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ON THE PROBLEMS OF OUR PLANET

by
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McDOUGALL MEMORIAL LECTURE

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ON THE PROBLEMS OF OUR PLANET

The year 1969 will be remembered for a long time, at least as long as there are men to remember. It is the year of the successful landing on the moon, the latest episode in the great revolution that began at Hiroshima 24 years ago. As with the first atom bomb explosion, the repercussions of this exploit will possibly only be felt in delayed waves many years hence. Because what is important is the impact of these tremendous feats on the minds and hearts of men. For example, in this last episode there was a moment that will influence humanity in times to come more than any other of this great adventure. At the half-way point in their space journey the astronauts decided to share with us groundlings a sight which they themselves found wondrous and awesome. Through one of the capsule portholes we saw their ultimate destination, the moon, just as it had been known to the privileged few who had had access to telescopes, but much more mineral in colour, with the numberless pock marks on its pale surface, the sombre seas, the craters and the petrified traces of ancient volcanic eruptions. All too clearly a dead, silent, barren world. Then they shifted the camera to another window and regaled us with the sight of the bluish globe of our own earth, shimmering on its edges, its surface traced with the swirls of air currents and, peering out from among masses of clouds and undefinable turbulences, parts of continents, the parched brown of desert, the deep blue of the seas, the Arctic snows. The earth, though incompletely visible, either waning or waxing, was clearly alive. If, in fantasy, we were spacemen from another star, and were to see the earth for the first time, we would certainly not have to make many calculations to know that this globe enveloped in its many-layered atmosphere, and warmed just enough on all sides by the sun, is a harbour of life in a part of the universe that apparently contains no other. There would only remain to ask instead, with the ecologist Cole in a recent article of his, "Is there intelligent life on earth?"

Today, for the first time, we are embarked on the direct solution of global problems which, though in embryo, have long been present despite our not having perceived their nature or their magnitude. If there really is intelligent life on earth, now is the time to prove it. Because, for the first time, it would not be difficult to make people understand, however great their ignorance or their vanity, that we must guard the lonely spark that was lit here in a prodigy of cosmic chance and could be snuffed out just as easily.

Up to now, humanity has been consuming the mineral, vegetable and animal reserves of the planet with savage improvidence, perhaps in the unconscious conviction, against all the theoretical evidence to the contrary, that they are inexhaustible. Man has done nothing, and invented nothing that does not lead to sure destruction of natural resources, which may or may not be renewable, but are fatefully limited. It is only now, as Koestler says, that he is beginning to doubt his immortality as a species. Perhaps this is why we hear, day after day, the voices of the prophets of doom, of the cosmic cassandras who see in every sign the beginning of the inevitable catastrophe. They do mankind a disservice by inuring people to their sombre predictions instead of preparing the present generation to take a few

precautions that perhaps might suffice. With the habitual exaggeration of the world of the scientists and their eagerness to radicalize everything, they do not accept the possibility of salvation in the systematic application of intelligence and good will to the conflicts of our time, and they alternately deny the existence of those conflicts and declare the impossibility of doing anything to avert the catastrophe.. Of course it is difficult to think in moderate terms: the life of the individual is so short that he grows hard and heartless to the ills that may come to the fore beyond the expected span of his ephemeral existence.

Up to now there had been no opportunity to examine, with relevance, the general problems of mankind, starting with that of its survival. Heretofore, all problems have been tribal, national, of the class, the group. The issues of today are quite different. Can there be any political power capable of deciding upon the destruction of adversary nations and of polluting with nuclear fallout the air that others breathe. Can the headlong multiplication of the poorer, uneducated and helpless populations be allowed to set the stage for a crisis of incalculable proportions? Can the hunger that prevails among broad sectors of the earth's population be tolerated? Is there any possibility of producing, processing and distributing the food that will be needed by the population that the earth is expected to have in 10 years, in 20 years or by the end of the century? Is the destruction of the soil, the pollution of air and water to go on just for the sake of voracious industrialization? Is there the possibility of a sudden disruption of the ecological equilibrium? Are not the crowding, pollution and psychological tensions of urbanization seriously undermining the mental and physical health of substantial members - and perhaps the most intelligent segments of humanity? If we had to organize ourselves more - and we will very probably have to - to shoulder the responsibilities imposed by the prospect of this imminent disaster, would the new anarchistic generation stand for it? With its tender and confused philosophy, is it in any condition to take over the reins of the government as the world requires?

