

book reviews

Prehistoric snails

Land Snails in Archaeology, with Special Reference to the British Isles. By John G. Evans. Pp. xii + 436. (Seminar: New York and London, January 1973.) £7.90.

ARCHAEOLOGISTS are becoming increasingly interested in the reconstruction of the environment and ecology of the ancient sites they excavate, and one of the sources of evidence available to them is the careful study of the shells of ancient land snails. These are particularly important in the limestone and chalk regions of Britain where pollen grains do not survive to give direct evidence of the local flora.

This book sets out to give an account of the growth of interest in the study of land snails by archaeologists during the past century, the methods of identification and the results that can be achieved by careful sampling and interpretation.

The possibility of using snail shells as environmental indicators was first suggested by General Pitt-Rivers when he found their remains in the ditch of the iron age hill fort at Cissbury, Sussex, in 1869. Most of the early work on snails in ancient contexts in this country was carried out by A. S. Kennard and B. B. Woodward. Recent developments largely brought about by the author of this book, and recorded in detail in it, include the much more accurate sampling procedures, the interpretation of the environment from the standpoint of both moisture and temperature. "The techniques of snail shell analysis is now refined to the extent that we are able to recognise and differentiate between the effects of climatic, local environmental and anthropogenic influences on ancient snail populations."

Now it is essential that further study be made of the geographical ranges of present day snail populations in this country. Also urgently needed are quantitative data on modern snail populations from habitats whose physical, chemical and biological aspects are fully described. The reconstruction of the past environment depends on establishing the snail fauna of the locality: snail faunas in which 90% of the snails are of one species reflect a severe habitat—salt marsh, ploughed field or sand dune. A wide range of species may be found in well established woodland—upwards of fifty

species is not uncommon, with none of them accounting for more than 15% of the total fauna.

The study of snail faunas ultimately rests on the identification of the remains of the snail shells surviving from the past. The author provides a number of pages of outline drawings of the 200 species involved, including illustrations of immature forms, which should be a splendid guide for those undertaking this identification work. It might have also been helpful to supplement this with photographs both of complete shells, and the most common ways in which they survive as fragments. The species are described in detail, with the environment, distribution and archaeological finds all listed for each species.

Chapter six deals with the ecological groups into which snail faunas may be classified, and may be one of the most interesting sections of the book for those concerned with reconstructing past ecological conditions. They are divided up into shade-loving species, (including the Zonitidae, *Carychium tridentum* and *Discus rotundus* and other woodland species); intermediate or catholic species; open country species (including *Vertigo pygmaea*, *Pupilla muscorum*, *Vallonia costata*, *V. excentrica* and *Helicella italica*); marsh and freshwater slum species. Besides these, four other groups which are not entirely ecological can be distinguished: alien species (introduced into Britain by man at various times since the Bronze Age); burrowing species (*Pomatias elegans* and *Cecilioides acicula* in particular), anthropophobic species, confined to wild habitats in remote woodland (including *Lauria angelica*, *Ena montana*, *Helicodonta obvolvata* and *Limax tenellus*); and synanthropic species which live in man made habitats such as gardens, hedges and refuse heaps (for example, *Hygromia striolata*, *Helix aspersa* and *Limax flavus*).

Some snail species are now extinct, which were relatively common in the Boreal period, and thus may be useful for giving some clue for dating the deposits in which they occur, in particular *Vertigo genesii* and *Discus ruderratus*.

The conclusions from work so far are that there was an all-pervading forest cover in Mesolithic and Neolithic times, and that forest clearance at a number of Neolithic sites was fol-

lowed by a period, immediately before the burial of the soil profile, of short turfed grassland. So far snails have not indicated cultivation, except at South Street, Avebury where the ground was ploughed in Beaker times, possibly to create better grazing land. Regeneration of the forests seems to have been prevented for many centuries, probably by grazing, and was never very successful. In the latter half of the first millennium BC the Iron Age farmers began to bring the chalk and limestone soils into more intensive cultivation.

This book marks the beginning of a new phase in the study of ancient land snails, where carefully controlled sampling and analysis can provide the data for the reconstruction of snail faunas, and thus of ancient environments. There are some problems to be overcome, notably the lack of adequate information about some of the modern snail populations, and the fact that some snail species seem to undergo changes in habitat preference (for example *Vallonia costata* and *Helicella italica* which occurred abundantly in prehistoric arable habitats, but are absent from cultivated soils today). It is also possible that some habitats known in the past are now quite extinct.

Land Snails in Archaeology should be on the shelf of every practical archaeologist, and of all those interested in reconstructing the past environments of ancient sites.

JANE M. RENFREW

Mermaid morphology

Morphology of the Sirenia: A Macroscopic and X-ray Atlas of the Osteology of Recent Species. By Hans E. Kaiser. Pp. viii + 76. (Karger: Basel, London and New York, 1974.) Sfr.94; £13.65; \$29.15.

THE true function of this slim but expensive book of photographs is somewhat difficult to discern, though much effort has gone into its production. Here is an ordered series of original photographs, together with a number of positive X-ray photographs, designed to illustrate the macroscopic osteology of the three genera of modern Sirenia. Each photograph is accompanied by a detailed textual description of what is to be seen in that particular picture. But unfortunately a number of the photographs are lacking