

National Health Service, contributes an interesting and too brief reminiscence of early problems. Godber, the Chief Medical Officer of England and Wales, has supplied a speech that provides a very interesting and well-informed view on the current problems of the National Health Service. There are a few other good essays by capable people who have long been concerned with the service. One can also find statistics on the number of ambulances, the number of patients carried, and the miles driven for certain years. Some of the authors have padded their rather short essays by inserting Ministry of Health memoranda or extensive quotes from other well-known documents. The following is an example of some of the banalities encountered in the discussions of special services: "Methods of teaching should follow modern educational methods with much more emphasis on class participation and student projects."

It is difficult to recommend this book. The good papers have mostly been published elsewhere, and the remainder are routine descriptions of component divisions of the National Health Service. A "stock-taking" should take stock. Only a minority of these contributions fill the bill.

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Study of Animal Societies

Social Behavior and Organization Among Vertebrates. William Etkin, Ed. University of Chicago Press, Chicago, 1964. xii + 307 pp. Illus. \$7.50.

There is every sign of a revival of interest in the comparative study of animal societies and in the genetic, structural, and behavioral correlates of the various types of social systems that occur. New ideas are being put forward on the genetics and ecology of cooperative and competitive behavior, polygyny and monogamy, the energetics of sexual dimorphism, and the evolution of parental care. Since Huxley and Mayr and others in the late 1930's and the early 1940's summarized the conclusions of a generation of post-Darwinian investigations on such things as mating systems, sexual selection and the evolution of sexual di-

morphism, there has been something of an eclipse. The intervening years have seen dramatic advances in the fine analysis of behavioral mechanisms and their physiological substrates and, with some notable exceptions, a relative neglect of the nature and significance of different types of social systems.

Social Behavior and Organization Among Vertebrates is a kind of hybrid between the two types of emphasis. Four of its ten chapters deal with physiological themes. Etkin reviews vertebrate neuroendocrine systems, with little emphasis on behavioral correlates. David Davis writes on the physiological analysis of aggressive behavior, developing the discovery that pituitary gonadotrophins have direct effects upon the aggressive behavior of birds and summarizing recent work on effects of aggressive interaction on reproduction and mortality. Frank Beach considers the neural and hormonal mechanisms that underly mammalian sexual behavior. In interpreting the so-called hypersexuality of animals with lesions in the pyriform cortex, Beach brings out the need for sophisticated behavioral description, both before and after operation. Daniel Lehrman explores the mechanisms of hormonal action in the reproduction of birds and mammals and the role of environmental stimuli, both present and past, in the control of the patterns of hormonal secretion that underly cycles of breeding activity. Among the less physiologically oriented chapters, those by Niko Tinbergen, on the evolution of signalling devices, and J. P. Scott, on the effects of early experience, are both up to date, providing students with clear reviews of such subjects as the origin and ritualization of signal systems and the role of early social experience in mammalian development.

The remaining four chapters (by Etkin), which come closest to the theme in the title of the book, are more in the nature of historical reviews. In the section on cooperation and competition in social behavior, Allee's works loom large, but the discussion of territory fails to come to grips with the problems of function and definition which are a current source of concern for behaviorists and ecologists. The review of reproductive behaviors brings in recent work, within a framework that will be familiar, for example, to readers of E. A. Armstrong's 1947 book on bird display and behavior.

The concluding "important general principle that the type of sexual dimorphism shown by a species correlates with the role of the sexes in courtship and parental activities" was anticipated by Darwin and Wallace, among others.

A chapter on the theories of animal socialization and communication reviews the highly influential ideas of European ethology, more or less as those ideas were summarized in Tinbergen's 1951 book, with some more recent illustrations included. In the last section, on types of social organization in birds and mammals, the social systems of several species and their correlates are outlined; the section concludes with a discussion of their relevance to the evolution of early human societies.

It is regrettable that the parts of this book dealing with the comparative study of social systems mostly take a historical viewpoint rather than emphasizing the new developments that I at least believe are emerging. Nevertheless, the subject has not been brought together in this way before, and the juxtaposition of highly critical, experimentally oriented discussions with the broader, inductive treatment of evolutionary problems will serve to remind students how much still remains to be done before we can understand the adaptive significance of different types of social systems.

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Paleopathology

Bones, Bodies, and Disease. Evidence of disease and abnormality in early man. Calvin Wells. Praeger, New York, 1964. 288 pp. Illus. \$6.95.

Because so much of the writing about disease in skeletons is unreliable, I fully expected the present book, a popular presentation, to be more of the same. It is a pleasure therefore to say at the outset of this review that Wells has produced a generally reliable, wide-ranging, and quite readable account. Undoubtedly this result is due to his combined training in medicine and anthropology, as well as to his experience as a lecturer. Training in either medicine or anthropology by itself does not qualify a person to deal