

Mahatma Gandhi: An Apostle of Applied Human Ecology. T. N. Khoshoo
Tata Energy Research Institute, New Delhi 1995. pp 71

1995 has been declared by UNESCO as the International Year For Tolerance. The principal aim of this initiative is to promote among humankind at least tolerance and understanding, if not love, of diversity and pluralism in human communities in terms of religion, language, ethnicity, skin colour, gender and political belief. The Director-General of UNESCO, Federico Mayor, mentioned in a lecture at New Delhi in May 1995 that fostering appreciation and tolerance of human diversity is the best way of commemorating the 125th birth anniversary of Mahatma Gandhi. Gandhiji's gospel of nonviolence was based on his conviction that nonviolence cannot be practised in compartments – it has to be total, encompassing all manifestations of life. Thus, he once mentioned that it will not be possible to be nonviolent to nature if we are going to be violent to each other. He was convinced that the alternative to *sarvodaya* was *sarvanasha*.

The Global Biodiversity Convention at Rio de Janeiro in 1992 designed to protecting flora, fauna and microorganisms will not help in achieving its purpose, unless there is an equal commitment to preserve, respect and nurture human diversity. It is worth repeating this central message of Gandhian thought and action at a time when violence is growing in the human heart. This trend is getting reflected in many ways – starting with violence to oneself (through drug addiction and AIDS) and violence to whole religious or ethnic groups as is happening in the former Yugoslavia or in Rwanda. The term 'ethnic cleansing' is now being used in the mass media without evoking horror and universal condemnation. T. N. Khoshoo has reminded us through this well-written book the beauty, simplicity and eternal relevance of Gandhiji's views on different aspects of human development. The book indicates how the four major ills of contemporary human developmental pathways could have been avoided had policy makers in all countries followed the Gandhian approach and methods of planning. It would be useful to refer to these briefly, since reexamining them and adapt-

ing them to present-day conditions could pave the way to achieving the harmony we now seek with nature and with each other.

The first serious malady of today's pattern of economic growth is the increasing rich-poor divide in economic well-being. Over 84% of the world's annual income now goes to 20% of the world's people. Another 20% get only 1.4% of the global annual income. One billion women and men live on a daily per capita income of less than one US dollar, while another 2 billion earn less than 2 US dollars per day. Everyday 68,000 babies are born to families living on less than one dollar per day. The Gandhian recipe to such gross inequity consisted of three seminal ideas. First, the promotion of sustainable life-styles would lead to curbing greed and meeting the essential needs of everyone. Second, the adoption of democratic decentralization in planning would lead to addressing the minimum needs of every child, woman and man. Third, the adoption of the concept of trusteeship by the well-to-do with reference to their surplus wealth will result in the promotion of symbiotic social contracts between the rich and the poor. For example, if the 20% of the global population now enjoying 84% of its annual income will regard themselves as trustees and not owners of their enormous income and will adopt sustainable life-styles and share their wealth with the poor, the funds needed to overcome extreme poverty and deprivation will be readily available.

Secondly, the present pathways of development are causing serious damage to the environment, resulting often in irreversible harm to the rights of the unborn for a healthy and productive life. Khoshoo has explained in detail the Gandhian approach to protecting our life support systems of land, water, flora, fauna, forests and the atmosphere. Conserving nature and natural resources and using them in an ecologically sustainable and socially equitable manner constitutes the core of the Gandhian approach to environment protection.

A third serious malady of present-day developmental paradigm is the phenomenon of jobless growth, i.e. GDP increases but employment opportunities diminish. Gandhiji's approach to promoting sustainable livelihood security was the creation of eco-jobs based on organic

recycling, garbage and sewage utilization, generation of wealth from wastes, ecological farming, value-addition to natural products through village-level agro-processing and promotion of self-reliance at the village level to the extent possible. Decentralized production supported by a few key centralized services will help to convert the concept of sustainable livelihoods for all from rhetoric to reality. The *charkha* was the most elegant and effective symbol Gandhiji used to stress the need to convert cotton into cloth at the local and even household level, rather than sending cotton abroad (as was happening in the 1930s) and importing textiles. To the slogan 'export or perish' the Gandhian answer will be 'import less and live', since the present pattern of exports based on an unsustainable exploitation of environmental capital stocks would result in 'export and perish'.

Finally, the most serious of present-day ills is the spread of violence. Mini conflicts are replacing mega conflicts. Failure to integrate the principles of equity and ethics in the present developmental paradigm is a major reason for the spread of a culture of violence. Economic structural adjustment dictated by international financial institutions enhances the deprivation and misery of the poor. These adverse effects are being addressed through recipes such as structural adjustment with a human face and safety nets for the poor. Gandhiji considered economic equality an essential condition for non-violent independence. He once mentioned that a technological society has two choices. First, it can wait until catastrophic failures expose systemic deficiencies, distortion and self-deceptions (as is happening now). Alternatively, a culture can provide social checks and balances to correct for systemic distortion prior to catastrophic failures. The alternative approach involves adopting *antyyodaya* (attention to the poorest person) as a means to achieving *sarvodaya* (well-being of all). It also involves gender equity, with women being accorded the same status and attention as men in all spheres of human development. Thus, the structural adjustment we need now in the world is adjustment to sustainable life-styles and to the internalization of the principles of equity, both in gender and economic terms, in our daily life.

