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TONY GIBSON

FOOD PRODUCTION
and
POPULATION

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BY

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Foreword

For some twenty years now the question of malnutrition, of people not having enough to eat, has been a conscious pre-occupation of an increasing number of people. The work of men like Lord Boyd Orr in this country succeeded in affecting governmental policy during the flux created by war to such an extent that obvious malnutrition is now on the whole a rarity in Britain where previously it was commonplace.

With the problem relieved at home, it is natural that nutritionists (again headed by Lord Boyd Orr) should have turned to the food situation of the world at large. In America, the contrast between the plenty which is available to Americans and the stringent rations on which so much of the world exists, has also brought the question of famine into prominence and general discussion.

Then there are the agronomists who know and fear the phenomenon of soil erosion, the loss of fertility over large tracts of the world, including Africa, America and Russia.

With all these forces at work it is not surprising that the threat of world famine, and a sense of responsibility for the world's underfed—estimated by Ernest Bevin as 50 per cent. of the human population—should be very real to many thinking and practical people.

When one adds to all this the fact that the world's population is increasing by many millions each year, the threat of eventual famine becomes a major problem for immediate solution.

In this pamphlet, Tony Gibson has clarified the problem in the most drastic way. It is a task that urgently needed doing, for few serious practical problems have been in general approached in so trifling a manner by politicians and agronomists.

Food production is the most basic work that mankind engages in. But peasants and farmers wield little political influence and their work is carried out within an economic framework which limits their freedom of activity at every turn. They do not even have it in their power to decide when or if food production shall be increased. Many may wish to alleviate the world food shortage, but their immediate practical concern is how to earn enough from the land to keep themselves and their families and be able to plan a season or so ahead.

It is because of this pressing personal economic problem that governments always act by mere economic incentives. For example, when during the war, it was necessary to increase home production of food in Britain, the government decided that more land should be ploughed up, and to make this proportion feasible to farmers they offered a ploughing-up subsidy of £2 per acre turned over from grazing to arable farming. The farmer's only decision in the matter was an economic one.

It is plain that to try and solve so huge a problem as world hunger without the active predominance of the world's farmers and peasants is simply ridiculous. Yet that is what is attempted to-day when governments, industrialists and theoretical agronomists make these decisions.

Tony Gibson shows how essential the work of the individual cultivator is; how existing farming has developed through his initiative and foresight and hard work, and how these are the qualities which must be drawn upon if an effective increase in world food production is to be secured. His pamphlet lights the way through the morass of compulsion and sterile controversy that confuses the ordinary townsman when he tries to approach this most pressing problem.

J.H.

FOOD PRODUCTION AND POPULATION

It is now the fashion to write books and articles prophesying doom for the human race because our planet lacks the possible agricultural resources to feed the increasing population. I am no prophet and cannot foretell whether this hungry doom will befall my species, but if it does it will not be for the reasons propounded by the enthusiastic Jeremiahs. If such civilisation as we have crashes in ruins, it will not be for lack of agricultural resources or the will to utilise them, but for reasons which are more complex in character.

Let me hasten to disassociate myself from the anti-Malthusian. I have no quarrel at all with Malthus' unanswerable mathematics. A conservative estimate allowing four offspring to every mated pair leads us to calculate that a single pair of humans will produce a population of 2 million million ancestors in forty generations if the human reproductive process suffers no check from disease, war, etc. Now, if mankind order their social relations properly, which is all that we anarchists advocate, they will certainly have the power to reduce these disastrous checks to a minimum. What then—do we complacently approach to a time when the Earth is chock-a-block with human beings and we have to colonise the other planets? The limitation of breeding by contraceptive methods is the obvious solution, and if we do reach a condition of social harmony which makes the conquest of death by disease and violence a practical possibility, we will also have the opportunity to render rational contraception a world-wide practice.

The problem, however, is what to do in this interim period. The population of the Earth is about 2,500 million people—and it appears to be rapidly increasing. There are about 33,000 million acres of the Earth's land surface, but according to most authorities only a small part of this is suitable for cultivation. The United States Department of Agriculture gives the figure of 4,000 million acres; other authorities place it as low as 2,500 million acres of cultivable land. So it appears that we have between 1 and 2 acres of land per head to support us at present, and if anyone has old-fashioned ideas as to the sufficiency of "an acre and a cow", let us remember that Lord Boyd Orr declares that $2\frac{1}{2}$ acres per head are requisite for a proper diet. So, according to the statisticians, the world population has *already* passed the limit at which human life can be properly supported, and every year brings an increase of population to help us on the way to world-wide famine. Again, other statisticians point out that the cultivable surface of the Earth is actually shrinking at an alarming rate, due to soil erosion, and that all we can hope to do is to fight a stiff losing battle against the impoverishment of our resources.

