PREFACE

This volume brings together the contribution of certain internationally known scholars to human ecology. Each of these scholars has made a significant and lasting contribution to the understanding of the relationship between human beings and environment, and their works have implications for theoretical as well as applied interests. The papers generated for this volume have been classified into seven sections, viz. perspectives on human ecology; ecology and health; ecology and human growth; resources; biological dimensions; ecology, archaeological finds and history; and ecology, disaster and global change.

A fresh view to human ecology is provided in Napoleon Wolanski and Maciej Henneberg's article. Their core argument is that the science of human ecology is a modern form of anthropology. In fact, the ecological perspective can unify the diverse branches in anthropology, for each one of them is concerned with the nature of human adaptation to its environment. Following this is Mario Giampietro's paper. Taking the case of both the developed and developing societies, Giampietro submits that the processes of globalization and economic transformation are generating the crisis of governance within human societies, which is reflected in the issue of sustainable survival. The author further attempts a definition of sustainability from the perspective of human ecology.

Next in line is Michael Opielka's paper. He takes up the aspects of social health from the point of view of the social-ecological theory of action. For him, the idea of 'health' is the centrepoint of the quality of life, but we must approach it with a holistic perspective. In this connection, Opielka scans the body of the traditional thoughts. In another unconventional attempt, Inge Røpke says that the developing world wants to establish environmental regulation in its context, but succeeds less as its institutions are not fully equipped to do so. Røpke's view is that we must change the power relations, because this will rectify their environmental problems. This paper suggests certain new concepts — such as 'environmental economics', 'unequal exchange', 'ecological footprints' — the value of which may be examined in future researches.

The second section of the book is devoted to the relationship between ecology and health. The first paper is by M.K. Bhasin and Veena Bhasin, who in their macro-approach have a closer look at the situation in India. In this richly documented contribution, the Bhasins provide an overview of the health situation in India. They point out that in a diverse country like India, where on one extreme there is an unrivalled concentration of wealth and on the other, an unrivalled concentration of poverty, the health situation will hugely vary from one context to another. Focusing on the nutritional aspects, they submit that those sections of the population which are not able to acquire nutritional foods are placed in a disadvantageous situation, and all this in turn will affect their posterity. In the follwing paper, Maj-Lis Foller brings in the data from the inhabitants of the Amazon and examines the links between the different facets of ecology and health discourse. He also examines the value of the three historically used aspects of ecology and health, viz. soil, calorie intake, and protein.

The matter of ecology and human growth comprises the next section. E. Gualdi-Russo, G. Tani, and L. Zaccagni, in their paper based on a piece of research conducted in Italy on pre-pubertal subjects, investigate the possible relationships of anthropometric traits and physical performances with physical activity and lifestyle. The data thus obtained are subjected to comparison with data from the other parts of Italy. It was found that children in northren part of Italy tended to overweigh. The physical activities improved motor performance and kept the body weight under control. In another article in this section, its author, Mohammad Taghi Sheykhi, notes the reciprocal relationship between human resources and environment. He observes that unless we take up some concrete measures to alleviate poverty, we shall not attain the state of sustainable development.

In the next section, we have placed articles that pertain to the state of resources in the world. Masatoshi Yoshino contributes a piece on the production of rice and climatic change in monsoon Asia. Having a futuristic outlook, Yoshino, taking up the case of Thailand, reflects upon the problems in the twenty-first century. Natabar S. Hemam, B. Mohan Reddy and Madhav Gadgil analyse the changing patterns of natural resource use in north east India. They discuss in detail the ethnographic case of the Gangtes of Manipur. For

them, north-eastern India is a 'veritable laboratory' for studying the transformation of small and autonomous societies with subsistence economy as they come in contact with the market-oriented systems. Bringing in the historical data, the authors of this article show that the forest wealth is exhausted as the privatization of control over land and vegetational resources increases. Alongside, the community-based social organization of the people is also weakened.

