

on 'Cryoplanation' is more traditionally geomorphological, as is Thorn on 'Nivation'. 'Rock glaciers' is a review, with a lengthy bibliography, by Barsch. Questions of sedimentology are considered by DeWolf. The eclectic nature of the book is already apparent.

In Part 2, 'Frozen ground and active layer processes', Harry writes well on 'Ground Ice and permafrost', French on 'Active layer processes' and Vandenberghe on 'Cryoturbations'. Harry, and French, deal to some extent with the geotechnical and process (physical science) questions. These aspects have the greatest practical significance and these authors could well have written more. While the near-total absence of even simple equations may make the book superficially attractive, it reflects the continuing all-too-frequent absence of the necessary scientific rigour in periglacial studies.

'Seasonal frost mounds' (Pollard), 'Earth hummocks (thufur)' by Schunke and Zoltai, 'Palsas and related forms' (Seppälä) are placed with a review of pingos (by Pissart) and of pingo scars (de Gans) to make up Part 3: Process and form — the example of frost mounds' (do we really call pingos 'frost mounds?').

The final group of papers, 'Perspectives on the Periglacial System' has 'Slope processes' by Lewkowitz, Harris on 'The alpine periglacial zone', and two papers which are somewhat philosophical and about periglacial topics rather than on them. Perhaps both authors thought they were writing 'concluding' comments for the volume. If so, they should have mentioned pressing issues such as the effects of climate change in the periglacial regions, or the application of materials science to frozen soil behaviour. A broader vision in selection of topics might, after all, have improved this useful volume. (P. J. Williams, Carleton University, Ottawa, Canada)

BRIEF REVIEWS

ICELAND: VOLCANOES: GLACIERS, GEYSERS. Münzer, U. 1985. Luzern, Atlantis Verlag. 182 p, illustrated, hard cover. ISBN 095-148-38-03. £27.50.

Published originally in Germany, translated by Ellen Sallet, now available through a UK distributor, this is a most elegant illustrated account of Iceland's geography and structural geomorphology. The text is clear and intelligent, outlinging the history and social background of the people and giving a detailed account of the glaciers and volcanic areas. The pictures include stunning aerial photographs, satellite images and occasional down-to-earth photographs of remarkable quality. Available from Cordee3a De Montfort Street, Leicester LE1 7HD: add £2.50 for surface mailing.

WHEN THE WHALERS WERE UP NORTH. Eber, D. H. 1989. Kingston, McGill, Queen's University Press. 187 p, illustrated, hard cover. ISBN 0-7735-0702-7. £26.95.

Subtitled 'Inuit memories from the Eastern Arctic', this is an account of late 19th and early 20th century commercial

whaling, by Inuit who became involved with the UK and US whalers operating off Baffin Island, Cumberland Sound and Hudson Bay, accurately billed as '... a story drawn from oral memories ... which will soon disappear with the last Inuit generation to have seen the whalers.' A fascinating mix of history, folk-lore and gossip, well illustrated with contemporary photographs and Inuit prints.

HYDROLOGY OF ICE CAPS IN VOLCANIC REGIONS. Björnsson, H. 1988. Reykjavik Societas Scientiarum Islandica, University of Iceland. 139 p, maps, illustrated, hard cover. ISSN 0376-2599.

Results of 15 years' studies of glaciology and hydrology on the Vatnajökull and Hofsjökull ice caps of Iceland, especially the drainage of water and ice from Icelandic glaciers, with emphasis on jökulhlaups from subglacial water reservoirs. The text includes a historical overview of Icelandic glaciology, and accounts of water drainage at the glacier bed, formation of subglacial reservoirs and locations of glacial lakes, the ice surface and bedrock topography of Hofsjökull and western and northeastern Vatnajökull, delineation of ice catchment basins, the triggering of jökulhlaups, the mass balance of Grímsvötn basin, and the estimation of area and location of other water-drainage basins from bedrock and surface topography, with a summary and conclusions. 21 maps are boxed separately.

ANTARCTIC CENOZOIC HISTORY FROM THE CIROS-1 DRILLHOLE, McMURDO SOUND. Barrett, P. J. (editor). 1989. Wellington, DSIR Publishing. (*DSIR Bulletin* 245). 254 p, illustrated, soft cover. ISSN 0077-961X. NZ\$29.95.

Presenting results of a wide range of studies on core material from a hole drilled between 16 October and 14 November in the Transantarctic Mountains of Victoria Land, Antarctica. Individual sections include papers covering scene-setting geophysical surveys, data from the down-hole logs and from seismic reflection surveys, basic stratigraphy, sedimentology studies, palaeontology, strontium isotope ages, palaeomagnetic stratigraphy, petrology and geochemistry, organic chemistry, biostratigraphy and chronology, and a synthesis by the editor and associates. The core material represents sediments accumulating from 36 to 34.5 Ma and 30.5 to about 22 Ma in a shore environment and a regime of temperate glaciation.

THE TRAVELLERS: CANADA TO 1900. Waterston, E., Easterbrook, I., Katz, B and Scott, K. (editors). 1989. Guelph, University of Guelph. 321 p, illustrated, hard cover. ISBN 0-88955-170-7. Can\$49.00.

