

the equatorial forests of the West African coast and the Congo. The great carrying capacity of this country for ungulates is not fulfilled in an area which holds a dense human population which has always hunted for meat. The great swamplands of the Nile Basin, from Uganda far into the Sudan are an endless-seeming world of their own. The floating masses of the sudd support a considerable head of wildlife and the ecology of the Bahr-el-Ghazal, the country of the rivers, with its alternating *toich* plains and bush, its cattle-keeping Nilotics and the wild game, is a life-time's study in itself.

We are led through the East African grasslands which the tourist knows so well, then southwards into the great forests and savannas of *miombo* which takes us to Rhodesia. The Cape coastal country of South Africa is one of the most favoured climates of the world, a quite glorious country, but still so truly Africa. Some short habitat chapters deal with the flamingos of the soda lakes regions, the vegetation of the high mountains, and the fauna of Madagascar.

Leslie Brown is no less aesthetically aware and in wonder through long contact with Africa. Rather is he the better aligned and never ashamed to let this side of his nature take charge of his writing from time to time. His English style is good and he never gets purple. Throughout, his ecological appreciation causes him to explain and encourage conservation as a necessary scientific discipline, not as an emotional plea, yet we know how deeply he feels. Indeed, his book is a distinctive achievement and an artistic whole.

The size and format of this book might cause the casual browser to think it another "coffee table" volume. Do not be misled, for the contents are sound and the size is justified by the quality and range of the pictures in colour and black and white by many of the best photographers of the day in Africa. The book should be gone through for the pictures alone and again for the reading of Leslie Brown.

F. FRASER DARLING.

Budongo, by Vernon Reynolds. Methuen, 36s.

As indicated in the sub-title "A Forest and its Chimpanzees", this is the story of a Central Uganda forest and its most interesting wild inhabitants. With a wealth of detail so skilfully presented that it never palls, the forest, its diverse conditions, its manifold hazards and its medley of wild life—large, small and strange—are fascinatingly described. It is not unusual for wanderers in such places to get lost, and one can sympathise with the author and his intrepid wife Frankie learning the hard way, in their introduction to such an unnerving experience in the wilds of Africa.

What did they find? The answer is chimpanzees in unexpected abundance, thus providing unique opportunities for the study of individual characteristics, group constitution, all manner of behavioural aspects, locomotion, voice, food, movements and range. Comprehensive, meticulous observations faithfully recorded on the spot enabled them to establish that chimpanzee movements—and they follow a set pattern—are governed by the availability of suitable food, as with so many wild creatures. Mainly frugivorous, the chimpanzees congregate in the localities and the trees where seasonally the most desirable fruits are found. Where this diet is plentiful they regale themselves noisily and advertise their enjoyment with resonant choruses

which speedily attract all others within earshot. But the author does not attempt to explain the eerie, demoniacal howling sometimes heard in the depths of the forest in the middle of the night. Is it inspired by sudden panic or is it to frighten off a potential predator? *Quien sabe?*

Attention is drawn to the dubious practice—in the interests of silviculture—of poisoning those species of wild fig trees which provide much of the chimpanzees' staple diet. Cannot this be stopped?

All animal lovers will certainly agree with the evocative indictment of the callous methods so often used when keeping in solitary confinement the greater and more intelligent primates. If these unfortunates must be kept in captivity, surely the plea for more humane conditions cannot go unheeded.

C. R. S. PITMAN.

Animals in Captivity, by Philip Street. Faber, 25s.

The wide choice of popular books about wild animals today includes almost nothing about the history of zoos and their development; here is a welcome attempt to fill the gap. Due prominence is given to the significance of Hagenbeck's pioneer experiments, and the author describes the advances made at the London Zoo under A. D. Bartlett and Sir Peter Chalmers Mitchell, culminating in the Whipsnade experiment. Separate chapters deal with fish, reptiles, birds and anthropoid apes, and some of the more important aspects of breeding, feeding and health in a zoo are discussed.

The knowledge accumulated at Regent's Park is certainly important, but it is a pity that the author has relied so much on one source of material. References to the major European and American collections are all too few. Whipsnade was designed to acclimatise exotic species and to enable herd animals to exhibit social behaviour, and therefore breed. This was important, but town zoos with limited space, such as Bristol and Basle, have also had remarkable breeding successes. The search for optimum conditions in captivity cannot always be equated, as the author suggests, with the attempt to reproduce natural behaviour. The security of life in a zoo must itself affect an animal's behaviour fundamentally.

There are some factual inaccuracies (orang utan does not mean 'wild man of the woods'), and I dislike the expression 'animals and birds'. The index is inadequate, but the photographs are excellent, and the importance of breeding rare species in zoos receives the emphasis which it deserves.

GEOFFREY SCHOMBERG.

Woodlands, by J. D. Ovington, English Universities Press, 21s.

Directed at the sixth former and those at an early stage at university, this book in the 'Modern Biology' series will certainly give a fresh and up-to-date description of the interest and value of our woodland. The text is well laid out and is excellently illustrated by 88 black and white photographs and 22 easily understood figures. Only in the chapter on "Woodland Processes," where the description seems unnecessarily burdened with quantitative data, is the readability spoilt. A chapter on "Woodland Management" states the many good reasons for having woodland and briefly describes the many kinds of management required if the modern ideas of multiple use of the crop are to be realised. It was a little disturbing to read of the notion that in order to direct vandalism at camp sites away from living trees, posts might be provided for name-carving—almost like a visitors' book!—a practical idea if a little negative.

Professor Ovington's approach is essentially that of a forester and the reader certainly benefits from his wide experience, though perhaps the book's emphasis is a little too strongly in this direction for it to claim to be a truly general treatment of the subject. Trees themselves are ably dealt with and many interesting facts revealed, though the detailed biology of the understorey, which is such an important part of the woodland eco-