

## REVIEWS & NOTICES

**Rays of Hope: The Transition to a Post-petroleum World**, by DENIS HAYES. (A Worldwatch Institute Book.) W. W. Norton, New York, and George J. McLean, Toronto: 240 pp., 21 × 14 × 2 cm [paper covers, no price indicated], 1977.

The general argument of this book is summarized in an introductory chapter: the world's supplies of oil (and firewood) are running out. Other constraining factors—environmental, material, financial, and political—are imposing or will impose sharp limits to the present rate of growth of energy production from all sources, including nuclear power. The world therefore faces a difficult and probably painful transition from a policy of energy waste to one of energy conservation.

Chapter 2 deals with the fossil fuels—petroleum, oil-shale, gas, and coal—and concludes that 'while the world as a whole faces no current shortage, those areas [U.S.A., Western Europe, and Japan] in which energy demands have already outstripped domestic supplies, should begin a transition towards use of renewable resources. With only slightly less urgency, the remainder of the world should follow suit'.

Chapter 3 discusses nuclear power and concludes that it is environmentally and politically too dangerous to be acceptable as a successor to the fossil fuels.

The implications of these conclusions are spelled out in the remainder of the book. The main themes are the need, and scope, for economy in the use of energy in agriculture, transport, construction, and industry, and the possibilities of exploiting the Earth's renewable natural resources—sunlight, geothermal, wind and water power, and 'biomass' or organic fuels.

This is a well-written book by a member of the Worldwatch Institute in Washington, D.C., whose President contributes a foreword. The language is clear and forceful. A mass of factual material is made digestible by a lively style, not devoid of humour.

A layman like the present reviewer finds it difficult to be sceptical about the book's main theme—the impending shortage of fossil fuels and the consequent need for a radical change in our attitudes towards their use. Indeed, from the environmentalist's point of view, the need for a change would surely be equally compelling even if the world's supplies of fossil fuels were assured for the indefinite future. Nor is it easy to be optimistic about the dangers of nuclear power, although one sometimes wonders if they have not been unduly dramatized. On the other hand, it is difficult to share the Author's optimism, cautious though it is, about our chances of achieving a peaceful and orderly transition to a way of living based on sources of energy which are both renewable and non-nuclear. Human greed and human short-sightedness are formidable obstacles. One can only seek consolation in the thought that so far in the history of prophecy, the pessimists do not seem to have scored higher marks than the optimists. Meanwhile, Mr Hayes' book is recommended to all who are concerned with, and by, the way things are going.

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**Environmental Awareness**, Edited by G. M. OZA, 'Oza Building', Salatwada, Baroda-390001, India. Vol. 1, No. 1, Oct.-Dec. 1977; Indian Society of Naturalists, Baroda, India: viii + 59 pp., 24.5 × 18.5 × 0.6 cm. Free to members of INSONA (Membership RS.5 annually for Student Members, RS.10 for Ordinary Members in India, to be paid annually in October; for members in other countries, \$8 or £4 annually).

The Indian Society of Naturalists—INSONA—have launched this quarterly journal devoted to the cause of environmental conservation for human welfare. The Editor hopes to develop understanding between the common man and the scientist on the need and the principles of conservation through its pages. There has been obvious need of such a medium to serve the Asian countries by making the people aware of the regional problems arising out of technological development. The Reykjavik Imperative on the Environment and Future of Mankind is summarized by the Editor, which indeed appears to have inspired the birth of this new journal.

Nicholas Polunin, of the Foundation for Environmental Conservation, in a brief article emphasizes the role of such a journal in bringing about desirable change in Man and Nature and hopes that the publication shall prosper. (Experienced editors know that it is easy to launch a journal but difficult to maintain it.) Dillon Ripley, of the Smithsonian Institution of Washington, in his article has drawn attention to the accelerating genetic erosion and the conflict between personal advantage and community loss. According to him, ecologists have begun to realize that it may be too much to ask 'have not' nations to save wildlife as Man's common heritage. The problem of world stability and peace can revolve around endangered species, and codification of international property rights in the name of species may lead to better relations between the developed and the undeveloped countries. Mostafa Kamal Tolba, of UNEP, highlights environmental damage as a side-effect of development, and calls upon nations to use their resources on a sustainable basis. He proposes to hold a periodic review of the state of the world environment, so that Man may make conscious efforts to mitigate the depletion of our life-support system.

The 1977 report deals with the problems of the ozone layer, environmental cancers, land loss, soil degradation, and firewood. Possible biological effects of ozone reduction in the atmosphere are given in this number. An essay on forests and their impact on the environment is written by M. A. Rashid in the historical context of India. There are some important articles reprinted from other sources—including Aerosol Sprays: A Planetary Time-bomb, by Brodeur, The Importance of Using Nature's Diversity, by Shankar Ranganathan, Wild Life in Gujerat, by Ruben David, and A Viewpoint from a Developing Country, put forth forcefully in the context of global responsibility by Fatesingh Rao P. Gaekwad, President of INSONA. Man and Mountain Ecosystems are analyzed by B. R. Gupta with reference to northwestern Himalayas. These valuable articles are interspersed with notes, notices, and useful announcements, throughout the Journal.

INSONA, and particularly the Editor Dr G. M. Oza, deserve to be congratulated on putting together such interesting and instructively diverse material in the inaugural issue of this Journal. It is hoped that this high standard will be maintained in subsequent issues, as there is no doubt that *Environmental Awareness* will strengthen the bonds between the layman and the scientist whose interests are bound together in the common environment.

RAMDEO MISRA  
(Banaras, India)

**Population Biology of Plants**, by JOHN L. HARPER. Academic Press: New York-London-San Francisco: xxiv + 892 pp., 23.5 × 15 × 5 cm, £ 30, 1977.

The principles of population biology, particularly as they relate to evolution, have been formulated mainly on the