

The

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THE FALL OF THE ROMAN EMPIRE

A Social & Ecological Interpretation

by Edward Goldsmith



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This month's Cover: The Neroniani Aqueducts. Detail from an engraving by Piranesi.

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Editor: Edward Goldsmith. Assistant Editor: Ruth Lumley-Smith.

Editorial Group: Michael Allaby, Robert Allen, Peter Bunyard.

Associate Editors: Jimoh Omo-Fadaka, Brian Johnson, Andrew MacKillop, Lawrence Hills, John Davoll, Richard Willson, Graham Searle, John Papworth, Robert Waller, John Milton (U.S.A.), Peter Freeman (U.S.A.).

All communications should be sent to: The Ecologist, 73 Molesworth Street, Wadebridge, Cornwall PL27 7DS, England.
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1970

On the occasion of The Ecologist's fifth birthday we offer readers an extra big issue with contributions from the team who launched it and the Associate editors who have supported it and written for it in those five difficult and exciting years. Changes are as inevitable in a periodical as they are in any other field. When The Ecologist first reached a surprised and tentative readership almost all of what it said was little known and even less understood. Today the national press, T.V., and radio discuss and report extensively on the environment; problems of resource shortage, pollution and world famine are recognised. Excellent magazines about self-sufficiency, alternative technology and conservation proliferate. Our role now must be to explore ways of creating a new life-style for the post-industrial age in which people will learn to live in harmony with the natural world, enhancing it instead of destroying it.

We thank those who have supported us since the beginning and welcome all who have joined us since.

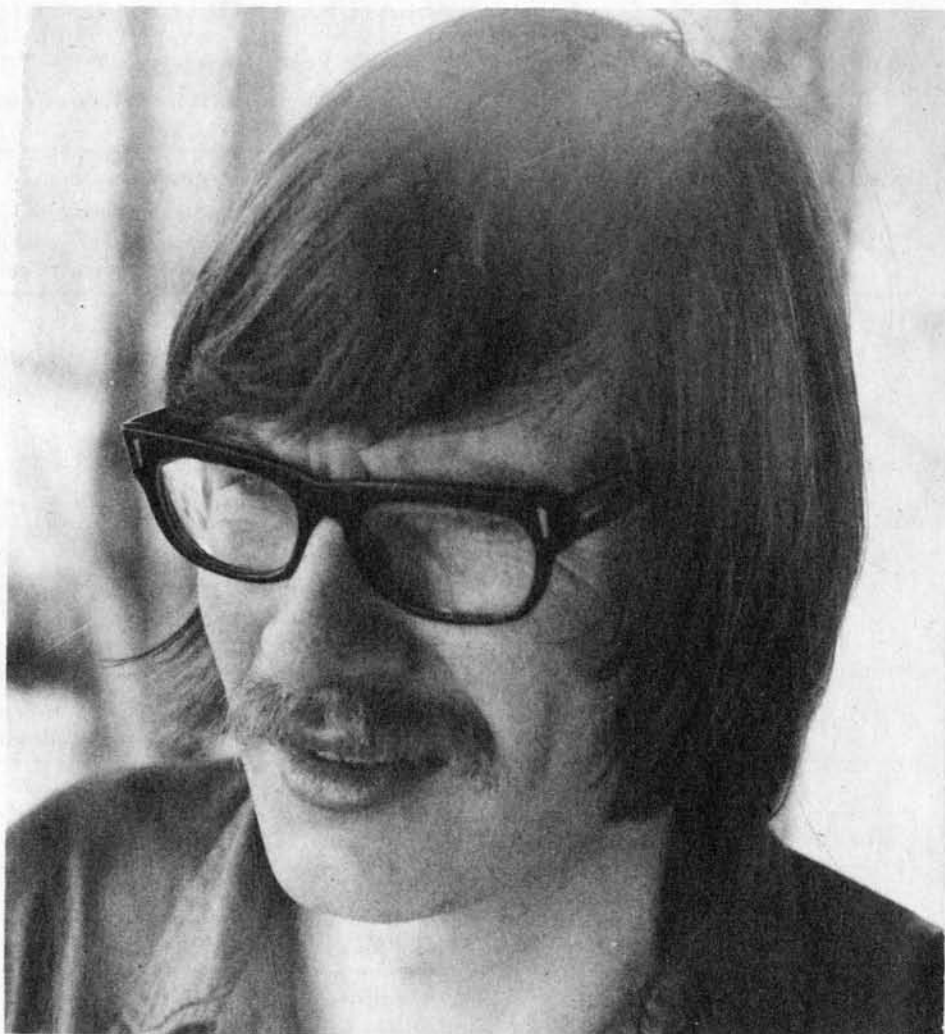
JULY

1975



Editorial

The City Is Dead



Associate Editor, Robert Allen is now working for IUCN (International Union for Conservation of Nature and Natural Resources) in Switzerland.