It would be difficult to deny that these questions, which are asked at every turn,. contain the essence of the real problems of mankind in the nuclear age. There may be others, and very grave ones, too, that are missing from this brief list. Is any serious effort being made to tackle them and to propose solutions? In part, yes. But it has to be recognized that their technical nature excites the reactions of the contentious subspecies of the men of science who nowadays do not stand aloof from the passions and immediate concerns of the people, but, quite the contrary, are in many cases committed to philosophies, policies and religious concepts that make us wonder about their impartiality and, above all, about their wisdom. A charming sceptic of the end of the nineteenth century said that the sciences are exact, but scientists can err. Today we may add that they do so, all too frequently, at the behest of their party, their class, their church.

There is, for example, one issue that scientists can hardly discuss without loosing storms. This is the subject of population. It should be one of the easiest. The issue is simply to know whether we can stand, and to what point we can stand, the pressure of a growing population on earth. But a naïve newcomer to this battleground finds that every position has been taken and that the battle has been joined - low and behold - between Malthus and Marx. Their disciples argue furiously and absorb themselves in the innocent but atavistic pursuit of flogging dead horses, in the words of the author of The Ghost in the Machine. There is not yet any reason to believe that the current projections on the growth of the world's population are essentially in error. Thus, it is true that the thousand millions of inhabitants that there were before the first discoveries of Pasteur, whose numbers had been laboriously built up from the first year of our era, when there were not more than 250 million souls to be saved by the sacrifice of Christ, multiplied to 2 000 million in 1925 and 3 000 million in 1965. According to the most reliable figures for

1969, the world has apparently grown - in barely four years - to 3 551 million and according to two United Nations projections may reach 7 500 million or, more conservatively, 6 130 million by the year 2 000. What is in store for us thereafter is an exponential curve rising almost vertically, which has the population doubling again to 14 000 million human beings within 35 years after the turn of the third millennium. No such figures were even imagined by those who, like Malthus at the close of the eighteenth century or like Marx at mid-nineteenth century, expounded their dogmatic theses on the inevitable insufficiency of food for the growing numbers of our species, or on the ability of the social revolution to cope with this difficulty. Old Malthus, ''the priest'' as Marx disdainfully called him, was ignominiously dealt with by the new revolutionary, and the charges of falsehood and plagiarism that he levelled against Malthus were another instance of indulging in the flogging of a dead horse. But none of this is pertinent to what is happening now. It is only in our day that we have started to have any genuine science of demography. And it is a guarded, cautious, almost timid science, which records statistical data but refuses to draw conclusions. Meanwhile, the empiricists are anticipating that, if things continue as they are going and as they appear to be coming upon us, the problem of mankind is not one of food, although this problem will exist, as FAO well knows, but whether the species can withstand the speed of that growth without human dignity, decency and liberty being seriously compromised. And the other big question of our time is: what unity of purpose is there among all the members of our species to make the hard choices that a headlong growth of this kind will demand, and in what does it consist?

It is obvious from the known facts that the peoples that are reproducing at a heretofore unprecedented rate are the least developed, the poorest, the least educated and those among whom hunger is most severe and most dramatic in its effects. There is an explanation for this population growth and its speed, which, in historical terms, seems to have happened so suddenly. A comparison of the peoples in the Northern Hemisphere with those in the teeming belt that lies between the tropics of Cancer and Capricorn, shows clearly that the advent of the miracle drugs in this century has exerted almost fantastic effects on populations that had formerly been decimated by every disease and epidemic, whereas their impact was much less where these did not occur or had in some way been contained in their lethal effects. To cite what I know best, I will refer to the case of tropical Latin America, where the sulfa drugs and the antibiotics and the massive campaigns against yellow fever and malaria abruptly reduced the mortality figures, while people continued to procreate with the same specific anxiety over survival of earlier centuries, particularly in the countryside, where contraceptive methods were and still are unknown and a childless marriage has always been regarded as accursed. The situation is no different in other so-called ''backward'' regions of the globe - Asia, Africa, the islands of Oceania - which in the years that remain till the onset of the twenty-first century will have to absorb the largest proportion of this unprecedented increase. To be sure, the large untenanted areas of the planet are on some of these continents, and it is technically possible for many more people to live there, and even to support themselves with an agriculture whose productivity could be raised. Hence the fallacy of the argument of population density, which has been advanced at least as often as it has been said that there are inexhaustible food resources in marine plankton. Most of those who concern themselves with this problem for the first time as a new problem of humanity and not as that of Malthus or Marx, speak of the speed of growth, of the present rate of growth, and not of the optimum number of inhabitants per square kilometre that mankind should permit itself in the coming centuries. And they consequently judge that voluntary birth control should be promoted and the instruction and means provided for its free practice, as a flexible and transitory policy suited to the conditions of each region but not simply as an instrument for the furtherance of nationalistic political interests, eventual revolutions or religious dogmas.

