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BOOK REVIEW

McGAVIN G.C.: ESSENTIAL ENTOMOLOGY. AN ORDER-BY-ORDER INTRODUCTION. Oxford University Press, Oxford, 2001, vi + 318 pp. ISBN 0-19-8500025. Price GBP 18.99.

Following a brief introduction, which emphasizes the species diversity of insects (however 56.3% of recent organisms seems to be rather low estimate), this textbook is written in four main parts. The first part called "Insect Evolution and Biology" covers topics such as the emergence and evolution of the group, the factors that made insects such successful organisms and the importance of their role in terrestrial ecosystems. It outlines the common features in their structure, function and physiology. Starting from the evolution of arthropods and first appearance of terrestrial arthropods a brief history of multicellular life with particular reference to insects is discussed. Five key factors in the insect winning formula (i.e. size, cuticle, the nervous system and the blood-brain barrier, flight, and reproduction) are described in detail.

The second part provides a semi pictorial key to the insect orders. Unambiguous text coupled with clear drawings, designed to highlight key features, should allow the reader to assign most adult insects to the correct order.

The major part of this book (third chapter) consist of a treatment of the 29 extant insect orders. Each order is treated in a similar way and laid out in a very desirable, uncomplicated fashion. Following a full-page illustration of a typical representative of the order, tables containing basic data (alternative and common names, their derivation, size, type of metamorphosis, distribution, number of families and known world species) are presented and key features of the order emphasized. Concise descriptions of each group containing basic information of both a morphological and biological nature are presented. Data are presented in a standard manner making it easy to understand and essential terms are explained using marginal notes. All chapters end with paragraphs entitled "Key Reading", which indicates the basic literature sources.

The book ends with a chapter on Fieldwork, dealing with collecting techniques, killing methods, data recording and specimen preservation.

Although the higher phylogeny and systematics (here called "Basic Taxonomy") of insect is far from being resolved some notes seem to be rather obsolete. For instance, nobody considers the Mantodea and Blattodea are suborders of Orthoptera or the Raphidioptera and Megaloptera of Neuroptera (p. 52). The "Hemiptera" concept is disputable and rather conservative. In fact, the Sternorrhyncha seems to be a sister group to all other hemipterans (sometimes called Euhemiptera). Within the latter group, the Auchenorrhyncha represents a sister group of Coleorrhyncha + Heteroptera s. str.

References in the "Key Reading" paragraphs seem to have been chosen by chance in many cases. For instance, proceedings of international conferences on Ephemeroptera or Plecoptera do not bring any comprehensive knowledge on the orders in question. The mostly very specialized papers referred to cannot help students understand the essentials of an order, although they may inform the reader about current trends and tendencies in research.

The note on "neoteny" (p. 203) is a little confusing, although not wrong. According to general opinion (cf. e.g., Wigglesworth, 1965), neoteny is the ability of a non-adult (e.g., larval) stage to copulate and give raise a fertile offspring (e.g., "neotenics" in termites). Some figures are confusing. For example, that on p. 72 indicates non-existent "terminal gills" in mayflies. Stonefly larva illustrated on p. 88 possesses two-segmented tarsi (!) but lack ocelli and eyes.

In spite of minor mistakes, this publication is useful for students as a very welcome basic source of knowledge on insect diversity.

T. Soldán