

ZOOLOGY OF OLD MAPS

Animals and Maps

By Wilma George. Pp. 235. (Secker and Warburg: London, September 1969.) 63s.

THE attraction of old maps must be universal. The thirteenth century map of the world in Hereford Cathedral is among the most appreciated English treasures, and many a den or study is embellished by seventeenth century Hondius maps, or copies of them. Much of the interest of maps is due to portrayal on them of animals, ranging from careful realism to apparent utter fantasy. Miss George, with special interest in *Animal Geography* (title of a previous book by her), has had the genial and ingenious idea of applying a zoological eye to available maps older than the nineteenth century. She found some 350 such maps with significant representations of animals. She has endeavoured to identify those animals, and she has discussed them in the light of modern knowledge of zoogeography. The resulting book, with its many illustrations, clear text, extensive bibliography and unusually detailed index, should fascinate both lovers of maps and lovers of animals.

In some other quarters there has been an odd tendency to reproach rather than to appreciate the zoological contents of old maps. A recent student of cartography called them "atrocious", and most of us know Swift's ironic quatrain, ending:

And o'er uninhabitable Downs
Place Elephants for want of Towns.

Miss George quite reasonably points out that elephants do indeed occur in some places where towns are lacking, and that such representation may reveal knowledge rather than veiling ignorance. Beyond her factual conveyance of cartographic and zoological substance, she develops a three-fold thesis: (1) the animals of the old maps are, in the main, identifiable even when apparently fantastic; (2) they are generally shown within what were in fact their geographic ranges; and (3) in sum they constitute original contributions to knowledge and to the history of science. Her first two points are acceptable, with only a few more reservations than she would allow. Her third is not. As to the first, it is just barely conceivable that the idea of a basilisk arose from nature, and it is quite likely that the original yale (or eale), if one may speak of an "original", was a real animal. Nevertheless, the cartographers' concepts of those and many other creatures and their portrayals of them had become quite divorced from any source in nature. In instances still more extreme, some of Miss George's identifications are made with a degree of charity and perhaps even of naïveté that it is hard to share.

Animals that are identifiable were generally shown on the proper continents, and the point is made that considerable zoogeographical knowledge existed long before 1800. Yet enthusiasm for the cartographers' perspicuity in showing elephants and giraffes in Africa is tempered when they are also shown in North and South America, and the placing of a reindeer in Africa is not an impressive answer to Swift's irony. Ideas of animal distribution, usually approximately correct but often quite wrong, are indeed conveyed by the maps. It still is not evident that the maps, in themselves, made any advance in such knowledge. Miss George's claims to the contrary are not tenable, even on her own evidence. For example, she says (page 206) that armadillos appeared on Ribeiro's world map of 1529, thus antedating Oviedo's notice of them (about 1535) and that by Eden (1555). But elsewhere she indicates that the identification of Ribeiro's animal as an armadillo is doubtful (page 63), and anyway armadillos had been described at least as early as 1518 (page 69). Similar weaknesses are not rare, but they do not spoil the value of a handsome book on a fascinating subject.

G. G. SIMMONS

ICY REGIONS

Picture Atlas of the Arctic

By R. Thorén. Pp. xii+449. (Elsevier: Amsterdam, London and New York, 1969.) 380s.

THIS admirably produced book presents, in 600 photographs, a short text and maps, an introduction to the Arctic scene that could hardly be bettered, together with the impression that it was meant to be something rather different.

The Arctic is defined as "regions in the Far North, discussed on the basis of a limited polar distance of 23° 27', or 1,407 nautical miles, which corresponds to everything north of latitude 66° 33'", and the author's brief was "to touch on all the sciences with the exception of zoology and botany". This exception may have been convenient for the author, but with the fairly generous coverage of human activities which he includes it does not improve the balance of the overall picture he seeks to present. He divides his material into nine chapters: eight covering geographical regions—the Arctic Ocean, the Arctic region of Alaska, the Canadian Arctic, Greenland, Iceland, Norwegian islands in the Arctic, Arctic Scandinavia and the Soviet Arctic—and one chapter on floating islands. Each chapter includes a sketch map of the area, a fairly brief and factual text and a generous selection of photographs linked—often somewhat arbitrarily—with points in the text. The photographs themselves have full descriptive captions, including such useful points as dates and altitudes, and benefit from Captain Thorén's expertise as a professional photographic interpreter. The treatment of the various areas differs both in scope and detail, but generally includes material on physiographic regions, natural resources, settlements and transport. The choice of material is often arbitrary and uneven and it would have produced a less diffuse effect had the author concentrated on fewer aspects and commented on the same ones for each region.

Availability of good photographs obviously dictates the amount of space allotted to each chapter, sometimes tempting the author to over-elaboration, and it is unfortunate that many place names referred to in the text and photograph captions do not appear on the map—always an irritating omission in this type of book.

But this is, after all, a picture book and the photographs are superb; one is awed by the industry and patience that the amassing of this collection represents. It is sad that the price will put the book out of reach of many who would enjoy browsing through it.

L. M. FORBES

MOLTEN SALT RESEARCH

Molten Salts

Characterization and Analysis. Edited by Gleb Mamantov. Pp. xvi+611. (Dekker: New York and London, August 1969.) \$16.76; 160s.

THIS publication is notable for a number of reasons. What probably demands most urgent attention is the way well-coordinated sponsorship of research can crash into an inadequately explored field, and can generate useful work in most of the important directions, in a surprisingly short period of time. All the twenty reviews or papers in this collection were first given at a symposium of the American Chemical Society in 1968 and stem from the United States, with Oak Ridge (fourteen authors or co-authors), Brookhaven (seven) and Argonne (five) well represented. Most of the work described is from the past ten years. This concentration on American work does not of course mean that there is no important research on molten salts elsewhere. For example, at the Faraday Society Discussion held in Liverpool in 1961, only nine out of the twenty-five papers were from the United States. But clearly, the financial support and much of the inspiration from various