

**Archaeological Investigations in British Guiana**  
By Clifford Evans and Betty J. Meggers. (Smithsonian Institution: Bureau of American Ethnology, Bulletin No. 177.) Pp. xxi+418+68 plates. (Washington, D.C.: Government Printing Office, 1960.) n.p.

**T**HE authors, who are well known for their work at the mouth of the Amazon and other parts of lowland South America, spent the winter of 1952-53 in British Guiana. Their report can be assumed to have answered most of the questions of any importance which are likely to arise in the archaeology. There is, however, one important problem, probably insoluble, to which they direct attention for the first time, namely, the possible existence of an early hunter horizon of the age of the first occupation of South America. The evidence consists of seven large stemmed stone points, four of which they illustrate, to which I may add three of rather different form in the University Museum of Archaeology and Ethnology, Cambridge. All are casual finds, they are unlike anything known of later date, and the possibility of finding a site which puts them in their context is remote in the environment.

For the rest, the work covers the North-West District and two inland areas. The first produced a pre-ceramic shell-mound stage, with polished-stone tools and extremely crude percussion-flaked ones, with pottery and agriculture coming into its latest stages, perhaps from Venezuela. It is ascribed to the early centuries A.D. There follow three distinct ceramic phases, the first from Venezuela c. A.D. 500, the second from Trinidad c. 1100, and the third probably from the East c. 12-1300. All lasted until the arrival of the Europeans. The inland areas, the Rupununi Savanna and the Upper Essequibo, were chosen as likely ones for finding traces of people immigrating from the south. Traces were indeed found in the shape of distinctive pottery, but all belonged to people known to have come after 1670, some of them, the Wai-Wai, very recently indeed.

The sum of it all is that British Guiana was never a great centre of aboriginal development and had no great attraction for them. Various peoples entered it from time to time, most of them at a late period, and probably under pressure.

G. H. S. BUSHNELL

#### Natural Selection in Human Populations

Edited by D. F. Roberts and G. A. Harrison. (Symposia of the Society for the Study of Human Biology, Vol. 2.) Pp. viii+76. (London and New York: Pergamon Press, 1960.) 20s. net.

**I**N the first paper, "Natural Selection in Man: Some Basic Problems", Prof. L. S. Penrose discusses the particular genes recognizable in human populations in terms of their frequencies, precise effects, origins, degrees of stability, and quantitatively observable trends. The popular view that present-day cultural practices have abolished the effects of natural selection upon our species is rejected. Rather, the process has been transferred at certain points from one genotype to another, as may be observed in the role that medical control of infectious disease has exerted in reducing the advantage of those genes whose frequency in the gene pool was once maintained for fighting disease. Dr. Penrose regards the primary force of selection today to be directed

towards the embryonic level, where most anomalies occur. Such selectivity does not harm the gene pool since its victims do not live to reproduce.

Dr. A. R. G. Owen's paper, "Mathematical Models for Selection", approaches selection in terms of its effects solely upon the genotypes themselves. His mathematical model is a representation of the polymorphism of multiple alleles which he suggests as a means of approach to the complex factors of heterozygosity.

"The Relative Fitness of Human Mutant Genotypes" by Dr. C. A. Clarke and "Natural Selection and Some Polymorphic Characters in Man" by Dr. P. M. Sheppard are clinical approaches to those gene complexes we identify as the units of human polymorphism. The fourth contribution to the Symposium, by Prof. T. Dobzhansky, "On Selection of Gene Systems in Natural Populations", emphasizes the frequently overlooked fact that natural selection works on organized gene systems rather than on single discrete genes which are the concern of some human geneticists embogged at the biochemical level.

The final paper, which is by Dr. Ashton, "The Rate of Change in Primate Evolution", is essentially a review of the primate fossil record and of studies of the St. Kitts green monkey population. Dr. Ashton regards the rate of morphological change for the primates as completely indeterminable.

This collection of researches should be useful to the physical anthropologist concerned with problems of human genetics and the intellectual history of this phase of the discipline. As a broad study of natural selection in human groups the book is only partially successful. Little attention is given to the cultural factors affecting the frequencies and distribution of human polytypes. An understanding of that relationship of social tradition to genetic complexes is the very crux of anthropological theory.

KENNETH A. R. KENNEDY

#### Mechanisms in Radiobiology

Edited by Maurice Errera and Arne Forssberg. Vol. 2: Multicellular Organisms. Pp. xiii+395. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1960.) 13 dollars.

**T**HIS is not a text-book. The five chapters, all by different authors, show little sign of editorial integration and vary greatly in quality. "Gametes and Developing Embryo", by Roberts Rugh, is a useful literature source, but by no means easy reading. Rugh's contention that cells are more radiosensitive during differentiation than during division may help to loosen some of the present fixity of radiobiological thought. "The Adult Organism", by Clemenson and Nelson, is the least satisfactory chapter in the book. It is not only uncritical but seriously incomplete. For example, there exist six classical papers concerning radiation effects on the thymus, but only one of these is mentioned and that incorrectly. Structural changes in the retina, on which there is an important literature, are dismissed in five lines. Testis and ovary could have been omitted in view of their more complete coverage in Rugh's chapter.

"Immunology", by Hašek and Lengerová, is too short (sixteen pages, excluding chimeras) to do justice to this important topic. "Protective and Sensitizing Action", by Eldjarn and Phil, is a good and critical survey, despite its somewhat pro-SH bias.