

may be interested, for example, in 1) the specific climatic parameters influencing the fluctuations of a particular glacier, or in 2) regional to hemispheric responses of glaciers to climatic changes and the implications to regional hydrology or sea level.

Furthermore, it is believed that glaciers, particularly valley glaciers, may be used as indicators of the Greenhouse Effect, bearing in mind that some glaciers are more sensitive to precipitation changes than to air temperature changes. One Alaskan glacier study has shown that as mean annual air temperatures increased, the mass balance increased, because of the concurrently increased precipitation. With further temperature increase, however, the mass balance trend began to reverse. Interesting observations such as these often form the basis for subsequent theoretical modelling studies, in which case it may be claimed that mere observations can and do inspire others to greater levels of understanding.

As a final example, one can refer to a classic study by two theoretical physicists who applied kinematic wave theory to study how a glacier might respond to changes in mass balance, and thus to see if a mine portal was in danger of being overwhelmed during the projected lifetime of the mining operation (Untersteiner and Nye, 1968). Because no mass balance (and ice thickness) data were available at that time, the results were imprecise, and it was left to others to repeat and refine the study at a later date, using some accumulated mass balance data (Fisher and Jones, 1971). One can thus see that there are some interesting aspects to the apparently routine procedure of recording glacier behaviour.

The WGMS and the schedule for its series of publications place a responsibility on each "measurer of stakes" and their national correspondents, who every half decade report their countries' results to the compilers in Zurich. In this way, the "consumers" need not waste valuable time trying to collect data from the "hundred measurers of stakes" scattered around the world.

The book comes in a handy cardboard case (165 x 250 x 60 mm), which also holds the sheaf of nine new glacier maps. It is divided into useful chapters that address topics related to the data presented in the appended tables, which are the real *raison d'être* for this publication.

One aspect of these data sets that should be addressed in future publications is the errors involved in the measurements of snow and ice areas, point mass balance measurements and specific net mass balance values. In many cases, this could be a formidable task, but along with updating glacier areas, it should become a routine exercise.

This review appears at a time when the "accounting" for the next compilation period (1985-90) is fast drawing to a close. Some time series will then span 23 years, but for many statistical processing purposes this is not nearly long enough.

There are many reasons why this publication should be continued; one key reason is that the complete series gains value with every volume. Thus the compilers are to be congratulated for continuing this task on behalf of the international glaciological community. This book is certainly an item for acquisition by all science libraries.

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NATURE OF THE SOVIET UNION. LANDSCAPES, FLORA AND FAUNA. TARYBU, SAJUNGOS GAMTA. KRAŠTOVAIZDZIAI, AUGALAI IR GYVŪNAI. PRIRODA SOVETSKOGO SOIUZA. LANDSHAFTY, FLORA I FAUNA. By VAIDOTAS JANUŠKIS, ALGIRDAS KNYSTAUTAS, and EUGENIJUS KARPAVIČIUS. Vilnius: Mokslas Publishers (23 Zvaigzdiu Street, Vilnius, USSR 232050), 1987. 588 colour photos. US\$45.00.

Nature of the Soviet Union is a book of outstanding appeal to naturalists, especially to those who desire a better understanding, through visual appreciation as well, of the great natural diversity of the USSR, an area of 22 million km². Those concerned with the protection of floras and faunas will find the details about natural reserves and national parks to be highly informative.

The volume is well bound in cloth, in a format of 34.5 by 26.5 cm. The text, prepared by A. Knystautas, is trilingual, in Lithuanian, Russian, and English. The writing in the two major languages is of high quality. A two-page preface describes the natural features of the Soviet Union, including climatic conditions, mountain ranges, rivers, and lakes, and provides information about the biota: 90 000 to 100 000 species of plants occur there; the fauna includes mammals of 300 species and birds of more than 800 species. In 1985, when the authors were preparing this book, the USSR had 143 separate reserves and national parks, making up altogether 11 193 667 hectares, or 0.5% of the total area of the country. These include 17 that were established under the UNESCO program "Man and the Biosphere." In 1969, the book edited by A.G. Bannikov, *Reserves of the Soviet Union (Zapovedniki Sovetskogo Soiuza, Kolas, Moskva)* listed only 83 natural reserves (all described in detail). That the number of protected areas has been significantly increased in approximately 15 years is of importance, perhaps even adding some balance (minuscule but probably positive) against those regions of the world that are being severely altered in their natural qualities or destroyed by man.

