CALENDAR — continues

assistance of Unesco, UNEP, the East-West Center and the Hong Kong state authorities. EIA courses are also regularly available in Aberdeen, lasting from three months to a year, depending on the participants' requirement. The annual World Health Organisation international seminar on EIA is timed for 8-21 July, 1984, in Aberdeen. Details of all these events from the Conference and Training Coordinator at the UK address given above.

Miami biosphere event

The *Miami International Symposium on the Biosphere* will take place at Miami Beach, Florida, USA between 16-18 April 1984. Details from the Director, Clean Energy Research Institute, School of Engineering and Architecture, University of Miami, PO Box 248294, Coral Gables, Florida 33124, USA.

WILDLIFE FILM FESTIVAL. CALL FOR ENTRIES

The Seventh Annual International Wildlife Film Festival (April 11-15, 1984) will accept entries until 23 March, 1984. Information, rules, application forms and the Festival agenda are obtainable from the Wildlife Biology Program at the Festival's venue, the University of Montana, Missoula, Montana 59812, USA.

Desertification course, Sicily

The climatological aspects of desertification is the theme of a course to be held between 10-22 October at the Ettore Majorana Centre for Scientific Culture, Erice-Trapani, Sicily. There are still a limited number of places available on the course, which is directed by Dr R. Fantechi, EEC Environment Research Programmes (DG XII), Rue de la Loi 200B, B-1049, Brussels, Belgium, who will answer enquiries about the course. □

WORK OPPORTUNITIES

Director, Charles Darwin Research Station, Galapagos Islands

From December 1983. Biologist, preferably fluent in English and Spanish. Minimum term, three years. Write for a job description to Juan Black, Casilla 3891, Quito, Ecuador or Marsha Cox, Smithsonian Institution, Washington, D.C. 20560, USA, or Peter Kramer, Fb 9, University of Essen, 4300 Essen 1, Federal Republic of Germany.

NGO Executive Officer position open

The Environment Liaison Centre, an international NGO based in Nairobi, Kenya, seeks candidates for the position of Executive Officer.

Experience with the NGO movement, proven managerial and fundraising abilities, and good command of English essential.

Initial contract for two years, starting 1 August 1984.

Deadline for applications: 15 October 1983.

For full details, contact: ELC, PO Box 72461, Nairobi, Kenya. Cables: ENVICENTRE; Telex 23240 ENVICENTE; telephone: Nairobi 24770.

Mentawaian unloading rattan, West Sumatra Photo: WWF/J.A. McNeely

CULTURE AND CONSERVATION
a missing link in the World Conservation Strategy?

The *World Conservation Strategy* has been widely recognised as a definitive source of technically-sound axioms about natural resource management and environmental conservation planning, but various commentators have suggested that the *Strategy* left several important factors out of account. The interaction between population pressure and the quantity and quality of natural resources is one such factor, and the debate about its importance continues to occupy a place in work towards further extension and refinement of the Strategy's message. Another neglected factor has hovered on the fringe of this work but, till fairly recently, has received less debate than it merits: the question of *culture* as an influence on practical conservation management and conservation theory. Articles by David Pitt and Corneille Jest in the last edition of our World Conservation Strategy in Action supplement, pinpointed this lack. Here we pursue the question in greater detail.

Culture is not an easy word to define. Often, it has been used to signify the opposite of 'nature' (itself a word with several dozen contradictory definitions) or, in another sense, the opposite of 'technology': neither sense usefully defines the use of the word in conservation thinking. More helpful is the sociological definition of culture or 'a culture' as a group of people marked out by their common knowledge and their shared lifestyles, values, manners and symbols. World events nowadays tend to be dominated by large-scale cultures such as that of the industrialised West, but there are, all over the world, thousands of small-scale cultures, sometimes categorised as tribal, traditional or indigenous societies. Together, these people number over 200 million. Many have already been overwhelmed by modern political and economic currents: the World Bank has called those that are left 'the poorest of the poor'. Many, too, are custodians of natural environments and habitats now recognised as overshadowed by unsustainable or inappropriate development: the very survival of these societies is often closely linked to the survival of those environments.

