

tain only as strays. The publisher is perhaps a bit bold in expecting Americans to invest this much money on a book devoting 15 pages to distribution maps of wasps in Britain, 23 pages to keys and checklists of British species, a plate to intromittent organs of British wasps, and so forth.

But having discharged my venom sac, let me hasten to add that within its limited scope this book is excellent, making up in depth for what it lacks in breadth. Spradbery reviews in detail his own work on ecology and population structure as well as the work of Brian and others in Britain, including the previously unpublished studies of N. B. Potter. The recent work of several Continental, Israeli, and Japanese workers is also not neglected. Americans can learn much from this review, since in fact most of the research has been done in the Eastern Hemisphere. In the United States, these insects evidently have too little relevance to "national needs" to be worth much effort—and because of their covered nests and ability to defend themselves, vespine wasps do require a good deal of effort. That yellow jackets are often major pests of campers and picnickers, especially in the Pacific states, or that several persons die each year from the effects of wasp stings is doubtless scarcely worth mentioning, considering the many problems we face. Nevertheless, persons who are unaware of the life histories and behavior of these unique organisms are missing a good deal.

It is interesting to learn that Aristotle had a fairly good understanding of social wasps but scarcely anything new was learned for over 2000 years. In fact, it is only in the last decade or two that some of the factors that coordinate behavior in populous wasp colonies have come to light—and clearly there is a great deal still to be learned. Some of the more exciting recent work has been done on the Oriental hornet, and it remains to be seen to what extent the results of this research can be applied to other species. Spradbery has covered just about every question one might ask about vespine wasps, but one may be sure, from the pace of recent research, that in a few years there will be more and different answers as well as different questions to be asked.

Perhaps in their zeal to bring this book to press before it was out of date, the author and publisher have been careless about some details. It will be a shock to librarians to find a slight-

ly different subtitle on the book from the one on the jacket; it is irritating to find William Morton Wheeler consistently referred to as William Mortimer Wheeler; and it is puzzling to come upon completely meaningless expressions such as "3-labial palpi" (what is meant is palpi with three terminal sensilla). But the reader should not be put off by these blemishes. This is a valuable addition to the literature of entomology and of animal sociality, even though less monumental than the title, dust jacket, and price might lead one to believe.

HOWARD E. EVANS

*Department of Zoology and
Entomology, Colorado State University,
Fort Collins*

Plants in Archeology

Palaeoethnobotany. The Prehistoric Food Plants of the Near East and Europe. JANE M. RENFREW. Figures drawn by Alan Eade. Columbia University Press, New York, 1973. xviii, 248 pp. + plates. \$20.

Much of what we know about man's long association with plants is scattered and hidden in reports of research on a limited group of plants or people. Renfrew has assembled from the literature and her research a readable compendium of materials, methods, and ideas for the study of plants found in archeological sites of the Near East and Europe.

Introductory chapters survey the accidents which preserve some plant parts in sites, methods used to recover this material, and processes of interpretation. Flotation with water is recommended for extraction of small plant parts, and various techniques and problems are discussed. Examples are given of changes in plants from the time of their earliest known use to recent periods of intensive agriculture. Some of the changes in the plants are shown to be associated with man's activities.

Of 21 short chapters, 15 cover the identification, origin, and development of the major cultivated plants of the Near East and Europe. Another chapter covers 51 edible wild plant seeds that have been found in archeological sites in the same region. Clear explanations, line drawings, and photographs make this a good identification manual, simple enough that anyone can use it with little practice. Correct identification and the ability to recognize and compare significant variations within the species

are essential before useful comparisons of collections can be made.

Summaries of genetic and archeological evidence for the origins and dispersal of the cultivated plants cite the important literature. Short sections on conditions required for the cultivation and on the uses of the plants will encourage speculation on the role of plants in various cultures.

Renfrew concludes that agriculture may have arisen independently at a number of places in the Near East and was well established before 6000 B.C. The number of cultivated plants increased as agriculture developed and spread. Agriculture reached the North Sea before 4000 B.C. and Great Britain before 3500 B.C. Plants found in archeological sites are evidence of the environment and activities of the people who lived there. Patterns of relationships of man and his plants are persistent. The varying patterns found in the Near East and Europe today are the result of the more than 8000 years of development which Renfrew outlines.

There has long been a need for a text like this which provides basic materials for someone who knows little about plants and at the same time suggests approaches and ideas which experienced archeologists and botanists can use.

HUGH C. CUTLER

*Missouri Botanical Garden and
Washington University,
St. Louis, Missouri*

Hormone Research

Structure-Activity Relationships of Protein and Polypeptide Hormones. Proceedings of a symposium, Liège, Belgium, Sept. 1971. M. MARGOULIES and F. C. GREENWOOD, Eds. *Excerpta Medica*, Amsterdam, 1973 (U.S. distributor, Elsevier, New York). xvi, 566 pp., illus. \$53.70. International Congress Series No. 241.

This work presents the output of the second in what we may hope will be a continuing series of symposia of refreshing design (the first in the series being the Liège meeting of 1968). In this design the actual meetings are devoted to discussions based on invited reports which have been transmitted to the participants prior to their confabulation. The organizers have wisely chosen to focus this current effort even more tightly on the overall problem of hormone research by limiting the discus-

sions to structure-activity relationships. While the reader may miss detailed discussion of his or her favorite hormone, the resulting volume includes a wealth of information from the smaller polypeptides through the large glycoprotein molecules. The foreword by A. Nizet and H. Van Cauwenberge and the introduction by S. A. Berson outline what appears to be an increased concentration of effort toward producing a quantitative understanding at the molecular level, rather than a collection of unrelated descriptive accounts of phenomena, without however losing sight of the fact that these hormones act within a complete physiological system.

This concern is evidenced by a number of highly competent papers, grouped in their own separate section, dealing with the conformation of these proteins and its relation to their activity. Unfortunately, the discussions concentrate almost entirely on the small polypeptides, with little new information concerning the larger protein hormones. One of the fundamental difficulties of hormone research, which is well pointed out in this work, is the lack of specific information concerning the structures and inner workings of cellular receptors. This is not to say that efforts in this direction are faltering. Significant advances are evidenced by the experimental work of Rodbell *et al.*, Roth *et al.*, and Goodfriend *et al.* The more theoretical approaches of Rasmussen and of Hechter and Braun also provide food for thought. It seems to this reviewer, however, that the large number of reports dealing with the various factors that affect immunologic activity clearly shows a widespread interest in "getting on with it," in the sense that the antigen-antibody interaction may be a useful *pro tem* model for hormone-receptor interaction. While understanding of the immunochemistry of these hormones is progressing at an encouraging rate, one wonders how much of this information will ultimately be transferable to the cellular receptor. Potential difficulties arising from impatience in attempts to explain interactions with receptors are clearly pointed out by Birnbaum. Here again, the critical evaluation of quantitative data seems to be the most important lesson.

Both the original reports and the discussions of them will be of great value to anyone who proposes to develop an understanding of hormonal action. The organization of the book itself and the excellent editorial con-

tributions throughout will aid him in this quest. The inclusion of a stop-press section and the overall pleasing appearance of the book make it a valuable addition to any library.

THOMAS A. BEWLEY
*Hormone Research Laboratory,
University of California, San Francisco*

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Academics, Politics, and the 1972 Election. Everett Carl Ladd, Jr., and Seymour Martin Lipset. American Enterprise Institute for Public Policy Research, Washington, D.C., 1973. vi, 100 pp. Paper, \$3. Domestic Affairs Studies.

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