

REITH LECTURES 1969: Wilderness and Plenty

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Lecture 1: Man and Nature

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If I were asked to interpret briefly what I mean by ‘Wilderness and Plenty’ I’d reply: population, pollution, and the planet’s generosity, meaning the history of man and the effect he has had—and is having—on the economy of nature since he appeared on the planet. These are closely interconnected themes, like the pattern of a fabric, in all the lectures, and I propose to follow them through their intertwined complexity. Let’s begin with ourselves.

The most significant event in the organic history of the Earth in the last 100,000 years has been the rise in the world population of human beings in the past two centuries. Man spent so long getting a foothold, and even when he had reached the gregariousness that civilisation allowed, hazards were great. One might say that only then could the allegory of the Four Horsemen of the Apocalypse be conceived. We suddenly became aware that they rode, destroying the stability so newly gained. But the Earth seemed limitless—it is only 500 years or so since we discovered with certainty that the planet was globular and finite. The shock of that discovery seems to have been more religious and philosophical than biological, until the inexorable biological consequences occurred in the colonisation of the New World and the destruction of its indigenous but senile civilisations. The total world population of human beings was probably about 500 million at that time. It was less than 1,000 million by AD 1800, when the Industrial Revolution had just begun. But there are twice as many people on Earth now as there were when, as an inquiring youth, I first read *The Origin of Species*, Dean Inge’s essay on eugenics, and then Malthus on population. There are now about 40 people to every square mile of the Earth’s land surface—3.6 thousand million in all, according to the latest United Nations estimates. There will be nearly as many again by the year 2000.

When I was young, men still thought of going into the world’s wildernesses to carve out farms and ranches as a splendid thing to do, though my remembrance is that our aim was not the altruistic one of growing more food for the new millions, but that any food you grew would pay for the good life you had chosen for yourself. This, too, has passed away with the memory of empires. Now governments and United Nations agencies are feverishly carving up the remnants of nature’s wilderness wherever it is thought possible to grow more food or hold more water for the increasingly articulate hungry millions. The cumulative impact of man on the face of the Earth has been considerable already: think of the dry, eroded Mediterranean region compared with that of Homer’s heroes! Even he knew that his world was not so good as it was in the days before the Trojan War. The Sahara Desert is expanding all the time through the grazing practices of man, which are themselves influenced by the impingements of settled agriculture. Yet we go on doing what history clearly shows to be wrong: for example, cultivating hilly districts and poorer soils in Africa, and South America, and

South-East Asia. The biological impact is mounting and the ecological consequences are giving concern to more and more people.

Malthus Was Laughed Off

Malthus was writing when there were less than 1,000 million people on the globe, two-sevenths of what there are now. He thought in terms of food production, and one of his mistakes was that he did not conceive of the enormous advances that might be made in the methods of farming on both the physical and genetic fronts. Certainly the essays of Malthus instigated Darwin to gather his data on the theory of evolution by natural selection, but so far as human population was concerned, Malthus was politely laughed off, and sometimes not so politely. The population curve in England almost levelled out in the 1920s-30s and in Scotland it actually dipped: The Empire took a lot of emigrants, of course, but, as so many of the wiseacres explained to us, one should know that the birth rate dropped as the standard of living rose. This is just a blind truism.

The desire for such horizon-widening artefacts as motor-cars, wireless sets and labour-saving gadgetry made people attempt a measure of family planning. In the better-educated classes, the rise of feminism also helped to control the birth rate. Women wanted careers and a civilised life, as well as children. Men looked upon women as partners, and as people they liked living with, rather than simply treating them as housekeepers and brood mares. So, said the know-ails, we need not bother about undue growth of human population. Dean Inge got himself called the Gloomy Dean for having the awkward perspicacity to see that not only was there a wide differential in the birth rate in civilised societies between the professional and the labouring classes, but that there was a great undeveloped world out there where any notion of family limitation was either nonexistent or repugnant.