Such a world picture of the plight of *homo sapiens* contributes somewhat to the hysteria and short-term policies of the ruling States of the world to-day. It does not seem such a lunatic action to burn foodstuffs to stabilise a market, or to massacre a million to simplify the science of government, if mankind is probably doomed anyway, and that the best hope lies in devastating half the planet in order that one power block may seize what remains. I am not suggesting that the adoption of a war policy by the great States is entirely due to a conscious fear of world over-

population in relation to food supplies, but this fear is undoubtedly operative both in ruling circles and among those whom they rule.

Before joining in the general hysterical stampede into totalitarianism and accepting the necessity for global war, let us examine rather closely the fundamental premises of the prophets of doom. Is there, in fact, even at this present time with our present knowledge of agriculture and our present potential resources an absolutely fixed relationship between acreage and population? It occurs to me that many of the popularisers of the famine-scare are forgetful, if not entirely unaware, of certain elementary facts about food—where it comes from, what its nature is, and why we need it—and in their too hasty judgment they make economic and political assumptions which are unwarranted. At the risk of labouring the point, therefore, I propose to go over some elementary scientific facts which are perhaps not as widely appreciated in their proper significance as they might be.

All foodstuffs are primarily dependent on the sunlight which floods so abundantly on our planet. Green plants trap the energy which comes from the sun and by its agency synthesise foodstuffs from certain gasses of the air, water and chemicals of the soil. The energy supplied by the sun is incorporated into the foodstuffs and the need which we humans and other animals have for food is primarily to get at this store of energy and utilise it for our own life processes. When we have done with the food we return (by excretion or by our death and decay) precisely the gases, water and chemicals which the green plants require to synthesise more foodstuffs. So plant life and animal life play an endless game of exchange with the same elements, the whole motive force for the game coming from the energy received from sunlight. There is no "using-up" of the elements of the planet. The nitrogen atoms which were in a pharaoh's beard may very well be in my body now; carbon atoms that rose up in the smoke of burning Rome may well be in the apple that now lies before me. As far as the *quantities* of the elements necessary for animal and vegetable life on this planet, a millionfold increase in living matter would reduce the world resources very little. The one limiting factor to an almost infinite reproduction of life (besides the obvious one of living space) is the amount of energy conveyed by sunlight, which we cannot increase. But such is the enormous difference between the number of calories per year which the Earth actually receives from the Sun and the number of calories which are actually trapped by plant life and made available in foodstuffs in a year, that the problem will remain academic for a long time to come.

This crude picture of plant and animal life playing their endless game of rotating elements in order to utilise the sun's energy, is not the whole story, but it is basic to the understanding of the origin, purpose and eventual destination of foodstuffs. Plants need more than sunlight, aerial gases, water and chemical salts to maintain healthy growth; they need a complex balance of living organisms in the soil and certain climatic conditions suited to the different plant species. Wheat will not grow in a marsh, nor rice in a sandy plain. But Man for unrecorded centuries has been an interfering creature altering the ecology of plant life wherever he has scratched a living. Let there be no mistake about this; farming is an essentially *unnatural* occupation. Its object is to interfere with the balance of nature and to make certain plants grow in situations and under climatic conditions quite foreign to them. The townsman looking at well-cultivated farmland thinks of it as something "natural",

something as inevitable to the landscape as bristles to his own chin. But in reality he is looking at something as artificial and man-determined as a motor car factory. He is seeing cross-species of American potatoes growing where bog plants would naturally grow, root vegetables from Mesopotamia growing where native gorse would flourish, and artificially produced species of cereals growing on the ancient site of woodlands. A farmer has only to neglect his constant task of interference and the natural ecology will soon reassert itself and oust his artificial crops. There is so much mysticism and crass ignorance mixed up in the general concept of farming and food production that it is difficult to get people to approach the problem rationally. Man exists on this planet by his ability to oppose, to alter the forces which are loosely referred to as Nature, but there is a current superstitious dread of admitting that our means of life are "unnatural"; *i.e.*, instead of largely adapting ourselves to the general conditions prevailing on this planet, we depend upon adapting the planet to suit ourselves.

I have referred to the fact that of the 33,000 million acres land surface of the Earth only 4,000 million acres are alleged to be cultivable: this pronouncement by the United States Department of Agriculture simply means that the conquest of the ecology of one-eighth of the land surface has been achieved, and the remaining seven-eighths has an ecology which, *in the present state of things*, is too difficult to master. A similar pronouncement may well have been made about England by the Doomsday surveyors of A.D. 1086, but since that time a considerable amount of the ecology of England has been altered by the draining of swamps, clearing of forests, dyking of tidal areas, and the introduction and breeding of new varieties of plants which now take the place of the old native flora. Our enquiry must therefore lead us to a consideration of *the present state of things* in which seven-eighths of the land of this planet is unproductive of food, although most of it receives the essential energy from the sun just as the fruitful one-eighth does.

