that wings were thin, Mach numbers moderate, and disturbances small, a considerable store of answers to such questions was established. Prof. Miles was very much in the forefront of the attack on these problems, and the appearance of his authoritative book on the subject is to be welcomed.

The book deals mainly with the supersonic theory, in which the existence of domains of influence and dependence makes it possible to solve explicitly a number of linearized problems. The opening chapter is a careful study of the restrictions appropriate to various approximate governing equations, of which that corresponding to the sound equation in still air is the most important : various $xt$-transformations ($x$ is the streamwise co-ordinate, $t$ the time) of this equation are then considered. Basing his presentation not on the traditional method of retarded-potential doublets but on the more compact method of integral transforms, Prof. Miles makes short work of each of the following problems : two-dimensional wings, the rectangular wing of semi-infinite span, wings with 'supersonic' edges, and the extension of Evvard's method to wings with straight, subsonic side-edges. For the delta wing with subsonic edges, further approximations are necessary. There is a detailed account of methods for wings of slender planform and slender bodies, and the book ends with a genuflexion towards non-linear problems.

Despite the formidable economy of his presentation, the author cannot treat all the ramifications of his subject in a book of modest size, but there are ample references to papers on those (mainly secondary) questions which are not included. The book maintains the high standard of the Cambridge Monographs on Mechanics and Applied Mathematics.

L. E. FRAENKEL

## MONKEYS AND DISEASE

*Diseases of Laboratory Primates*
By Prof. Theodore C. Ruch. Pp. xxvi + 600. (Philadelphia and London : W. B. Saunders Company, 1959.) 52s. 6d.

THIS volume is the first of four parts of a projected "Handbook of Primates", and treats in monographic form the spontaneous diseases of laboratory primates. The main topics reviewed are the diseases caused by parasitic agents and, to a lesser extent, nutritional disorders, both of which have an important bearing on the management of a monkey colony. In addition to this information, which is of immediate practical value, the author also describes the nature of conditions such as cardiovascular and dental diseases and suggests that monkeys may be suitable animals for research into these problems.

Three of the more important conditions—enteric diseases, respiratory tract infections and tuberculosis—which are responsible for the high mortality frequently observed in monkeys, are dealt with at length. The chapters on these subjects will be of particular interest to those who are responsible for the management of large colonies of monkeys now maintained in many countries for the production and testing of poliomyelitis vaccine.

In the course of reading this book, attention is directed to the numerous pathogenic agents which have been accidentally transmitted to man. Of these the most serious is B-virus (*Herpesvirus simiae*), which

has caused a number of fatal cases of ascending myelitis. Since this virus, and other pathogenic agents, are localized in the mouths of infected animals, the author rightly points out that procedures should be designed to preclude, so far as possible, the occurrence of monkey bites. It would have been of value to those who have not seen this condition in monkeys if photographs showing B-virus lesions in infected animals had been included.

The compilation of this volume is clearly the result of much painstaking work involving an extensive review of literature and, in addition to providing factual material, Prof. Ruch has succeeded in presenting the subject-matter on each topic in a most readable form. This will be a very useful reference book and its publication fills an important gap in scientific literature.                    C. R. COID

## THE MEASUREMENT OF INFORMATION

*Information Theory and Statistics*
By Prof. Solomon Kullback. (Wiley Publications in Mathematical Statistics.) Pp. xvii + 395. (New York : John Wiley and Sons, Inc. ; London : Chapman and Hall, Ltd., 1959.) 100s. net.

THIS book provides a treatise upon the general statistical theory of information, as complete, thorough and up to date as any single book to-day. It deals with the various measures of information and information-rate, not restricted to their place within the theory of communication (as are so many recent texts), but as part of the general theory of statistics and probability. It covers and relates the work of Fisher, Shannon, Chernoff, Kolmogorov, of Good, Woodward, Barnard and many others well known within the field.

The author's reputation here needs no comment from me. In this book he aims at unification—conceptual, notational and methodological—of scattered work by West Europeans, Americans and Russians too. He covers not only the specialized applications of information theory to communication problems but treats the whole field of statistical hypothesis testing as it arises also in the design of experiments and in observation theory, in the theory of stochastic processes, in parameter estimation and in other processes of statistical inference. In the first half of the book the various logarithmic measures of information are developed and their properties studied, in terms of measure theory ; it is the second half which is concerned with a wide range of applications to statistical inference.

The book is essentially mathematical in treatment and in its purpose. It comes at an opportune time for many people in the physical sciences ; for biologists, for telecommunication engineers (detection, coding problems, etc.) ; again, for psycho-physics (behaviour models and artefacts) and many other fields. Modern techniques of statistical inference are making an ever-increasing contribution and the relevance of information theory merits careful attention and revaluation at this present time.

The many worked and unworked examples form a particularly valuable feature of the book ; it is well provided, too, with a glossary of mathematical terms and with a comprehensive bibliography of several hundred references.                    COLIN CHERRY