The compulsory exodus of the citizens of Phnom Penh, two million of them in about as many days, is arguably the most significant event since Hiroshima and certainly the most instructive — not least for the almost total incomprehension with which it has been greeted by the rest of the world. Non-Cambodians have glimpsed a rural revolution, and they are appalled.

Since its foundation five years ago, the *Ecologist* has advocated the revitalization of the rural community. In the December 1970 issue, for example, Edward Gold-

smith ("The Stable Society — Can We Achieve It?") argued that the only society able to make its members happy, and endure is one composed of small self-regulating communities clearly linked to the rest of nature. This argument was expanded in *Blueprint for Survival's* call for decentralization, and has continued to be a constant preoccupation of the magazine's staff and associates.

Cambodia's abandonment of the urban economy is thus of particular interest to us, and the extent to which the meagre information emerging from Cambodia is distorted

by the bewilderment and hostility of the press is especially frustrating. We are fortunate, then, that at least two outstanding journalists — Sydney Schanberg of the New York *Times* and Jon Swain of the London *Sunday Times* — remained to describe the first days of Cambodia's ruralization with honesty and compassion. Without their reports, a balanced appraisal of the fate of Phnom Penh would have been difficult if not impossible.

What both men witnessed and lived through, horrified them. "In five years of war", wrote Swain, "this is the greatest caravan of human misery I have seen. The Khmer Rouge must know that few of the 20,000 wounded will survive. One can only conclude they have no humanitarian instincts. The entire city is being emptied of its people: the old, the sick, the infirm, the hungry, the orphans, without exception". Families were split: French husbands allowed to leave Cambodia; Cambodian wives and children sent on the long trek into the country. Patients were forced out of hospitals: people who had just undergone serious operations, people on drip-feed, people quite unable to walk on a journey without transport, people who without question died.

Phnom Penh was not the only place to be evacuated. Virtually every town that resisted the "Communists" was emptied into the countryside — an estimated 3-4 million people in all, half Cambodia's total population (7 million). It is a tribute to the professionalism of Swain and Schanberg that they are able to present fairly the logic of this unprecedented dispersal. Before the Khmer Rouge's victory, Cambodia was dominated by the cities and towns and by the elite and merchants living in them. Now, Swain tells us, "the Khmer Rouge are abandoning everything connected with the defeated regime. They have no time for cities, which in their eyes are parasites living off the sweat of the peasants. This is why they evacuated Phnom Penh. Salvation lies in the fields and it is to them that they have sent the city's people. It is a sweeping, unprecedented reform, brutal in its

application, but for the sake of the Cambodian people who have suffered so much one can only hope it will work. At least the country is at peace".

"My overriding impression", he states later, "was that the Khmer Rouge authorities had ordered this mass evacuation not to *punish* the people but to *revolutionize* their ways and thoughts. Many thousands will no doubt die. But whatever else, this does not constitute a deliberate campaign of terror, rather it points to poor organization, lack of vision and the brutalization of a people by a long and savage war".

That the war was savage there is no doubt. The Americans razed whole towns and villages and much of the countryside has been mauled by B52 bomb craters. Such an experience must greatly alter a people, but the Cambodians do not seem to have been brutalized by it, nor do their actions necessarily betray lack of vision. Contrary to the predictions of the Americans, there has been no bloodbath. The Khmer Rouge have shown tolerance towards their countrymen, such as the monks, who may differ from them but are no threat to the value system they are trying to introduce. The evidence of brutality and lack of vision is restricted to the evacuation, which as the journalists say has probably killed thousands.

Here, outside commentators such as myself are in some difficulty. First, we do not know the minds of the Cambodians, so that what follows is speculative, although consistent with the evidence available. Second, it is just too easy to shrug off suffering and death on the unimaginable scale of the evacuation on the grounds that they were "necessary" and "for the best". However enthusiastic I may be about the apparent decentralization and ruralization of Cambodia, I cannot ignore the probability that if it happened to me I would be as weak, miserable and afraid as any other urbanite.

Yet what else could the Khmer Rouge have done? They could not have allowed the old and the hospitalized to remain in Phnom Penh without allowing all the operators of the support services:

doctors, nurses, maintenance men, power workers, water supply staff, suppliers of food and other materials. A large category of exceptions would grow still larger. After a few days there would be urgent pleas for international aid to support these people. A city of two million reduced to ten per cent is still substantial and would oblige the peasant soldiers to form an urban administration, perhaps to employ lesser functionaries of the old regime, certainly to call on the help of the outside world.