I am not going to begin by dealing with the Sahara desert or the Himalaya mountains or the equatorial forests of South America, but with a country which I know personally and which, it is alleged, cannot feed half its population. I refer to Britain. Passing Northwards from Carlisle, I noted the barrenness of the hills; apart from magnificent crops of bracken, heather, reeds and scant rough grass, these thousands of acres grow nothing at all, except where the Forestry Commission has caused a few stands of conifers to be planted. Occasionally, a single cottage stands on a bare hillside and in its little garden grow vegetables. If anyone points out that the garden is part of the hillside and asks why vegetables do not cover the whole hillside the question appears naïve and ridiculous. Vegetables grow in the garden because care and patient labour is applied to the soil there; vegetables *could* after a time be grown on the hillside by the application of sufficient labour to plant wind-breaks, level terraces and generally "work up" the soil to take on a new ecology, but the price of such labour would be prohibitive. The cash return would not pay any land-owner.

So we arrive at the plain fact that the barrier to growing food on certain land is not one of biological impossibility but of economic impossibility, *within the framework of things as they are*. I am not impressed by the technical objections to bringing poor, barren land into cultivation; we spend the greater part of the wealth of the community in doing far, far more technically difficult things than that. The

amount of labour, skill and ingenuity spent on such industries as armaments, plastics, electronics and atom fission make the problems of overcoming difficulties in crop growing child's play by comparison. But our economic system is so taken for granted by Socialists and Tories alike that even the threat of world starvation cannot make them think in other terms. Such inanities as the following are produced by any attempt to consider increased food production at the expense of the economic system.

"It is true that there are people who refuse to accept Malthus . . . they are quite convinced that there are still huge tracts of land literally (*sic*) shrieking to be cultivated, and only the crass selfishness of the 'workers' prevents these lands from providing teeming millions with the highest possible standard of living. Alternatively, the fault is due to the 'capitalist class' (always unnamed) who deliberately refuse to allow immense quantities of food to be cultivated, who are always ready to destroy millions of tons of food 'to keep the prices up', and who, no doubt, eat huge quantities of food themselves which could be better distributed among the 'workers'."

This extract is from a review by A. Cutner on *Population Trends and the World's Biological Resources*, by Dr. G. C. L. Bertram. Mr. Cutner further confuses the issue by assuming that those who try to point out the relevance of the economic system to the non-cultivation of land, are "anti-Malthusians", whereas Malthus' thesis is not in fact questioned at all.

Where then does the key lie which will unlock the economic bar to land development and food production? It is useless to expect to find a solution from State enterprise in this direction, for the State cannot act otherwise than according to its own nature. In this country it is committed to the policy of developing industrial interests (nationalised or privately owned) and in order to sell the products of industrial production foodstuffs produced many thousands of miles away must be imported—and this, of course, gives a boost to the shipping industry, the coal industry and the steel industry. To grow all the food we require here would create a disastrous short circuit, and industry would suffer. I do not believe this to be a clearly thought out plan manipulated by Machiavellian schemers, but like so much else it is the inevitable result of a number of conflicting tendencies which make up the balance of the *status quo*. It is unrealistic to expect the State to have a "change of heart" and go in for production for use on a rational basis; for one thing, the State is an institution and not an individual and therefore has no heart or mind to change.

Progress in the direction of a greater measure of State control and land nationalisation offers no solution to the problems of food production. The late lamented Ground Nuts Scheme in West Africa on which many millions of pounds were wasted stands as a monument to State enterprise in food production. In Russia, 14 years after the Bolsheviks had seized the power of the State their efforts at stimulating food production by bureaucratic control of the land resulted in a famine of fantastic proportions. The famine of 1932-33 stands out in Russian history as a most unnecessary catastrophe brought about by political meddling.

Recent reports from Yugoslavia show that there has been some withdrawal from the earlier policy of State interference with the management and control of agriculture.

In actual fact the chief agent of stable food production all over the world has

always been the small peasant cultivator. Although peasants are often backward and ill-equipped in their methods of farming, their deficiencies are due less to their own innate incompetence than to the drain on their resources by the exactions of landlords, tax-collectors, brigands, bourgeois exploiters and other human parasites who drain away the surplus which should naturally go into the improvement of the land. The peasant works like the humble but essential earthworm, that churns up a small quantity of soil every year, doing it very thoroughly, dragging the humus down into the earth, aerating it, draining it, and by his vast and greedy numbers and his tireless activity leaves no inch of it untouched. For the soil is a most curious medium: apart from its mineral constituents of sand, clay, salts and the organic humus, there are a host of living agents both in it and on it which are vitally necessary to plant growth—bacteria, protozoa, fungi, worms, insects. All are agents who must work together to produce a particular ecology, and when that ecology is one of food crops, man himself becomes one of the animal agents. I have described farming as an essentially "unnatural" process; by this I do not mean that all that is necessary is for the chemist and the tractor-driver to combine and try to force whatever crops they please out of the land. This method has been tried and produced barren deserts. Farming is "unnatural" in that its aim is to create a totally new ecology, but a stable and healthy ecology of food-bearing plants, and this can be achieved only by methods more subtle than those of the chemical land-rapist.

