

## MAN PRESSURE

By COLIN BERTRAM

Those with the enthusiasm and zeal for fauna preservation and conservation even yet, I believe, remain inadequately aware of the enormity of the human tide which sets against them. This essay is intended to help towards a fuller perspective, biologically frightening though it is.

Whereas it is true that the minute calcareous-shelled marine planktonic organisms have had the greatest topographic influence on the earth's surface in the formation of chalk, mankind's overwhelming influence on his environment has so far been in the alteration of the world's vegetational cover, and in the decimation and extinction of other species, chiefly the larger vertebrates. What may come from his radioactive wastes, or purposes, is not for discussion here.

Why is it that *Homo sapiens* is so unprecedentedly destructive of other species? The answer is that quite apart from man's powers and potentialities, he is by far the most numerous of the larger animals. To name another species of vertebrate of comparable total numbers—at present 3,000 million—is not easy and is probably impossible except among the smaller marine fishes. No other species of world-wide terrestrial vertebrate has ever existed and been co-existent in comparable numbers—and, in addition, been large and therefore excessively demanding.

Is there any species of vertebrate of which it may truly be said that a significant proportion of all the individuals there have ever been are alive simultaneously? The answer is indubitably negative, with the sole exception of our own species. So great has been, and is, the recent multiplication of human kind that it is calculated that of all the individuals of the species that there have ever been since *H. sapiens* emerged, between 3 and 4 per cent are alive at this moment.<sup>1</sup>

Human multiplication, the population surge, is in process of explosion. The present 3,000 million are conservatively expected to reach 6,000 million within the present century. The average world-wide figure for increase is about 2 per cent per annum, a figure which itself increases annually, and which already in particular regions exceeds 3 per cent per annum—a doubling of local population in under twenty years.

The reasons for this human surge are not for discussion here.<sup>2</sup> A population crash for *H. sapiens*—perhaps through some virus mutation rather than hunger alone—will most certainly come unless the rate of increase can be checked. Having very substantially, by beneficent effort, greatly reduced mortality, the crash is inevitable at some stage *unless* we are equally successful in limiting human fertility.

Nuclear warfare may "solve" the species' excessive reproduction, but

<sup>1</sup> Of human scientists, those creatures of knowledge, power and potentiality for good or ill, 90 per cent of all those who have ever existed are calculated to be alive to-day.

<sup>2</sup> A convenient general summary is provided in *World Population and Resources*. Political and Economic Planning, London, 1955. This work satisfactorily covers not only food and other biological resources but mineral and energy resources in addition.

we all must strive to avoid it. Lesser warfare will not “solve” this problem. Two world wars killed between them perhaps 50 million people: that is now the world’s net increase of a mere 400 days. Crash and chaos can only be avoided, by means acceptable to people of goodwill, by the deliberate control of fertility. At what point—or at what human population level—this will be achieved remains to be seen. However, so far as we are concerned with the conservation of our heritage of fellow species, we must expect that some decades at the very least will elapse before there is even a significant deceleration of the human surge. In passing, it may be remarked, with sadness and surprise, that, in this great population surge, there are no discernible positive advantages<sup>1</sup> to anyone, while the disadvantages are so numerous yet so little realized in the present ocean of ignorance. Our population increase was never planned: it is a mere by-product of technology and beneficence. Fundamental antagonisms exist between quantity of human lives and the quality of life for the individual. They concern the whole range from the importance and dignity of the individual, through matters of freedom and human relationship, to crowd psychology and personal stress.

*H. sapiens*, in addition to being now world-wide<sup>2</sup> in distribution, is omnivorous with a strong predilection for animal flesh and products. When man succeeds in this it is called affluence, a state which is highly prized and much sought. The immediate result of course, of this deliberate seeking to change in any degree from a mainly vegetarian to a more largely animal diet, is that the individual “occupies” or requires more space. The use of livestock, as intermediaries between vegetation and the human stomach, adds a new link to the food chain with all the inherent losses. Thus, not only does humankind press progressively more heavily on the biological environment by reason of the enormous increase in the numbers of our species, but additionally because every effort is made to bring about dietary changes which inevitably result in the individual effectively occupying more space.

Further, since a large proportion<sup>3</sup> of mankind is at present underfed or undernourished, kind hearts and international zeal are at present seeking to improve the nutritional status of individuals world-wide. The Food and Agricultural Organization of the United Nations asserts, for example, that with population doubled by the end of the century, a fourfold increase in food production in Asia will be necessary. Further, the recommendation is and the effort will be made, enormously to increase the cattle population of the world in the hope of achieving for the many something of the nutritional affluence already accepted as normal by the Western world. Yet remember, that the end of the century is less than forty years ahead;

<sup>1</sup> These matters are conveniently set out by the present author in a chapter “What are People For?” in the symposium volume *The Humanist Frame*, edit. Sir Julian Huxley, 1961.

<sup>2</sup> Antarctica, the last continent to be colonized, now regularly has a few overwintering males, and male summer migrants are numerous. Female visitors are still very scarce. Conception is known to have occurred, but as yet no birth has been recorded in Antarctica.

<sup>3</sup> The exact proportion (whether one-third, one-half or two-thirds) is debatable and lacking in definition, and is irrelevant to the present discussion.

and A.D. 2000 is a point of mere verbal significance within a continuous process.

Not only does mankind thus progressively take more space on account of surging numbers and seeking nutritional affluence, but additionally requires ever-increasing areas of agricultural land to produce crops yielding textiles and tobacco, rubber, fibres and so on. Further, there are timber requirements which ravage the forests of the world, the hardwoods from the tropics and the softwoods from the temperate zones. The coniferous softwoods serve to produce those fantastic quantities of newsprint whose excessive use in affluent lands is far from admirable.