Hidden treasure

Yet, despite their relative poverty, their seemingly anachronistic ways and the patronising attitude sometimes taken towards them by their more urbanised countrymen or the world at large, these small-scale societies often harbour immense riches in a form that can only be made available through their living culture. They are the 'librarians' of vast stores of knowledge, accumulated over centuries, about the potential and actual usefulness to

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human welfare of resources unique to their own environment: natural sources of food, medicine, textiles, dyes, pesticides and much besides that has not yet a category in conventional wisdom. It was to small-scale cultures in Central America that the anonymous Western 'discoverer' of the birth-control applications of the forest yam *Dioscorea mexicana*, is known to have directed his search. Without their help, and the fact that they had been their own clinical test subjects for hundreds of generations, that search might very well have proved fruitless. There are unquestionably other commodities of similar importance awaiting discovery. A simple request for information to the technicians best-equipped to analyse an environment for its useful properties — its inhabitants — might well be the key. Even when development efforts include attempts to evaluate wild resources, the technological approach to the task is too often a wide sweep of a large area, followed by destructive analysis of the resulting samples, with preconceived notions in mind of what is being searched for. The social anthropologist and the ethnobotanist should have just as important a part to play in this kind of research as the ecologist or the chemist.

No ordinary talents

Many small-scale cultures have evolved ways of coping masterfully with environments — jungles, mountains and hot or cold deserts, for instance — which most of us would not survive in for more than a few days, without an elaborate and costly infrastructure of special equipment and supply lines. Here, too, we have something important to learn from cultures like the Inuit (Eskimos) of the Arctic, the pastoral nomads of arid regions in Africa and the Middle East or the Amerindian tribespeople of South and Central America, something of real relevance to conservation planning. A study of their lifestyles will not only suggest conservation innovations; in these societies exists ready manpower to police and maintain reserves and areas of special interest. In some cases, the only recruitment procedure necessary is the proper recognition of their statutory rights in their own homelands. In others, there is room for a compromise between conventional and traditional conservation management practices — for example, the 'bush fallow' system of cultivation, often labelled as 'slash-burn cultivation', and blamed for a number of environmental problems which, when practiced on a small scale, it has nothing to do with. Small-scale bush fallow cultivation may actually enhance the natural diversity of some tropical forest ecosystems by creating artificially the same kind of growth opportunities for emerging plants that the death of one emergent forest tree might create naturally. There are many examples of more conscious and highly elaborated conservation techniques at work among small-scale cultures: traditional marine management systems in islands and mainlands in several parts of the Pacific reveal a truly impressive understanding of and expertise in conservation practice. Other examples now exist only in the historical record; they have already been obliterated by development and with them has gone a valid and powerful conservation tool: the 'water courts' which controlled use of this resource in parts of North Africa and Moorish Spain, are an example of one of these lost management systems. Can we afford to lose more?

A double standard?

In many industrialised countries, general terms like 'amenity', 'heritage' and 'countryside' are sufficient to justify a great deal of significant conservation management; though it may not be recognised as such, this is a cultural terminology — a set of totems and taboos which achieve sweeping, positive results without so much as a mention of conservation, ecology or sustainable development. In any developing country, cultural concepts of equal power exist, but are often overpowered by agrarian and industrial change on the Western model, unqualified by the cultural checks and balances which shaped that model on its home ground.

Decision-makers in less developed countries are often inclined to react against traditional values, or to consider them a hindrance to economic progress. Understandably enough, they seek the kinds of reforms which can benefit whole populations across the board and feel there is no time to waste on taking into account the idiosyncracies of relatively tiny groups.

There are clear signs, however, that this attitude is changing. Planners and administrators in less developed countries are increasingly becoming aware that the agrarian and technological progress which, twenty years ago, they hoped would result from imported techniques, often fails to meet its targets under the special conditions they face: they also see the same techniques failing to satisfy demand, or creating unjustifiable surpluses and environmental decline in industrialised countries. The search for alternative ways and means has begun in earnest in many countries, and a reappraisal of the wisdom of traditional cultures is an important part of the search.

