

peoples themselves, for they use them as codes of precedent for status, rights, and cultural activities. The oral histories are more than this, however, for they contain sociological explanations of the contemporary society; the nature of these explanations enables anthropologists to find the best approach for examining key institutions and the state of unity within diversity.

The focal group, the Lunda people, is designated and accepted by all Luapula peoples as the rulers; among the Lunda are found not only the paramount chief but also many other persons with official authority and privilege. Although this has been a conquest-state for more than a century and a half, Lunda cultural influence tends to be limited to a number of political centers, and little effort has been made to establish conformity. The Lunda chiefship and political authority is, nevertheless, linked directly and indirectly to the institutions of the various peoples; it provides a coherent structure and a stable continuity to the society. This book provides a useful addition to our knowledge of central African peoples.

PHILLIP GULLIVER
*African Studies Program,
Boston University*

Implications of Evolution. G. A. Kerkut. Pergamon Press, New York, 1960. x + 174 pp. Illus. \$5.

"It may be distressing for some readers to discover that so much in zoology is open to doubt, but this in effect indicates the vast amount of work that remains to be done." Kerkut made this discovery for himself, and this book is his cry of distress. Evolution has not, he writes, been proved beyond all reasonable doubt. He is not an antievolutionist, since he concedes "that many living animals can be observed over the course of time to undergo changes so that new species are formed." But he argues, correctly of course, that we do not know exactly when and how life arose from nonliving matter (chapter 2), that the phylogenetic relationships of the viruses, rickettsiae, and bacteria are obscure (chapter 3), ditto for the protozoans (chapter 4), ditto for the origin of the Metazoa (chapters 5 and 6), ditto for the invertebrate phyla (chapter 7), ditto for the origins of the vertebrates as suggested by the biochemical studies (chapter 8). All of

which means that zoology is not yet a completed story, and, indeed, a vast amount of work remains to be done.

The basic conclusion of the author is, however, something else—since we cannot yet reconstruct in all details the phylogeny of the animal kingdom, therefore, evolution is not "proven"! This is a confusion of two distinct problems; we may be sure that life (or, for that matter, the Cosmos) had a history, but it does not follow that we know all the events of which these histories are composed, with their respective dates. The author has been wise not to suggest any alternatives to the theory of evolution; he has been unwise to write chapter 9 ("Vertebrate palaeontology") without which the book would have been better than it is.

THEODOSIUS DOBZHANSKY
*Department of Zoology,
Columbia University*

New Books

Biological Sciences

Biological Clocks. vol. 25 of *Cold Spring Harbor Symposia on Quantitative Biology*. Biological Laboratory, Cold Spring Harbor, N.Y., 1960. 524 pp. Fifty papers presented at the symposium which was attended by 150 scientists from 31 countries.

The Biological Role of Ribonucleic Acids. Jean Brachet. Elsevier, Amsterdam; Van Nostrand, Princeton, N.J., 1960. 144 pp. The 1959 Weizmann Memorial Lecture.

Dictionary of the Fungi. G. C. Ainsworth. Commonwealth Mycological Inst., Kew, Surrey, England, ed. 5, 1961. 554 pp. Illus. 30s. More than 5000 corrections or alterations have been made, new material added, and new illustrations prepared; 500 more generic names have been compiled—mostly from vol. 2, pts. 8–20, of the Institute's *Index of Fungi*.

Electrophysiological Methods in Biological Research. Josef Holubar and Josef Ipser, Eds. Translated by Petr Hahn. Czechoslovak Acad. of Sciences, Prague, 1960. 515 pp. Illus.

Evaluation of Drug Therapy. Francis M. Foster, Ed. Univ. of Wisconsin Press, Madison, 1961. 191 pp. \$4. Proceedings of a symposium held in May 1960.

Index-Handbook of Cardiovascular Agents. vol. 2, pts. 1 and 2 (1951–1955). Publ. No. 821. Isaac D. Welt, Director, Literature Project. National Acad. of Sciences–National Research Council, Washington 25, 1960. 1623 pp. \$15. Lists 13,400 scientific communications, each analyzed and annotated with reference to the various drugs involved. Chauncey D. Leake served as chairman of the advisory committee; the staff included Welt, James H. Defendorf, Carter Lee, Judith MacMillan, and Edgar C. Rich.

Mackie and McCartney's *Handbook of*

Bacteriology. A guide to the laboratory diagnosis and control of infection. Robert Cruickshank, Ed. Livingston, Edinburgh; Williams and Wilkins, Baltimore, Md., 1960. 991 pp. \$8.50.

Die Neuroendokrine Steuerung der Adaptationstätigkeit. K. Lissak and E. Endroczi. Akademie der Wissenschaften, Budapest, 1960. 171 pp. Illus.

Orthopedic Surgery of the Dog and Cat. Ellis P. Leonard, Saunders, Philadelphia, Pa., 1960. 308 pp. Illus. \$12.50.

Principles of Plant Breeding. R. W. Allard. Wiley, New York, 1960. 496 pp. Illus. \$9.

General

An Atlas of Africa. J. F. Horrabin. Praeger, New York, 1960. 126 pp. Cloth, \$3.50; paper, \$1.45. Graphic maps showing the geography, topography, and history of Africa. A section entitled "Tomorrow" shows problems of population, language, and transportation; distribution of mineral wealth, water, and water power; recent activities in the Sahara; and sites of the main archeological activities in recent times. The volume measures approximately 5½ by 8 inches.

Cacti. Walter Kupper and Pia Roshardt. Translated and edited by Vera Higgins. Nelson, New York, 1960. 127 pp. Illus. \$10. A description of the spines, flowers and fruits; written for the non-scientists. The 60 full-page illustrations (in color) by Pia Roshardt were painted from specimens selected from the Cactus House in Zurich.

God of the Scientists. God of the Experiment. Remy Chauvin. Translated by Salvator Attanasio. Helicon Press, Baltimore, Md., 1960. 159 pp. \$3.95.

Government Publications and Their Use. Laurence F. Schmeckebier and Roy B. Eastin. Brookings Institution, Washington, D.C., ed. 2, 1961. 487 pp. \$6. A description and evaluation of catalogs, indexes, bibliographies, and other sources of information; explanation of classification and titling systems, with new chapters on government periodicals and microfacsimile copies of government publications.

Klimadiagramm-Weltatlas. vol. 1. Heinrich Walter and Helmut Lieth. Fischer, Jena, East Germany, 1960. The first part (three volumes, with about 30 maps and their supplements, are planned) of a collection designed to represent the climate of the world in uniform graphic reproduction, each map showing climate regions and position of meteorological stations. Supplementary charts provide information about stations, altitude, years of observation, mean annual precipitation, and so forth. The authors are staff members of the Institut der Landwirtschaftlichen Hochschule.

The Mediterranean Lands. D. S. Walker. Methuen, London; Wiley, New York, 1960. 547 pp. Illus. \$6.75. Primarily intended for the sixth form in British schools, this book deals in some measure with all the countries possessing a coast line on the Inland Sea.

Man and Space. The next decade. Ralph E. Lapp. Harper, New York, 1961. 190 pp. \$4.95.