A collection of splendid photographs makes up the greater part of the book. The prints are in colour, 588 in all, taken from nature and arranged appropriately by region. Some pages hold several; two-page panoramas or portraits (34.5 x 53 cm) are numerous; and two consist of three-page foldouts. Symbols indicate threatened, endangered, or rare plants and animals that are listed respectively in the *Red Book of the USSR* (94 species) or in the *International Red Data Book* (published by the International Union for Conservation of Nature and Natural Resources, to define the status of species worldwide) (12 species). The subject of each photograph is identified in the three languages, and scientific names of plants and animals are given, in captions printed beneath each picture or, for two-page illustrations, on the preceding page. Those for the front- and end-plates are given on the last page. The photographs are arranged under the five sections of the book: Tundras, Forests, Steppes and Deserts, Mountains, and the Far East. Each section begins with a two-page description of the natural features, flora and fauna and includes information about the existing reserves, which are indicated and identified by number on regional outline maps, superimposed on maps of the country.

In Section I (Tundras), following a two-page photograph of a Ross Gull on Wrangel Island and a three-page foldout of the landscape there, views of low-vegetation tundra are shown from Iakutia, Taimyr, Chukotka, Franz Josef Land, and the Lapland Reserve and of forest-tundra as well. The following photographs portray typical plants, birds, and mammals. These include a peregrine falcon covering its nest on the ground and a three-page foldout of a polar bear emerging onto the sea ice while carrying remains of prey.

Forests (Section II) make up the largest of the natural regions, with 38 reserves. The major types of forest landscapes are shown, followed by impressive photographs of fungi, higher plants, insects, amphibia, reptiles, birds, and mammals (a two-page

scene shows a herd of European bison at the edge of a forest in winter).

Steppes and Deserts (Section III) mainly occupy the southwestern region of the USSR, with only small areas additionally to the southeast of Lake Baikal. Twenty-five reserves are listed for that region. As might be expected, reptiles are prominent — 27 species are portrayed. Several raptors are shown, including the imperial eagle, *Aquila heliaca*, and the griffon vulture, *Gyps fulvus*. The last two photographs in this section are of a herd of wild asses, *Equus hemionus*, and a cheetah, now surviving as a species in the USSR only in the deserts of southern Turkmenia.

Section IV concerns mountain ranges, mainly along the eastern and southern borders of the USSR, where 50 natural reserves are identified. Some dramatic landscapes of the Pamirs, Tian'-shan', and the canyons of the Charyn (in southern Kazakhstan) and views in the Altai, Caucasus, and Tallas Ala-Tau are included. Birds of numerous species are portrayed, mostly at their nests. The relatively few illustrations of mammals include marmots of three species, mouse weasel, and some rare photographs of wild goats, *Capra sibirica*, *C. caucasica*, and *C. falconeri*.

Section V, the Far East, covers the region from northern Kamchatka southward to Primore, the Island of Sakhalin, and the Kuriles. Ten reserves are listed, all but one in the Primorsk district. The volcanic landscapes of Kamchatka are striking. Plants of unusual beauty are shown. Again, most birds are portrayed at their nests. Among the mammals included, the Amur tiger and the goral, *Nemorhaedus caudatus* (a goat-like bovid that in the USSR now occurs only in the southern half of Sikhote Alin'), are listed in the *International Red Data Book*.

The last photograph is followed by an index of scientific names for all of the organisms portrayed, as well as indices of common names in the three languages. Credits for the photographs are given last (preceding the five end-plates); 33 individuals contributed works of photographic art to make up this volume.

It is an outstanding volume, well printed and of high quality throughout. The explanatory material provides much information about the respective regions. On the basis of my work in northeastern Siberia and a few observations at other localities in the Soviet Union, I judge the selection of photographs to be generally representative; perhaps inclusion of landscapes showing forests of larch, *Larix dahurica*, and stands of stone-pine, *Pinus pumila*, both so prominent in the far northeast, would have been desirable. The book is generally free of errors (a few scientific names were spelled incorrectly, and I believe that one species was misidentified; the rodent shown in photograph 73, called a varying lemming, *Dicrostonyx torquatus*, appears to be a brown lemming, probably *Lemmus sibiricus obensis*, the Ob' lemming). For a book of such quality, the price is very reasonable. Relatively few people will ever be able to experience in person the grand and natural beauty of many areas of the Soviet Union. This book can partially provide that comprehension.

