

Bulletin of the Institute of Nuclear Sciences 'Boris Kidrich'

Vol. 7. Pp. 166. (Belgrade: Institute of Nuclear Sciences 'Boris Kidrich', 1957.)

THIS volume contains papers in English, French and German, describing work by members of the Institute. The work is mainly in chemistry, including radio-chemistry, but there are also papers in nuclear physics and electronics.

My chief qualification for this brief review is that I spent a week in the summer of 1956 at the Institute, which is about ten miles east of Belgrade, at a place called Vinča. It is a 'little Harwell', equipped with canteens, houses, etc., as well as laboratories. The main equipment is to be an experimental reactor (with a power of 1 megawatt or more) which was being engineered in the U.S.S.R. The building work was half complete in 1956, but I have not heard that the reactor is working yet.

The Institute is therefore planned to centre on the physics and chemistry of nuclear reactors. But there are groups, as at Harwell and Saclay, working on nuclear physics research, instrumentation, etc. The atmosphere is very enthusiastic, and there are a number of able scientists there, many of whom have studied abroad, mostly in the Western countries but some in the U.S.S.R. The Institute is, of course, entirely Government supported and there are no formal ties with the University of Belgrade, though some of the staff also lecture there. The Government has evidently realized that it must start by building up research work, and my impression was that they have made a very good beginning. The British Council is interested in the Institute and in particular in arranging the exchange of publications with research departments in Britain.

H. W. B. SKINNER

The Flora of Wiltshire

By Donald Grose. Pp. iv + 824. (Devizes: Wiltshire Archaeological and Natural History Society, 1957. Copies obtainable from The Museum, 41 Long Street.) 42s.

THIS flora is presented to a large extent in the format which has become traditional for such works in Britain. These publications are the product of much industry, stimulated largely by local pride and enthusiasm, but to botanists accustomed to dealing with the systematic problems on a world scale, county floras such as this seem proportionately to have scant scientific value. It is true that in the "Flora of Wiltshire" some ecology is included in the section dealing with the vegetation of the county, in the form of lists of species forming associations typical of selected habitats. In a county which is mainly agricultural and pastoral, with little elevation above 600 ft., and dominated by the chalk formations of Salisbury Plain and the Marlborough Downs, there is a surprising number of species represented. In all, some 1,406 flowering plants, ferns and charophytes are listed, of which just over 900 are deemed to be native to the county. No descriptions are given, and, as is usual in this typically British production, a very extensive knowledge is assumed of the British flora.

The book is really in the nature of a detailed catalogue and it is a pity that, in the fashion of the Druce era, there is such a proliferation of names of subspecific rank to which botanists will have difficulty in referring plants.

Check-List of North American Birds

Prepared by a Committee of the American Ornithologists Union. Fifth edition. Pp. xiii + 691. (Ithaca, N.Y.: American Ornithologists Union, 1957.) n.p.

THIS big volume is a result of many years work (1939-57) of a committee of eleven eminent American ornithologists with Dr. Alexander Wetmore as chairman. The fourth edition of 1931 covered 1,420 species and subspecies, and in the present volume this number has grown to 1686. A hypothetical list including 41 species is also added. The area covered is North America north of Mexico, Greenland, Bermuda and Baja California. The distribution of each species or subspecies is treated with great care and detail, and especially in regard to some rarer species the amount of evidence and the manner of presentation deserve the highest commendation. The title of the book does not sufficiently indicate its contents, since it is much more than a simple check-list normally is. This long-awaited, excellent work is invaluable for everyone interested in the distribution of birds in general and especially of those of North America. Serious ornithologists will find it an indispensable source of information. It is very desirable that a similar check-list of European birds should be prepared as a counterpart of this American work, and the forthcoming twelfth International Ornithological Congress to be held at Helsinki in June offers a good opportunity to discuss the problem. The international compilation of such a monumental work seems not impossible and would certainly be a very valuable undertaking because no modern check-list of the birds of Europe as a whole exists at present.

W. RYDZEWSKI

Determinism and Indeterminism in Modern Physics  
Historical and Systematic Studies of the Problem of Causality. By Ernst Cassirer. Translated by O. Theodor Benfey. Pp. xxiv + 227. (New Haven, Conn.: Yale University Press; London: Oxford University Press, 1956.) 40s. net.

IN the halcyon days of the 1920's, most of the essentials of modern physics had been achieved. It is not surprising, therefore, that this distinguished book, written originally in German, but published in Sweden, should contain a large part of the epistemology necessary for the basic understanding of almost any system of natural philosophy. But it was intended to supply (in 1936) a final chapter on the causality problem, a project destined to failure, on account of the author's death. Luckily, Prof. Margenau, a close associate of the late Prof. Cassirer, has been able to contribute a very impressive preface on the most important developments in this field. It does two things: it brings out the contrast between 'causality' and 'determinism'—as Cassirer conceived them—and current interpretations, and it discusses recent advances.

Where the author himself is strongest is in his insistence upon the intimate connexion (almost amounting to fusion at times) between physics and the theory of knowledge. He takes account of the whole cycle, from the most mechanistic beginnings to the present-day sub-quantum determinism of David Bohm. In this way, the build-up of thought is seen to be continuous through the periods of matrix-calculus and wave-mechanics, and much of the dual character of Nature is made more comprehensible. The translation into English is excellent.

F. I. G. RAWLINS