Good agricultural practice, with increasing yields from the same area of land through growing technical enterprise—manuring, weed and pest control,<sup>1</sup> genetic advance, etc.—is at least rational from the point of view of food production. But much environmental damage is not even that. Agricultural and pastoral practices which lead to gross soil erosion, the over-cutting of forests and the over-fishing of aquatic stocks, are all world-wide examples of irrational action. Over the years less is gained than would be available with lesser exploitation on a basis of sustained yield.

That is the picture and the prospect for our own species, so numerous and so destructive. Turn then to other species which share with us the earth. As a first example it is asserted that in Africa 90 per cent of all the large mammals, that incomparable fauna, have already gone within the present century. Yet Africa is still “backward” in its rate of human population increase compared with many parts of the world.

The world prospect for faunal conservation is dismal indeed on a numerical basis. There is nothing to cheer except the recent rise of minority understanding, effort and spirited endeavour through IUCN, the World Wildlife Fund and associated activities. Whether the rate of increase of benevolent and conservationist influence can remotely match the fast growing man-made danger and destruction is not here for prophecy. Optimism has no basis in fact: pessimism is useless: it is for us to strive now with all the zeal we can muster: our sons will see the result. Examples fill the pages of this journal of species already extinct in recent times as a result of human predation and competition and of the many species now in jeopardy.

All in all, the prospects for other large vertebrates, and for small ones, too—to say nothing at all of other animals and plant communities—could scarcely be worse than they are to-day in the face of overwhelming competition from human kind. The force of competition increases geometrically—each year the rate of increase itself increases—because that is what man’s numbers do.

Now as to ameliorative action by that minority which appreciates the loss in the quality of life for the individual man and woman when other species are extinguished. This minority realizes that increase in human numbers is the greatest hazard even to the maintenance of the present quality of life of all people, let alone its improvement which is the natural, if subconscious, goal of all men. Quite certainly, in wisdom, there must be

<sup>1</sup> The faunistic dangers of chemical control are at last becoming more widely recognized.

no reliance whatever on one method of preservation or conservation of other species, and plant and animal communities too. To assume that, in a complex situation, the favourable adjustment of a single factor will solve a problem is nearly always an erroneous judgment. Many methods must be tried even if each one of us has his own predilection as to which should have priority.

Preservation of a community of species by the formation of national parks and nature reserves, in Africa and elsewhere, may do much. But, to be realistic, the "erosion" of those special areas is all too easy and probable. The London green belt is diminished little by little by developers, with the sanction of the relevant Ministry; and the reserve in Africa suffers likewise by the pasturage of cattle. Where people grow rapidly in numbers, where food supplies need increase, where governments are "emergent", tribalism strong, and law enforcement feeble, there may reserves not long remain intact. Game reserves and forest reserves will go together. The realist will see not only Africa full of instances. Education in the value of the cropping of wild herbivores, and the glitter of the tourist trade, must both be pressed but may not be enough.

Conservation through rational exploitation may in some instances be the strongest form of protection. The Fur Seals of the Pribilof Islands and the Saiga antelopes of Siberia are fine examples within the sovereignty of single nations. Even the Fur Seals, however, because of their migrations, depend upon the backing of an international treaty, which might not, in all circumstances, be enforceable. Likewise, international treaties at present allow the rational exploitation of the Mackenzie river salmon and the halibut of the American Pacific coast. On the other hand, international treaties and commissions and an abundance of knowledge and scientific co-operation have failed alike to prevent irrational over-exploitation of the whales of the world's oceans and the fishes of the North Sea.

Preservation by domestication in an alien environment is far better than extinction in the natural habitat. Pere David's deer is a leading example. Okapi and Giraffe are free breeders in captivity and could thereby be preserved with effort in distant lands. The aviculturists in these matters are perhaps more advanced than those with their main interest in the mammals which so commonly require more space and money. All should be encouraged, just as the last individuals of the Arabian Oryx are now transported to Arizona in a desperate attempt to build a breeding herd in safety. Special limited enthusiasms likewise should be fostered and lead to efforts such as those of our Wildfowl and Pheasant Trusts.

Even the minority, the preservationists and conservationists, in my opinion, have as yet failed to see in full the awful vividness of the red light before them. Education is indeed essential everywhere, in fauna preservation,<sup>1</sup> but it can rarely be relied upon to be enough alone. Man pressure, with all its deleterious influence on the fauna and flora which grace our earthly home, will continue to increase geometrically until man's actual fertility is controlled to the extent that his mortality already is. The huge

<sup>1</sup> Crowding may now be such that even the enthusiasm of the cognoscenti must be checked: the Royal Society for the Protection of Birds has had some recent distressing examples.

present surge of population of our own species is a mere by-product of our own beneficent effort. We must and shall strive to avoid a "natural" population crash. If we succeed, for a few decades more without sufficient fertility control,<sup>1</sup> we lose inevitably and for ever most of the remaining larger mammals of the world, very many of the birds, the larger reptiles and so many more both great and small. The more the delay in fertility control for our own species the worse our prospects in every way, in the quality of life for the individual just as in the hopes for survival of other species. The good of man and beast in the end are one.

<sup>1</sup> The International Planned Parenthood Federation is the co-ordinating central pressure group. As yet Japan is the only country in which the change from high fertility to low (from thirty-four to seventeen per thousand of population per year) has been brought about in a short time by deliberate intention. India is one of the countries now in which really strenuous efforts are being made, under governmental leadership, to bring population growth under rational control. Some others strive but success is slow to come. Indubitably a sensible momentum is developing in these matters in many parts of the world, but fundamentally what matters is that the rate of change of attitude and practice shall match the ever-increasing need.