In other words, there is no reason whatever why the major portion of mankind should be kept in ignorance on this essential problem of mankind until such time as hunger sparks an upheaval whose consequences can only be disastrous for any new order which it is intended to build on that monstrous expectation.

It is also true that population pressure is not always harmful and that so far it has been more beneficial for the development of countries than dangerous. On the whole, the underdeveloped countries have made notable progress since endemic diseases and plagues have been effectively controlled, and, therefore, since the onset of what has come to be called - and not as a joke - the population explosion. Initially, at the beginning of the growth curve in the last 20 or 30 years, the sudden population rise was a kind of galvanic shock for nations which chronic hunger had reduced to lethargy and whose only active function was heedless procreation. But this effect has passed. What we have today is something else: the cities that have suddenly been enlarged by migration from the countryside have become tragically overcrowded and shantytowns have grown up around them where, in nowise improved by the change of environment, the ex-''campesinos'' continue to live just as badly as, or worse than, they had for centuries as peasants under feudalism. There are not enough schools, or hospitals, or housing or physicians or even cemeteries to cope with this sudden influx. Nor is there employment, because the recent industrialization prefers another kind of worker, better trained to understand and handle the tools of an incipient mechanical culture. And, while work was growing scarcer in the countryside as a result of partial mechanization, in the city there was only disguised unemployment, prostitution, a sharing of jobs with the underworld, human misery. Some scientists who, like the former Chairman of the FAO Council, Dr. Josué de Castro, the brilliant author of the The Geography of Hunger, are led by what he calls ''the passion for truth'', to maintain that ''Hunger itself will be the guiding force, the mainspring of a social revolution that can gradually draw the world back from the abyss which threatens to swallow our civilization much more greedily than the oceans threaten to swallow our soils This faith'' he added ''makes me an optimist....'' This subversion provoked by hunger as the effective catalyst, as the necessary revulsive, is probably a legitimate hope of the revolutionaries for whom birth control is morally censurable. For those who would not want to witness the repugnant spectacle, which could leave the species permanently crippled, this is not a morally permissible prospect. And, in any case, those who speak of the genocide of unborn children, who have not even been conceived, should view the promotion of revolution brought on by global hunger with a large dose of scruples.

It is, again, true that effective birth control is at least unlikely as the suggestion that a formidable organization - such as had never before been achieved on the planet and is still unknown - could suddenly lead to the production of all the food necessary not only to mitigate the chronic hunger of two-thirds of mankind but to prevent the famines that could occur very soon as the population doubles and triples. On this point, as has been the case in everything relating to crops since the world began, nothing is certain. Indeed, grandiose hopes have been raised only to be dashed by ruthless disappointments. A few years ago we regarded the problem of feeding the world's population and of keeping pace with any growth as solved because extraordinary yields were being obtained from new strains of rice or maize. Just last May, your Director-General, Mr. Boerma, speaking at Miami, injected a note of sobriety into these extravagant hopes of those who seek the solution of our formidable global muddles in magic formulas, a new miracle drug, a perfect contraceptive, a fantastic and inexpensive protein. No. We have not solved anything yet. There are grounds for a cautious - a very cautious - partial optimism, mainly in the aspects relating to the application of technological know how. But to produce all the foods that our omnivorous species requires, not just to still its hunger but to supply the calories that it lacks today, and moreover to enable it to

