

This manual consists of eleven chapters and Appendix I, terms for direction; Appendix II, the preparation of specimens; and Appendix III, references and an index. The major systems covered in the chapters include the axial and visceral skeleton; the appendicular skeleton; the muscular system; the sense organs; the nervous system; the coelom, digestive, and respiratory systems; the circulatory system, and the excretory systems.

In each of these chapters, the respective systems of the fish, the primitive tetrapod, and the mammal are covered. Easy to follow instructions are outlined and numerous clear line sketches are included on each system to aid the student in the location, dissection and identification of the specific structure being considered.

The over-all presentation of this manual is organized in such a manner that it could be effectively utilized in the advanced high school biology class where extensive vertebrate dissection is planned and where an introduction to the comparative anatomy of representative vertebrates is to be considered. A more extensive area for utilization of this manual is in the college area of comparative anatomy where it should be found to be a very effective manual.

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HERPETOLOGICAL TYPE-SPECIMENS IN THE UNIVERSITY OF ILLINOIS MUSEUM OF NATURAL HISTORY, Hobart M. Smith, David A. Langebartel and Kenneth L. Williams, 80 pp., \$3.00, University of Illinois Press, Urbana, 1964.

This Illinois Biological Monograph (No. 32) lists the 1,827 type-specimens of amphibians and reptiles in the University of Illinois Museum of Natural History, with annotations on collecting site, collector, and date. The technical compilation, of historical as well as taxonomic significance, is largely made up of type records which are Mexican in geographic origin. Although this publication is primarily of interest to professional herpetologists, there is a helpful discussion of categories of "types" in the introduction.

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ANIMAL LANGUAGE, BSCS Pamphlet No. 20, Nicholas Collias, 36 pp., 50¢, D. C. Heath and Company, Boston, 1965.

Devoted almost exclusively to the vocalization of birds, the treatise nevertheless comes off well as many observations are reported as to

the meaning given to various calls. A full-color insert does not lend much to the writeup but seems to illustrate pictorially some things described almost more vividly in the text.

This is one of those facets of biology which is based primarily on keen observation, and as such suggests all sorts of things for the biology students' project-mindedness. A most interesting and fascinating look into a facet of natural history with importance for scientific research.

CELLULOSE IN ANIMAL NUTRITION, R. E. Hungeate, 36 pp., 50¢, D. C. Heath and Company, Boston, 1965.

Of course, the role of the microorganisms in the breakdown of cellulose is the running theme of the book. These interesting relationships which these organisms have built up within their larger "hosts," but necessarily with a biological meaning, are described here in some detail. The case of the termite and the ruminants are, of course, the most classic, and the most extensively treated.

This is an aspect of biology alluded to, but seldom covered in elementary texts. It is even difficult to figure under what caption it belongs. It has relevance for agriculture, ecology, microbiology, and molecular biology. No wonder it has been easier to ignore it.

This is one of the few in this series without color, but the textual descriptions are well done and interesting.

ANIMAL GROWTH AND DEVELOPMENT, A LABORATORY BLOCK, BSCS, Florence Moog, 83 pp., \$1.32, D. C. Heath and Company, Boston, 1963.

These are especially valuable books for the teacher who would like to present an experimentally oriented laboratory or to provide suggestions for science fair projects in the field of animal growth and development. The teacher's manual includes several introductory chapters on advice for those doing the block for the first time, the making of schedules, and just some practical hints on managing the block. Five major projects are included: normal development of frog embryo; hormonal control of amphibian metamorphosis; normal development of the chick embryo; and the influence of sex hormones on the development of the chick. Each project is clearly outlined as follows: materials needed; advance preparation; handling the project in the class, and discussion. In addition to these major projects a variety of other experiments are included as ideas for further study. There is an appendix listing the materials and equipment that are needed for both the prescribed and the optional projects.