Book Reviews

Bernhard Eduard Fernow: A Story of North American Forestry. Andrew Denny Rodgers III. Princeton, N. J.: Princeton Univ. Press, 1951. 623 pp. $7.50.

In completeness of coverage, fidelity to facts, and freedom from bias, this volume should rank as the most comprehensive and trustworthy history of the origin and development of forestry in the U. S. and Canada that has yet appeared. The author has made a thorough examination of all published records and has supplemented these data drawn from extensive private correspondence and personal interviews. In a careful reading of the text, based on personal knowledge covering fifty years, the reviewer has not discovered any inaccuracies.

Bernhard Eduard Fernow, as the record shows, was truly the founder of the profession of forestry in America—despite the fact that Gifford Pinchot, his successor as head of what was then the U. S. Bureau of Forestry, building on the foundations Fernow had laid, was able to realize the aims of his predecessor. With the support of President Theodore Roosevelt, Pinchot established and greatly expanded the national forest areas and policy for which Fernow was responsible.

The practice of forestry as a science and an art was unknown in America when Fernow first visited this country in 1876 to attend the Philadelphia Centennial Celebration. Remaining here, he later married the American girl who was the real reason for his transfer of citizenship. A Prussian of the old school, he had received a complete education and training in the science of forestry in his native land. With this equipment he combined keen intelligence, great versatility, enormous energy, and the culture and instincts of a gentleman and a true scientist.

Fernow was appointed chief of the Division of Forestry in the Department of Agriculture in 1886—his first salaried position in forestry—after a decade of employment in other fields and of active public work for a sound national forest policy. By June 4, 1897, his plan for national forests had been adopted by Congress and a sound administrative act passed and, with Filibert Roth, he had founded the science of timber physics.

Not by nature politically minded, Fernow in 1898 resigned to found the first professional college of forestry in the U. S. at Cornell University, to prepare students for the practice of this art, then for the first time promising employment to trained men. His later misfortune, brought about by his belief that plantations of conifers should supersede Adirondack hardwoods, which led to temporary discontinuance of the school in 1903, is ably and fully covered and should be accepted as the last word on this controversy.

After a year of substituting at the Yale School of Forestry in the absence of Henry S. Graves in the Philippines, Fernow initiated the College of Forestry at Penn State, in 1905, but in 1906 he was called upon to found the College of Forestry at the University of Toronto—where he remained until his death in 1923. His influence on Canadian forestry was as far-reaching and profound as had been his initial efforts here.

This text is far more than a life of Dr. Fernow. Literally hundreds of persons are mentioned, with the part they played in forest history. All important events in the development of forest policy and practice are accurately dealt with, from the early beginnings of the movement in the 1870s until 1923, when Fernow's participation was terminated by his death.

"To be first in the field in point of time, and to continue to be first in the field in point of quality, is one of the rarest things in this world" sums up Dr. Fernow's career in the words of President Livingston Farrand, of Cornell University, at the dedication of Fernow Hall in 1922.

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Progress in the Chemistry of Organic Natural Products, Vols. VI and VII. L. Zechmeister, Ed. Vienna: Springer-Verlag, 1950; distributed by Walter J. Johnson, New York. Vol. VI: 392 pp.; $12.50 paper, $13.50 cloth. Vol. VII: 330 pp.; $12.00 paper, $12.80 cloth.

It is difficult for a modern chemist to conceive that there was a time, almost within the memory of living men, when a person could know all the important discoveries of organic chemistry. As our science broadens, the task of organization and assimilation continually becomes more complex, and the need for books such as these is felt more keenly. This reviewer is once more impressed by the high scholarship and clear expression of the authors and the intrinsic interest of the subject matter. The work of typesetting and proofreading is beyond praise when the trilingual (English, German, French) nature of the books is considered.

Volume VI deals with "Biochemical and Nutritional Aspects in Fat Chemistry," by H. J. Deuel, Jr., and S. M. Greenberg; "Animal Odors and Perfumes," written in French by E. Lederer; "Occurrence and Biochemical Behavior of Quinones," written in German by O. Hoffman-Ostenhof; "Cactus Alkaloids and Some Related Compounds," by L. Reti; "Plant Proteins," by James Bonner; and "Spectrochemistry of Fluorescence of Biological Products," written in French by Ch. Dhéré.

Volume VII discusses "The Constitution of the Triterpenes," written in German by O. Jeger; "Constitution, Configuration and Synthesis of Digitaloid Aglycones and Glycosides," in German, by H. Heusser; "Thyroxine and Related Compounds," by C. Niemann; "Penicillin and its Place in Science," by A. H. Cook; "The Active Principles of Senna," by A.

