Among Animals of Africa, by Bernhard Grzimek. Collins, £2.50.

Mammals of East Africa, by C.A.W. Guggisberg. Sapra, Nairobi, EA shs. 15.00.

What Grzimek writes is, as always, factual, thorough, intensely interesting and valuable. Beautifully illustrated in colour, this is an enthralling and enjoyable book. Dealing with a medley of creatures, their habits and habitat; he also describes in detail the complex anatomy of some of his subjects. Research to ensure more effective wildlife conservation is combined with an experiment to populate a lake island with certain endangered species and the bizarre use of inflated dummies to test the reaction of their wild counterparts. Fascinating are the chapters devoted to gorillas, and especially the account of an orphan brought up like a human baby through adolescence to boisterous maturity. One learns that in 1953 there were 56 gorillas in captivity outside Africa; 14 years later in 1967 this figure had risen to 302 lowland and 12 of the mountain race, indicating how important and urgent is their adequate protection. The practical value of an amphibious motor vehicle – the Amphicar – to counter crocodile poaching, generously and jointly presented by Grzimek and Aubrey Buxton to the Uganda National Parks, is graphically demonstrated, and he describes his aeroplane's unfortunate forced landing in the Sudan, after unintentionally straying across the border, which could have had dire results; a happy ending was only achieved after an eventful journey as a prisoner to Khartoum. In a work of such scope and so comprehensive, inaccuracies, mainly minor, certainly occur, but the claim that Uganda's Murchison Falls National Park is 12,000 (in fact only 1200) square miles 'one of the largest in Africa', should have been avoided.

Dr Guggisberg is a well-known authority and his Sapra Safari Guide No. 1 is a useful field guide to East African ungulates, carnivores and primates. The numerous photographs are excellent, and the drawings, in black and white or in colour, though scarcely to be commended, suffice for identification. The notes on distribution, habits and characteristics are concise and valuable.

C. R. S. PITMAN

## Jebels by Moonlight, by Charles Sweeney. Chatto & Windus, £1.75.

This is a lively account of the author's first tour of duty as an entomologist in the Nuba Mountains some twenty years ago. The jebels, whose fauna and peoples he describes with such an appreciative and observant eye, consist of a series of ranges of large granite outcrops in the Acacia-tall-grass region of the Sudan. Because the soils in the valleys and plains between them are often of dark cracking clay, which is almost impassable during the rains, Charles Sweeney was isolated for several months of the year. He cannot have been idle, for, in addition to his official duties and research, he built up quite a respectable zoo at his headquarters in Kadugli, and he describes the antics of its inhabitants and the tribulations resulting especially from those of Gorab, a pied crow, and Chita, a baboon. (The Arabic sheeta actually means a chimpanzee; gerit is baboon).

A keen collector of wild animals, he was stung by scorpions and bees and bitten by *surret* flies (Tabanidae) – the last, he suggests, may have been the main reason why southern Kordofan was never occupied by

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the better armed and more numerous Arabs of the north, whose camels and cattle are affected by tabanids more than are the pigs and goats of the Nuba tribes. When a spitting cobra discharged its venom into his eyes, giving him intense pain, he was unable to see properly for 20 hours, but these, and other discomforts, he apparently accepted with equanimity.

Some of the quotations are reminiscent of an earlier period, so beautifully described by Reginald Davies in *The Camel's Back* (John Murray, 1957): in particular, Sweeney cites a report on termites which concluded with the words, 'this tenacious enemy has started to attack the laboratory without mercy'; but, 'our work continues with unabated

zest and fury'.

It was Sweeney's misfortune to have been in the Sudan before Independence so that he was to some extent denied the pleasure of mixing on equal terms with the people, surely among the most friendly and hospitable in the world. His writing is sometimes clumsy and the sequence of events confused. The only date given is 'the year 1371 by the Muhammadan calendar but as far as El Obeid was concerned it could almost have been the same year by Gregorian reckoning'. It is clear, however, that the Nuba Mountains have changed little since Sweeney commented on their wildlife and natural history.

J. L. CLOUDSLEY-THOMPSON

Antarctic Ecology, edited by M. W. Holdgate. Academic Press, 2 vols., £11.

This exceptionally well produced account of the Symposium on Antarctic Biology, held in 1968, and organised by the Biology Working Group of SCAR, comprises 81 papers, introduced by a discussion of the past environments, flora and fauna of Antarctica, which, for much of geological history, was subject to temperate conditions. Most of the papers are concerned with the marine ecosystem, with sections on plankton and its consumers, the pelagic resources, benthos, fishes, biology and adaptations in seals and birds. The second volume has sections on the freshwater lakes, soils, vegetation and terrestrial fauna.

A useful account of conservation gives a very clear exposition of conservation objectives, generally accepted as the protection of scenic beauty, birds, mammals and terrestrial and freshwater life, and the restoration or stabilisation of those island ecosystems that have been disrupted by man and his imported alien species. A further important aim is 'the wise management of the biological resources of the Southern Ocean so that a protein crop can be taken without irreversible damage to the ecosystem or the undue depletion of populations'. Tourism is increasing and poses a possible future problem. The present state of the Antarctic ecosystems, current conservation measures under the Antarctic Treaty (which in effect provides a unified management plan for a region of millions of square miles), and desirable future developments in three fields (specially protected species and areas, and management) are dealt with.

Of special interest to the conservationist also are a series of papers documenting changes in the oceanic ecosystem due to the removal of the large whales by the whaling industry, and speculating on the possible consequences in the marine food chains. The total estimated standing crop biomass of whales supported by krill has fallen from 24