

the various ways by which adults deal with the difficult moulting period.

The book tells us much of the human inhabitants of the Arctic, the yearly round of the Eskimo, and why, in spite of an almost exclusive meat diet, he has never suffered from that curse of former Arctic expeditions, scurvy. And the use he makes of the lesser life around him, by no means wise use unfortunately, for the Eskimo of North-West Greenland seems to have as little idea of conservation as the Alaskan Eskimo. Indeed one could have wished that the authors had given some space to suggestions for the preservation of the wild life they describe so well.

This is a long book, interesting to read and useful for reference. It has good diagrams, pleasant sketches, and an adequate index. The map inside the cover which shows the whole Arctic region, is useful, indeed essential, but a whole-page map of the area north of the Arctic Circle between 50° W. and 90° W., with which this book is really concerned, would have been extremely useful also.

C. L. B.

SERENGETI SHALL NOT DIE. By BERNHARD and MICHAEL GRZIMEK. Hamish Hamilton. 30s.

The German edition of this book has already been reviewed in *Oryx* and we now welcome this English edition.

It is a beautifully illustrated and moving appeal for the Serengeti National Park, made more impressive by the fact that the author's son lost his life in completing the work on which it is based.

It would in any case be of interest to members of the Fauna Preservation Society, but it is particularly so because the Society in 1956 supplied funds to carry out at short notice an ecological survey of the Serengeti. This was of necessity done in the dry season, so that much of the interest of the work embodied in this book is that it extends our information, by describing the conditions in the wet season when movement is extremely difficult. This difficulty was overcome by using a reconnaissance type of military aeroplane which could take off and alight in a small area. As a result we are now given much more complete information about the game migrations and about the pasture grasses which, in the dry season survey, had to be identified from the dried and withered scraps remaining after many weeks of

drought. Under those conditions only the skill and persistence of Dr. Greenway made results possible.

The new information implies two important points. The first is that the main game concentrations in the wet season take place to the south-east and outside the new boundaries of the National Park. The second is that the survey of grasses confirms the observations made in 1956, that the character of the grasslands changes as one goes from west to east, while what are apparently important species, preferentially eaten by grazing animals, are more common in the east. If the new survey presents the facts fairly, the important grasses are only present outside the new boundaries and this may account for the wet season distribution of the grazing animals.

The present book is, of course, a popular account including many other features of enthralling interest. Nevertheless, as so much of importance depends on the results of these new surveys, it is very unfortunate that the new evidence is presented in a very slight manner, in the form of a few very small and inadequately described maps. These, as presented, imply that almost all of importance lies outside the new boundaries of the National Park. We note that the maps of game concentrations contain no clue as to what the species are or the dates and durations to which the distributions refer.

In regard to the grasses, the very small maps of the few grass species mentioned are apparently chosen to show that three species eaten by game occur wholly outside the new Park boundary. The form of presentation implies that a poor and possibly little eaten grass *Pennisetum mezianum* is prevalent in the Park and the especially edible grasses are outside. No reference is made, for example, to other grasses that are more abundant *outside* the Park, though largely inedible. A somewhat similar weakness of presentation shows *Themeda triandra* as the "spurned grass" inside the new Park boundary only, while its actual occurrence outside (along the Crater Highland foothills and in the Ngorongoro Crater) is not even suggested. In many parts of Africa this grass is regarded as a useful pasture grass and one of the most interesting problems of game management is why it should be used as pasture in some places, but left quite untouched in others. The late Mr. G. N. Swynnerton thought that the distribution of predators or of tabanid biting flies was largely responsible for some at least of these diversities of treatment which we saw in the Serengeti. There is, of course, also the probability that such a grass as *Themeda* is not eaten when other more desirable species are in the vicinity, though

otherwise or at some season of the year, it would not be neglected. What is undoubtedly desirable is that any evidence about the distribution of these pasture grasses should be presented as factually and impartially as possible.

The original report which I made in 1957 recorded what was then known of concentrations of game on the plains. These necessarily referred only to the beginning and end of the wet season, but it was stated that the western concentrations of animals moved east to the vicinity of Lemula hill and apparently so did those from the Bologonya area. No suggestion was made as to what happened in the main wet season nor was there any implication that the western animals stayed in the west. Dr. Grzimek refers to this as "the opinion held for decades", giving a map in illustration. I did not meet anyone who voiced such an opinion and my report was confined to what we saw and what the game wardens knew. It is therefore unlikely that this opinion was a cardinal factor in determining the decision of the 1957 Committee of Inquiry to make the provincial boundary the new eastern margin of the Park. It is possible and more likely that two factors influenced them—firstly that the new boundary is one affecting the Masai but not the game, which now are free to graze where they will. The Masai, however, cannot graze their animals west of the boundary. Thus supposing that in the long run the better grasslands suffer severe damage from over-grazing by cattle and game (as is possible if not likely) and reverts to desert conditions, the game will still find pasture in the National Park. This is certainly used as pasture by them in passing from west to east and it would undoubtedly support a considerable number of animals permanently. The likely result if the worst came to the worst and game were excluded from Masailand, is that the Park inside the new boundaries could be maintained without human occupants, even if with a smaller head of game. Let us then be fair to the Committee of Inquiry whose reasoned case is wholly ignored, and ask if they have not provided something which may well survive the worst that can be immediately envisaged. There is no present justification for the assumption that the Special Conservation Area which has been set up on the Committee's recommendation, including the Ngorongoro Crater and other areas formerly within the National Park itself, is a complete loss.

Dr. Grzimek is on far better ground in drawing attention to the real peril that faces the Serengeti game herds—poaching. Here is something that requires strict control and the utmost effort from all concerned.

We must remember that *Serengeti Shall Not Die* is intended for popular reading and that much further information will be given in the scientific publication which is now in print. This book is intended, above all, to focus attention all over the world upon the Serengeti so that every future government of Tanganyika shall legislate to its advantage. It is being translated into eleven languages.

The Serengeti, from Ngorongoro to Speke Gulf, is one of the most remarkable and interesting natural sites on earth and all who know it will support Dr. Grzimek's plea that with its animals, it must escape destruction.

W. H. P.

SNAKE MAN, The Story of C. J. P. Ionides. By ALAN WYKES.
Hamish Hamilton. 21s.

This astonishing story, its main setting in Africa, concerns one of the most remarkable characters ever to have set foot in what is still to a great extent the Dark Continent. In a land of myth and magic where sinister occult influences play an important role in everyday life, Snake Man's skill in capturing with ease large and deadly species such as mambas, cobras, Gaboon vipers and puff adders, was regarded with fearful awe by the highly superstitious natives, who were convinced that he exercised supernatural powers. The old beliefs die hard in an Africa where as yet education has made little real impact. Ionides, a master of his peculiar craft, will long be spoken of and the tales of his prowess are unlikely to diminish in the telling.

As a field naturalist of repute he has made notable contributions to herpetology by the discovery of new species of African snakes and lizards, as well as by the general study of reptilian habits. By trial and error he has had to work out the most effective methods of snake-catching—and there can be little margin of error permissible with a deadly species. The tale of the taming of "Popkiss", the puff adder, has a macabre flavour and tempts one to wonder, should one meet Snake Man, what he has concealed in his shirt!

Although it was snake-catching which eventually became his hobby and ruling passion, he has been privileged to hunt most of the rarer large mammals which are found in the African continent. This was not done in the acquisitive spirit of the trophy hunter, but strictly for scientific purposes on behalf of museums. One feels that the narrator with advantage could have