That, at all costs, the Khmer Rouge clearly wish to avoid. Their hatred of the United States may be taken as read, and not without reason, they probably regard Europe, Japan, Australia, *et al*, as tarred with the same brush. They have also demonstrated their lack of affection for the Russians and East Europeans. The East German diplomats were thrown out of their embassy, the Soviet embassy was fired on, and Brezhnev's portrait mutilated. The Cambodians have also indicated that they do not wish to be interfered with by the Chinese or the Vietnamese.

None of this is surprising. The Russians and their allies are urban industrial peoples and as "bourgeois" as we in the West, as their behaviour when expelled demonstrated. Swain reports that the Russians were amongst the greediest and most selfish of the evacuees, refusing to share their food even with a Bulgarian woman in the party. As for the Vietnamese, their aggressive ambitions are an historical fact, which is partly the reason why their post-victory behaviour has been sufficiently comprehensible to Western journalists for them to get a much better press than the Cambodians.

In the last five years, ten per cent of Cambodia's people have been killed in a war not of their choosing and which would not have occurred if outside powers had not intervened with capital, equipment and fuel. Small wonder then that the Cambodian's have a powerful mistrust of foreigners and will stop at nothing to avoid having anything to do with them.

Small wonder, either, that the

peasant troops whose victory it is, have been slow to invite back the politicians. They seem to be doing their best to ensure that urban parasitism cannot re-occur. They have closed the factories, destroyed the urban water supplies, and wrecked the banks, burning their records and all the paper money they can lay their hands on. They have returned to the barter system.

Some commentators have expressed concern that by returning so precipitously to a rural economy, many Cambodians will starve. In the *International Herald Tribune*, George F. Will accused the Khmer Rouge of sending their countrymen "on a forced march to nowhere, deep into the countryside where food is scarce and shelter scarcer still". Swain quotes the local United Nations Development Programme (UNDP) representatives as saying: "What the Khmer Rouge are doing is pure and simple genocide (*sic*). They will kill more people this way than if there had been fighting in the city. There is no food outside. The next rice crop is not until December, and anyway without outside help they can only grow enough to feed thirty per cent of the population".

Will seems to believe that food grows only in shops. Both he and the UNDP man are clearly unaware of the immense feats of food production of which the Cambodian peasants have shown themselves capable. During five years of war, the villagers worked in the fields during the day and fought at night. At least one village, according to Swain, harvested three crops of rice a year. No doubt there were others, and there will be more now they no longer have bombs and battles to worry about. The people who were fed by the international relief agencies were the urban dispossessed. Given land and told to work it, they will feed themselves soon enough. And their countrymen have shown generosity enough in the past for us to be confident that they will be fed between seedtime and harvest.

It is presumptuous of papers like the *Sunday Times* (not Swain himself) to describe Phnom Penh's evacuation as a "disaster". And it

offends against the standards even of Grub Street for journalists like George Will to portray the Khmer Rouge as totalitarian monsters whom only the most rabidly doctrinaire left-wingers would support. One is left wondering why the events in Cambodia should have provoked such a near-unanimous outburst of envenomed hostility, and forced to conclude that they must strike at a most vulnerable part of the industrial psyche.

If Cambodia succeeds in forging a decentralized rural economy, it will force us to appraise the prison of industrialism. Most men and women today are slaves who if offered their freedom would reject it, refusing to spend the time that freedom requires. The members of urban economies are by now so conditioned to being fed and being governed that they would regard the offer of doing either themselves as an idle gesture, and any attempt at their imposition as a fundamental threat to liberty.

Yet no-one can be free who does not have the time and opportunity to grow his own food and to govern himself. Anyone who depends on others for the essentials of life is at their mercy. Anyone who delegates to others decisions intimately affecting the rest of his life condemns himself to permanent retardation as a political infant. To grow your own food and to govern yourself demand time, however (say, four hours each a day?), time that could otherwise be spent gathering the gew-gaws of industrialism. We call voting every now and then "democracy". It is not. It is delegating the conduct of our affairs to specialists, who, specialized though they may be, know precious little about government and nothing at all about democracy. Democracy is not representative government but participatory government, and participation means so many hours away from the telly. But then, so does living.