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BOOKS RECEIVED

CHILLS AND FEVER, HEALTH AND DISEASE IN THE EARLY HISTORY OF ALASKA. By ROBERT FORTUINE. Fairbanks: University of Alaska Press, 1989. (Available from University of Alaska Press, c/o Signer's Hall, University of Alaska Fairbanks, Fairbanks, Alaska 99775-1580.) ISBN 0-912006-41-2. xvi + 393 p., maps, b&w illus., bib., indexes. Hardcover. US\$32.00.

GEOGRAPHIC MAP OF THE CIRCUM-PACIFIC REGION, ARCTIC SHEET. By CIRCUM-PACIFIC COUNCIL FOR ENERGY AND MINERAL RESOURCES. Menlo, CA: Circum-Pacific Map Project, 1990. (Available from AAPG Bookstore, Box 979, Tulsa, Oklahoma 74101.) 1:10,000,000. Tinted bathymetry and topography, glacial ice, seafloor and land names. 4 colours, 10° geographic grid. US\$17.50 postpaid to North America; US\$19.25 elsewhere.

OUT OF THE NORTH, THE SUBARCTIC COLLECTION OF THE HAFFENREFFER MUSEUM OF ANTHROPOLOGY, BROWN UNIVERSITY. By BARBARA A. HAIL and KATE C. DUNCAN. Seattle: The University of Washington Press, 1989. The Haffenreffer Museum of Anthropology, Studies in Anthropology and Material Culture, Vol. 5. ISBN 0-295-96709-9. 301 p., 27 colour plates, 291 b&w photos, drawings, maps, bib. Softbound. US\$25.00.

POUR JEAN MALAURIE, 102 TÉMOIGNAGES EN HOMMAGE À QUARANTE ANS D'ÉTUDES ARCTIQUES. Edited by CHRISTIAN DE BARTILLAT. Paris: Editions Plon, 1990. (Available from Centre d'Etudes Arctiques, 19, rue Amélie, 75007 Paris, France.) ISBN 2-259-01552-2. 944 p., 238 photos, 39 maps, 99 figs. and drawings. Softbound. FF450.

SADIE BROWER NEAKOK, AN INUPIAQ WOMAN. By MARGARET B. BLACKMAN. Seattle: The University of Washington Press, 1990. ISBN 0-295-96813-3. xviii + 274 p., b&w illus., notes, index. Hardcover. US\$19.95.

THE AGE OF THE ARCTIC, HOT CONFLICTS AND COLD REALITIES. By GAILO SHERENKO and ORAN R. YOUNG. New York: Cambridge University Press, 1989. ISBN 0-521-36451-5. xvi + 316 p., b&w illus., map, notes, index. Hardcover. US\$59.50.

THE EXPERIENCE OF NATURE, A PSYCHOLOGICAL PERSPECTIVE. By RACHEL KAPLAN and STEPHEN KAPLAN. New York: Cambridge University Press, 1989. ISBN 0-521-34139-6. xii + 340 p., b&w illus., bib., index. Hardcover US\$54.50. Softbound US\$15.95.

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THE MUMMIES FROM QILAKITSOQ — ESKIMOS IN THE 15TH CENTURY. Compiled and edited by J.P. HART HANSEN and H.C. GULLOV. Copenhagen: The Commission for Scientific Research in Greenland, 1989. Meddelelser om Grønland, Man & Society 12. (Available from Nyt Nordisk Forlag — Arnold Busck A/S, Købmagergade 49, DK-1150, Copenhagen K, Denmark.) 199 p., maps, illus., index. Hardcover. DKK297,50 excl. VAT and postage.

THE SOUTHERN ICE-CONTINENT: THE GERMAN SOUTH POLAR EXPEDITION ABOARD THE GAUSS 1901-1903. By ERICH VON DRYGALSKI; translated by M.M. RARATY. Huntingdon, UK: Bluntisham Books, 1989. ISBN 1-85297-031-6. xxi + 373 p., maps, b&w illus. Hardcover. US\$95.00.

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