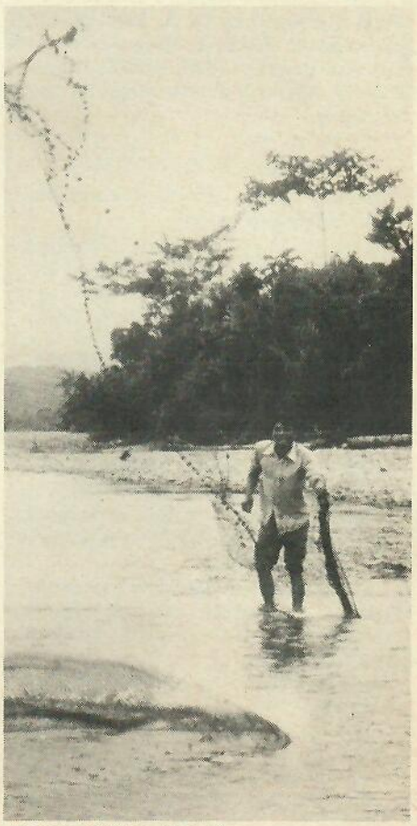
Traditional lifestyles recognised

IUCN has played a part in renewing interest in traditional lifestyles. At the 15th Session of the IUCN General Assembly in Christchurch, New Zealand, in October 1981, it was recommended that heads of governments, ministers, members of legislatures, administrators, planners and conservationists:

- **take into account the still existing very large reservoir of traditional knowledge and experience within local cultures which must provide a significant basis for the evolution of future management policies and planning actions;**
- **provide the means for local people who maintain ecologically sound practices to play a primary role in all stages of development in the area they identify with, so that they can participate and benefit directly, in a manner which is consistent with their values, time frames and decision-making processes;**
- **seek continuous support of these local people in shaping and implementing conservation strategies, programmes and plans, in order to increase considerably conventional conservation potentials for achieving the goals of the *World Conservation Strategy*;**
- **foster further research into the ecology of traditional life styles.**

The initiative taken at Christchurch led to rapid action. The IUCN Commission on National Parks and Protected Areas (CNPPA) and the IUCN Commission on Environmental Planning (CEP) have been particularly active in commissioning a series of papers which show that traditional cultures can be vital forces for conservation. The papers are being published in a volume which describes how environmental management is being carried out for, with and in some cases by the indigenous people themselves in different parts of the world and in different ecosystems. And throughout there is ample evidence of the scientific value of traditional conservation practices.

This issue of the *Bulletin* features four examples which illustrate the problems and potential of traditional cultures under very different conditions. They are excerpts from full versions which will appear in the forthcoming book. Other contributions to the discussion will appear in future IUCN *Bulletin* editions.



Yumbo fishing, Ecuador.
Photo: WWF/H.Jungius

CULTURE & CONSERVATION

WHAT HAPPENS WHEN A TRADITIONAL SYSTEM BREAKS DOWN — THE CASE OF INDIA

MADHAV GADGIL

Traditional equilibrium

Historically, Indian society is made up of a large number of endogamous castes each with a restricted geographical range and a hereditary profession. This hereditary profession is fairly specialized so that the different castes utilize different natural resources with little overlap with other castes of the same region. Thus any particular resource of a given region used to be utilized over generations by a small homogeneous group which expected the same resource to sustain its future generations as well. These conditions were particularly favourable for the evolution of cultural traits ensuring long-term sustainable utilization of natural resources. Such practices included restraints on territory over which a given group may exploit plants and animals, the season in which the exploitation is permitted, the method which may be used for exploitation, the species or the biological communities which may never be exploited and the species in the exploitation of which a given caste may be specialized. This equilibrium could be maintained because the ruling classes only tapped the agricultural surplus and a few harvests from the wild such as musk and sandal-wood.

Modern exploitation

Destruction of wild living resources in India occurred in two main waves. The first was the wave of the 'Aryan' agriculturists and pastoralists who put most of India's useable land under cultivation or grazing. Resistance by the tribals to this encroachment on their homeland is depicted in the Indian epics as the resistance of demons against gods. Nevertheless, at the end of this phase, wild living resources still remained abundant over hilly and more arid tracts, and by many rivers, lakes and coasts. The second phase began around the 1860s when industry took an interest in resources like wood charcoal as a raw material, so that the forests and other resources which were earlier left to the local communities, now became coveted and finally controlled by the ruling classes and the colonial government. This second wave was depicted as part of the 'white man's burden' of bringing civilization to India: the process ended with one of the worst ever famines in the country's history, in the early 1940s. India achieved independence in 1947 yet the same process was now being depicted as a struggle for 'development and progress'.

