

will continue, and hence, as now, any implementation of global commons principles within the Antarctic region will have to come through ATPs.

So long as the Antarctic Treaty regime well serves the common interests of humankind, neither its lawfulness nor its purposes seem likely to be effectively challenged. Nor is the Antarctic Treaty System likely to be replaced by any other regime resembling the common heritage of mankind. Hence, for the foreseeable future, the Consultative Parties will continue to manage Antarctica in trust for the international community. (page 258)

As a result, the key challenge for ATPs is not only to continue to do this but also to keep convincing the wider international community on this point. (Peter J. Beck, Kingston University, Kingston upon Thames KT1 2EE.)

**THE ARCTIC SKY: INUIT ASTRONOMY, STAR LORE, AND LEGEND.** John MacDonald. 1998. Toronto: Royal Ontario Museum and Nunavut Research Institute. x+314 p, illustrated, soft cover. ISBN 0-88854-4278.

A millennium ago, the ancestors of contemporary Inuit began migrating eastward from Alaska, and, within a few centuries, they established the Thule culture along the entire Arctic coastline reaching to Greenland and the Labrador peninsula. *The Arctic sky* reveals the astute navigational skills and knowledge of northern cosmography that allowed prehistoric aboriginal hunting parties to explore this vast territory. Their descendants preserved the Thule environmental legacy as they adapted to regional geographic conditions over time, and, despite the emergence of linguistic and social distinctions between population groups, a common identity as Inuit endures to this day.

Inuit used stars to determine direction, diurnal and seasonal periods of time, and recurring natural ecological cycles. As well, there were other dimensions to Inuit astronomy that integrated the celestial and earthly realms. Stars had a mythic role in Inuit spirituality and were endowed with names to personify human and animal figures mirroring terrestrial life. Their names were recalled through legends that reflected social ethics and universal concerns about creation, social and cosmic order, nourishment, retribution, and renewal. Thus the Arctic sky was a complex metaphor for the spatial knowledge and cognitive orientation of Inuit, subjects that were intrinsic to aboriginal people and eluded non-Native academics conducting research during the course of more than a century. Accordingly, this book is not simply about Inuit astronomy, but rather it is an exploration of the Inuit intellectual culture that is guided, as are all successful northern expeditions, by aboriginal expertise.

Inuit elders at Igloodik were the main source of information for the text. The community has a permanent research centre (managed by John MacDonald) and a continuous 4000-year history of occupation by Arctic cultures that make it an ideal site for indigenous research.

Observations by elders on astronomical features were recorded in a series of interviews for an oral history project that was conducted during the winters from 1988 to 1997. The elders considered their traditional knowledge to be personal rather than absolute and universal, as is often implied in statements made by western scientists. Experience and memory were more relevant to Inuit because they lacked a writing system, and so they learned star names, and other environmental details, casually in conjunction with an activity or the telling of a legend.

Place, time, and activity were the cardinal elements of an ecological and social orientation that Inuit measured by star constellations, cycles of the Sun and Moon, wildlife migrations, and 'landmark' events in the life of an individual, family, or community. The Inuit language contributed to the subtleties of people's conceptual framework with unique word categories (called localizers) that gave precise references to the location of things and places, and with specific place-names that described a physical or biological aspect of the landscape. In this manner, Inuit traditional knowledge was profoundly holistic and not readily reduced to western rational analysis.

John MacDonald expands the perspective of Igloodik elders by including extracts from circumpolar literature published by western observers that reveal a fundamental similarity in star lore across the Arctic. Inuit names and corresponding European terms are given in descriptions of stars and constellations, phases of the Sun and Moon, and various other atmospheric phenomena. Ample illustrations are provided to assist readers in identifying the position of celestial features. Remarkably, Inuit applied the same principles in their astronomical naming system as did ancient Arab peoples, in contrast to western society, by representing single stars as living creatures and groups of stars as inanimate objects. Constellations that are most commonly recognized by Inuit throughout the Arctic are Aagjuuk (Aquila) and Tukturjuit (Ursa Major or 'Big Dipper'), and surprisingly the celebrated Polaris or North Star (Nuutuittuq) is actually useless for navigation in the far northern hemisphere. Its height above the horizon increases with latitude and is too great in higher Arctic regions to be employed for an accurate directional bearing.

Chapters on navigation and on time provide fascinating information on attributes of the Sun and Moon, and other environmental elements in addition to stars that were traditionally used by Inuit to orient themselves in northern landscapes. Wayfinding skills included reference to place-names, familiar landmarks, set of winds and snowdrifts, vegetation, sea currents and tides, unusual meteorological conditions such as mirages, the aurora borealis and 'water-sky,' animal behaviour and movements, and even dream experiences. Thirteen named moon months and eight seasons composing the conventional Inuit calendar are outlined in a summary table showing associated celestial markers, biological and environmental signals, and prominent social activities.