Stoll and B. Becker; and "Some Recent Developments in the Chemistry of Antibodies," by J. W. Williams.

The authors give bird's-eye views of these subjects, in which each is an active and well-known worker. The chapters are replete with interesting facts and generalizations. Many excellent suggestions for future work are to be found here. For this reason, these volumes are particularly recommended to the young academic researcher who has not yet selected his particular field of investigation within the vast domain of organic chemistry. Literally thousands of references help to introduce the reader to the original literature.

This reviewer can only congratulate the editor upon being able to persuade busy men to devote so much time to make it easier for the rest of us to catch glimpses of fascinating researches outside the areas of our own efforts. These books are not light reading, but they are very rewarding.

H. B. HASS

General Aniline & Film Corporation

Structural Geology of North America. A. J. Eardley. New York: Harper, 1951. 624 pp. $12.50.

"The purpose of the book is to describe the structural evolution of the North American continent in post-Proterozoic time." The author thus defines scope and aim and faithfully adheres to his purpose. The book is less a structural geology than a post-pre-Cambrian tectonic history and regional geology of North America. The only other recent regional geology of the continent (Bornträger, Berlin) has become a war casualty. This book fills a large gap and, being the work of one author, has all the advantages of single authorship. Disadvantages are well compensated by frequent use of the literature and the many unaltered original illustrations.

The book begins with a brief chapter on definitions of those terms that the author felt needed clarification. There follows a brief summary of the tectonic and paleogeographic history, vividly illustrated by 16 color plates outlining the distribution of orogenic belts, areas of erosion, ocean basins, and areas covered by thin sediments or shallow sedimentation. Lands rise and subside, oceans recede and transgress, and the instability of the earth's crust is reflected in sedimentation and folding of zones at the margin of an otherwise little-changed continent.

From page 24 on the author takes up the structural provinces in 31 chapters, each dealing with an area or tectonic unit. The delineation of units may be debatable but does follow generally accepted lines; it is structural where units are recognizable—for instance, the "Idaho batholith"—or geographical where the units are less defined—for instance, "Alaska." It would seem more desirable to use tectonic units only.

In each chapter the stratigraphy is summarized rather thoroughly, and the structures are discussed in terms of the tectonic history, thus providing a geologic picture of the area. The book is much more than the outline and description of the tectonic evolution of North America. Since it is profusely illustrated (343 figures!), and the illustrations are largely copies of original drawings, it provides the most illuminating document on a theme that one might well entitle: "Geologists at work in North America." It is easy to see how the various authors try to communicate their ideas and conclusions to the fraternity. Easily recognized are professional drawings of draftsmen of the U. S. Geological Survey, too similar to reveal the author's originality. Outstanding are the artistic masterpieces of Phil King, Robert Balk, or the famous block diagrams of Johnson. Some of Raisz's and Lobeck's illustrations appear like antique etchings, but much is left to the lettering set and draftsman where the author should have done the drawing himself. But pictures express ideas. Some of these are conservative and meticulously supported by evidence, others sweeping and with little basis in fact or entirely hypothetical. All follow one another and convey the impression of a busy group of productive scientists.

The text is, of course, entirely the author's, but the ideas and skill as they appear in the illustrations tell the story in a much more lively and authentic fashion—as if the illustrations had lost their identity in the process of publication.

The book is large—624 double-sized pages, and represents an enormous amount of hard work. It is useful as a source book and will be so used by most geologists. For the teacher it will pave the way to many a lecture without search through a library. It will stimulate teaching of regional geology, which is too rarely listed in university catalogues.

It could be expected that not all regions would be equally well handled and that those the author knows fare better than others. For geologists there is no substitute for personal acquaintance in the field.

After receiving the gift of the author's many years of labor, it seems ungrateful to criticize it and to ask for more and greater efforts, but the complete omission of the basement structures on which the continent is built, and on which the author's work rests, is like building a monumental structure without a foundation. Could it be that this omission reflects lack of information on the basement and possibly lacking interest of the fraternity in crystalline rocks generally?

The outer form of the book is elaborate; the printing and illustrations are first-class and could scarcely be improved.

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Genetics: A Survey of the Principles of Heredity. A. M. Winchester; Bentley Glass, Ed. Boston: Houghton Mifflin, 1951. 371 pp. $5.00.

The great majority of students in an elementary genetics course have no special aptitude or interest in the subject and have no intention of going further in it. This book is written for such a group. In his preface the author states: "The material is presented with the