

supposed place or places of the original domestications. While surveying the claims of other areas to be the cradle of domestication, the author soon decides that the domestication of most animals and plants, perhaps even of root crops, was centred on the Near East. While allowing that the evidence of independent domestication in the New World is at present strong, he does not bar the possibility that even here Old World influences could have played a part. Failing to find any other cause which satisfactorily explains such a drastic change in human behaviour, Professor Isaac agrees with Eduard Hahn that domestication, particularly of cattle, may have had a religious motive. This theory would of course be considerably weakened if it were ever proved that domestication happened at different times and in different places, but the author sees no reliable evidence for this. Indeed, to him the evidence suggests the opposite.

Nevertheless, reading this book as a whole, one wonders whether some of the recent work has been adequately considered. In particular, the ecological background to domestication is scarcely mentioned, and the growing contribution of pollen analysis to our knowledge of late Pleistocene conditions in the critical areas is ignored. In a field where facts are outnumbered by hypotheses, and where new facts are constantly challenging our assumptions (some of Professor Isaac's included), no review can afford to ignore such sources. Such limitations notwithstanding, this work must be regarded as a valuable and welcome contribution to an important subject and one whose price is happily within reach of the average student. G. W. DIMBLEBY

Sea Structure

Circumpolar Characteristics of Antarctic Waters. (Antarctic Map Folio Series. Folio 13.) Sound Channels in Antarctic Waters. Edited by A. L. Gordon, R. D. Goldberg and K. Hunkins. Pp. 6+19 plates. (American Geographical Society: New York, September 1970. Published under a contract with the US National Science Foundation.) \$12.00.

THE American Geographical Society's Antarctic Map Folio Series, made possible by financial support from the Office of Antarctic Programs of the National Science Foundation, summarizes present knowledge of the Antarctic. Folios issued so far deal with surveys, meteorology, climatology, geology and glaciology, and this is the fourth to deal with the sea. It is the second to deal with water structure and

movements, Folio 6 having dealt with the Falkland and Pacific sectors between 20°W and 170°W, where the US research vessel *Eltanin* has done most of her work. The latest maps cover the whole of the ocean south of latitude 40°S. They present the data in three ways: first, contoured maps of temperature, salinity and oxygen content at depths of 20, 200, 500, 1,000, 2,000 and 3,000 m; second, average values of the same variables for 'squares' bounded by 5° latitude and 10° longitude, and for additional depths of 4,000 and 5,000 metres; and third, seven contoured meridional, vertical profiles, spaced round the circumpolar ocean but with rather a gap in the west Pacific sector. The numbers on the map which show the locations of the profiles do not correspond to those on the drawings: they should be phased round one profile to the west. There are also diagrams showing the depth distribution of the main sound channel, where underwater sounds might be heard at great distances because multiple refractions concentrate the sound near the depth of minimum sound velocity.

When interpreting the maps of temperature, salinity and oxygen content one has to remember that the water movements that do much to control the distribution of temperature and salinity at all depths are not themselves horizontal. The temperature and salinity maps for 200 metres must, for example, show a circumpolar belt of low temperature, low salinity and high oxygen content, north of the Antarctic convergence where the Antarctic surface water sinks through the 200 metre level to a greater depth, and there must be higher temperatures, higher salinities and lower oxygen content some 10 degrees farther south where deep water climbs above 200 metres. In this respect the earlier Folio 6 is more easily interpreted because it maps each variable in the layers of temperature, salinity and oxygen minima and maxima instead of at fixed depths. But it is useful to have the new comprehensive display and the vertical profiles are a great help. It was done chiefly by computer methods, and it will be particularly useful for studies of meridional and vertical exchanges. The averaged data also add to the overall picture at the 4,000 and 5,000 metre depths where observations are still rather scarce. G. E. R. DEACON

Story of a Moor

Dartmoor: a New Study. Edited by Crispin Gill. Pp. 314+47 plates. (David and Charles: Newton Abbot, November 1970.) £3.75.

CRISPIN GILL has edited a symposium of studies on aspects of Dartmoor intended to fill the need for a modern definitive

study. The book is largely concerned with the industrial development of the region with introductory chapters on the physical environment and prehistory. The burning political issues of the contemporary use of Dartmoor were unfortunately outside the scope of this survey, although in the words of its editor "the danger of each proposed development should be costed not just in its immediate amenity effect but in its cost to the succeeding generations as yet unborn".

Since the earliest days of Man's habitation of Dartmoor, its natural resources have been exploited. The extractive industries predominated, particularly those of tin, lead, copper and iron, while the use of granite for building and peat for fuel attracted both ambitious entrepreneurs and local craftsmen. Farming, however, has always been and still remains the most important aspect of the Moor's economy and has largely been unperturbed by the socio-economic changes to which other industries failed to adapt. Modern industrial Britain requires from Dartmoor only its china clay, which is exported in large quantities, because metal mining and the cloth and corn mills have largely been abandoned.

Dartmoor, nevertheless, has more to offer, for its natural beauty is still preserved by National Parks legislation. The coming of the railway to Exeter in 1844 with its branch lines pushing into the remote villages, together with the advent of coach services later in the century, opened the Moor to visitors; later, as the advent of the private motor car brought easy travel within the reach of a large part of the population, the Moor became freely accessible to many in a way which had been hitherto impossible. Opportunities were therefore readily available not simply for relaxation but also for serious study. From the descriptions in this book, the reader is made aware of the vast amount of archaeological work that has been undertaken in the area: extensive excavations began in 1893, making discoveries which form the basis of our knowledge of Bronze Age and Early Iron Age cultures. The present archaeological emphasis, however, is upon a more systematic study of prehistoric settlements, and an up to date analysis is given of material hitherto only published in specialized archaeological journals.

This study, nevertheless, is not intended simply for the specialist, although he will find it well documented and scholarly in its presentation. It contains much to interest the general reader, particularly one acquainted with the region. This is indeed a fine book and a worthy successor to earlier, and by now classic, studies of Dartmoor.

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