

POLAR REGIONAL GEOGRAPHY

[Review by H. G. R. King* of David Sugden's *Arctic and Antarctic; a modern geographical synthesis*. Oxford, Blackwell, 1982, p, illus. Hardcover £29.50.]

This well-researched and cogently reasoned study of the polar regions comes opportunely when the Falkland Islands war has alerted us to the economic significance of the Antarctic region, and when Arctic mineral resources are an everyday reality—one at least in terms of the price of petrol at the pump. Many attempts have been made to synthesize polar regional geography; none has succeeded. Failure stems partly from a tendency to study the various systems operating in the polar regions—climate, tectonics, human activities—in watertight compartments, none relating properly to the others. Also, too little has been known of Antarctica until recently to make direct comparisons with the Arctic possible. All that has now changed. Dr Sugden, a professional geomorphologist, a seasoned field worker in both polar regions, and an established university teacher, has come to grips with a vast literature to provide, not a text book, but rather a number of models and hypotheses on which readers can build. His aim is to analyse the regional geography of the Arctic and the Antarctic, regarding man and his environment as systems which interrelate, but on different scales in space and time.

The opening chapters deal with two world-scale natural systems, plate tectonics and climate. The theory of continental drift does much to help our understanding of the geology and structure of polar regions, both in obvious physical ways and economically by indicating the presence of minerals. A study of climate, another world-wide phenomenon, is necessary for us to understand the circulation pattern of polar regions, and helps to explain their depth of cold. Smaller-scale polar systems—geomorphic, oceanographic and biogeographic—can also be interpreted in terms of the world-scale climate. Thus the presence or absence of ice is a factor of climate affecting the limits of vegetational productivity, and climate creates special problems involving communications, transport, housing and clothing. Subsequent chapters treat the glacial, periglacial and polar marine system on a sub-zonal scale; Dr Sugden takes pains to relate these not only to the world-scale systems, but also to the way they impinge on other systems. To take a single example, the presence or absence of polar glaciers is related to plate tectonics as well as to climate, and their significance both as a constraint on, and a resource for, man is fully discussed.

The second half of the book is devoted to human systems in both the Arctic and the Antarctic. A 30-page chapter on world-scale human systems takes us through the history of man from his first appearance as a hunter and gatherer to the stage of agricultural settlement, the establishment of urban communities and the eventual colonization by these 'core' communities of the earth's polar periphery: on a sub-zonal scale we see how this process has affected the traditional life style of a typical indigenous society, the polar Inuit (Eskimo). Subsequent chapters deal with the human geography of the present day inhabitants of the Arctic in Greenland and Svalbard, and in Arctic Canada, Alaska and the Soviet Arctic, comparing and contrasting the human spatial pattern of their respective peoples, settlements and communication networks. The application of Friedmann's model to explain transition from subsistence to urban and industrial economics certainly helps us to understand the problems involved, even though it requires scientific research in Antarctica to be regarded as an exploitable resource. Antarctica, unique as an example of international settlement of a continent, is the final sub-zone to be discussed. The author's approach to evolution and functioning of human spatial patterns and logistical networks provides a valuable summary and pointer to the problems that will need to be considered by the Treaty nations before the end of the present decade.

Dr Sugden's own brief has compelled him to omit all mention of northern Scandinavia and there is no discussion of solar, geomagnetic or auroral phenomena in polar regions. But then, as we stressed at the start, this is not a text book. It will, however, prove a boon to all those involved in teaching polar studies in sixth forms, colleges and universities, and it is by far the most intelligent book of its kind to date. *Note bene*: there is a discount of £10 off the price of this book to *Polar Record* subscribers.

* Scott Polar Research Institute, Lensfield Road, Cambridge, CB2 1ER.