cal and subcortical visual centers in 20 different species of primates reveals interesting similarities and differences in these visually oriented animals (Hassler). Phylogenetic aspects of the lemniscal system and pyramidal tract in the higher vertebrates are analyzed by Shriver.

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Microorganisms

The Actinomycetes. A Summary of Current Knowledge. SELMAN A. WAKSMAN. Ronald, New York, 1967. 286 pp., illus. $12.

The publication of a study of the actinomycetes by Waksman is no novelty, for the organisms of this group have been the object of his investigation from the time he was a graduate student. Although he has now retired from active research, he still is vitally interested in and keeps informed about these microbes. Waksman more than anyone else was directly responsible for much of the early information on the actinomycetes, and his researches demonstrating that these organisms produce antibiotics led to his being awarded a Nobel Prize and, more important, resulted in intensive studies of the actinomycetes by his colleagues and in laboratories all over the world.

This book lay on my desk unopened for a long time. What could Waksman say that he had not said previously? It turned out to be a great deal. Certainly, this volume contains much material that he has previously presented —some of it almost in the identical form. But then we have little new ecological data, and the early history as well as basic morphology is still sound. What is important is that here are presented both previously given information and more recent data. For the professional taxonomist who stays abreast of the recent literature, there is little that is new; nor will any of the other specialists be enlightened in his own field. But each of them can be guided by this book into current information in fields outside of his specialty. Furthermore, the previous three-volume series on this subject by Waksman is out of print and, I am informed, will not be reprinted; thus this book fills a hiatus.

The subjects treated in the book include the ecology, morphology, cytology, classification, genetics, physiology or biochemistry, the production of antibiotics, and the pathogenicity of the actinomycetes. Of these subjects the taxonomy receives the most intensive treatment. It is a pleasure to find summaries of the most recent information on genetics and cytology and a recognition of the part that cell wall composition could play in taxonomy.

What one misses in this book is a critical treatment of the subjects described, even where the taxonomy is concerned. There is no lack of mention of new genera such as *Actinopycnidium* and *Promicromonospora*; but are these useful taxa? A number of keys of the classification are given, but we are not told which is the most usable one. There is a general assumption that one can rather readily separate the species of *Streptomyces*, for example. Thus the author writes that it is easy to separate organisms with flexuous from those with straight sporophores. This is not always the case, and the difficulty is compounded when one attempts to separate other sporophore types. One would have appreciated some recognition that the taxonomy of the largest group of actinomycetes, the *Streptomyces*, is not in good shape and that, in practice, keys to this group fail to resolve the species. This failure is in fact the basis for a current large international program to find good criteria and to characterize the species adequately. Furthermore, there is the question whether or not the approximately 600 recorded species are in fact different and whether or not some reexamination and consolidation are in order. There should be some recognition that genera that are based on ecological properties such as growth at different temperatures are not generally approved today even though they were validly and legitimately published.

These minor points do not detract from the prime importance of the book —that it brings up to date the information on the actinomycetes. It is thus an excellent introduction to current aspects of the information about these microbes.

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A Demographic Study in Malaysia

The Population of Borneo. A Study of the Peoples of Sarawak, Sabah and Brunei. L. W. JONES. Oxford University Press, New York, 1966. 221 pp., illus. $6.75.

This volume provides useful demographic information for Brunei, North Borneo (now Sabah), and Sarawak. In 1963 these states assumed importance because of the new Federation of Malaysia, which united the last two with the Malay states and Singapore. Although these states comprise only one third of the land area of Borneo, they are significant for a number of reasons. The population is predominately indigenous, but has a large, and increasing, economically active Chinese segment. Rich oil reserves make it a valuable part of the Federation and the envy of its neighbor Indonesia. South Borneo, on the other hand, is largely undeveloped and its population pagan and tribal.

Population increases in these states have been spectacular since World War II. Prior to Jones's study census figures were largely informed guesses. During the early decades of the present century the indigenous population seems to have been sparse, with little tendency to increase. The slowness of population growth during that period has been attributed to epidemics of smallpox and cholera, the debilitating effects of malnutrition and diseases such as malaria, sterility resulting from venereal diseases, the practice of head hunting, and tribal wars. In providing us with carefully collected demographic information Jones has erased much of the speculation and ignorance about the populations in these states. Whatever may have been the reasons for the slow growth in the population of the indigenous peoples prior to World War II, the increase since 1945 has been as revolutionary as elsewhere in Southeast Asia. Jones notes that the immigrant population, particularly the Chinese, has also multiplied *in situ* and now forms a major element in an increasing urban population. The population is proportionately young. In 1960 only 13 to 15 percent was over 45, compared with 23 percent in Japan, 28 percent in Australia, and 38 percent in the United Kingdom.

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