Union, New Zealand, Australia, Sweden, West Germany, and England. This section concludes with an important chapter on lower plants. This reports a panel discussion between several symposium participants in which it is concluded that cryptogamic plants have been neglected and that their conservation must proceed through conservation of good habitats for them.

The second section contains four papers on tropical forests that reiterate the now-familiar theme of the desperate plight of this habitat. Ashton emphasizes the need for biological and demographic study and appeals for an integrated system of inviolate reserves. Tracey reviews the types of rain forest of Australia and points out that only a fourth remains, and Dransfield provides interesting biological data about the rattan palms. Threats to economically important plants that are subject to over-exploitation and whose preservation poses special problems are often neglected in books on conservation.

Section 3, Understanding Rarity and Monitoring Rare Plant Populations, treats various local examples and has two outstanding theoretical discussions of rarity by Harper and Rabinowitz. This section contains the newest information for conservation in this volume.

Section 4 consists of ecological studies of rare plants, including case studies from the British flora, two from South Africa, and one from Ghana. Information on individual species can often be more widely applied elsewhere. It is good to see population biology techniques discussed in a conservation symposium, as in a paper by Wells on orchids. Hartmann's good paper on Mesembryanthemaceae introduces data from leaf anatomy and anatomical adaptations to different environmental conditions. Ward discusses *Juniperus communis* in Britain and provides data on predation by rabbits and arthropods. Consideration of predators and plant-animal interactions is most important for conservation, and there is relatively little on the subject in this book. Boucher's paper on *Orothamnus zeyheri* from South Africa treats pathogens, representing another important interaction. He discusses the threat to the survival of the species presented by pathogenic fungi.

Section 5 contains three papers on introductions and reintroductions in Britain, and section 6 has seven papers about protected areas for plant conservation. The last section has mainly examples of conservation areas and organizations in Britain and the United States, and one paper on nature reserves in Yugoslavia by Godich and one on phytosociological parameters for the definition of conservation areas by Medwecha-Kormas.

Three appendixes contain short notes and abstracts of additional papers received, a useful bibliography of Red Data Books and lists of threatened plants, and the IUCN Red Data Book categories.

This volume is broad in its coverage and furnishes some new data and ideas. Emphasis on species rather than habitat preservation is apparent. Profits from the sales will go to the Fauna and Flora Preservation Society to support plant conservation projects, so the purchase of the information contained in this volume will have the practical value of contributing to conservation. It is a volume that all plant conservationists should own.

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## Protozoology

**Parasitological Topics**. A Presentation Volume to P. C. C. Garnham, F.R.S., on the Occasion of His 80th Birthday, 1981. ELIZABETH U. CANNING, Ed. Published for the Society of Protozoologists by Allen Press, Lawrence, Kans., 1981. viii, 290 pp., illus. Paper, $35. Society of Protozoologists Special Publication No. 1.

The first part of this volume reviews the life and outstanding work of P. C. C. Garnham, whose varied topics of study include relapsing fever, plague, yellow fever and other viral maladies, and especially protozoan infections of animals and humans (*Leishmania*, Coccidia, Haemosporidia), which remains his topic of predilection. This part of the volume includes a list of his 305 publications, dating from 1922 to 1981.

The second, much larger, part of the book contains 41 papers covering a broad spectrum of topics. The underlying homogeneity in the volume is that almost all of the papers concern subjects that Garnham has studied or encouraged others to study. There are papers on taxonomy, parasitic life cycles, the physiology of parasites and their vectors, biochemistry, parasite genetics, immunology, the behavior of infected hosts, epidemiology, and parasite ecology.

The taxonomic papers are worth emphasizing. New genera, subgenera, and species are described in papers on *Encephalitozoon* (Elizabeth U. Canning), *Novyella* (A. Gabaldon and G. Ulloa), *Cyrilia* (R. Lainson), *Hepatocystis* (Irene Landau), and *Haemaphysalis* (H. Hoogstraal and Hilda Y. Wassef). There are also papers redescribing species and others on general classification.

A second important topic discussed in several papers (W. E. Collins *et al.*, A. Corradetti, and L. H. Schmidt) is that of relapses in certain malarial infections in humans and other animals. These papers deal with the latest hypotheses on dormancy of hypnozoites in hepatic cells, which although quite probable are still contested by some authors.

Thus, in spite of the great diversity of topics treated, the volume is of interest to all parasitologists and illustrates to what extent the works of Garnham have been decisive in many sectors of parasitological research. It also shows the influence Garnham has had and still has on the directions of research, notably that on *Plasmodium*. The large number of papers on comparative parasitology is demonstrative of his ability to share with his students and friends his enthusiasm for fundamental biology.

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## Epithelial Electrophysiology

**Ion Transport by Epithelia**. Papers from a symposium. STANLEY G. SCHULTZ, Ed. Raven, New York, 1981. xviii, 270 pp., illus. $32. Society of General Physiologists Series, vol. 36.

Our understanding of the mechanism of ion and fluid transport by epithelia has been limited by the apparent diversity of these tissues as well as by our lack of knowledge of the details of the intraepithelial transport events. As evidenced by the papers in this book and the lively discussions that follow each from the symposium of which the book is the proceedings, general principles of epithelial transport have emerged. Common systems for ion absorption have been identified in intestine, kidney, and gallbladder; secretion of salt and water seems to occur by the same mechanism in the tracheal epithelium of mammals as it does in the rectal gland of the shark. Given this commonality of transport mechanisms, investigators are free to study similar processes in any of several tissues, with the choice being determined by the specific requirement of the experiment.

Significant advances in the analysis of