

contains some slightly inaccurate soil physics and some half truths about erosion: there is no consideration of any medium other than water for the transport of soil material. Two chapters on water as a factor in plant ecology possibly put too much emphasis on the importance of ground-water and the use plants make of it. Next comes the partial survey and rejection of the evidence for post-glacial climatic change, and then some interesting case studies show how the special knowledge of a thoughtful water engineer can re-interpret the evidence from archaeological digging. Finally, there is a sermon on the desirability of "The Inter-disciplinary Approach" to large-scale ecological problems, with many words to explain "inter" and none to define "discipline". Although it has all been said before, it needs repetition from time to time, and these two books show that hydrology itself would be a worthwhile subject for treatment. H. L. PENMAN

LIVING PRIMATES

A Handbook of Living Primates

Morphology, Ecology and Behaviour of Nonhuman Primates. By J. R. Napier and P. H. Napier. Pp. xiv + 456 (114 plates). (London: Academic Press, Inc. (London), Ltd.; New York: Academic Press, Inc., 1967.) 126s.; \$21.50.

THE study of primate biology as a facet of the analysis of human origins and variation has matured during the past half century, in phase with the development of general evolutionary theory. In the late nineteenth century, the standard handbook of the primates—a two volume compendium by H. O. Forbes, now almost a classic in the field—centred almost exclusively on the natural history (much of it anecdotal) together with the taxonomy of the order. A modern handbook is therefore required to present, in accordance with present systematic practice, not only the much expanded body of morphological data, but also that bearing, for instance, on primate physiology, ecology and genetics. It is to this task that Dr and Mrs Napier have addressed themselves in the preparation of this book—the only modern handbook of the primates available today in a concise form.

The first section, "Functional Morphology of Primates", presents the major structural features of the order in relation to the presumed overall trends of change discernible through its subdivisions.

The second and much the largest part of the work provides a series of abbreviated "profiles" of each primate genus. Each profile comprises such data as are available about, for instance, the geographical range, ecology, bodily dimensions, external and internal morphology, locomotion, genetics and serology, behaviour and social life, reproduction and development, together with some notes on longevity and breeding record in captivity. Each account is followed by summary lists of references, compounded at the end of the volume into an overall bibliography of some 800 titles.

The third section of the work presents a systematic list of the various primate species, correlating, for example, formal and vernacular names, and supplemented by notes relating to the taxonomy of each genus. This is followed by accounts, more detailed than would have been appropriate in the second section of the volume, of such topics as the ecology of the African primates, locomotor patterns, limb proportions and associated features, together with such vital statistics of primate genera as have, to date, been gleaned.

The volume is illustrated with more than 100 plates of a quality uniformly high and, at times, outstanding.

A book of this type must, of necessity, be eclectic and every student of primate biology is likely to note some fact or reference that, in his opinion, ought to have been included or given a different emphasis. Others may claim

that Dr Napier has possibly given somewhat too great a prominence to certain aspects of primate biology to the detriment of others. Again, certain of the general premises outlined in the early pages of the volume are unlikely, in all details, to meet with universal agreement. Nevertheless, few will dispute that the present volume provides not only a unique compendium of modern knowledge of primate biology but also a most usable guide to the principal sources of original literature.

The volume is intended as a source book, and it would be unjust to reproach the authors for not attempting to enquire into the extent to which contrasts in many of the physiological, genetical and morphological characters correlate or contrast with accepted schemes of primate systematics. In many cases, the data are, as yet, insufficient to enable such studies to be carried out effectively and a stated purpose of the work is to indicate the extent of the gaps. It is only as these are gradually closed that the overall body of data can be combined in a multivariate scheme summarizing the overall contrasts between extant primate groups. ERIC H. ASHTON

INDUSTRIAL MICROBIOLOGY

Progress in Industrial Microbiology

Vol. 6. Edited by D. J. D. Hockenhull. Pp. 281. (London: Heywood Books, 1967.) 84s. net.

THIS sixth volume of *Progress in Industrial Microbiology* is one of a series of international reviews which each year covers a number of selected topics from the rapidly expanding field of industrial microbiology. This particular volume, edited by D. J. D. Hockenhull, deals with seven subjects ranging from the production of rifamycins to continuous culture, and should be of interest to workers in many disciplines.

As a review it fulfils the function of providing a brief account of the history of most of the subjects, describes the latest developments in research and refers to more detailed works elsewhere.

The first paper, "Production of Polyene Antifungal Agents by Streptomycetes", outlines the fungicidal activity and chemical properties of these organisms. It also summarizes the toxicities of various polyenes and considers the conditions used in their production. This review of Perlman's is particularly useful because the polyene group constitutes a very important group of antifungal antibiotics. P. Sensi and J. E. Thiemann have written a detailed paper on the production of rifamycins—among the latest therapeutic agents. Discovered by Sensi, Margalith and Timbal of the Lepetit Research Laboratories in Milan, an important property of rifamycin is that modification of some functional groups of the molecule yields other compounds with high antibacterial activity. It seems that the production of rifamycin is favoured by a number of elements and it has also been shown that, for maximum yields of antibiotic, high aeration rates are required only at a very specific stage of the fermentation.

The paper which I found most interesting is that on the bacteriology of fish spoilage and preservation by J. M. Shewan and G. Hobbs of the Torry Research Station, Aberdeen. As they point out, fish spoilage depends on a number of factors including the initial bacterial flora, the flora acquired during handling and processing, the conditions to which the fish have been subjected during storage and processing, and on the actual chemical composition of the fish. Preponderant pathogenic flora are *Pseudomonas*, *Achromobacter* and *Flavobacterium*, but when fish are caught close to land, typical coliform and food-poisoning bacteria can be isolated. Smoking and salting are both traditional methods of preservation; newer methods include freezing, use of antibiotics and irradiation.