Again, it is useless to achieve high yields of crops (and thus establish statistical records) unless the food itself is of adequate *quality*. Vegetable produce which is apparently sound and healthy may yet lack the proper factors which make it give proper nourishment, and animals (ourselves included) which are fed on poor-quality trash, not only degenerate in health themselves, but even give dung which lacks the proper quality of stimulating plant life to healthy growth. Thus, though the sun shine never so brightly, and water and chemicals are plenty in abundance, the wheel of life may run down if abused by ignorant business men or politicians who think only in terms of tonnages of food to be sold or doled out as rations.

In considering the human factor in land cultivation we come up against the stumbling-block of those who regard the peasant with a sort of mysticism, and revere even his stupidities and unscientific methods of farming which are the outcome of poverty and his not unnatural mistrust of outsiders. All I am pointing out is that only when the actual cultivators of the soil are given access to the great wealth, technical skill and scientific knowledge that are now squandered on socially useless projects, the problem of producing food from the untapped seven-eighths of the land surface of the globe will begin to be solved. I use the term "given access" advisedly, for if land-cultivators simply have forced on them by decree certain techniques, rule-of-thumb methods and short-term policies, much improvement can hardly be expected. Only when men have a real control over their own work will they be able to take advantage of the collective wisdom and wealth of the community to the general advantage of the community. I cannot see this coming about through political means; what signs of hope there are of sanity in food production at this present time are to be found in a-political bodies such as the Soil Association and in unofficial groups of farmers, market gardeners and biologists who attack their problems directly. In the last analysis, the preconditions for solving the problem of feeding the population will be arrived at only through a world-wide social revolution

destroying the power-States, which are to-day limiting and destroying the world's resources. This solution does not appeal to many people in this country at the moment, for they are as yet unconscious of its relevance to their own work, and mistakenly regard it as yet another "political" idea—and one of the most extreme variety. Yet there is no doubt that recognition of the validity of the anarchist case is growing.

I cannot leave this subject without a final tribute to *homo sapiens*, without whom the continuation of terrestrial life on this planet will hardly be possible in future ages. We discussed how plants and animals played a round game with certain chemical elements, taking their motive power from sunlight. Water and aerial gases will always be available, but not so with the mineral salts. Gradually, very, very gradually, they are being washed out of the land continents and drained away into the sea. This is an inevitable process which has in the past been compensated for by the rise of continents out of the sea by volcanic action, but as the crust of the earth cools and stabilises, this will no longer happen. Save for *homo sapiens* the continents would become too depleted of mineral salts to support terrestrial life, except around the borders of the sea. We are the only animals (except for a few sea-birds) who rescue the mineral wealth from the sea and spread it on the land again by our fishing activities and by the rarely practised art of manuring fields with seaweed. I mention this not out of mere academic interest or out of concern for terrestrial life a billion years hence, but to point out that available acreages of *land* are not the only source of food. The vast wealth of the sea is hardly touched at present; the sea weeds that grow in such abundance in some areas provide an almost inexhaustible supply of vegetable humus, and the plankton on which the whales feed so leisurely may yet prove a far greater food source than the fish caught by trawlers—and nowadays not infrequently thrown back into the sea.

I fear that the above facts and my interpretation of them will hardly calm the Malthusians, who will excitedly point out that the Earth's population is growing like a snowball rushing down hill, and that only State-administered birth control will prevent a terrible famine. Unfortunately, the States of the world are only too eager to take advantage of the teeming reproductivity of their own subjects to ensure a good supply of cannon fodder. Why kill off the spermatozoa when in 17 years some of their number can contribute to the war machine? But the Malthusian case can best be met by assuring the conditions in which people will be able to limit their fecundity by rational contraception. When the people are herded into the slums of a big city or the grinding poverty of an exploited village, it is difficult for them to apply contraception properly. Anyone who has himself experienced such a life even for a short time will understand how in the dull grind of getting a living, of satisfying one's appetites under adverse circumstances, a hopeless apathetic state of mind is engendered and the idea of cautiously limiting fecundity becomes as ridiculous as the idea of a daily bath. People will only adopt contraception—effectively—when they have a certain decent standard of life. By this I do not imply anything connected with radios, leather shoes, canned goods or mechanised transport, but merely a life in which work is not an enforced drudgery, and leisure something to be enjoyed.

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