Khoshoo and the Tata Energy Research Institute have rendered great service to

contemporary development debate by bringing out this collection of Gandhian principles in the areas of environment and development. At least in vocabulary, the Gandhian approach is being recapitulated in the declarations of the recent UN Conferences. If a stripe review is undertaken of the declarations made at the Children's Summit in New York (1990), the UN Conference on Environment and Development, Rio de Janeiro (1992), the Conference on Human Rights, Vienna (1993), the Conference on Population and Development, Cairo (1994), the UN Social Summit, Copenhagen (1995) and the Fourth World Conference on Women to be held in Beijing in September 1995, we will find a striking resemblance between many of the statements contained in Khoshoo's book and those embodied in the international declarations. Converting the Gandhian development strategies and value systems from theory into practice is thus an idea whose time has come.

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Recent Trends in Aerobiology, Allergy and Immunology. A collection of Plenary Lectures and Contributory Articles. Ed. S. N. Agashe. Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi. 1994. 315 pp. Price. Rs 750.

Aerobiology is the study of airborne particles of biological origin, their sources, liberation, deposition and impact on agriculture/human health. The presence of these particles in the atmosphere is influenced by environmental and climatic conditions. The emphasis of aerobiology has shifted from one aspect to another. During the last few decades, aerobiology has assumed importance because of its role in diagnosis of allergic disorders. The role of pollen in allergic rhinitis was shown by Charles Blackley as early as 1873. Since then, a lot of work has gone in to show the relationship between aerobiology and allergology. Various systematic studies were conducted on the

presence of pollens and fungal spores in the atmosphere and their effect on human health. The book under review consists mainly of papers presented at the 5th International Aerobiology Conference held at Bangalore in August 1994. The 20 topics cover diverse areas, mainly of aerobiology related to allergy, except for a few topics dealing with the usefulness of aerobiology in forensic sciences, solar radiation, polymorphic light eruption, and paradox and placebo of medicine in the 21st century.

Brown in his article has brought out the historical relationship between aerobiology and allergy, while John Lacey in his article has emphasized the other aspects of aerobiology and given various priorities for aerobiological research. Other articles on pollen calendar and the environmental influences on the allergenicity of pollens give a lot of information in this area. A few articles on fungal spores, including alternaria, and their effect on human health and foods are worth reading. The pollen allergy in India has been dealt with in great detail. Also there is an interesting article on latex allergy which warns of the severe risk for workers in the manufacture of latex products. The house dust mite is a known source of allergen which has been shown to be a principal factor responsible for early morning asthmatic attacks. The book has two articles on this topic: one on the current studies of research on dust mite in India and the other on the use of mite allergens for immunotherapy. Until a few years ago, insects were not considered as major allergenic source. However, during the last few years insects as aeroallergens have been conclusively established and the review of this topic is very informative. The book also covers molecular characterization of allergens and the current studies in immunotherapy.

The wide range of fields covered in this volume illustrates the importance of aerobiology. However, the topics are not arranged with any specific aspect in mind. There is scope for improvement by reducing the typographical errors and improving the quality of paper and the production of photographs. Even though the references quoted by various authors are comprehensive, there are serious deficiencies concerning recently published literature. The inclusion of subject index and abbreviations used in the book could have added to the quality of the book.

In spite of all deficiencies the book gives a lot of current information on various aspects of aerobiology and is an important edition for the students working in this field. The book is not priced but I hope it will be within the reach of any Indian student and will be inspiring to the research workers in aerobiology.

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***In vitro* Culture and its Applications in Horticulture.** H. Vidale (coordinator). Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi. 1995. 231 pp. Price: Rs 360.

In vitro culture of economically important crop species is a key area of applied research in biotechnology. Micropropagation technology is the best example of direct applications of research outcome in different plant species. During the past decade many '*in vitro*' culture techniques have been scaled up to commercial level and now various commercial companies are producing a large number of propagules of selected rare clones of various plant species, among them ornamental and horticultural crops being the main candidates. In these species full-fledged technologies are standardized and are being commercially exploited. A lot of information is available in the form of research and review articles. There are many books available on the *in vitro* culture of ornamental, horticulture, woody perennials, and important crop species. The book under review is an addition to the voluminous literature already existing. The book is contributed by a team of teachers, researchers and practitioners of commercial tissue culture from Angers, France.

This book covers the various aspects of *in vitro* culture application, main methods of laboratory set-up, media preparation, the choice of explant, and physiological phenomena related to *in vitro* culture. The genetic aspect of tissue-culture-raised plants has also been considered