grow continuously and unrestrainedly, would take a far too radical change in the economic, social, political and cultural conditions of the most deprived segments of humanity precisely the very ones that are procreating at an astonishing pace. In 1900 the population of the less developed regions was 67 percent of the total population of the world; in 1960 it had risen to 70 percent; in the year 2 000 these same regions will account for 80 percent of the world's population. Well, it may be that there was never in the history of our planet a majority as poverty-stricken and impotent, nor minorities as wealthy and as small, as those of our time. But there is more: apart from the numbers - which are overwhelming - as a quantitative measure of the problem, there is the conflict between that misery and the efforts of the most advanced, most sophisticated technology which would have to be applied to feed all people. Dr. J. George Harrar, one of those experts who really knows agriculture right in the field and in the underdeveloped world, from having spent many years as President of the Rockefeller Foundation trying to improve conditions in that world, writes in his book Strategy toward the Conquest of Hunger: It has frequently been said that the answer to food problems lies in the prompt and universal application of the scientific method to agricultural production. This standpoint is valid as a principle. As a practical possibility is has no validity. The fact is that if, by a series of miracles, everything that is known today in agricultural technology could be applied universally and economically to agricultural societies, the world's annual food supply could be expected to double and triple very soon. Unfortunately, there is no hope of any early and great progress toward that utopia. This is not for any lack of scientific knowledge, but because scientisfs cannot function independently of other sectors of society... Decisions on the proper role of men of science and their participation in national public programmes are usually taken, and ordinarily should be taken. by non-scientists in positions of power and influence. In the final analysis the successful application of science to food production generally depends on adequate communication among technicians, national and local leaders and the public, and above all on the understanding and acquiescence of the tiller of the soil. All the injections of modern science and of technology will not avail to increase production if they are not based on the understanding which leads to their acceptance, application and continuity. Even after the great successes achieved by the Rockefeller Foundation in Mexico, India and the Philippines with cereals, Dr. Harrar holds to the same opinion. And this, in other terms, is what Lenin must have thought and what the Communist leaders who have attempted sensational agricultural revolutions must have believed. The tiller of the soil, who has been tilling it by methods that have not changed since prehistoric times, will offer, either with the politicians or without them, stiff resistance to any attempt to disrupt his routine. Yet, unless it is disrupted,no technological progress will be made.

Nor, moreover, is the world problem of population versus food unrelated to that of the gradual devastation of our natural resources and the pollution of water and air by the wastes of industry or the mere agglomeration of large cities. These are all by-products of the speed of population growth and are of concern not only to nations of high fertility in the poorer parts of the world but also in the more industrialized and richer regions where the phenomena of accumulation and pollution most seriously jeopardize the equilibrium of the physical environment and where there are already alarming signs of psychological disturbance principally among the inhabitants of megalopolises. Of course, it can already be stated without much fear of contradiction that urbanization as we know it, the product of a process of unplanned and unanticipated agglomeration, is a disaster of major proportions, and that the large cities have proven failures. They were once the pride of our civilization and are speedily becoming its shame. They simply do not function. Their results are equally nefarious in the areas of greater wealth and more complex technology, on the eastern seaboard of the United States of America and in the ancient cities of Asia that have spread like cancers, without any apparent rhyme or reason, as unemployed land workers have taken refuge within their walls.

Nevertheless, the city made much sense and still does; it meets an intelligent purpose and, until recently offered one of the pleasantest places to live. What is at fault is certainly not the city itself, but the sudden transformation of the slow, traditional migration of countryfolk to the larger centres into clamorous flight, a true exodus with all the suffering and disorder of the historical dislocations of people precipitated by war, pestilence and famine. What is happening to the cities today was unforeseen, is unorganized, and follows no plan whatsoever. And if humanity continues to grow at the present rate or even if it holds to its present numbers, it may possibly succeed in feeding itself, but in the transition it will run into the most dreadful conflicts with one or another of its basic instinctive drives. Thus, everything indicates that what is in store is not less but more organization, not more but less freedom of individual action, not more private enterprise, but less. Population pressure is driving us inexorably toward more socialized, world-wide regimes in which many of the present fantasies and ridiculous whims of our consumer society will be eliminated. For it will not be possible to go on stimulating and courting our appetite for unessentials, our weakness for the useless and our passion for the superfluous while failing to take the rationing steps essential for survival, and not only in regard to food, obviously. Life is going to be far less attractive in many respects for the few including the world establishment that rules the rich and industrialized societies. But perhaps it will become less harsh and fuller and more equitable for the great masses of the earth.