In an exemplary effort, R.E.S. Tanner argues that human waste should be re-used rather than disposed. He gives the example of China where human waste has been consistently used for agricultural purposes. This process has been quite successfully institutionalized there. Japan offers another example where night soil treatment plants have come up in a big way. A succinct account of the South Turkana Ecosystem Project is provided in Michael A. Little's paper. For Little, the Turkana Project was a groundbreaking research experiment to anthropology and ecology. It showed that human ecology can only be pursued as a multidisciplinary science. We must pool in the perspectives from different disciplines. Human ecology can be further advanced when bio-social and ecological sciences are fully integrated. This integration is not only for theoretical reasons but also. In another paper, Bibhash Dhar gives an account of the state of transhumance in India and how anthropologists have looked at it.

The following section is concerned with the biological dimensions of human ecology. Charles Susanne and Esther Rebato in their contribution dealing with mutagenesis and cancerogenesis opine that the goal of anthropology is neither therapeutic nor diagnostic. It is to render predictive tests because they are based on a genetic polymorphism. Our capacity to predict exceeds our curative endeavours. Susanne and Rebato draw our attention to the ethical problems in predictive researches, for there is always a possibility of individuals and populations being stigmatized by the types of genes they carry. In another article placed in this section, J.S. Yadav, S. Thakur and A.K. Chhillar examine the genetic risk assessment in cigarette smokers. They do so by investigating the somatic chromosomes of fifty male cigarette smokers and comparing their findings with an equal number of non-smokers. Their results suggest that cigarette smoke is both clastogenic and genotoxic for human beings.

Our next section deals with archaeological finds and history. Here, the first article is by Kenneth A.R. Kennedy, who reflects upon the state of palaeoanthropology in India. He appreciates the sentiment that scholars in south Asia should be the key interpreters of their prehistoric past, but notes that the abysmal lack of funds for palaeoanthropological research in these nations does not allow the research to proceed in a satisfactory way. Kennedy also notes that many biological anthropologists in south Asia enter into those areas that are supposed to have an 'applied' value. Even governments support research in medical and genetic issues, demography and ecology, and the other related dimensions. As a consequence, palaeoanthropological research is relegated to the backseat. In the second paper of this section, S.N. Padhy, S.K. Dash and Ratnaprava Mohapatra re-read the Hindu Book of Laws, Manusmruti, for the interpretation of environment by the sages and seers in the Vedic Age. They have extensively reviewed the Book to bring out the various environmental aspects as reflected in socio-ecological niche, academic environment, family atmosphere, social interation, salubrity, and the ethical protection for the biota.

The last section of this volume is on disaster and global change. Luc Hens, in his article, takes up the environmental consequences of human displacement and migration. He shows that environmental displacement is closely linked to environmental security. In his paper, he covers a wider canvas comprising natural disaster, water shortage, desertification, deforestation, climatic changes, industrial accidents, population pressure, and poverty. He also offers an operational definition of the concept of environmentally displaced people, who, according to him, are those who leave their land because it can no longer support them. These people could be called environmental refugees. He suggests that the state should reduce the motivation of these people to migrate by providing them a sustainable lifestyle. In his paper, S.M. Patnaik provides a comparative account of the community responsible for change in ecology due to displacement, which finds an expression either in the modification of its social structure or in a protest movement.

In the paper that follows, Dennis Bartels shows parallels between the mobilization of resources by the Western Allies during the Second World War and the measures which may be necessary to counter severe global climatic change. In his paper, Robert J. Gregory says that the state of the contemporary world is

precarious. It is because of the existing inter-relationships between people and environment, as well as the links between past decision-making and present-day outcomes. J.R. Vallentyne, in his contribution, identifies four stages in the evolution of our species, viz. the development of a technological species; a period characterized by sub-planetary, warring nations; an integrated planetary civilization; and cosmic civilization. He argues that the first stage in the evolution is essentially complete, but we are still in the other stages. He thinks that a re-structuring of the United Nations Organization is imperative to facilitate the transformation from the second to the third stage. Finally, V.K. Srivastava discusses the case of a religious community in India, which in the list of principles to be observed by its members explicitly states that green trees should not be cut down. In his paper, he shows the relevance of these ideas.

Looking at the range of the contributions in this volume, we may submit that the field of human ecology is truly multi-disciplinary, and that is the way in which human ecology has to be approached.

September 2001 **Editors**
Delhi