cation programme to enhance the development of the rain-forest parks, concentrating initially on the Korup National Park. In Kenya, a project is being developed in collaboration with the Royal Botanic Gardens at Kew in England and the Kenya Energy Non-governmental Organization (KENGO). This work involves, *inter alia*, having school-children in both Kenya and the UK looking into the ecology of traditional food-plants, which could develop into valuable research for the management of arid and semi-arid areas and meanwhile prove a useful contribution to environmental awareness on the part of the children involved.

Rain-forests Resource Pack

Living Earth is also bringing the facts and issues surrounding rain-forest conservation to British schoolchildren. More than 40 teachers, environmentalists, and designers, have been involved in the development of their award-winning Rain-forests Resource Pack. It is designed to be both educational and entertaining, and is remarkable for its flexibility; it has been used with four year-olds and Body Shop franchises, and even with a group of company directors!

Among its 40 items, the Pack contains a wealth of ideas, approaches, and practical case-studies, all supported by visual material of a standard that is normally reserved for coffee-table books. It is designed to be cross-curricular, because learning about tropical rain-forests draws on, and enhances, many resources that are already provided in schools. It has been used within art, English, maths, and economics, lessons as well as the more naturally applicable areas of geography and the sciences.

Another element of the Pack is a set of cards which can help to mobilize the older students to start up a local group, as it gives hints about how to acquire the techniques which are needed to achieve *results* (publicity, exhibitions, minutes, letter-writing, etc.). The particular example in the Living Earth Pack suggests that the wall sheets be used to build an exhibition about tropical rain-forests, in order to continue the educational work of the Pack. However, these guidelines could help a group of young people to motivate itself and achieve results on almost any allied issue.

Developments

The Pack is currently being marketed to schools throughout the UK, and a grant is being sought to adapt and translate it into other languages. This will open it up to distribution in some key developing countries, as well as more widely than hitherto in Europe. The Pack is the first of what is intended to be a series of environmental resources designed for use in schools.

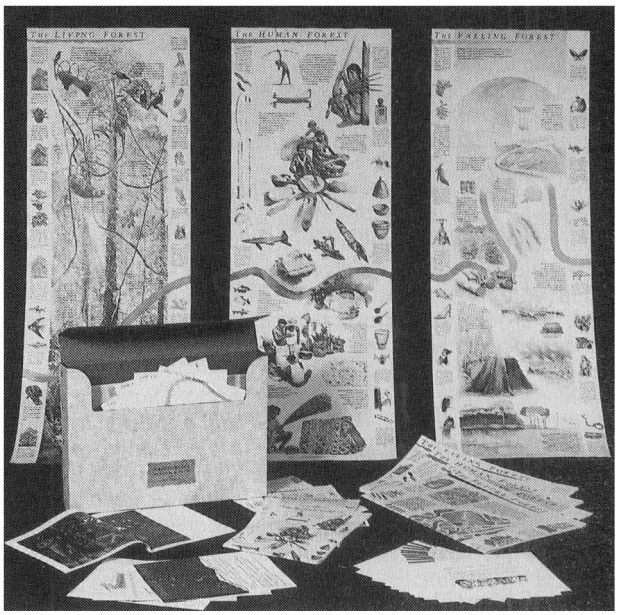

FIG. 1. *Living Earth's Rain-forests Resource Pack, full of colourful and comprehensive materials to aid education about the world's tropical rain-forests.*

Living Earth's Rain-forests Resource Pack is probably by far the most comprehensive educational aid available on this urgent and topical subject. More details about it, and about Living Earth's activities and membership, can be obtained from the undersigned:

CLAIRE BIRCH (Mrs)
Living Earth
10 Upper Grosvenor Street
London WIX 9PA
England, UK.

Acquisition of a Significant Wetland in Canada

A major achievement in the preservation of significant wetland was realized on 17 August 1988, with the purchase of 1,500 hectares of land in Alfred Bog. Preservation of this wetland has been a high-priority conservation objective for years, and this acquisition protects about one-third of the Bog.

Alfred Bog is a 5,000 hectares' domed peat-bog (4,000 hectares of open-to-closed Black Spruce [*Picea mariana*] forest with heath or sedge–heath openings surrounded by 1,000 hectares of peripheral wetland) located about halfway between Montreal and Ottawa. It is situated in a broad, shallow valley that was once a channel of the Ottawa River. Peat depths range from about one metre at the edge of the Bog to over seven metres in the interior. The Bog contains a relict boreal habitat that was once widespread in the St Lawrence lowlands. Of national significance, it is the largest, and has the richest floral and faunal diversity, of the few remaining bogs in the Ottawa Valley. Alfred Bog is home to many rare species: the Southern Twayblade Orchid (*Listera australis*), Fletcher's Dragonfly (*Williamsona fletcheri*), the Bog Elphin Butterfly (*Incisalia lanoriaensis*), and the Spotted Turtle (*Clemmys guttata*), being examples.

Encroachment by drainage, agriculture, and mining for peat-moss, has been continuous over the years until the bog is now only about half its original size. A serious threat came in 1982, when the local municipality changed the zoning for the 1,500 hectares mentioned above from 'conservation' to 'agriculture'. The Ottawa Field-Naturalists' Club became involved at this point, unsuccessfully appealing against the zoning change before a provincial court.