*The Arctic sky* presents an outstanding wealth of information on Inuit astronomy and offers the best exposition of

Inuit navigational skills of which I am aware. Yet, as MacDonald admits, Inuit knowledge has diminished substantially in recent generations, and his project has salvaged memories of some of the last elders remembering traditional practices. Had this research been conducted two or three decades earlier, one can only wonder how much richer the present volume might have been. Nonetheless, MacDonald demonstrates the elegance of Inuit intellectual culture and the many features of aboriginal knowledge that are analogous to western science.

Inuit observations were once typically dismissed by non-Native scientists as hearsay opinion or folklore, but in recent years the validity of aboriginal knowledge and its value for enhancing western science have become more widely appreciated. An example is given of Inuit reports about sounds emitted by the aurora borealis and displays occurring close to ground level being rejected by most atmospheric scientists, although confirmed in historical accounts written by European and American explorers. Yet we may be perpetuating a bias against information from aboriginal people by continuing to describe material as 'traditional knowledge,' while 'science' is credited only as a product of western society.

Modern Inuit have become less reliant on star-gazing and traditional navigational skills with the introduction of high-speed snowmobiles, man-made landmarks, compact GPS (Global Positioning System) gadgets, street lights in winter, clocks for telling time, and calendars organized by work days, weekends, observance of Sunday religious rites, and holiday periods. With the establishment of Inuit jurisdiction to Nunavut (formerly the eastern Arctic) in April 1999, interest in reviving the Inuit culture has grown and should generate new opportunities for collaborative research between community residents and western scientists. Material from *The Arctic sky* is already being used in school classrooms to teach elements of Inuit astronomy to children, and the book is a valuable model for future studies combining indigenous and western sciences.

*The Arctic sky* is beautifully produced by the Royal Ontario Museum and the Nunavut Research Institute, and contains numerous colour photographs, sketches, woodcuts, images of artifacts, and diagrams. For Igloolik elders and John MacDonald, the stars in the Arctic sky will surely whistle their thanks for being remembered through the publication of this intriguing volume. (Carol Brice-Bennett, Bareneed, Conception Bay, Newfoundland, Canada.)

**SNOW.** Ruth Kirk. 1998. Seattle and London: University of Washington Press. 320 p, illustrated, soft cover. ISBN 0-295-97734-5. \$US17.95.

Do not be misled by the title of this book, which was first published in 1977. Whilst it attempts to cover the distribution of snow in all its vicissitudes, it also deals with many other aspects of frozen water, from snow animal ecology to snow clearance in New York. It is not written for the specialist glaciologist or meteorologist, but more for the well-read generalist with some knowledge of ice ages, climate change, polar biology and anthropology, snow

transport systems, and water conservation and management. The author draws on her direct experience of snow whilst living with her husband, a ranger in the Mount Rainier National Park, reputedly the snowiest place in North America; on wide reading in the eclectic literature of the subject; and on discussions with notable mountaineers, and particularly her friendship with Sir Charles Wright (now deceased), a long-time survivor of Robert Falcon Scott's last expedition. In no way is the book a scientific monograph, nor a textbook in the physical sciences, but a highly readable, discursive account similar in approach to the classic *Times of feast, times of famine*, by the French social historian Emmanuel Le Roy Ladurie. Essentially, it is a 'geography of snow.'

The book is divided into 10 chapters as diverse as: 'The role of snow,' a general commentary on the influence of snow on the human environment, including an account of the making of snowballs by macaque monkeys; 'Theories of ice ages'; a brief outline of the major events in the search for the North and South poles; the contrasts in polar ecology of the Arctic and Antarctic; perceptive analyses of human adaptation to snow and ice in shelters built, and clothing used, in polar regions; the domestication of sled dogs and reindeer; and a history of skiing. The purist will object to the unavoidable over-generalisation in a work of this kind, such as the statement, 'glaciers caused the formation of Niagara Falls,' but the book is commended as an entertaining and widely researched account of the natural history of snow.

The work is not referenced in the text, but in a selected bibliography for each chapter, given at the end, and in an index. As befits a general work produced in North America, metric measure is eschewed: temperatures are given in Fahrenheit, snowfall in feet and inches, and topographic elevation in hundreds of feet. (Peter Speak, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

**THE CIRCUMPOLAR INUIT: HEALTH OF A POPULATION IN TRANSITION.** Peter Bjerregaard and T. Kue Young. 1998. Copenhagen: Munksgaard. 289 p, illustrated, hard cover. ISBN 87-16-11905-3. DKK 300.

Arctic human history can be read as a narrative of changing health patterns. Ancient health indicators remain inscribed in genetic markers linking Inuit populations with northeast Asia. Recent analytical techniques involving mitochondrial DNA suggest a common ancestor for several northwestern North American and northeastern Asiatic populations, providing clues about distinctive patterns of health and disease (pages 18–19). In the history of European colonization, Inuit were both the first and the last North Americans to contact Europeans: Inuit on the Labrador coast met Norse visitors as early as 1000 AD, yet when Stefansson reached Coronation Gulf 900 years later, in 1910, he was the first European the Copper Eskimos had encountered directly (page 25). Evidence from the last five centuries attests to the general deterioration of health throughout the Arctic, initially because of massive de-