

Book Reviews

The Mountain Gorilla: Ecology and Behaviour. By **George B. Schaller.** University of Chicago Press, 72s.

A by-product of the scientific explosion of the past twenty years, an explosion which has both increased the momentum and transformed the direction of technological and social progress, has been a resurgence of interest in certain areas of scientific inquiry which hitherto have been poorly cultivated. Among the fields of study which have benefited in this way are some which many once regarded as constituting simple observational natural history. Ecology, a creation of the inter-war years, and then a poor relation of the established sciences, was one of these subjects. To-day it is a popular and thriving field of inquiry whose importance is universally recognised. Similarly, the study of animal behaviour has blossomed over the past ten to fifteen years, and also sub-divided into a number of specialities of which the accurate field study of the lives of animals is only one. While our appreciation of the facts of wild life may not yet have been transformed by some set of new illuminating generalisations, we certainly, as a result of all this new attention, now have more facts than have ever been collected before.

Among the creatures whose lives in the wild have attracted new interest are the monkeys and apes; and among the most valuable studies of sub-human primate life that have appeared in recent years is Schaller's *Mountain Gorilla*. It is a good book, which makes little claim to do more than report what the author observed during a spell of two years which he spent in the Albert National Park in the Congo, first in association with his colleague, Professor J. T. Emlen, and throughout the period with his wife. The writing is clear, and richly documented both by tables and the best set of illustrations of wild gorillas that has ever appeared in the literature. Unlike a large number of other travellers who tried, but failed, to study the wild gorilla, Dr. Schaller succeeded. In the period he was in Africa he made 314 "visual contacts" with the animals, amounting to a total period of study of 466 hours. Some periods of observation were brief, and on average few lasted more than an hour or so. But out of them all he was able to piece together from, as it were, a series of short lengths of film a continuous picture of the lives of certain groups of gorillas, some of which he got to know fairly closely. The secret of Dr. Schaller's success was that he did not treat his quarry as dangerous animals. He carried no firearms and his equipment consisted simply of field glasses, camera and notebooks. He learnt how to track the animals, and having approached a group he settled down in full view, relying on the animals' own curiosity for them to approach him. On no occasion did he pursue them, and on some he slept where they nested rather than lose contact. All the same, he did not find the mountain gorilla an easy animal to observe, mainly because of the thickness of the forest floor where it lives. There are also very few of them. Dr. Schaller calculates the density of subspecies as a whole as about one per square mile in the 8,000 square miles of forest they inhabit. The mountain gorilla spends practically all of its time on the ground, and not once during the period of his study—which was probably rewarded with more visual observation than that of all previous field-workers together—did he ever see a gorilla "brachiating". This negative observation disposes of a deeply cherished anatomical myth.

The animals live in small parties, varying in size from a pair to as many as thirty, with mature females out-numbering the mature males, sometimes by as many as four to one. In each group there is always a dominant male, round whom the females dispose themselves when the gorilla parties come

to rest at night, and to whom the other males are subservient. Dr. Schaller also encountered numbers of solitary males. Each group of gorillas sticks to an area of 10 to 15 square miles of forest, but since the area may be occupied by more than one group Dr. Schaller prefers not to classify the gorilla among those primates which are strictly territorial in their habits. Food—a vegetarian diet—is abundant, and Dr. Schaller could find no evidence that the animals ever eat meat, a negative observation which he established by a very extensive analysis of the animals' dung. Nor do they drink water directly—they presumably take in sufficient fluid with the succulent herbage they eat. Sexual activity appears to play a very inconspicuous part in their lives, and they also rarely come to blows—or teeth—even though displays of dominance on the part of the big males, especially the performance of chest beating, seem very terrifying. According to Dr. Schaller predation, other than by man, is a minor factor in determining the life cycle, and disease is the major cause of death.

Some of the matters described by Dr. Schaller seem hardly to deserve the amount of space he has accorded them—for example, his discussion of variations in nest building, and of the animals' excretory habits. And some of the quantitative data he provides gives a spurious air of importance, through figures, to the matters discussed. It is, for example, odd to read that the average walking speed of a gorilla is 532.7 feet per hour, with a standard deviation of 452 feet. It would surely have been enough to say that in the course of an hour a gorilla usually covers anything between 100 and 1,800 feet, or whatever figures he chose to give us. It is even stranger to read that "in a total of 2,451 nests . . . 99 per cent contained dung", as opposed to a brief sentence that the animals always foul their nests. Points like these detract from what is otherwise a work of scholarship, and suggest that the author lacks a sense of intellectual priorities.

Dr. Schaller's careful field study provides no new generalisations about primate behaviour. At the same time certain matters, for example, the significance of male dominance in relation to the presence of solitary males and in relation to sexual activity, seem to have been treated in accordance with views which the author accepted before going to Africa rather than by a critical analysis of the data as they revealed themselves. But let us be fair. Dr. Schaller did not set out to provide us with generalisations about primate behaviour, and we should be grateful for the new facts he has given us. So far as the Fauna Preservation Society is concerned, it would certainly be true to say that we now have available the kind of information on which to base a policy for the conservation in the wild of what many regard as Man's most interesting cousin.

S. ZUCKERMAN

A photograph of gorillas from Dr. Schaller's book is on plate 1.

Henderson's Dictionary of Biological Terms. By J. H. Kenneth. Oliver and Boyd, 63s.

This standard work used to be called "A Dictionary of Scientific Terms," but as its scope since its first edition in 1920 has covered only the biological sciences, it was rightly thought better to change the name for this eighth edition. It is strictly biological, and not in any way a natural history dictionary, with the bias towards the laboratory and museum, though first-class within this restricted biological ambit. It has, for instance, no definition of bog, heath or fen, and it is perhaps unreasonable to expect the word "conservation" to appear, though one hopes that it will not be long before biologists do not merely peer out of the laboratory at their disappearing subject-matter but stride out and help to save it.

R. S. R. FITTER