Clearly, the transformation will be - indeed, must be - gradual and, since it depends primarily on our powers of persuasion to alter the most ingrained habits of the species, it will necessarily be slow. Radicals believe that there are only absolute and immediate alternatives. Moderates think this more complex society can be reached by several roads, without having to fight a decisive battle on each of them, that is, that it is possible to start to gradually reduce the birth rate now, when there no longer is any reason for the instinctive concern over saving the species from extinction and half of each stock no longer dies off prematurely, as used to happen in the past. It is now feasible to produce more food and to distribute it more equitably and efficiently through economic systems of world government that will bring food to the tables of the impoverished peoples and so banish malnutrition now rife among them and prevent famines. Nor are dietary habits themselves immune to change by a long-range educational process. It will be possible to stop the waste and corruption of the human environment that over-industrialization is causing everywhere. It will also be possible by persuading men of the barbarous futility of such a course, to prevent nations from continuing to ruin themselves in order to build up a nuclear threat, which, if carried out, would wipe out all trace of human life in entire regions and might irremediably contaminate the rest of the world. In other words, we can only hope there still is intelligent life on this planet. Certainly the two great political systems, the dogmas that vie for world hegemony, have made no serious progress toward the solution of these problems, which proves that it is no easy matter. Yet assuredly their very contradictions are engendering new political forms in the international and, above all, in the economic fields, which may be the synthesis in the dialectical process by which we discover better instruments with which to cope with our enormous predicaments. For out of the chaotic world we have created by aggregation and accumulation, there must emerge some form of organization to save it. Obviously, it is on earth that man must survive. We reject, almost indignantly and with some amusement, the proposition of selective emigration to other habitable spheres in the Universe, advanced by one of the architects of space exploration just as the first men reached the moon, to give us the tranquilizing reassurance that humanity is not yet about to perish.

But now an unforeseen obstacle arises. We have already said that the chaos of our world will have to be mastered by a greater complexity of organization for which, a considerable range of technological tools is, fortunately, already available, as has recently been

demonstrated. Such organization and the sheer number of our global problems call for very firm intellectual guidance and strong moral fiber, but the new generation, which had supposedly been well prepared to shoulder the job, is apparently not willing to do so. What the new generation hates is precisely the complexity, the organization, the technology and the orderliness that is now indispensable. Youth is hedonistic, flighty and capricious, and, of course, bravely rebellious in its passive disobedience; it is, moreover, consciously anarchistic. It has other virtues, but its superficiality seems incurable. It detests all forms of society, both actual and possible. This may not be a bad preparation for acceptance of the unpredictable future, but what they really detest is any form of coercion, from whatever source. Can such a generation, as at least its most active members appear to be, take in hand the present situation which has no single easy solution?

The organization that presumably will emerge will have to be international, and has already been set up in its broad outlines, though cautiously and deprived of any effective power by the refusal of the great nations to surrender any part of their sovereignty. The world powers will increasingly understand their incapacity to solve such problems, if only for the mistrust they inspire. And very soon they will follow the example of the rich in individual nations and consent to the replacement of their alms and paternalistic advice by the surrender of a portion of their income as a kind of general tax, the proceeds of which will be spent on the development of the world. And they will agree to their best people working in the international agencies for the benefit of the less developed areas, without compensation in political or economic subordination. The only alternative open to the international organization is its own dissolution - for it has become untenable that a minority of developed countries should continue to systematically dominate the vast majority of the poor nations - or else the acquisition from the few hands that now hold it of a power that has not been put to the best possible use. From their standpoint the great mistake of the victorious powers in the second world war was to set up democratic machinery accessible to all the nations of our globe and yet to expect that the most ancient power of all, that of numbers, of majorities, of irrepressible aspirations, would not arise there. Almost every revolution in history has been sparked by a concession of this kind, which, once given, is usually irrevocable.

Thus, who can say that I am not this minute addressing what will be the world food administration of the future - one of the most powerful agencies of all - that will apply technology to the solution of the oldest problem of man since his earliest, hesitating steps in pursuit of his elusive sources of animal protein?

I, of course, will not be there to see it. This process is, I believe, one difficult to arrest in the evolution of our species, which, according to Father Chardin, differs from others in that it knows that it knows, and I am optimistic that it will not be cut short by a nuclear tragedy that would render futile any lecture on the optimum number of inhabitants on the earth and the capacity of agriculture to support them.