and the mandarin attitudes Anderson deplores are no longer so widespread as he would lead his readers to believe. However, if the value of plants in the study of man is not fully recognized, this book should do a great deal to remedy that fault.

The problem of the origin, development, and dispersal of cultivated plants and weeds is so complex that new methods had to be devised to record information and to analyze it. The methods Anderson developed and the difficulties and adventures he encountered in applying these methods are among the most interesting parts of the book. Some of the procedures described could be applied to the study of artifacts. The reader is provided some insight into botanical methods and into the importance of taxonomy—a much scoffed-at but essential study. A good taxonomist is not buried in a mass of minutiae; his observations provide him with new and more fundamental ways of ordering his data and contribute to a virogous sense of problem. Anderson does not stop with taxonomy. However, one wishes the author had indulged in fewer diversions of a personal and somewhat emotional nature and provided a simpler explanation of some of the genetic data.

In the short space of one book it was obviously impossible to discuss fully the present status of our knowledge on the origin and diversity of even the most important cultivated plants; so this is summarized in a chapter, "A Roster of Our Most Important Crop Plants and Their Probable Origins." Most of the data presented in this chapter are not new, perhaps; but their concise presentation in one place is a great convenience. Instead of having to rely on information, often supplied second-hand by anthropologists, botanical data of significant concern to anthropologists are here presented by a competent botanist.

Anderson's annotated list of suggested reading includes some of the more stimulating sources on cultivated plants, but does not include two titles which appeared while the book was in press. These are Albert F. Hill, *Economic Botany* (McGraw-Hill, New York, 1952) and Robert W. Schery, *Plants for Man* (Prentice-Hall, New York, 1952). Both these books were designed for use as texts, but are also two of the most convenient sources of elementary information on the major cultivated plants, from woods and fibers to foods, oils, and resins.

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The Study of Instinct. N. TINBERGEN. (xii, 228 pp., 130 figs., $7.00. Clarendon Press, Oxford, 1951.)

Tinbergen and Konrad Lorenz are two leaders among the group of European scientists who have been developing the analytic and comparative study of animal behavior under the label "ethology." Both have recently published books in English. The volume by Tinbergen is a scholarly and well-documented review of the general field, while the volume by Lorenz (*King Solomon's Ring*, New York: Thomas Y. Crowell Co., 1952) is a highly personal, very readable, account of the author's adventures with his subjects of study. I think anyone unfamiliar with the field would do well to read the Lorenz volume first, as it gives perspective and meaning to Tinbergen's quite technical summary. Lorenz's book is written in such a light and jargon-free style that, by itself,

it would give no idea of the depth of scholarship and care in experimental design that have gone into these studies.

The general field of animal behavior should be of considerable interest to anthropologists. After all, man is an animal as well as a bearer of culture, and presumably there is a pattern of innate behavior underlying his cultural complexities. The material summarized by Tinbergen, however, is far from providing an adequate basis for any direct approach to man. This book performs a beautiful job of pulling together diverse and diverging observations, experiments and concepts, suggesting theories that will surely lead to much new and fruitful work. But most of the studies reviewed concern birds, fish, and to a lesser extent, invertebrates. The study of innate behavior in man will surely require a considerable preliminary or parallel development of studies of mammals and especially primates. These studies will not be easy, since they require the experimental manipulation of situations encountered by the animal in the course of its normal life. This is hardly possible at present with primates, in fact, since primates are tropical and ethologists boreal, with no overlap in distribution. Nevertheless Tinbergen is hopeful, and in the last paragraphs of his book he argues that human behavior can be studied from the ethological point of view, and that such study holds considerable promise. He points out that it would fill an area that is at present a sort of no-man's-land between neurophysiology and psychology.

The book starts with a discussion of the field of ethology, the "objective study of behavior," showing how this differs from physiology, which tends to study the functions of separate organs, and from the various schools of psychology, which in general neglect the study of innate behavior. The second chapter covers the analysis of behavior in terms of stimuli and reactions, with particular attention to the concepts of "sign stimuli" and "innate releasing mechanisms." The third chapter covers internal factors—thresholds of reaction, hormones and nerve activity. Then stimuli and orientation reactions ("tropisms" in the more usual biological vocabulary) are discussed in some detail. This is followed by a chapter which attempts the synthesis of a general theory of innate behavior. The final three chapters are on the development of behavior in the individual, the adaptiveness of behavior, and the evolution of behavior.

The book will be invaluable to biologists and experimental psychologists; I am less sure about its usefulness for anthropologists, even though I agree with Tinbergen's hopes for the fruitfulness of the "ethological" approach to problems of human behavior.

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BOOK NOTES

Problemas de la población indígena de la cuenca del Tepalcatepec. GONZALO AGUIRRE BELTRAN. (363 pp., maps, plates, charts. Memorias del Instituto Nacional Indigenista, Vol. III, México, 1952.)

The Mexican Government is carrying out a land development project modeled after the TVA in the hot, lowland Tepalcatepec basin in central Michoacán. Beltran's study provides demographic and cultural data on some of the populations which may be benefited, and is designed to facilitate the planning and execution of the project. The field work appears not, however, to have been carried out in direct conjunction with the Tepalcatepec project. Beltran actually includes most of the Tarascan area in his study, even though much of its falls outside the project's