ters subdivided according to process designation, that is, milk production, poultry production, pig rearing, fruit handling, and so forth.

Volume II is completely devoted to the application of central station electric service to nearly every branch of agricultural activity and contains a tremendous quantity of valuable empirical data, design information, and specifications on the sizes of electric loads imposed by the variety of farm chores susceptible to performance by electric methods. Volume II is a classic in the field of what is generally known as "power use"—an activity that includes all endeavor designed to develop additional load for electric systems serving rural areas.

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Reports on Progress in Physics. vol. XVII (1954). A. C. Stickland, Exec. Ed. Physical Society, London, 1954. 280 pp. Illus. £2 10s.

This volume, like the preceding ones, is remarkable because of the wide range of problems discussed. M. H. L. Pryce (now at Bristol) treats a subject that is of great interest to all theoretical and experimental nuclear physicists—the nuclear shell model. The theory of the origin of the cosmic ray is discussed by Edward Teller (University of California, Berkeley), showing that the random acceleration process (Fermi) and location of the accelerating fields in radio stars (Unsöld) can account for the main features of cosmic radiation. Solid-state physics is represented by the article on Antiferromagnetism, by A. E. Lidiard (Berkeley, Calif.). Readers interested in the properties of the various compounds in which antiferromagnetism has been observed will welcome the table (p. 240) that summarizes the various properties that have been studied and how they are related to antiferromagnetic structure. Chemical physics is represented by "Atomic valence states and chemical binding," by W. Moffitt (Harvard).

Atmospheric electricity was reviewed by J. Alan Chalmers (London). This is welcome, since much new work in this field has been carried out in recent years. It would have been even more interesting if this article had been illustrated. C. W. Allen (University of London Observatory), in his discussion of the physical condition of the solar corona, touches on problems that are of interest not only to astrophysicists but also to the physicists interested in "plasma physics" (gaseous discharges and high-temperature physics).

Investigation in the ionosphere is a field of physics that is particularly well supported in England and the paper on the horizontal movements in the ionosphere, discussed by E. H. Briggs and M. Spencer of the Cavendish Laboratory in Cambridge, is a valuable contribution to our knowledge on ionosphere movements based on radio methods.

Microwave investigations during the war have stimulated interest in the solution of the classical diffraction problem. This work, which was, among others, developed by Bethe, Schwinger, and their collaborators in this country, by Meixner and Buchholz in Germany, and by the author in Holland, is presented in a masterly summary with over 500 references, by C. J. Bouwkap (Philips Research Laboratories, Eindhoven, Netherlands).

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The Identification of Organic Compounds. A manual of qualitative and quantitative methods. Stig Veibel. Gad, Copenhagen, ed. 4 (1st Eng. ed.), 1954. xv + 346 pp. Illus.

Three Danish editions have preceded the present English language edition of this well-constructed, up-to-date manual on the identification of organic compounds. Here are combined in one convenient volume the qualitative and quantitative aspects of the subject. The first three chapters deal with purification and determination of physical properties, detection and estimation of the elements, and solubility tests. The remainder of the book offers a wide and critical selection of the available methods for detection and quantitative determination of all the principal functional groups and for identification of organic compounds through derivatives. Only in the treatment of aromatic hydrocarbons do I feel that the book falls short.

The manual was originally prepared for use at the University of Copenhagen and the University of Technology of Copenhagen by students who were devoting about 40 (5-hour) working days to the course on identification. Designed for the mature student, it does not provide lists of compounds and derivatives found in many treatments of qualitative organic analysis. Instead, the student is referred to Beilstein and the abstract literature and is provided with references to papers in which melting points of derivatives are given. All specific procedures are documented, and the author, whose contributions to the original analytic literature have been ample and varied, adds valuable experience from his own laboratories to the documentation. He does not lead the student by the hand; moreover, he permits the student to realize, through brief documented discussions, that a variety of methods are often available for studying any one functional group, and that he need not restrict himself to the recommended procedures that are described in detail in the manual. The total approach can only develop a sound understanding of the problems involved in identification.

Few of our colleges and universities offer integrated courses of the type for which this manual is written. However, anyone planning to institute such a course could well consider this neat, succinct, but comprehensive, treatment.

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