Then came the Second World War, which turned topsy-turvy so many well-entrenched ideas—more, really, than the First War did. There was a rise in the birth rate in civilised countries, significant enough to produce the harassing post-war bulges in the educational systems. But in the so-called underdeveloped and non-industrial countries there was not so much a rise in the birth rate as a fall in the death rate together with a steady birth rate.

Since, the growth of medical knowledge in the 19th century there has always been a strong missionary zeal to cope with disease in far countries, as well as to carry the Christian religion there. Death rates were already gently falling by the time the Second World War armies began to move into these places. Health measures were then of vital and immediate importance and some of these were not matters of personal attention but acts involving change in habitat. Malaria has always been a great killer, and once the vector was discovered by Sir Ronald Ross at the turn of the century it was inevitable that some substance would eventually be found which would be lethal to the mosquito and could be applied easily in malarial habitats. We all know the story of DDT and the way it enabled mankind to eliminate malaria in many countries. Ceylon is an excellent example and the results have been dramatic in a doubling of the population.

British Guiana in the Second World War gave an even more dramatic exhibition through the aerial spraying of DDT as a blanket operation. Infant mortality around 300 per 1,000 births was reduced to 67 and here, because malaria is also a debilitating disease, the birth rate rose. The standard of living in terms of calorie intake was about 1,500 per day when the campaign began. No wonder there was a long period of political unrest, because before people get too weak to grumble at starvation, they get angry. Wherever preventive medicine has had a chance to work in the tropics, there has been a rise in population beyond the increase in food production, and the immediate human situation has been an increase in squalor and stress. There has been far too little concomitant research on control of fertility.

It is observable that when shortages of subsistence occur, people tend to congregate. They hear that food can be got in the cities or at the ports, and that is where they drift. The *barrios* of Lima in Peru and *favelas* of Rio de Janeiro in Brazil are now notorious—abject aggregations of people without hope or social cohesion except that of a similar plight. Calcutta is even worse, for that is where the food ships come and where thousands are living their lives lodged on the pavements. We are constantly troubled by the growth of large cities such as London and New York, where shortage of housing is chronic, but, considered objectively, there is still some sense of organic growth, for the incomers mostly come for work in a society that needs labour. But these tropical cities are growing at a much faster rate on no perceivable organic principle. There is the same uncontrolled proliferation of cells as in cancer. As yet, we have not found the cure.

Nor, indeed, do we know how to consider our reactions to this vast increase in world population. Do we withhold medical care and let folk die? Surely not, but even now, in our full consciousness of the need for birth control, we do not know how to apply the means. Contraception is a fairly sophisticated procedure, applied by the individual, and when it is attempted on a mass scale, as in India, it barely scratches the surface of the problem.

The prospect seems inescapable that we face a future of continuing overpopulation and congestion. Civic effort seems incapable of dealing with the situation even as a holding operation. Right here in London, the recent Notting Hill Report disclosed a revolting condition of ‘overcrowding— shared rooms, shared houses, shared lavatories, shared squalor. The population of Britain is increasing, and as a general phenomenon this does not seem to be greatly heeded: only in the particular instances where local government is faced with problems of overcrowding it is not fitted to cope with is the press of people felt. We accept immigrant populations to provide labour which the opinion of economics dictates that we need. Do we expect them to roost on trees? Re-housing and urban renewal seem geared to a status quo and not to a curve of increase in numbers. More people live in conditions which, if they reflect, cannot be called home. Home, that lovely word, is understood by most races, even if you are a nomad in a *yurt*, but particularly by those folk who have a sense of place. *Oikos*, the Greeks called it, and we have made the root the basis of our words ‘ecology’ and ‘economics’.