The future

The whole course of the development process will have to change if we do not wish it to lead to the eventual destruction of the nation's living resource base and to a continual widening of the gap between rich and poor. What are the pre-requisites for this change? We must begin to identify national interests with interests of the rural poor, no less than with the interests of the industrial sector. We must restore to rural populations some control over the resources of their region. Finally, we must respect the traditions of restraint in resource use and reinforce rather than undermine them.

In my view, the International Union for Conservation of Nature and Natural Resources should squarely face these issues and initiate attempts to deal with them. One practicable step would be to identify examples of sound cultural practice of resource conservation such as sacred plants and animals, sacred groves and sacred lakes and river pools, and launch a campaign to preserve these wherever they still exist throughout India and the world. □

Dr Gadgil works at the Indian Institute of Science, Bangalore, and is a member of IUCN's Commissions on Environmental Planning and Species Survival.

TRADITIONAL MARINE MANAGEMENT IN THE PACIFIC

GARY A. KLEE

The wealth of traditional knowledge

Many South Pacific islanders possess a wealth of environmental expertise, including traditional systems of resource management. Traditional conservation practices of many South Pacific cultures were once highly effective, and, if supported by or adapted to modern methods, could continue to be so.

Marine conservation in Oceania is more widespread than all other forms of traditional conservation practice — as one might expect of an area whose people mostly live along the margins of the sea. In most areas of the Pacific, fishing, the gathering of shellfish, the hunting of different kinds of sea mammals and the capture of turtles have long constituted an important source of protein to supplement a diet of terrestrial plants and animals. In the past, these aquatic resources were safeguarded by a variety of means: a high degree of environmental awareness; skilled conservation office-holders and master fishermen; a complex system of marine tenure; a variety of magico-religious taboos, enforced by strict fines and punishment, and a variety of methods to conserve a supply of sea foods.

Environmental knowledge was central to most forms of traditional conservation practice in Oceania. The native islanders lived of necessity close to nature and knew how to analyse the diurnal, monthly, and seasonal cycles of their environment. To the Polynesians, Micronesians, and Melanesians, the heavens and the phases of nature served as a clock or calendar. The position of the sun, the rising and setting of the stars, the waxing and waning of the moon, the ebb and flow of the tide, the changing wind directions, the height of the breakers on the reef, the natural smells within the village, the seasonal variances of terrestrial flora and fauna, and the aquatic cycles all served as a system of time reckoning, and, consequently, played a major role in the understanding of life histories, mating seasons, habitat requirements, and other basic knowledge of the plants and animals with which they shared their environment.

Thanks to this high degree of environmental awareness, many island cultures were able to regulate their harvest and use of wild plants and animals on a sustained yield basis. Daily activities were geared to the cycles of nature. Fishing, that most cyclical of human activities, was carried out according to the reading of the heavens as well as the phases of nature. The moon, tides, stars, and fish migrations had a direct bearing on the movement and activities of island fishermen.

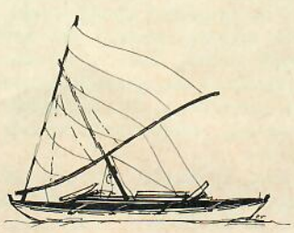
What can we save?

These older, long-standing systems of conservation and resource management have much to teach the modern-day resource manager. First and foremost, he can heighten his own awareness of the local environment by mentally combining two culturally different temporal frameworks. By using his own system of time-reckoning (the Swiss watch and the Gregorian calendar) with that of the indigenous culture's system (the movement of the sun, moon, stars, tides, and so on), the modern-day resource manager can see the phases of nature in a new perspective.

To be more specific, the western marine biologist can learn a variety of types of information, such as the lunar periodicity of the spawning of fish; the location and traditional regulation of marine preserves; the fishing grounds used by a particular village; the effect of rainfall, winds, currents and temperature on fishing conditions and the habits of certain fish; the times, places, and seasons offering optimum fishing conditions; the variations in fish habits and migration peculiar to different islands and different parts of the coasts of larger islands; the distribution of toxic plants that might render fish poisonous; the traditional regulations regarding fishing rights; closed seasons; specific identity; the optimum days for exercising particular fishing rights; the construction and proper use of traps and ponds for fish conservation; the various methods of fish preservation; the traditional conservation ethic and its enforcement by fines and punishment.