The Ottawa Field-Naturalists' Club then teamed up with the Nature Conservancy of Canada, convening a meeting in 1985 of 14 organizations who were concerned about preservation of the Bog. This meeting resulted in the creation of the Alfred Bog Committee, which was responsible for negotiations with the owners of the land, arranging the financing, and publicity. Significant contributions were received from the Ontario Ministry of Natural Resources and Wildlife Habitat Canada.

https://doi.org/10.1017/S037689290000905X Published online by Cambridge University Press

The Alfred Bog Committee is now concerned with fund-raising to pay off the loan required to make the purchase, with negotiating protection for the remainder of the Bog, and with developing a management plan. Any assistance in this project would be gratefully received.

FRANK POPE, *Chairman*
Alfred Bog Committee
Ottawa Field-Naturalists' Club
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Ottawa, Ontario K1Y 4J5
Canada.

International Institute for Environmental Studies and Disaster Management

In an attempt to improve knowledge of our environment, another Institution has been formed in the south Asian subcontinent. Stimulated in 1988 by one of the most devastating floods in recorded history, the Bangladesh Research Bureau organized an International Seminar on Bangladesh Floods: Regional and Global Environmental Perspectives, in Dhaka (Bangladesh) from 4–7 March 1989. Events and deliberations that occurred during this important meeting were guided by 35 eminent scientists and other scholars from 17 Countries, and by 182 participants from Bangladesh.

The International Seminar was inaugurated by the President of the Republic, Hussain Muhammad Ershad. In his address the President stressed the need for regional cooperation amongst the neighbouring countries in order to solve the problems caused by such natural disasters, by saying: 'Only one conclusion has emerged today—that these problems need the cooperation and integrated approach of all the countries of this region. Nowhere is interdependence more vital than [in] the rational use and management of internationally shared rivers. Shared rivers are archetypical examples of cooperation—cooperation on the basis of equity, mutual trust, and respect. The use of water from transnational rivers should not be a zero-sum game where one party's loss is the gain of the other party'.

The President also emphasized and wisely counselled the organizers on the formation of an International Centre for studying such environmental problems, by saying, 'Like all other nations, Bangladesh cannot turn a deaf ear to the cries of planet Earth. As a nation with the endless experience of environmental hazards, we would like to share and participate in activities aimed at reducing and ultimately removing those evils. I am, therefore, pleased to ponder on the creation of an International Institute of Environmental Studies in Dhaka, to continue the quest commenced today with multidisciplinary cells to carry on the research. I urge and hope that all other nations and international organizations will extend the necessary assistance to this global venture'.

After three days of intense and fruitful discussion, the scientists present issued the 'Dhaka Declaration', with deliberation on five main themes:

1) Permanent flood-control and management.
2) Floods: socio-economic and legal aspects.
3) Living with flood: The need for disaster management.
4) Geomorphological processes leading to flood.
5) Anthropogenic perturbations of the environment and the greenhouse effect.

Other edicts were also put forward:

1. Recommends the continuation of scientific and technological studies at both regional and global levels. These studies should be directed towards further assessment and understanding of all aspects of environmental sciences, including geochemical and geomorphological processes, climatic factors, etc.
2. Recommends that studies be conducted for developing and coordinating strategies for permanent flood-control and disaster management. These studies should incorporate channel relief, embankment construction, sediment transportation, monitoring, forecasting, an early-warning system, and rehabilitation.
3. Recommends the formulation of a legal framework, so that it would be possible to examine and apply international laws governing environmental issues and riparian relations at all levels.

The essence of the Seminar's recommendations among other things stressed the need for continuing research and environmental studies in all their ramifications, and underlined the need for global and regional cooperation for the solution of disasters such as floods, storm surges, and other calamities arising out of anthropogenic perturbations.

To achieve these objectives, and following the suggestions made by the President of the Republic, it was resolved that an International Institute for Environmental Studies and Disaster Management would be established in Dhaka.

The Institute was inaugurated on 18 May 1989, and the Board of Advisers (nominated during the International Seminar in March), made up of 18 foreign and 17 national scientists, approved the research programme at its first meeting (19 and 20 May). The new Institute is thus already in being.

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The International Mussel Watch—A Prospectus

For the past decade, marine environmental scientists have been haunted by the possibility that usages of chlorinated hydrocarbon pesticides in the southern hemisphere and tropics may have increased to the extent that ecosystem damage, similar to that observed in the 1960s and 1970s in the northern hemisphere, may occur also far south of the Equator. This mood has developed on the bases of limited measurements of pesticides in ocean airs and waters as well as some published use and production data. Further, the UNEP–WHO–Swedish National Food Study on human exposure to selected organochlorine chemicals through the amounts that have been found in human milk, indicated that populations of developing nations such as China, India, and Mexico, possessed the highest values. On the other hand, countries that have prohibited or severely restricted the usages of these biocides had mothers with almost an order of magnitude lower concentrations in their milk.

https://doi.org/10.1017/S037689290000905X Published online by Cambridge University Press