Ecology and Economics: The Case for a Rapprochement

There are fashions in words, and 'ecology', which is much newer than 'economics', is being bandied about until people are growing sick of it before they know what it means—the science of the organism in relation to its whole environment, in relation to other organisms of different species, and to those of its own kind. These two fields, ecology and economics, at present so far apart in outlook, must some time come nearer together, and may that be soon. The economic factor looms so large that people in power use it as if it were some real power, one of a trinity with God and Satan. Folk and family are forgotten in some figment called gross national product expressed in dollars and pounds sterling. God and Satan have been losing out in the battle of ideas but the economic factor has gained such power as almost to dictate a truncated existence for the many. This is called the greatest good of the greatest number.

Of course, horizons have widened for almost everyone except the old, but I repeat: where there is overcrowding, the fuller life which education and growing knowledge make possible is truncated to an existence in which stress ceases to be the stimulus which is the natural and proper function of stress, and becomes an organic depressant of beauty, of the romantic spirit which is the pearl of our human heritage.

Man is probably the most adaptable animal on Earth, but he is still an animal to whom natural laws apply until his ingenuity manages to overcome them in part. Comparative anatomy and physiology are still valid studies and the ecologist extends them to behaviour and environment. What lemmings are supposed to do when they get too many has become almost apocryphal and the simile has been used often enough to prophesy courses of human behaviour by people who have no understanding of lemmings or their environment or if the organism-environment relation. Lemming are small rodents living in a fairly simple Arctic and sub-Arctic environment. As Charles Elton pointed out 40 years ago, fluctuation of populations among Arctic animals is more pronounced than in the temperate and tropical zones. Rodents display this cyclicism particularly and give us good subjects for investigation. An American ecologist, Paul Errington, trapped muskrats in Minnesota to pay for his university education and then, with characteristic brilliance, made the muskrat the central animal of his studies. He knew the creatures so intimately that, in the spirit of science, he could learn much more. He noted their capacity to live together and increase. The philoprogenitive 19th century would have been charmed. Then the idyll begins to fade, for the animals become more quarrelsome and show signs of stress. The inquiring ecologist finds gastroenteritic conditions prevalent in the population, and going still further, discovers hormonal imbalance. Here is evidence of excessive stress. Numbers decrease and the picture is of thin distribution. Then the cycle starts again.

Whether they are muskrats, lemmings or field voles, we see the animals following the pattern of Elton's and Errington's observations. The common factor is stress. Man is not a muskrat but he bears some comparison with one. Both species are gregarious but crowding brings about psychosomatic and social behavioural disorders. The quality of behavioural adaptability in man is immense, so that density of populations as such is no absolute criterion. There is a big difference, indeed, between high density and overcrowding. Good manners allow great density without stress; good sanitation and hygiene allow considerable density without a high incidence of gastroenteritis. Good

town planning allows a smooth flow of people. But what is all this worth if everyone has not a hole of his own?

The physical environment—that which we see, hear, feel, taste and smell—is a field in which the influences on human beings are more debatable because people are so different—their individual likes and dislikes, their culture and social backgrounds. Industrial societies would seem to need high density for economic convenience, and we know that industrialisation seems to be the most significant reducing factor in the birth rate. Here is paradox again. Most nations seek industrialisation for economic reasons. The environmental conditions sought for by industrial development are rarely achieved by the many. Despite the attendant fall in birth rate, population still increases beyond absorptive capacity because the death rate falls and life expectancy increases. Our traditionally allotted span of three score years and ten now seems too generous in an industrial welfare state. We should relieve so much stress on the productive age groups if we were out of the way at 60.

But few if any of us really wish to look upon our or any other society as an efficient conglomerate of production-consumption units. We seek the good life, and many of us at some time or other have had the illusion that there was once a golden age of man. The good life for a larger proportion of the population of any country is not an illusion but an ideal capable of being achieved. Indeed, we should never lose sight of it or be in any way content with the half-lives so many are compelled to lead.

