Meteorology for Biologists

Weather and Life. An Introduction to Biometeorology. WILLIAM P. LOWRY. Academic Press, New York, 1969. xiv + 306 pp., illus. $5.95.

Potential readers of this book will be better guided if they heed the subtitle rather than the title, for the author in fact follows the conventional approach of a meteorologist addressing himself to biological problems. Weather, as the net effect of numerous and variable meteorological factors, is dealt with only by implication; individual factors, by contrast, are treated in some detail. The individual factors that are stressed are those that contribute to the energy balance; integration, one with another, is in terms of this concept. Important though the energy balance is in dealing with biometeorological relationships, it is hardly synonymous in most minds with weather.

As a presentation of the way in which the selected meteorological factors contribute to the energy balance of living organisms and their immediate environment, this book represents a worthy effort by a meteorologist to communicate with his biological counterparts. But it is still on his own terms. The biologist will need to make a matching effort at understanding the physical approach and at translating its input into biologically significant terms. With a somewhat different style this task could have been made easier.

The treatment is sound, but tends to the pedantic; an occasional happy phrase or illustration does not entirely offset a generally heavy approach. Nevertheless, until such time as a more felicitous text emerges, this volume provides a very necessary and timely exposition of the significance of environmental energetics for the living organism. Radiation, temperature, moisture, and air movement are discussed in physical detail, replete with equations, in the first two sections. With these matters expounded, the third section deals with the impact of the energetic states upon plants, animals, man, and their immediate surroundings, in terms that will be more appealing to the biologist concerned with the ultimate outcome for productivity and for human welfare. The book concludes with a discussion of meteorological factors in city and air pollution problems.

This volume should be very useful for those who are involved in studies under the International Biological Program, and as a text for meteorologists, already familiar with the physical approach, who are seeking application to biological problems. But it will require supplementation by others who can match it with equal biological sophistication.

To a certain extent the book reflects the unfortunate fact that biometeorology has not yet fully forged the desirable link between its component disciplines. There are still too few biologists sufficiently versed in meteorological concepts and too few meteorologists who know biology. While this is less true at the agricultural end of the spectrum, it is patently so at the human end. In the meantime, much of the relationship between health and climate is left to the mercy of treatments that are little more than descriptive associations and carry analysis only to shallow depths.

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Diptera

The Flies of Western North America. FRANK R. COLE, with the collaboration of Evert I. Schlinger. University of California Press, Berkeley, 1969. xiv + 694 pp., illus. $25.

Cole aimed to produce a "general guide to the study of western flies." He systematically treats the families, genera, and species (about 8000) of Diptera known from the United States and Canada west of 104° West and from Baja California. Recognition of adults, natural history, and distribution are emphasized; supporting sections include a discussion of the external anatomy of the adult fly (basically a good condensation of Crampton's 1942 work), a glossary, and a "selected bibliography." Keys to the adults of the genera, but not species, are provided. Much space is allotted to enumerating the species and their distributions, but comparatively little and often no space to recognition notes; consequently specialized literature will still be essential for recognition of most of the species.

This book originated as an expansion of Cole and Lovett's 1921 list of Oregon flies. For over 40 years Cole compiled and condensed descriptive and biological data from the literature and from his own observations, modified and improved keys, selected and prepared figures (his own illustrations of whole flies are perhaps the best feature of the book), and repeatedly revised sections of the manuscript. The preface states that the literature was catalogued "through 1957" and that an attempt was made "to keep in line with recent findings in the 1965 Catalog" of American flies north of Mexico. Actually, the bibliography includes 61 entries for 1958–1962 and two for 1963, and the classification often differs from that of the 1965 catalog.

The long period of preparation, the difficulties in coordinating data from numerous and often conflicting sources, and no doubt other factors have resulted in many errors. For example, *Boletina* and some other sciophiline genera trace to Sciophilinae in the key on page 117 (if the exits of couplet 8 are reversed) but are included in the key to mycetophiline genera on page 121 because Cole used different classifications on the two pages. The many muscoid flies lacking setae on the "hypopleura" cannot be traced through couplet 47 on page 43. The account of sciomyzid biology seems to imply that little has been done on American species; the extensive work by Berg and his students is not mentioned.

Cole has produced a useful general guide to the study of western flies, but it should be used with regard for its shortcomings.

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Immunity and Heredity

Immunogenetics. W. H. HILDEMANN. Holden-Day, San Francisco, 1970. x + 262 pp., illus. $13.95.

Immunogenetics of Tissue Transplantation. ALENA LENGEROVÁ. North-Holland, Amsterdam; Interscience (Wiley), New York, 1969. xvi + 272 pp., illus. $17.50. Frontiers of Biology, vol. 16.

Although the hybrid specialty of immunogenetics began very shortly after the refounding of genetics at the beginning of the century, it is only relatively recently that it has emerged as a major discipline—one that is intimately re-