Book Reviews

The International Dictionary of Physics and Electronics. Walter C. Michels, Senior Ed. Van Nostrand, Princeton, N.J.; Macmillan, London, 1956. 1004 pp. Illus. $20.

It would be of some interest to know who conceived the idea of a voluminous reference document containing definitions—some long, some short—of most of the specialized terms encountered today in the literature of physics and electronics. The originator of the project and all those who had a hand in preparing this extensive one-volume compendium of useful information deserve the thanks of the scientific community.

Compilations of definitions of physical terms have been published before, but a brief search has failed to reveal any volume comparable with the *International Dictionary of Physics and Electronics.* In this work, the editor and the contributors have attempted to provide a reference tool useful (as the preface puts it) to ". . . the greatest possible number of those people who are working with physics. This group includes not only professional physicists, and those intending to make physics their profession, but also the far greater number of workers in other fields who have frequent need for information about terms used in physics."

Among the definitions in this dictionary one finds a variety of treatments of terms related to laws, relationships, equations, basic principles, instruments, and apparatus. Where a brief definition suffices, it is used: "DEKAGRAM. Ten grams." On the other hand, the editor has not made a fetish of brevity; the "definition" of "RELATIVITY THEORY, SPECIAL" occupies a full page, and more than three pages are devoted to the term "TELEVISION."

Several hundred line drawings (including a number of circuit diagrams) add to the clarity and completeness of the volume. The aim of the volume's compilers was the inclusion of "both formal and discursive statements and entries" in most definitions. This policy has necessarily resulted in a lengthening of the book, but the consequent gain in utility will probably justify the decision to present the material in this way.

Walter Michels, as senior editor, was assisted by 14 contributing editors representative of various specialized fields. Four British scientists were included in this group. The *International Dictionary of Physics and Electronics* will undoubtedly make a well-deserved place for itself in a large number of laboratories and libraries.

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E. A. Birge, a Memoir. G. C. Sellery. With an appraisal of Birge the limnologist, *An Explorer of Lakes,* by C. H. Mortimer. University of Wisconsin Press, Madison, 1956. 221 pp. Illus. + plates. $3.50.

In these days of ultimate specialization, it is both refreshing and encouraging to read about a scientist whose long life (just short of a century) encompassed notable careers in biology and administration, both of which were further enriched by remarkable talents in philosophy and religion and as an essayist and lecturer. This portrait of the life and accomplishments of Edward Asahel Birge is written by G. C. Sellery, his long-time friend and colleague at the University of Wisconsin. Sellery has drawn upon rich source material and abundant anecdote for his memoir on the many-faceted Birge.

The book contains seven chapters. "The preparation" and "The professor" cover his early life, education, and teaching. Professors and administrators will find that Birge as "The lieutenant of presidents" and "The president" (of the University of Wisconsin) had to deal with university problems and internal politics which have shown no fundamental changes in America during the past half-century. He was largely responsible for the development of the present stature of the University of Wisconsin.

As "The lecturer and essayist," Birge exhibited a broad knowledge of classical literature; he also had the happy ability of being able to write and speak for a wide variety of audiences on topics ranging from a popular lecture on Darwinism, limnology, or "culture" to an appeal to the state legislature or a masterly funeral memorial to a deceased friend. "The religious man" reveals his knowledge of the Scriptures and his reconciliation of science, evolution, and religion. His series of 13 annual sermons on St. Paul were models. "Some final estimates" contains an unusual evaluation of an alternate side of Birge's personality —his brusqueness, aversion to "small talk," rare indignation, and early criticisms of applied science.

The final and longest section of the book, "An explorer of lakes," was written by the English limnologist C. H. Mortimer. It is a general account of limnology, with the major classical papers of Birge and his collaborators (especially C. Juday) in mind. His most notable publications dealt with Cladoceran biology, diurnal migrations of zooplankters, annual plankton cycles, food webs, light penetration into lakes, temperature conditions, dissolved gases, and other aspects of lake chemistry. Up to his death in 1950, this work paralleled the development of modern limnology. Indeed, it *was* the development of modern limnology. And most of these contributions were published when Birge had gone beyond middle age!

In short, this book is an unusually penetrating picture of a distinguished teacher, scholar, administrator, and scientist—a fellow in a "race of giants." It should interest limnologists, nonscientists, and university administrators; it should appeal to those who knew Birge only slightly as well as those who knew him well.

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Weather Analysis and Forecasting. vol. I, *Motion and Motion Systems.* Sverre Petterssen. McGraw-Hill, New York, ed. 2, 1956. 428 pp. Illus. $8.50.

Weather Analysis and Forecasting. vol. II, *Weather and Weather Systems.* Sverre Petterssen. McGraw-Hill, New York, ed. 2, 1956. 266 pp. Illus. $6.

The second edition of Petterssen's well-known textbook is really an entirely new book. The revisions have been so extensive that almost nothing remains of the original edition. The orientation, material, illustrations, and organization, as well as basic concepts, have been completely altered and modernized.

The changes in the book reflect the transformation that meteorology has undergone in the last 15 years. In 1940, when the first edition was published, weather forecasting was a highly personal and subjective art with virtually no quantitative methodology. The basic ideas of synoptic meteorology found in the