Science and Technology, has been appointed to the newly established chair of chemical crystallography in the Department of Chemistry of Imperial College. Although 'born and bred' a physicist, he enjoys a national and international reputation as an X-ray crystallographer, combined with a lively interest in computers and programming. Dr. Rogers was educated at Wallington (Surrey) Grammar School and graduated in 1941 at King's College, London. After securing a Ph.D. in physics at King's College in 1944, he became assistant lecturer in the College of Technology, Manchester, where his early work on X-ray crystallography was carried out. In 1948 he moved to University College, Cardiff, where he remained as a close collaborator of Prof. A. J. C. Wilson until he joined Imperial College in 1961: he held an Imperial Chemical Industries fellowship for part of this period. Since his appointment as reader at Imperial College, he has established a thriving school of chemical crystallography. Dr. Rogers's prolific studies of crystal structures have been mainly among complex organic compounds, and substances of special biological significance have provided the main field for his recent work. Nevertheless, he maintains a keen interest in other struc-

tures, and has contributed much to the work of colleagues in inorganic chemistry, particularly in the study of metal complexes. He and his research school are substantial users of the *Atlas* computer in the University of London.

### Analytical Chemistry in the Imperial College of Science and Technology: Prof. T. S. West

DR. T. S. WEST, reader in analytical chemistry at the Imperial College of Science and Technology, has been appointed as from October 1 to the newly established chair of analytical chemistry, the first in this discipline in the University of London. Dr. West was born in Peterhead, Aberdeenshire, in 1927, and after education at Tarbat Old Public School and Tain Royal Academy, winning first place in the Scottish Education Department's "Highlands and Islands" Bursary Competition, proceeded to the University of Aberdeen, where he graduated with first-class honours in 1949. He then gained his doctorate, under Prof. Belcher, at the University of Birmingham, obtaining also his D.Sc. there in 1962. He was lecturer in the University of Birmingham until his transfer to the Imperial College of Science and Technology in 1963. Dr. West was awarded the Meldola Medal of the Royal Institute of Chemistry in 1956, the first analytical chemist to have won this distinction. In addition to his productive research activities which have