

and substance" or "[Viruses are] . . . attracted to a cell." These shortcomings, however disturbing they may be to the critical reader, do not seriously affect the value of this little book designed to introduce the beginning biology student to an active and exciting area of science.

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Fundamentals of Botany Series

Plants and the Ecosystem. W. D. Billings. Wadsworth, Belmont, Calif., 1964. vi + 154 pp. Illus. Paper, \$2.35.

Lack of appropriate text material has limited the effectiveness with which ecology is usually treated in introductory courses in biology and botany. In recent years several soft-bound textbooks of modest length have been published to meet this need, and one of the most skilfully prepared of these is *Plants and the Ecosystem*.

At the outset the subject matter and aims of ecology are described with respect to the individual organism, the population, and the ecosystem. Environment is discussed under the usual categories of physical and biological factors but in terms of energy flow, biogeochemical cycles, and integration of plant-environment relations so that the coherence of ecosystems is made clear. Physiological ecology is specifically treated in a brief chapter constructed on the topics of germination, vegetative growth, and flowering and fruiting. A discussion of the geographic distribution of plants, which provides a capsule survey of distribution patterns and ecotypic variation, precedes a sketch of North American Cenozoic vegetation history in light of paleoecological interpretations. A short but effective chapter on structure and classification of plant communities leads into a chapter on ecosystem dynamics where various facts and concepts presented in previous chapters are shown to have significant interrelationships. One of the longest chapters is a survey of "terrestrial ecosystem types" (which a few years ago might have been termed more simply "climax formations" or "biomes"); this chapter, which is documented by citations of representative areas and characteristic genera in all parts of the world, provides a sound

and well-balanced presentation. The concluding chapter, "Ecology and man's welfare," reviews applications of autecology, population ecology, and ecosystem ecology to human health and environments, treating briefly intriguing problems such as those of the "giant city ecosystem" and synthetic ecosystems as well as the "modified ecosystems" increasingly shaped by our management practices.

The terms and statements of this book are handled so that the average student in an elementary college course in biology can readily understand them, yet the subject matter is so rich in examples from contemporary research and so clearly presented that advanced students will find the book a useful review of general plant ecology. Inevitably, limited space has led to oversimplification of some explanations of functions and relationships and in places to logic that will disturb the critical reader (for example, relating the distant sun to plant environment equally with a phosphate ion in the soil because light can travel from the sun to the leaves before the ion can ascend the stem). Two pages of suggestions for further reading offer an extremely diverse list of books and articles, but it is the kind of mixed bag likely to entice the reader new to ecology into exploring further different facets of the broad subject. A 4-page glossary duplicates many definitions that are given in the text and condenses some so that they are of little use. The 2-page subject index has fewer entries than the wealth of subject matter in the text would seem to warrant. These criticisms, however, are minor in view of the volume's quality and usefulness. This small book conveys a remarkable amount of well-chosen information on plant ecology in a style that stimulates the reader's interest and is likely to fix the statements in his mind.

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Social Stratification

Stratification in Grenada. M. G. Smith. University of California Press, Berkeley, 1965. xiv + 271 pp. Illus. \$6.

The object of this study of one of the Windward Islands is "to describe the conditions of status distribution among Grenadian elite; to illustrate a

method for the field study and analysis of social stratification that seems especially appropriate to small societies or to small segments of large societies; and finally, to test the theories of action and pluralism by analyzing stratification among the Grenadian elite" (p. 228). The first two aims are achieved at a high level of professional competence. Taken in conjunction with other of the author's books [*West Indian Family Structure* (1962), *Kinship and Community in Carriacou* (1963), and *The Plural Society in the British West Indies* (1965)], this work comes close to making Grenada's one of the best described stratification systems since the publication of W. L. Warner's *Yankee City*. The method followed also has much in common with Warner's, although it is pursued with greater rigor and completeness, and the analysis is presented with a modern technical sophistication understandably missing from Warner's pioneer work.

Smith's third object is to test theoretical assumptions that lie close to the heart of contemporary social science, and his endeavor may be considered a part of the trend toward the revision of neo-functionalist theory which is underway in American, British, and French sociology and anthropology. It is an interesting, rare, brave, and, in my opinion, unsuccessful attempt.

Smith's test of theory is developed through juxtaposition of Furnivall's concept of *plural society* (implying fundamental value differences among segments) with Parsons' *theory of action* (implying fundamental value similarities among segments, even in loosely integrated systems). Smith carefully documents that there are very fundamental value differences in the bases of social stratification for different segments of the elite in the British West Indies, and concludes that this is a pluralistic society. Because some of the values in question are precisely those attributed universality by Parsons, Smith feels that he has demonstrated the inapplicability of "action" theory to Grenada. This would certainly be a finding of the greatest importance.

The demonstration is not compelling. Smith's own method, which combines the status judgments of persons of different strata to provide an index of the overall status of particular individuals, surely presupposes some common elements of evaluation—otherwise the combined index is artificial and meaningless for his purpose. The demonstration of difference does not negate