Subtitled 'An annotated bibliography of works published in English from 1577', this focuses on travel books written about Canada, including a few of regional flavour. Over 700 are represented, in chronological order, starting with an account by Dionyse Settle of Frobisher's expedition to Greenland and eastern North America, and ending with William Barr's 1987 translation of Klutschak's classic

Overland to Starvation Cove: with the Inuit in search of Franklin, 1778–80. Historical introduction; author/title and subject indexes. Copies may be ordered from Media Distribution, University of Guelph, Guelph, Ont., Canada N1G 2W1.

POUR JEAN MALAURIE. Bartillat, C. de. (editor). 1990. Paris, Editions Plon. 944 p, illustrated, soft cover. ISBN 2-259-01913-7. 450 FF.

A collection of no fewer than 102 papers, in French, presented in homage to the distinguished French geographer and polymath Jean Malaurie, Director of the Centre d'Etudes Arctiques, Paris, honouring his 40 years' involvement in Arctic research. An intriguing assemblage of research and comment, appropriately covering all aspects of Arctic knowledge from mythology to ethnomusicology, and a great deal more beside. Illustrated lavishly and affectionately, though not always lucidly: a fine tribute to a remarkable man.

BRITAIN IN THE ARCTIC: A DIRECTORY OF INTERESTS AND ACTIVITIES. Scott Polar Research Institute. 1990. Swindon, Natural Environment Research Council (Occasional Papers 4). 112 p, soft cover. ISBN 1-85531-018-X. Free.

Compiled by the library of SPRI on behalf of NERC, this catalogue aims, in the words of its introduction, to (1) identify all in the UK who have Arctic interests, (2) improve communications and help to develop collaboration within the UK Arctic community, and (3) strengthen Britain's claims for full membership rights in the recently

established Arctic Science Committee, as a significant and active participant in Arctic matters. Nearly 400 individuals and organizations are listed, together with notes on their fields of interest; there are also details of current projects and sources of funding, and subject, geographic and personal-name indexes. The information was assembled from questionnaires sent out in 1989. Any British scientific or industrial enterprises that are not included should contact the Information Officer at the Scott Polar Research Institute, Lensfield Road, Cambridge CB2 1ER, UK. Copies of this most useful catalogue are obtainable from NERC, Polaris House, North Star Avenue, Swindon SN2 1EU.

PETROLEUM GEOLOGY OF NORTH GREENLAND. Christiansen, F. G. 1989. Copenhagen, Grønlands Geologiske Undersøgelse (*GGU Bulletin* 158). 92 p, illustrated, soft cover. ISSN 0105-3507. US\$55.0.

An assessment of the hydrocarbon potential of the Lower Palaeozoic Franklinian basin, North Greenland, based on GGU drillings from 1980 onward, especially the 1984–87 'Nordolie' project that studied the distribution and thermal maturity of hydrocarbon source rocks in central and western North Greenland. The project was concurrent with a comprehensive GGU geological mapping programme. This report is a condensed version of Christiansen's fuller report of 1988. Nine chapters (with 11 colour plates) cover physiographic, geomorphological and logistic background, analysis of cores, quantitative aspects and economic implications of the study.

In brief

SATELLITES TRACK WANDERING ALBATROSSES. In a recent letter to *Nature* Pierre Jouventin and Henri Weimerskirch report their success in tracking six male wandering albatrosses *Diomedea exulans* across the Southern Ocean from nests on Ile Possession, Iles Crozet, January to March 1989. Using transmitters weighing 180 g and two ARGOS satellites, with processing centre in Toulouse, they obtained a mean of 11.8 locations per bird daily. Birds covered between 3664 and 15,200 km in a single foraging trip while their partners were incubating, much less during brooding, at maximum flight speeds up to 81 km per hour; seldom flying into wind, they used leeward winds on journeys out and lateral winds returning, tacking or looping around their home island until able to land. They continued flying at night, particularly in moonlight. Tracks of individuals extended south almost to the coast of Antarctica, north to 35°S in the central Indian Ocean, and southwest to Heard Island. (Source: *Nature* 343, 22 February 1990: 746–48.)

NEW ZEALAND DECLINES TO RATIFY ANTARCTIC MINERALS CONVENTION. The Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA), announced after the Fourth Special Antarctic Treaty Consultative Meeting in Wellington, New Zealand, in May–June 1988, is unlikely to be supported by the New Zealand Government. The Convention (the full text appears in *Polar Record* 25 (4) July 1989: 264–282) has already been repudiated by Australia, Belgium, France, India and Italy. Prime Minister and Environment Minister Geoffrey Palmer announced in parliament that legislation to ratify the Convention has for the moment been set aside; meanwhile a 'creative solution' to problems of Antarctic conservation is being sought in other ways. Conservation groups are concerned that the 'setting aside' leaves New Zealand free to return to the issue later, and does not amount to the full repudiation for which they were hoping. (Sources: *Nature* 344 15 March 1990: 187; *New Scientist* 10 March 1990: 27.)