

and potentials, and the conduction of excitations through synapses and motor end plates. In the last paper of part 1, G. Osche (Erlangen) reports newer aspects of some general principles of the ecology of parasitism and of symbiosis, including the problems of phoresy and commensalism.

F. Huber's (Tübingen) paper (in part 2) is entitled "Comparative physiology of the nervous system of invertebrates" and deals mainly with the more recent work on the nerve nets of coelenterates, the heart ganglia of crustaceae, and the neurons and physiology of the central nervous system of the main groups of arthropods as well as of the cephalopods. Huber's extensive biography is subdivided according to the subchapters of his paper. The other paper in this part, by J. Schwartzkopff (Munich), is a comprehensive review of the comparative physiology of hearing and of vocalization in invertebrates and vertebrates, which covers mainly the progress made during the last 5 years. Echo orientation by birds, whales, and bats is included. Although the bibliography cannot be considered complete, it does cover the field rather evenly.

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Paleontology

Beginning students of paleontology and amateurs should find use for this small handbook, **British Mesozoic Fossils** [British Museum (Natural History), London, 1962. 210 pp. 12s. 6d.]. The handbook, which was prepared by C. P. Costell, L. R. Cox, H. M. Murwood, and others on the museum staff, includes a generalized geologic map, a general discussion of the Mesozoic stratigraphy and paleogeography of Great Britain, stratigraphic tables, a stratigraphically arranged list of species, hundreds of excellent drawings of the species listed, and a simple discussion of the scientific names of fossils. The volume will be most useful, of course, in Great Britain and adjoining parts of northwestern Europe, but people living elsewhere will find that the marine Mesozoic rocks in their countries contain closely related species and a similar faunal succession.

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Ornithology

In this new edition of **A Field Guide to Western Birds** (Houghton-Mifflin, Boston, 1961. 393 pp. \$4.95), Roger Tory Peterson has refined his own technique of field identification to a point that is an artistic achievement as well as a scientific contribution. The present guide excels its predecessor in several ways. There are more color plates, arranged and drawn for easier comparison, with legend pages facing almost all of them. In the text, there are more precise and consistent descriptions of habitats, sections on similar species have been added, and the list of subspecies, not usually applicable in field identification, has been eliminated.

In addition to these improvements geographical scope has been added. All species found in North America, west of the 100th meridian, and a section on the birds of the Hawaiian Islands are now included. In contrast, the earlier edition covered only the western United States. With this new scope the cast of characters has been upped to a grand total of 747 species, presented on 366 pages. Thus, the addition of 126 pages has made room for well over 250 more species.

Although organization and skill have kept the book to the proportions of a field guide, the problems of dealing with so wide a geographical range are apparent. The hummingbird plate (p. 166) illustrates this. Eight of the 15 birds pictured there have ranges so limited that 99.9 percent of those who use the guide will not be within these areas, but no indication of this is given on either the plate or the legend page.

We feel that a key or list of restricted ranges on the legend pages would greatly simplify the use of plates where a substantial number of the birds have a limited distribution (hummingbirds, smaller auks, and flycatchers).

Perhaps the most significant addition to the guide is its companion, **A Field Guide to Western Bird Songs** (Houghton-Mifflin, Boston, 1962. \$12.95), an album of three 12-inch records with the songs and calls of more than 500 species. The album and records are keyed to the pages of the book. The records will be helpful not only to observers in the western United States but to Easterners who use them to compare the variant songs of the same species in the East and the West. The recordings, which are well chosen from the standpoint of their typical

nature, were produced by the Laboratory of Ornithology at Cornell University.

Certainly the book and recordings are a necessary part of any specialized collection; they are also essential for both amateur and professional ornithologists in western North America.

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New Books

Mathematics, Physical Sciences, and Engineering

Active and Passive Earth Pressure Coefficient Tables. Alfreds R. Jumikis. College of Engineering, Rutgers Univ., New Brunswick, N.J., 1962. 371 pp. Illus. \$10.

Angular Momentum. D. M. Brink and G. R. Satchler. Oxford Univ. Press, New York, 1962. 142 pp. Illus. \$2.40.

Annual Review of Nuclear Science. vol. 12. Emilio Segrè, Gerhart Friedlander, and Walter E. Meyerhof. Annual Reviews, Palo Alto, Calif., 1962. 633 pp. Illus. \$8.50.

Basic Theories of Physics. *Heat and Quanta* (© 1951, 310 pp.); *Mechanics and Electrodynamics* (© 1949, 288 pp.). Peter Gabriel Bergmann, Dover, New York, 1962. Paper, \$1.75 each.

The Challenges of Space. Hugh Odishaw, Ed. Univ. of Chicago Press, Chicago, 1962. 397 pp. Illus. \$6.95. Revised and expanded version of papers published in the May-June 1961 *Bulletin of the Atomic Scientists*.

Developments in Applied Spectroscopy. Proceedings of the 12th annual symposium (Chicago, Ill.), May 1961. vol. 1. W. D. Ashby. Plenum Press, New York, 1962. 270 pp. Illus. \$9.

Gas Chromatography. Howard Purnell. Wiley, New York, 1962. 448 pp. Illus. \$12.

Zur Geochemie und Lagerstättenkunde des Urans. Josef Dybek. Borntraeger, Berlin, Germany, 1962. 163 pp. Paper.

Physique Solaire et Géophysique. A. Dauvillier. Masson, Paris, 1962. 361 pp. Illus. NF. 72.

Principles of Applied Geophysics. D. S. Parasnis. Methuen, London; Wiley, New York, 1962. 183 pp. Illus. \$4.50.

Principles of Mechanics and Dynamics. pts. 1 and 2. Sir William Thomson and Peter Guthrie Tait. Dover, New York, 1962 (reprint of 1912 ed.). pt. 1, 525 pp.; pt. 2, 552 pp. Illus. Paper, \$2.35 each; \$4.70 per set.

Progress in Infrared Spectroscopy. Proceedings of the fifth annual spectroscopy institute (Buffalo, N.Y.), August 1961. vol. 1. Herman A. Szymanski, Ed. Plenum Press, New York, 1962. 452 pp. Illus. \$16.

Stars and Galaxies. Birth, ageing, and death in the universe. Thornton Page, Ed. Prentice-Hall, Englewood Cliffs, N.J., 1962. 176 pp. Illus. Paper, \$1.95; cloth, \$3.95.