Little time remains to identify, record, and preserve some of these traditional systems of conservation management: they should be respected, emulated, and where possible preserved, not thoughtlessly replaced. □

Dr Klee works in the Department of Environmental Studies, School of Social Sciences, San José State University, USA.



CULTURE & CONSERVATION

HEMA - THE WORLD'S OLDEST RANGELAND SYSTEM

OMAR DRAZ

The Arabian *hema* (plural: *ahmia*) grazing system is probably the world's oldest effective range conservation programme. It has been a prerogative of individuals, of tribes and of governments. A survey in Saudi Arabia of historic *ahmia*, formerly administered by the Government, has mapped these lands, which were opened to free grazing by a Decree of 1953. Today it is difficult to see any difference in the vegetation of these former government reserves and adjoining lands because of destructive grazing and uncontrolled tree and shrub cutting. The tragic story of loss of fertility, aridity and transformation to man-made desert, the fate of millions of acres in the Near East, has thus been repeated. In contrast, surviving tribal or personal *ahmia* which have been properly managed, show the suitability of this system to the local environment.

Types of hema

The *ahmia* may be classified, according to types of protection, as: those where animal grazing is prohibited, but cutting of grasses is permissible during specified periods and droughts; those where grazing and/or cutting is permitted, but restricted to certain seasons of the year; those where grazing is allowed all year round, but the kind and number of animals permitted for grazing is specified; those where the reserve is kept for beekeeping; and those where the reserve aims to conserve useful trees such as juniper, acacia or *ghada* (*Haloxylon persicum*).

Some *ahmia* are reserved for a particular tribe, one village, or a group of villages. The tribal or village head manages the utilization of such reserves. However, smaller units are kept, close to terraces or cultivated *wadi* beds, for the use of local residents. Rights of ownership or use are determined according to two categories of owner; those who possess documentary evidence of hereditary ownership or rights of use and those without documentary evidence, but who maintain control of *ahmia* by right of long-term possession and use.

Hema's resource management potential

The *hema* system was once common in parts of the Arabian Peninsula and is still used in parts of Saudi Arabia, Yemen, Oman and Syria. It originated in the Near East and is suitable as a means for controlled grazing in selected areas in arid, semi-arid and mountain ranges where nomadic pastoralism is the only system practised. Carefully protected *ahmia* would furnish fodder reserves essential for stability of nomadic grazing. They would also change the attitude of the pastoralists towards the range, introducing the philosophy of protection and improvement instead of exploitation.

Ahmia, moreover, can give the range manager an insight into the potential forage productivity of range sites and indicate how much improvement can be expected when large areas of run-down ranges are upgraded and given prudent care. Although soil and water conservation programmes might include several physical or mechanical methods, in most cases there is no substitute for vegetation renewal, for which the *hema* system has proved its efficacy.

Introduction of the system to new areas in this region, or to localities where it has previously been practised might require different techniques from one country to another. In most cases, however, this would need to be a gradual rather than an abrupt change.

Many people in the various countries where *hema* has been maintained, are of the opinion that, if previous rights in *ahmia* were restored, subject to some conditions to spread benefits equally, regeneration of vast areas of range or forest land could be achieved.

Neglect of the hema

In Saudi Arabia, marked denudation of plant cover occurred in most of the previously protected *ahmia*. Free grazing of these reserves took place through misunderstanding of the 1953 Decree. While this Decree was meant to replace the grazing rights of *ahmia* only so long as they were protected by the local Amirs in different regions supporting grazing animals owned by the Government, the Decree was interpreted by the different authorities as withdrawal of *all* controlled grazing measures. Loss of plant cover in these range reserves led to serious soil erosion associated with frequent destructive floods. Consequently, most of the ancient dams and water conservation systems which previously worked efficiently, failed to withstand the flooding and siltation that occurred when protective vegetative cover was destroyed.

Meanwhile, large amounts of runoff water have created another serious problem. The flood water after any appreciable rain storm soon collects in the *wadi* beds, to disappear into the sea, into salty depressions or into nearby sand dunes. The decreased water percolation that has resulted in most areas has in turn reduced the flow of spring water. A survey showed that many dams constructed in pre-Islamic time are now useless. The 400 m-wide Samalagee Dam, situated below Hema Thumula, can now store no water because the spillway was destroyed by floods. The construction of this gigantic dam proves that ancient peoples had a keen interest in water conservation works — present residents of the area lack even the ability to restore the damaged spillway. Five more dams, or *sad*, close to Hema Nageeb, have met a similar fate and about ten surrounding villages have been adversely affected. Wells have almost dried up, and villages are continually asking for help. □

Dr Draz is a member of IUCN's Commission on Environmental Planning and works in the Desert Institute, Cairo, Egypt.

