

# Biology of man . . .

Cedric A. B. Smith

*Human Variation and Natural Selection.* (Symposia of the Society for the Study of Human Biology. Volume 13). Edited by D. F. Roberts. Pp. ix+209. (Taylor and Francis: London, 1975). £4.50.

THIS book consists of a selection of papers read at meetings of the Society for the Study of Human Biology about 15 years ago, and published in previous symposia about that time. In spite of the lapse of time since then these papers still have freshness and relevance. A considerable amount of detailed knowledge has accumulated in the topics dealt with in many of the papers since they were written; but the basic ideas have not changed very much, even though the emphasis may now be different.

The first topic of importance essentially concerns the factors shaping the relative frequencies of various inherited characters in a natural population. There are contributions on that by L. S. Penrose, A. R. G. Owen, C. A. Clarke, P. M. Sheppard and T. Dobzhansky. They explain three main ways of maintaining variability in a population, namely by heterozygote advantage, by mutation counter-balanced by natural selection, and by natural selection favouring different types in different habitats. There are three main ways of introducing genetic variability for a limited time: genetic drift, and the response to changing natural selection, either because of a temporary change (for example, an epidemic) or a permanent shift in environment. Fifteen years ago we knew one clear case of heterozygote advantage, the sickle-cell polymorphism in Africa, described by Allison in a later paper in this book, and a number of cases of balance between mutation and selection. Although theory has been developed much further, observational knowledge remains substantially as before.

Another group of papers, by A. E. Mourant, A. C. Allison, N. A. Barnicot and S. M. Gartler, examines various Mendelian characters which show polymorphism, such as blood groups, haemoglobins, haptoglobins, transferrins and amino acids. Except for certain polymorphisms, such as that of abnormal haemoglobins, which



Drawing of a spectral tarsier. Taken from *Uniqueness and Diversity in Human Evolution: Morphometric Studies of Australopithecines*. By Charles E. Oxnard. Pp. viii+133. (University of Chicago: Chicago and London, 1975.) £9.

seem to be related to the presence of malaria, these characters seem suitable for anthropological investigations designed to find which populations are most closely related. Later work has extended this list, especially as regards enzyme variability.

There are also papers by A. C. Stevenson on "Biological studies of small communities", E. H. Ashton on "Rate of change in Primate Evolution", S. B. Holt on "Dermatoglyphic Patterns", and G. A. Harrison on "Pigmentation".

Each paper has had added to it a few paragraphs indicating more recent developments in the field. □

## . . . and baboons

T. H. Clutton-Brock

*Social Dynamics of Gelada Baboons.* (Contributions to Primatology, Volume 6.) By Robin and Patsy Dunbar. Pp. viii+157. (Karger: Basel, London and New York, 1975.) SFr.89; DM 85; \$37.25.

To casual inspection, the social system of geladas closely resembles that of hamadryas baboons: the population is divided into stable harem units usually consisting of a single mature male, around three adult females and their offspring. Younger males join unisexual troops and both harems and all-male groups form bands which share a common home range. The takeaway message of the Dunbars' monograph is that superficially similar social systems may be

the product of different behavioural arrangements. In the hamadryas, harem units are maintained by the chauvinistic activities of the male, who herds females and enforces group cohesion. In the geladas a more egalitarian situation prevails and harem units are maintained by strong social bonds between females.

The monograph provides a detailed but readable description of the anatomy of gelada social organisation. Its claim to cover group dynamics is less well justified. The study was of relatively short duration and few individuals could be recognised. As a result, virtually all interpretation of group dynamics is based on selected evidence. A more fundamental short-coming (although one which has been applied to many primate field studies) is the lack of theoretical orientation. This leads to a number of unfortunate effects: extensive description of trivial or obvious aspects of social behaviour, persistent attention to null hypotheses which are palpably false, and inadequate discussion of points of particular interest. The book will be of major interest only to primatologists. A stronger theoretical bent could have led to a study which was of much wider significance. □

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