traditional style of administration. With but a slight variation on this theme, one can argue that the authors also have stretched a point in attempting to inflate to the status of a book (priced at $8) a questionnaire-*cum*-interview survey of the status of automatic data-processing machines and program-planning and budgeting concepts in a group of state-related institutions of higher learning. While the administrative activities surveyed may be matters of some significance and even of growing concern in higher education, the "meaning" and the derivation of the issues related to them is given relatively superficial consideration. The relationships between certain aspects of "the new science of management" and the more substantive characteristics of institutions of higher learning (such as the conflict between those values espoused by business offices and those espoused by science faculties, for example) are given but nodding attention when they are mentioned at all. The key to this limitation in the treatment of their material may lie in the authors' basic concept—that from "the perspective of organizational theory . . . institutions of higher education belong in the category of professional organizations, along with hospitals, laboratories, and scientific institutes and agencies."

JOHN T. WILSON
National Science Foundation, Washington, D.C.

Indian Wildlife

The Deer and the Tiger. A Study of Wildlife in India. GEORGE B. SCHALLER. University of Chicago Press, Chicago, 1967. 376 pp., illus. $10.

This volume deals with the large mammals of India, with particular focus on the chital (*Axis axis*), its associated herbivores, and the tiger which preys upon them. It is written by a biologist for biologists. The approach is broad, combining the results of intensive field observation with regional surveys. Both the field work and the integration of findings with the literature are exceptionally thorough.

The large wild animals of India, once a rich and numerous assemblage, have been declining in number since the days of the Moghuls. The rate of loss became steeper as the British consolidated their hold a century ago, and steeper still as a railroad system brought a relative end to local famines. Since then, public health measures and firearms (the latter especially in the 20 years since independence) have become increasingly widespread and efficient. More humans need more land. Former wildlife habitats are farmed and grazed. Wild animals damage crops and are "controlled." Even special parks and sanctuaries, established as a last small remnant, with full paper protection, are in fact grazed and poached from every side.

When Schaller was searching for a place where the native ungulates could be readily observed in natural surroundings that included their predator, the tiger, he had few choices. He selected Kanha Park, in central India, a rolling forest and meadow area covering 123 square miles. Altogether he spent 14 months in intensive study at Kanha Park and another 6 months in gathering comparative information, from detailed notes on behavior to generalizations concerning wildlife conservation on the Indian subcontinent.

The book is organized conventionally: following a description of the study area and methods there are species accounts of each of the major ungulates. Next is a comparison of their ecology and behavior, followed by a long chapter on the tiger and a short one on other predators. The final section is an analysis of the effect of predation on prey population in Kanha Park. There is a wealth of biological information in this volume. This includes detailed data on the species studied, unusually thorough analyses of predator-prey relations, and much material useful in comparing the biology of subtropical ungulates with those of temperate zones. In addition, there is throughout a realistic appreciation of the place of man with respect to this fauna.

Thirty years ago the wild ungulates of Kanha Park—chital, barasingha, sambar, blackbuck, and gaur—numbered about 52 per square mile. Schaller found the present density to be down to about 14 per square mile. Now wild ungulates comprise less than one-third of the total biomass of animals grazing within the park; the rest are domestic livestock. Preying on both groups is the tiger. During Schaller's study two adult tigers and five cubs lived in the study area, and several other tigers used it from time to time. These particular tigers, unlike most in India, lived mainly on wild prey.

It takes about 6000 pounds of meat a year to support a tiger. There are possibly 4000 tigers left in India. Populations of wild prey continue to decline, and therefore much of the tigers' food is now domestic livestock. Tigers killing stock are themselves killed, and livestock, protected, further encroach upon wildlife habitat. Poaching continues. Even in Kanha Park, one of the best protected of India's natural areas, Schaller concludes that "poaching and not tiger predation has been the general cause of the decline of wildlife."

Two years of study, however competent, can scarcely be expected to result in a treatment that is definitive in the sense of being so comprehensive that little will be added. But this book may well be definitive in quite another sense, that little will be added because the populations that were studied may not long survive.

RICHARD D. TABER
School of Forestry, University of Montana, Missoula

The Lower Atmosphere

Descriptive Micrometeorology. Advances in Geophysics, Supplement 1. R. E. MUNN. Academic Press, New York, 1966. 259 pp., illus. $9.75.

Micrometeorology is the physics of the atmosphere near the ground. The exact limits of this field are not rigid. In the preface to his book Munn suggests that those processes should be treated in which the Coriolis force does not play an important role. In practice, this means that the book concentrates on atmospheric phenomena in, roughly, the lowest 20 meters. In spite of the limited vertical extent of the region discussed, it strongly influences all kinds of human activity; and agronomists, foresters, various kinds of engineers, air pollution control officers, astronomers, and many others have become interested in the properties of the atmospheric surface layer.

The behavior of air near the ground is extremely complex; it is controlled by turbulence and radiation and is greatly modified by the characteristics of the terrain on which it rests. A complete discussion of our current knowledge in this area would involve some sophisticated mathematics and much space, and Munn has done a great service to the workers in micrometeorology by summarizing many of the results of the theoretical and observational studies in easily readable form. The book is divided, broadly,