THE INUIT — A TRADITIONAL LIFESTYLE MISUNDERSTOOD AND UNDER THREAT

WILLIAM B. KEMP

The utilisation and management of arctic resources has a long and controversial history in the north. The relationship between people and resources has been fundamental to the survival of Inuit culture, but the nature of this relationship is undergoing significant changes. Inuit use of the land and resources continues to be important, but it is now part of a much larger system of activity and control.

Northern hunters were never aimless, long distance wanderers, nor were they constantly on the edge of starvation, hapless victims of a cold and unrelenting environment. Through skill, through information systems, and through the ability to unite socially, Inuit were able to apply judgement, strength and technology to the problems of gaining a living from the land. In the process, a very special type of adaptation evolved which is defined as much by the psychological outlook of a hunter as it is by his adaptive skills.

To the outside world, however, the requirements of hunting in terms of land and resources have often been viewed as running counter to development. The expansion of economic and political systems of the temperate zone at the expense of Inuit hunting and gathering activities is often rationalised in terms of scale and efficiency: hunting does not permit the maxiumum utilisation of a land's capacity to produce goods. Hunting was thought to require a constant work effort in order to gain a meagre return. People could subsist but they could not prosper. Small populations and large territory, high mobility and few material goods, reinforced this notion of marginality and provided a logic of social responsibility that sped the process of territorial acquisition and cultural displacement.

But there is an alternative approach. A logical assumption is that Inuit hunters, as principal users of the resources, will practise conservation because it is in their long term interest to do so. This point of view has been clearly stated by native people themselves. There is no group which has a greater interest in protecting fish and game resources than village people who depend upon them for subsistence. Responsibility, however, cannot be imposed from outside, nor can the assumptions and information upon which problems are identified and decisions are made, ignore the local concerns and points of view of Inuit hunters.

Conservation is a principle objective of such a process, but the definition of this term must be expanded. In the reality of today's North, conservation involves species

and habitats, but it must also take account of the life styles of Inuit, who continue to depend upon hunting, fishing and trapping for their livelihood and for cultural identity.

A political time-bomb

The potential explosiveness of the situation must be realised, and programmes and action must reflect the level of Inuit feelings about their lack of ability to affect changes. The Inuit feel themselves victimised at many levels. Victims of a political system that forces them to negotiate for land that they already know is theirs; victims of a bureaucracy that does not recognise their desire for an effective voice in decision-making; victims of a funding system that does not provide assistance for resource problems viewed as important by local people; victims of a system of economic priorities that allows development to take place at the expense of native values and life style; victims who have to justify their harvesting practises while they see development making massive, long term impacts on the environment; victims of a system of scientific enquiry and information that does not include the ideas and perspective of native people and which does not even facilitate their access to those sources of available expertise which could be useful to them.

There are, of course, arguments on the other side. Certain development projects have attempted to build-in native participation at many levels. It is essential to evolve a strategy for the conservation and management of arctic resources that is sensitive to cultural and ecological realities and realistic about the politics of conservation and resource development. The future rights of Inuit to maintain an active existence as hunters as well as to exercise other options with respect to their role in northern society is predicated on the assumption that resources can be properly managed and habitats preserved. At present, the critical need to conserve and manage northern biological resources and habitats is complicated by a lack of essential information about ecology and utilisation. It is also confused by the politics of jurisdiction and control. This sphere of influence includes conventional and government management agencies, but it also includes the new political power vested in companies concerned with resource development, and the growing influence of the scientific community.

Traditional lifestyles: conservation action

It is clear that more needs to be known about traditional lifestyles, but there are problems inherent in the process of preserving them. There are negative as well as positive features of the activities of traditional societies which need to be taken into account. One answer may lie in an amalgam of the old and new: young people in many of today's traditional cultures want something of both worlds. Involving these young people in conservation practises may be a most essential task for the future enrichment of our natural heritage. □

William B. Kemp works for the Makivik Corporation, Canada and is a colleague of CEP Chairman, Peter Jacobs.