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**The Naturalists' Directory.** Thirty-sixth edition. Salem, Massachusetts. \$3.00.

The Naturalists' Directory was first published in 1878 and since then has appeared every two or three years. It contains the names and addresses and a list of subjects of interest to hundreds of amateur and professional Naturalists. It has been very helpful in bringing together Naturalists in all parts of the world. In addition to the list of Naturalists there is a list of Natural History Museums and Scientific Periodicals. Naturalists generally have found the Directory very helpful.

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**Principles of Animal Ecology.** *W. C. Allee, A. E. Emerson, O. Park, T. Park, K. P. Schmidt.* W. B. Saunders Company, Philadelphia. First Edition. 1949. ix+827 pp. \$14.00.

The first section of this volume contains an excellent summary of the history of the development of ecology. It is especially valuable as reference material.

The second section presents a thorough discussion and analysis of the chemical and physical conditions of the environment with special emphasis upon the interrelationships of these factors and their combined effect upon biological organisms. These are considered from the standpoint of the various media in which the organisms live and finally the biotic factors including plant and food relationships.

Animal populations and aggregations, one of the major ecological problems today, are treated in a thorough and up-to-date manner in the third section. The material covers various types of animal populations including human populations together with the mathematical concepts of population growth.

The fourth section deals with the community in all its phases including stratification, metabolism, periodism, the problem of successions and the world's major biotic areas or biomes.

The final section concerns the important and interesting problem of ecology and evolution, which is discussed in the light of genetic mutations, isolation, adaptation, and natural selection.

The principles of ecology are treated here in a thorough and well balanced manner by a group of eminent specialists in this field. The book is well written and the material carefully selected and well organized. This excellent contribution in the field of ecology should serve as an invaluable reference source for all biologists working in any phase of ecology as well as an excellent text for advanced or graduate students of ecology in obtaining some knowledge of the basic principles of this scientific field.

DWIGHT M. DELONG.

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**Subtropical Entomology.** *Walter Ebeling.* Lithotype Process Company, San Francisco. First Edition. 1950. x+747 pp. \$7.50.

Although written primarily as a textbook for students of entomology at the University of California, Los Angeles, this book has been so thoroughly done that it also serves as a comprehensive reference volume for all those interested in subtropical horticulture or in the chemical control of insects.

Following an introduction, the next two chapters of the book cover briefly the structure and biology of insects and the recognition of the principle insect orders. Except with reference to the principles of classification, insect families are not mentioned. Insect control is discussed in the next fourteen chapters. This includes not only an up-to-date discussion of insecticides and their application but also biological control, experimental techniques, and legislative control. The excellent chapters on spray oils and fumigation reflect the author's wide practical experience in those fields.

The last eleven chapters deal with the specific pests of the subtropical crops: citrus, grape, walnut, almond, pecan, fig, olive, date, avocado, and minor fruits. In this section recognition, distribution, life history, and control of each important species are considered. The excellent illustrations, many of them original photographs, which appear throughout the book are especially valuable here in aiding identification. The nearly 1050 references cited in the book are listed following the text. An author and subject index complete the volume.

The emphasis in Ebeling's book is not on general entomology, but on the principles and materials of insect control and on the practice of insect control as applied to specific pests of subtropical horticulture. In these latter fields it is a valuable reference source.

FRANK W. FISK.