We can admit that the environment we have inherited and which we are still fashioning can be so far improved that a higher density of population than that of the present will find the world a more satisfying place in which to live. But there can be no valid doubt that population increase and environmental pollution are the world's biggest problems today. We have—rightly, as I think—ceased to accept disease complacently as a natural check; we abhor infanticide of normal newborn babies, which must have been a considerable population check when female children were preferentially exposed. Sterilisation of men and women by choice is a growing practice in many developed and developing countries; active birth control is increasing; but there are dangers here, in that the less responsible sections of populations will beget an undue proportion of coming generations. There are fiscal possibilities, though taxes can be gathered only from those who have the wealth to pay them. Instead, we still have, in some developed countries, cash benefits for having large families. Education must have much to do, and that early in life, in persuading people to decide for themselves on the necessity for the limitation of numbers of children; civics and a reproductive ethic should be inculcated together, helped by government action based on the acceptance of such limitation rather than on vote-catching.

In few governments in the world are there any clear policies or directives. They recognise the cogency elsewhere but are frightened and expedient at home. What becomes particularly hurt some is when palings in a black African country are daubed with legends to the effect that birth-control propaganda is a white attempt at genocide of the black.

I see no early relief to the world's population explosion, but I think that active thinking and working on the preservation of the few untouched plant and animal

communities and their habitats—the positive sense in which I am using the word ‘wilderness’—and on the rehabilitation of the degraded environments in which so many live, is possible and immediately desirable. Derelict landscape is not wilderness. This is indeed a world problem, to be faced by the world as a whole—by the United Nations Organisation for preference. The economic factor is enormously powerful, setting firm against firm in cutting down production costs and caring little about disposal of wastes. Country is set against country in getting the world markets, so the materialist’s creed is that once more industry must not be handicapped by idealistic policies of pollution control. An African country has recently pointed out that the measures of control of pollution suggested to it as being desirable when it was beginning to industrialise would come better if the European countries were doing the same. We are doing something, but not nearly enough, even to save our face.

I would say, in all modesty, that ecology has its particular contribution to make to understanding the environment man has made for himself in the heavily populated areas of the Earth, and from that point methods could be devised towards conservation of that which is good and rehabilitation of that which is bad. I would think this nearer to being human ecology than aspects of those sciences which already carry their own good names. Sociology, though, would deal with those phenomena of social implosion—an expression which perhaps better describes the social consequences of what is commonly called the population explosion.

Even if populations in the developed countries were to remain steady, and gently to fall, there would still occur the tendency towards urbanisation. Living successfully and gracefully in towns is an art—civilisation by definition—and the in-corn from rural life has much to learn. This I found for myself when I went to live in New York after my island years and the later expansive comforts of an English country house.

I truly believe that there is a considerable need for medicine, ecology, architecture, landscape and town planning, and conservation, to combine in some fields of our changing world. Stress and psychosomatic diseases stem in part from environmental factors which the ecologist senses but cannot state in medical terms. The landscape- and town-planner should be combining ecology with his sense of order. I sometimes think architecture should be the first subject taught to a child, that he should be given bricks of good and progressive design, even if he does build them in impossible ways and then push them down. He might then be more positively intolerant when he grows up. Good architecture conveys a sense of well-being, and Hogarth’s delight in the serpentine line was well based. The sharply angular townscape we know so well, and the plethora of sheer bad design, offend the sensitive excruciatingly, but somewhere medicine and psychology could tell us that even the insensitive are being affected, are made less successful human beings.

Conservation has traditionally been concerned with natural resources, particularly the animate ones, and with the habitats of animal and plant communities, but this science of applied ecology must now logically include the human species as an organism to be conserved. This is no paradox, for we hold to the principle that children born healthy should live, and that as adults they should be able to express their potential for themselves and for all. Conservation is a synthesising applied social science crossing the boundaries of all branches of culture—not least the arts—in its observational study of communities.

From earliest times men have lived in communities: families, clans, villages, towns, cities. Today in Britain and the United States nearly three-quarters of the people have left the land to live in urban fashion, and technological change has far outstripped man's slow biological evolution. How this has come about, and the effect which it has had on the natural wilderness will be the main topic of my next lecture.