

general reader who has some background in biology, and it admirably fulfills its purpose as an introduction to the biology of soil animals; but specialists concerned with any aspect of pedology will also find a great deal of interest here. Much of it should be of lasting value, although it will undoubtedly contribute to its own obsolescence by stimulating and directing research in soil zoology.

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Historical Mineralogy

On the External Characters of Minerals.

A. G. Werner. Translated from German by Albert V. Carozzi. University of Illinois Press, Urbana, 1962. xxxi + 118 pp. \$4.50.

This delightful little book should find a receptive audience among mineralogists and historians of science, since it stands as a monument to the early attempts to make orderly arrangements of data from scattered observations. Its appearance in 1774 clarified an ill-defined discipline and excited wide scientific concern. Of especial interest are the semantic writhings and circumlocutions required to describe, for example, such physical properties as color or cleavage, which, although recognized, were not understood.

The name of Werner is popularly associated with the ideas of Neptunism and continental drift, but his principal early interests and contributions lay in the field of descriptive mineralogy, where the impact of his ideas is still echoing. The subject matter of his text, which today would be termed the "physical characteristics of minerals," is limited in scope but thorough in treatment. He attempted, rather successfully, to define and to arrange the physical properties of minerals into an orderly scheme along the line of modern determinative tables in which only qualitative observations are required. Werner demonstrated a consistent antipathy to the use of quantitative measurements, by disregarding mineral chemistry although this art was relatively advanced at Leipzig, by his unconcern with crystallography which he considered to be a kind of applied mathematics, and by his attitude towards the determination

of specific gravity which required "much time in the preparation of such experiments, not to mention other difficulties."

This translation is taken from Werner's personal "desk" copy, which includes numerous changes made by Werner's own hand, apparently in anticipation of another edition. Carozzi has done a masterful job of incorporating this material, together with appropriate explanatory notes, into a very readable whole. He has also included an extensive and well-documented introduction in which he discusses the history of the book in its various early translations and brings Werner's mineralogical contributions into proper relation with the ideas of the time.

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New Books

General

American Credo. Stuart Chase. Harper, New York, 1962. 217 pp. \$3.95.

Diseases of Turfgrasses. Houston B. Couch. Reinhold, New York, 1962. 302 pp. Illus. Plates. \$10.

English-Polish Technological Dictionary. S. Czerni and M. Skrzńska, Eds. Wydawnictwa Naukowo-Techniczne, Warsaw, Poland; Pergamon, New York, 1962. 450 pp. \$10.

Essays on African Population. K. M. Barbour and R. M. Prothero, Eds. Praeger, New York, 1962. 346 pp. Illus. Maps. \$7.50.

A Field Guide to Western Birds. Roger Tory Peterson. Houghton Mifflin, Boston, ed. 2, 1961. 392 pp. Plates. \$4.95.

The First Nine Months of Life. Geraldine Lux Flanagan. Simon and Schuster, New York, 1962. 95 pp. Illus. \$3.95.

Flora of the British Isles. A. R. Clapham, T. G. Tutin, and E. F. Warburg. Cambridge Univ. Press, New York, ed. 2, 1962. 1317 pp. Illus. \$13.50.

High School Social Studies Perspectives. Erling M. Hunt *et al.* Houghton Mifflin, Boston, 1962. 353 pp. Maps. Paper, \$3.75. Thirteen contributed papers that deal with the social studies and their objectives and curriculums and with the critical areas of the world today. The book is intended for use in institutes and workshops for teachers as well as for use in courses offered in teacher-training institutions.

History of Science. An annual review of literature, research, and teaching. vol. 1, 1962. A. C. Crombie and M. A. Hoskin, Eds. Heffer, Cambridge, England, 1962. 140 pp. 30s.

How to Review Advanced Algebra. Howard Eisner. Youth Education Systems, Larchmont, N.Y., 1961. 141 pp. Paper, \$1.50.

Intermediate Algebra Review. Stanley I. Cohen. Youth Education Systems,

Larchmont, N.Y., 1960. 144 pp. Illus. Paper, \$1.50.

Life Beyond Our Planet. A scientific look at other worlds in space. Dan Q. Posin. McGraw-Hill, New York, 1962. 129 pp. Illus. \$3.25.

Medical Abbreviations. A cross reference dictionary. Special Studies Committee of the Michigan Occupational Therapy Association. The Association, Ann Arbor, 1961. 247 pp. Paper, \$2.

The National Aeronautics and Space Act. A study of the development of public policy. Alison Griffith. Public Affairs Press, Washington, D.C., 1962. 126 pp. \$3.25.

Of Time, Work, and Leisure. Sebastian de Grazia. Twentieth Century Fund, New York, 1962. 570 pp. \$6.

Problems in High Speed Printing. The influence of printing speed and pressure on print quality. Proceedings of the Sixth International Conference of Printing Research, held at Elsinore, Denmark, 1961. W. H. Banks, Ed. Pergamon, New York, 1962. 300 pp. (23 contributed papers). Illus. \$15.

Project Plowshare. The development of the peaceful uses of nuclear explosions. Ralph Sanders. Public Affairs Press, Washington, D.C., 1962. 216 pp. \$4.50.

Science and the Humanities. Moody E. Prior. Northwestern Univ. Press, Evanston, Ill., 1962. 136 pp. \$3.50.

Scientific Explanation, Space, and Time. vol. 3, *Minnesota Studies in the Philosophy of Science.* Herbert Feigl and Grover Maxwell, Eds. Univ. of Minnesota Press, Minneapolis, 1962. 643 pp. \$8.50.

The State Universities and Democracy. Allan Nevins. Univ. of Illinois Press, Urbana, 1962. 180 pp. \$2.95.

Subantarctic Campbell Island. Proceedings, No. 10, Denver Museum of Natural History. Alfred M. Bailey and J. H. Sorensen. The Museum, Denver, Colo., 1962. 305 pp. Illus. \$7.

Unpublished Scientific Papers of Isaac Newton. A selection from the Portsmouth Collection in the University Library, Cambridge. Edited and translated from the Latin by A. Rupert Hall and Marie Boas Hall. Harper, New York, 1962. 437 pp. Illus. Plates. \$11.

Tenth Year Mathematics. Joseph A. Vellozzi. Youth Education Systems, Larchmont, N.Y., ed. 2, 1960. 252 pp. Illus. Paper, \$1.50.

Thinking about the Unthinkable. Herman Kahn. Horizon Press, New York, 1962. 254 pp. \$4.50.

The Weapons Acquisition Process. An economic analysis. Merton J. Peck and Frederic M. Scherer. Graduate School of Business Administration, Harvard Univ., Boston, 1962. 768 pp. Illus. \$10.

Young People's Science Encyclopedia. vols. 1-19 (1896 pp. Illus.); vol. 20, *Parents' and Teachers' Guide: Index and Bibliography* (171 pp.). Edited by the Staff of National College of Education. W. Ray Rucker, Ed., Children's Press, Chicago, Ill., 1962. \$59.95; schools and libraries, \$44.95.

Yugoslavia and the New Communism. George W. Hoffman and Fred Warner Neal. Twentieth Century Fund, New York, 1962. 562 pp. Illus. \$8.