GUEST EDITORIAL

After Zero-growth?

No one who has studied the consequences of our species' history of unrestrained growth in terms of environmental degradation, resource depletion, pollution, and crowding, can avoid the conclusion that this deplorable drift must stop. Not only must zero or, better, negative population growth be achieved, but zero-growth in production and consumption — especially that involving use of nonrenewable resources — must also be achieved.

These conditions must come about if we are to continue indefinitely our tenancy on this planet. They will not come at once, desirable as that would be, but will probably be many years in coming. However the timing may be, now is not too soon to start thinking about the consequences of zero-growth and how to meet them.

Human Population Growth and Decline

It is a common observation that, when once a human organization stops growing, decline soon sets in. The motivation for maintaining the *status quo* does not seem to be strong enough to avoid a negative reaction. There is no reason to expect that this would be any less true of human society as a whole.

If it is indeed true that decline starts soon after growth stops, we are faced with a deadly dilemma. Continued growth has unacceptable consequences whereas its cessation results in stagnation and eventually starts us on a long downhill grade. An equally unacceptable reversion to primitive conditions or a period of 'dark ages' would be the most likely possibility at the end of the decline.

In no existing human culture, not even the Marxist ones, has it been possible to dictate motivation to the masses, or even to the intellectuals in the existing populations. Temporarily dominant majorities may be scared or stampeded into wars or other destructive activities by political manipulation, want, or greed; but such events, in the long run, have proven ephemeral because those induced motivations have not been sustainable. A motivation to sustain a steady-state society would most likely be even less sustainable.

A suggested long-term project to sustain interest and effort would be an attempt to upgrade and improve the quality of the human environment. This could only be carried out in the light of a far more complete understanding of the world ecocomplex than we now have.

As one who for many years has attempted to develop an understanding of how even the simplest geographical systems (as compared with such far simpler experimental ones as balanced aquaria, meal-worm colonies, or hay-infusions) work, I have met with more frustration than success. The more one learns, the more complexity becomes evident. Attempts to deal with this by a reductionist or analytical approach reveal more and more facts; but how these function together gets lost in the chaos of separate components. Few really controlling factors are found, and these turn out to be conditioned by other factors and combinations of factors; as a result, the mechanism comes to appear more and more complicated — often to the extent of being virtually unmanageable.

Holistic Approach Needed

In my desperation I have been forced to turn to the difficult holistic approach. Here, at a certain rather obvious level, namely that of whole organisms, a degree of understanding may be achieved. Behavioural patterns in the relationships of whole organisms are amenable to study and description. Attempts are made to understand these and their causes; but when these organisms and causes, and the relations between them, are examined critically, more complexity becomes evident. Attempts to relate these systems to each other, and to integrate them into communities or societies, present all manner of difficulties. Whole disciplines such as synecology, biogeography, sociobiology, human ecology, sociology, and human geography, have developed in attempts to understand the functioning of these 'superorganisms' and their relations to each other.

Success in these enterprises is at the same time limited by lack of critically important factual information, and at the same time we are drowned in an unprecedentedly enormous mass and flow of information. These problems seem to compound geometrically, notwithstanding the invention and incredible development of computers. These machines are facilities for reception, organization, storage, and retrieval, of masses of information, relieving the scientist of much of the time and labour of handling the flow of data. But such facilities, rather than lessening the complexity of ecocomplexes and their component ecosystems, serve to reveal more of their actual extent.

The way the situation now appears to me is that we have reached only the periphery of understanding the world superecocomplex in which we live. We have, however, so overused and degraded our world environment, without giving it the attentive care which it requires, that to bring it back to where it can support a vast human population will require far more understanding and ingenuity than we currently display, and more

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carefully selected and organized information than is available. And there seems no foreseeable limit to the extent of knowledge and comprehension that would be needed to make us able to approach an ideal in environmental quality for human beings.

Seek Long-term Objectives

My suggestion, therefore, is that while we may hopefully be approaching the required zero-growth situation, we will be promoting, as a replacement for the present growth and materialistic motivation of humanity, the ideal of attainment of higher and higher quality of the human environment, both natural and social. Hopefully, the total of intellectual effort that is now directed to extracting the most short-term material resources of our planet, can be redirected. The long-term amelioration of the environment of the inhabitants of this planet, both human and non-human, would provide, in all its complexity, a task that could, and indeed should, motivate humanity as money does at present. The daunting sociological and psychological problem is: how to instill this new motivation into the collective human mind and culture.*

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* Reminiscent of the last theme mentioned in our latest annual report as President of the Foundation for Environmental Conservation, published on pages 75–6 of this issue. — Ed.

EDITORIAL COMMENT

A Future for Amazonia

It was Richard Spruce, that masterful and self-sacrificing English explorer of the Amazon and the Andes, who in the 1850s wrote to a friend in London about the marvels of the tropical forest of the Amazon Valley.

> 'There were enormous trees, crowned with magnificent foliage, decked with fantastic parasites and hung over with lianas which varied in thickness from slender threads to huge python-like masses, were now round, now flattened, now knotted, and now twisted ... Intermixed with the trees and often equal to them in altitude grew noble palms; while other and far lovelier species of the same family, their ringed stems sometimes scarcely exceeding a finger's thickness but bearing plume-like fronds and pendulous bunches of black or red berries ... along with shrubs and arbuscles of many types, a bushy undergrowth, not usually very dense or difficult to penetrate ... The largest river in the world runs through the largest forest ... a forest which is practically unlimited, near three millions of square miles clad with trees and little else but trees ... I have lately been calculating the number of species that yet remain to be discovered in the great Amazonian forests ... there should still remain some 50,000 or even 80,000 species undiscovered.'

Much of this description, true, might fit many a tropical jungle; but it seems to be most appropriate indeed for the green cover of the vast Amazon Valley. And it seems, further, to be especially apt for the northwestern part of that great basin — that part which drew Spruce's rapt attention for seven long years.

The jungle of the Amazon still lures the naturalist. It is still a vast treasury of untouched botanical and zoological — not to mention ethnological — wealth. Having spent 18 years (13 of which constituted permanent residence) in botanical exploration of the north-west Amazon region, I am convinced that here, of all places on Earth, is a field crying out for many a lifetime of study.

Literature-polluting Travellers

Unfortunately in some ways it is not only the naturalist who is called to the Amazon. An ever-increasing stream of unprepared 'travellers', in search only of 'adventure', are penetrating the wilds of those parts of the world. The true scientist is perhaps of all people the least exclusory, not ignoring or tending to exclude other interests. He or she, of all men or women, would rejoice in having travellers wander hither and thither to educate the less fortunate stay-at-homes into the wonders of far-off and often hidden places. In the past century, there were travellers who laboured with this high intent; but today, such an individual is indeed a rarity. This century seems to have been deluged with articles and books by 'explorers' who, braving the 'terrors' of the untamed jungles, and escaping a hideous and novel death every few days, write their episodes in flashingly sensational terms — so far from the truth that one is almost won over to the need for strict censorship.