

The layout of the book is attractive. Sections in special colors indicate additional work for the interested student, problems to be solved, or more detailed description of phenomena and events.

To someone who is looking for a textbook that makes an attempt to be interdisciplinary, emphasizes the physical basis of life, is understandably written, and is designed for lecture presentation, then this may well be the book.

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**CLASSIFICATION AND BIOLOGY**, by R. A. Crowson. 1970. Atherton Press, New York. 352 pp. \$8.95.

The reader who from the title is led to expect another standard treatise on botanic and zoologic classification will doubtless be gratified that this book goes well beyond the scope of conventional volumes in the field. In the first two chapters, which deal with the classification of the sciences and the function of classification in natural history, the author outlines his philosophic approach, which serves as a basic system of reference throughout the 20 remaining chapters. Although he recognizes that rigid empiricists will likely consider his philosophic approach superfluous, he defends its inclusion on the basis of relevance and requisite intellectual honesty.

A discussion of the species concept in systematics, defined by the criteria of museum study, ecology, physiology, genetics, behavior, and paleontology, is followed by a consideration of classification above and below the species level. A convinced advocate of the phylogenetic approach to systematics, Crowson deals in detail with problems of classification in zoology, botany, and paleontology, with limited consideration given to microbial systematics. The up-to-dateness of the book is suggested by chapters that deal with numerical taxonomy and with phylogenetic evidence from nucleic acids and proteins. Other chapters consider the classificatory use of nonstructural characters, hosts and parasites in classification, heredity and chromosomes in evolution and classification, the systematic value of characters of immature stages, and the noncongruence principle. The final five chapters deal with taxonomic research, practical problems of phylogenetic classification, zoologic and botanic nomenclature, the practical work of the present-day systematist, and the future of systematics.

Throughout the book Crowson reveals an unusual breadth of knowledge of biology generally. As lecturer at the University of Glasgow he has traveled widely to study the fauna and flora of several geographical regions: support by a Leverhume research fellowship enabled him to study in Australia and New Zealand, and his subsequent appointment to the Alexander Agassiz lectureship by the Museum of Comparative Zoology at Harvard University permitted him to gain first-hand knowledge of the fauna and flora of America. The unusual breadth attempted in this presentation may account for a few misleading statements; for example, that "Fertilization by pollen-tube is found in the Gnetales and Coniferae among the Gymnosperms" (p. 208).

Crowson's approach and philosophy should strike a resonant chord among biologists who align themselves with natural historians of the Bacon tradition. Although he affirms that "there is no necessary antagonism between natural history and natural philosophy," one can detect his resentment of the present trend of classical botany and zoology to founder in the wake of onrushing Modern Biology. Having outlined his position, he defends it interestingly and well.

Although it is admittedly a defense of systematics, this volume includes a wealth of information and ideas. It should provide informative reading for high school biology teachers and for advanced-undergraduate and graduate students in the biologic sciences.

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**PARASITISM AND SYMBIOLOGY**, by Clark P. Read. 1970. Ronald Press, New York. 323 pp. \$10.00.

Epidemiology literally means a discourse on something that is "upon the people"; epizootiology means a similar treatment of something that is upon animals other than man. In both cases the relationship between the host and its associate (parasite) is generally that of some degree of parasitism. Among the aspects studied in such associations are the host-parasite relationships; the life-history, distribution, and special anatomy of both the associate and its host; and methods of eradication or control of the associate.

The life histories of perhaps most of the world's important parasites are pretty well understood. Methods of controlling the spread of many of the diseases caused by some of the worst parasites of man and other animals are also well known, though not always applicable worldwide.

It is the intimate relationship, the fascinating interplay, between the associate and its host that still challenges the ingenuity of man. These relationships include (i) the physical and life-history adaptations of the associate for getting to or inside the host, and (ii) the host's efforts, consciously or otherwise, to prevent the successful establishment of the associate. Once the associate is established, the relationship involves the exquisite humoral interplays between the two parties: the immunologic aspects.

It is just these most fascinating and challenging phases of epidemiology and epizootiology that Clark Read emphasizes in his book. Clearly and interestingly, he deals with many of the most timely aspects of host-parasite relationships; for example, the distressing drug-fastness (failure of a drug, for one reason or another, to adversely affect a parasite that it once destroyed) of malaria parasites in certain current theaters of war, and the dramatic increases in certain diseases (notably schistosomiasis) that accompany attempts at improving regional agricultural output. Also discussed are numerous host-parasite situations in plants.

The book is well illustrated and easy to read, and it contains a good bibliography. It is highly recommended as a lucid commentary on these engrossing topics.

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### History

**DARWIN AND THE BEAGLE**, by Alan Moorehead. 1969. Harper & Row, Inc., New York and Evanston; George Rainbird, Ltd., London. 280 pp. \$15.00.

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