Book Reviews

Studying Primates

Behavioral Regulators of Behavior in Primates. Papers from two congresses, Tokyo, 1968, and Atlanta, Ga., 1968. C. R. CARPENTER, Ed. Bucknell University Press, Lewisburg, Pa., 1974. 304 pp., illus. $27.50. The Primates.

Theories of primate social behavior, like any other theories, reflect their makers and their times as much as the phenomena they are designed to explain. Starting in the 1930's and up until the middle of the 1960's, the key themes were dominance, sex, and the attempt to be objective, which at that time meant devising a special laboratory apparatus to train animals into what you were after, and forgetting whatever did not fit onto this Procrustean bed. Field studies did not fit, and no one could decide whether or not they were really science. Compared to the study of learning, as defined by and enthroned in the Wisconsin General Test Apparatus, the study of social behavior formed an inconsequential part of primate studies, and one could summarize the major findings in about 30 pages of text—as, for example, Henry Nissen did in 1951.

The 1960's saw the rise of the Romantic Era, in which primate societies were gradually seen to be really held together by democratic and benign leaders, love of mother and kin, species-specific communication systems, play rather than fighting, grooming rather than sex, and above all a simple *liking* of each other. Fighting presumably occurred only when man interfered by confining animals in his nasty laboratories and zoos; dominance fell as the top-ranking explainer of social organization to a minor and nonmonolithic trait; sex was no longer a many-splendored thing lasting throughout all seasons of life; and each species, if not each social group, had its own unique culture, as it were, which could not be forced into the old clichés about primate behavior in general, let alone the behavior of organisms in general. Authors became increasingly cautious about generalizing even to the same species of monkeys in a different forest—although this of course did not inhibit them from generalizing from squirrel monkeys or rhesus to man. "Primatology" also sprang to life as a specialty in its own right, and its truly international character came to be clearly recognized. One index of this was the establishment of the International Congress of Primatology, and then national and even local societies. Slowly but surely the unique approaches and outstanding contributions of Japanese researchers came to receive the attention they deserved. Many Western investigators are still no doubt concerned about the apparent reluctance of some Japanese investigators to view their animals as objects and themselves as idealized observers who not only can but must remain outside of nature. Many Japanese students have in turn studied in Western laboratories to learn what foreign brands of "objectivity" are supposed to be about. Whether or not any clear mutual understanding has been achieved here, there can be no doubt that Japanese field studies were a major factor in making this area of research exciting to the younger generation of graduate students, theoretically provocative to their elders, and eventually even respectable to governments, universities, and granting agencies.

This book may be one of the capstones of the Romantic Era, which I fear passed away right about the time the articles for the book were first written. The articles are the outcome of two symposia held in 1968. Ten American and 17 Japanese authors summarize their own research on topics which are grouped under the more general labels of Theoretical Contributions (three chapters, all by Americans), Dynamics of Primate Colonies (five chapters on sociological studies, all by Japanese), Grooming (two chapters), Ontogenetic Development (two chapters), Maternal Regulation of Infant Behavior (three chapters), and Communicative and Adaptive Behavior (three chapters). All but one of the chapters (which is concerned with the performance of Japanese macaques on Wisconsin-type learning tasks) are concerned with social behavior. Perhaps half the studies are field studies and the other half were done in the laboratory; but nearly all are concerned with problems that derive their basic logic from field observation. The editor of the volume is unquestionably the dean of primate field studies. He and Ruth J. Carpenter have edited the volume carefully and with firm hand.

For one who is not well acquainted with this area of research, the present book will be at least moderately useful. It fulfills its stated objectives and portrays the study of primate behavior in America and Japan about as well as would be expected from short conference papers. However, it contains relatively little information that will be new to the specialist, and the content of many of the chapters is considerably less general than their titles. If the reader is looking for a view of primate behavior as it is in its present era, he is advised to go personally to the Fifth International Congress of Primatology, to be held in August 1974 in Japan.

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Neurogenesis

Developmental Neurobiology of Arthropods. D. YOUNG, Ed. Cambridge University Press, New York, 1973. viii, 268 pp., illus. $16.50.

The ancestors we share with the arthropods had a brain and segmented nervous system organized along lines that we consider basic to the construction of our own nervous system. Selective pressures that guided evolution emphasized and elaborated on different aspects of that primitive nervous system, but fundamental elements and, presumably, many of the forces that organize the developing human and arthropod nervous systems are the same. The editor and authors of the nine chapters of this book have approached arthropod development with an eye toward revealing similarities to (and differences from) vertebrate neurogenesis. For technical reasons insects seem to be the most favorable invertebrates in which to study neural development, and insects, not arthropods in general, are the principal subject of this book. Insects are distinguished by a