fluorine compounds timely; this chapter includes a detailed description of ionization phenomena in a wide variety of organo-fluorine compounds. J. M. Tedder discusses the fluorination of organic compounds with elementary fluorine; the theoretical aspects are supplemented by an obviously authoritative discussion of the experimental techniques involved. N. Hodge turns to the inorganic chemistry of fluorine and contributes a detailed review of the fluorides of the actinide elements; this chapter summarizes a good deal of the physical chemistry of this class of compounds, and the bibliography provides an excellent key to the literature. Finally, B. P. Saunders contributes a discussion on the physiological action of organic compounds containing fluorine. It is, of course, authoritative and makes interesting reading for both the inorganic chemist and his more biologically oriented colleagues.

The volume is well produced and can be recommended to all chemists concerned with these various aspects of fluorine chemistry.

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A Complete Compilation

Crossed-Field Microwave Devices. vol. 1, *Principal Elements of Crossed-Field Devices*. 648 pp. $22. vol. 2., *Principal Types of Crossed-Field Devices, Analysis of Oscillator System Performance, Regional Progress and Trends*. 520 pp. $18. E. Okress, Editor-in-Chief. Academic Press, New York, 1961. Illus.

One's first reaction to these volumes is one of annoyance. There are over 1200 pages of material, contributed by close to 60 authors and divided into roughly as many sections. Obviously, with different nomenclature, considerable repetition, and the like, such a collection would not constitute a very coherent whole, and the results could hardly fulfill the stated end of "summarizing the progress and state of art of crossed-field microwave devices in theory and practice." Apparently this defect was recognized by the editors, for in the preface they apologize for the inconsistencies in style and level of presentation. However, after one overcomes this initial annoyance, he will find that the quality of many, perhaps most, of the articles is very high. The volumes do include papers by almost everyone who has contributed in an important way to the development of crossed-field devices, and they do cover (sometimes two or three times) the essential characteristics, both theoretical and experimental, of these devices. Obviously, given the number of authors and sections, it is not even possible to quote the table of contents, but it should be pointed out that there is considerable material, some of it not available in as detailed form elsewhere, on many of the new developments, including crossed-field amplifiers, new methods of gun design, recent calculations on large-signal theory, circuits for cross-field devices, cathode problems, and some interesting treatments of the old *bête noire* of crossed-field devices, the instability of the space charge cloud. Thus, despite duplication, nonuniformity, and the like, I must state that these volumes undoubtedly do represent the most complete compilation available of authoritative material on crossed-field devices, including most of the recent developments. Readers will have to overlook the lack of optimum organization and accept these volumes for the riches they contain. It is possible that an attempt to organize the material might have resulted in the books not appearing at all.

As a footnote comment on the list of authors, I might point out that the list extends approximately from Boot and Buneman through all the rest of the alphabet to Willshaw. Readers who are familiar with the early history of these devices will realize that this encompasses the names of those responsible for developing most of the art of crossed-field devices, including those responsible for the very origins of the field.

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Miscellaneous Publications

(Inquiries concerning these publications should be addressed, not to Science, *but to the publisher or agency sponsoring the publication.)*

Chicago Natural History Museum. *Fieldiana: Zoology*, vol. 39, No. 51, "A new Peruvian race of *Crypturellus obsoletus*," Emmet R. Blake (3 pp. $0.10). vol. 41, "The land snail genus *Amphidromus*, a synoptic catalogue," Frank Fortescue Laidlaw and Alan Solem (275 pp. $4.50). vol. 42, No. 10, Philippine Zoological Expedition, 1946–1947. "New and interesting Odonata from the Philippines," Maurits A. Lieftinck (39 pp. $1). The Museum, Chicago, Ill., 1961.

Geophysics Research Directorate. AFCRL 438, *Research Notes*, No. 36, "Contributions to satellite meteorology," vol. 2, Francis R. Valovcin, Ed. The Directorate, Air Force Cambridge Research Laboratories, Bedford, Mass., 1961 (order from Office of Technical Services, Washington 25)

National Academy of Sciences–National Research Council. *Nuclear Science Series*, NAS–NS 3037, "The radiochemistry of polonium," P. E. Figgins. Office of Technical Services, Washington, D.C., 1961. 71 pp. $0.75.

National Science Foundation. NSF 61-32, *Surveys of Science Resources Series*, "Funds for research and development in industry, 1958." Superintendent of Documents, GPO, Washington 25, 1961. 135 pp. $0.65.

New York Academy of Sciences. *Annals*, vol. 91, art. 3, "Genetic perspective in disease resistance and susceptibility," Richard H. Osborne, Ed., pp. 595–818; vol. 92, art. 1, "Vitamin C," J. J. Burns, Ed., 332 pp.; art. 3, "Pavlovian conference on higher nervous activity," Nathan S. Kline, Ed., pp. 813–1198; vol. 94, art. 1, "Plasma proteins in health and disease," George T. Dimopoullos, 335 pp. New York Academy of Sciences, New York, 1961.

Smithsonian Institution, Bureau of American Ethnology. Bull. 180, *Symposium on Cherokee and Iroquois Culture*. William N. Fenton and John Gulick, Eds. Supt. of Documents, GPO, Washington, D.C., 1961. 292 pp. Illus. $1.25.

U.S. Geological Survey. *Bulletin*, No. 1028-R, pp. 563–81, "Geologic reconnaissance of Kiska Island, Aleutian Islands, Alaska," Robert R. Coats, Willis H. Nelson, Richard Q. Lewis, and Howard A. Powers. *Professional Papers*, No. 316-E, pp. 75–89, "Regional gravity survey along the central and southern Wastch front, Utah," Kenneth L. Cook and Joseph W. Berg, Jr. Superintendent of Documents, GPO, Washington 25, 1961.

U.S. Office of Education. No. OE-53010, "Trends in higher education, planning and management data, 1957–58 to 1959–60," W. Robert Bokelman and Louis A. D'Amico (24 pp. $0.25). No. OE-10005-61-B, "Progress of public education in the United States of America 1960–61" (82 pp.). Superintendent of Documents, GPO, Washington 25, 1961.

U.S. Public Health Service. National Health Survey, Health Statistics, Series B-No. 29, "Disability days, United States, July 1959–June 1960." Superintendent of Documents, GPO, Washington 25, 1961. 50 pp.

University of Wisconsin, College of Agriculture. *Bulletin*, No. 31, "Comprehension of graphs." S. E. Sarbaugh, Richard Powers, Hugh Culbertson, and Thomas Flores. The University, Madison, 1961. 26 pp.