

Henry A. Ward, Museum Builder to America  
By Roswell Ward. Edited by Blake McKelvey.  
(Rochester Historical Society Publications, Vol. 24.)  
Pp. xxiv + 297 + 14 plates. (Rochester, N.Y.:  
Rochester Historical Society, 1948.) N.p.

PROBABLY no individual has contributed more to the development of natural history museums throughout the world than Henry Augustus Ward, of Rochester, New York, who, even in his boyhood days, had acquired a roving disposition. At an early age he developed a keen interest in geology, and by dint of persistent hard work coupled with exceptional and unexpected opportunities he attained a position of eminence when he was comparatively young.

Early in the second half of the last century his passion for travel and for collecting rare specimens brought him to Europe, where he visited every museum he could find, returning to Rochester at the age of only twenty-seven with the finest collection of geological specimens in America. But this was only the beginning, and his love for exploration and the acquisition of new exhibits lured him to all parts of the world and provided geological and zoological specimens for Ward's Natural Science Establishment, which soon became a great emporium for the distribution of natural science material. Not only was this establishment famous for the provision of outstanding exhibits which led to the formation of many natural history museums, particularly in America, but it also became a training ground of outstanding men in various branches of museum technique who afterwards graduated to positions of eminence in the museum world. The later years of Ward's life were devoted to building up the most complete collection of meteorites in existence, a collection which is now preserved in the Field Museum, Chicago. The biography has been admirably written by his grandson, who has given us a complete and fascinating account of the life, work and achievements of a remarkable man of science, explorer and collector.

H. SHAW

Was ist Wahrheit in den Naturwissenschaften?  
Von Bernhard Bavink. Pp. 88. (Wiesbaden: Eberhard Brockhaus-Verlag, 1947.) n.p.

IN this little book Prof. B. Bavink discusses first the meaning of 'truth' in science and, secondly, the criterion by which we determine what is true and what is false. On the first point he contrasts the realistic view—that there is an external world which we examine and that our description of it is true if it corresponds faithfully to that world—with the positivist view that there is no world independent of our observations and that a statement about our observations is true if it is consistent with them all. As a compromise between these extremes he cites the Kantian doctrine that there is an external world but that it is unknowable and all our knowledge is of our experience. Prof. Bavink considers these attitudes in their relation to both general and particular scientific laws. Without definitely adopting any of these views he points out that in practice we usually think in terms of the first, and that in any case we must admit that scientific laws hold independently of the knowing subject. In the matter of the truth criterion he discusses the belief that mathematical and scientific theorems are conventions, and gives reasons for rejecting the positivist attitude in this matter. He finds the criterion of truth with respect to a scientific law in the convergence of different, and apparently independent, lines of research towards the

same conclusion; the law is true in so far as this convergence is without exception.

While the book does not contribute anything essentially novel to the problems of which it treats, it is clearly and interestingly written, and sets out the various considerations in a thought-provoking manner. It may be recommended as a valuable stimulus to those whose minds are not yet made up on the subject.

H. D.

Einführung in die vergleichende Morphologie der Wirbeltiere

Von Prof. Dr. Adolf Portmann. Pp. 335. (Basel: Benno Schwabe und Co., 1948.) 28 Swiss francs.

DURING the nineteenth century many detailed works of comparative morphology were published, both for vertebrates and invertebrates. At the close of the century, morphology was frowned upon by the eager physiologists, experimental biologists, embryologists and geneticists, who maintained that morphology was worked out. But as usual the pendulum has swung back again, and there has been a realization that morphology is the fundamental study upon which the others are based, and that not less but more is needed.

Prof. A. Portmann's book is an up-to-date treatise on the elements of comparative morphology, based on a wide, accurate and detailed knowledge of the vertebrates. The work follows the usual course, dealing with the systems and organs of the body in turn, discussing their homologies, comparing fossil and modern examples, and assessing the value of their evolutionary trends. The excellent figures prepared by Fr. M. Stehelin are especially to be commended. Their very simplicity is pleasing, and her bold use of black and white is applied with an artistic merit rarely seen in text-books. The parts of diagrams in comparative series are numbered instead of lettered, so that the reader can test his knowledge. Is it to prevent his memorizing the numbers that in one series the numbers begin at the anterior, and in another at the posterior end? A selected list of modern works is intended as an introduction to the literature, and there is an index.

N. B. EALES

Introduction to Emulsions

By George M. Sutheim. Second printing. Pp. viii + 260. (Brooklyn, N.Y.: Chemical Publishing Co., Inc.; London: Chapman and Hall, Ltd., 1947.) 21s. net.

THIS book is written in the first person in lecture style, and is, in fact, based upon lectures given at the Brooklyn Polytechnic Institute in New York. It is claimed to be written by a practical man for practical men, and, on that account, contains details and explanations which the chemist with a university degree will find superfluous. A bibliography is appended with 159 references; but no mention is made of G. I. Taylor's work on the physics of emulsion formation, nor of F. A. Cooper's work on size frequency analysis and the chemical engineering aspects of emulsion manufacture. Another extensive appendix gives the commercial name of 182 emulsifying agents produced in the United States, and lists their chemical name or formula, group and emulsion type and manufacturer. The uses of bentonite as an emulsifying agent is only lightly considered. The manufacture of a good emulsion is still somewhat of an art, and the comment that "you cannot learn to ride a bicycle by reading a book" still seems to hold for practical emulsion technology.

M. B. DONALD