

geographical variation and subspeciation receive considerable attention. Other aspects fully covered are habitat, distribution, migration, reproduction, survival and food. A great deal of information is provided, far more than in Johnsgard and, in some fields, more than in Bellrose. But the volumes are expensive, and Volume 1 is needed to understand in detail the conventions used in the succeeding ones. The illustrations and maps are good – especially so are some charming paintings of downy young by Colleen Nelson. The books can certainly be recommended to anyone working in the waterfowl field who can afford the outlay.

F. H. Kortright's *Ducks, Geese and Swans of North America* was published in 1942, and rapidly became a classic. Frank Bellrose's book is a much expanded and up-dated version in which the only obvious 'lifts' from the original are the illustrations. However, the clarity of the writing and the thoroughness of the research have been maintained. The book is aimed principally at wildlife managers who regard wildfowl as a resource, and the emphasis is on surveys, reproductive potential, flyways, the timing of migrations, age and sex ratios, mortality, etc. The more 'purely' biological aspects have not been neglected, and many of the data came from unpublished sources to which Frank Bellrose had access through the US Fish & Wildlife Service or personal contacts. So a large amount of recent information has been gathered together in text, maps and diagrams, and at a very reasonable price. Low cost presumably accounts for the rather flimsy binding, thin paper and poor printing. It seems a pity, although probably inevitable.

JANET KEAR

### **Mountain Sheep and Man, by Valerius Geist. Cornell University Press, £8.**

Geist is a field ecologist of outstanding ability whose particular interest is the evolution of northern ungulates. His recent book describes the background to his well known study of mountain sheep. It provides many fascinating insights into the conditions under which he worked as well as several exciting new explanations of evolutionary trends among ungulates: in particular, I found his exposition of the co-evolution of sharp horns and fighting strategies in mountain goats cogent and convincing. His writing is vigorous and colloquial, and he catches, with considerable sensitivity, the energy, beauty and sadness of the northern wilderness where he worked.

Wildernesses have, however, an unfortunate tendency to produce prophets. In the last chapters of the book, Geist abandons the viewpoint of the field worker for a far more ethereal role. Man, he argues, only developed most of his specifically human characteristics in the middle to late Pleistocene when, for the first time, he became a cooperative hunter of large mammals. Hampered by adaptations from this hunting past ('We shall never escape the inherent biological rules that govern our actions'), modern man has allowed technology to proliferate unchecked to a point where it threatens his continued existence ('Let it continue unchecked, like a cancer, and we shall become its victims – as certainly as the sun will rise'). His solution is simple and drastic: 'From a biologist's viewpoint, the solution entails linking the reproductive efforts of individuals to superior physical and intellectual performance – to escape the gradual randomizing of genetically controlled growth processes shaping the micro- and macrostructures of our organs and bodies.' . . . . 'The alternative, embracing an egalitarian philosophy, would inevitably lead to greater diversion (sic) of technology to prop up failing human minds and bodies, to an increased regimentation of the individual's life and to dictatorship by technocrats and machines.'

Geist's arguments concerning primate and human evolution are generally exotic and sometimes erroneous, while his analysis of our current predicament is superficial. For this reason, I would only recommend the book to those who, like mountain sheep, prefer to take a certain amount of salt with their forage.

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