Just how wedded we are to the urban economy and all that it entails is strikingly illustrated by the current plight of New York. This city is so deeply in debt that Mayor Abraham Beame has been forced to plan for the dismissal of

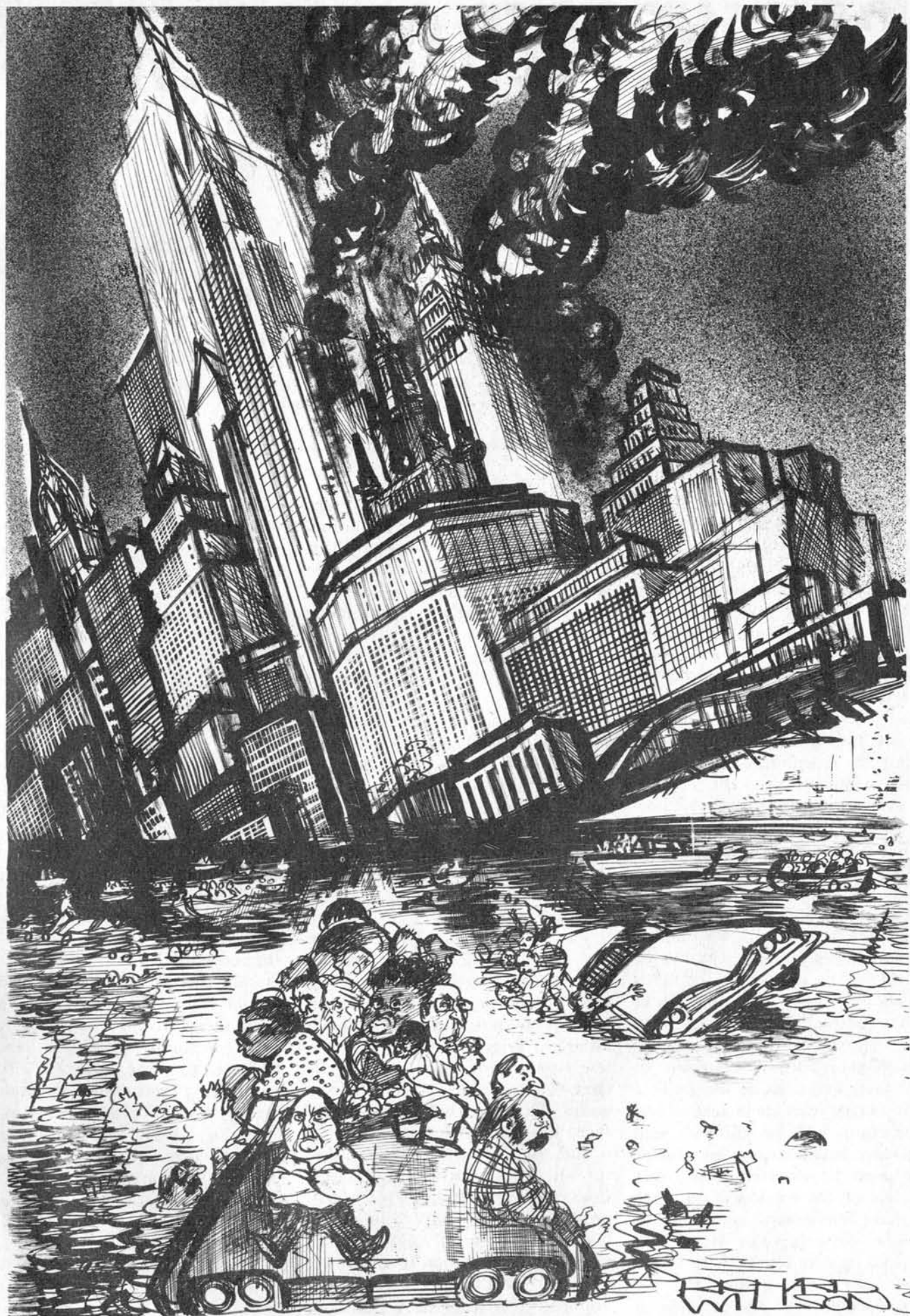
72,397 city employees (a quarter of the work-force) by June, 1976. The already inadequate police, fire, education and sanitation services are to be cut severely, thus completing the process whereby any connection between *civitas* and civilization becomes purely coincidental. Yet nobody has proposed doing a Phnom Penh on New York, except in jest.

At either end of the continuum of human settlements stand New York, symbol of the past, the most extreme example of humanity's self-destructive love affair with the urban economy, and Phnom Penh, symbol of the future, emptied into the countryside that supported it for so long. Whether it remains a symbol of the future depends on whether Phnom Penh will merely be replaced by some other urban capital or whether its end marks the beginning of a truly rural economy.

The Cambodians seem intent on encouraging self-supporting communities. Besides using the metal from defunct military hardware to make a host of implements from scythes to cutlery, the Khmer Rouge are urging the use of folk medicines, claiming that they are proving as effective as imported ones. We do not know, however, if they intend allowing those communities to be self-regulating as well. If they do not then all that can be said of their five-year struggle was that it enabled the Cambodians to remove themselves from the frying-pan to the fire.

Swain reports that the Cambodians, once noted for their spontaneity and gaiety, are now sullen and suspicious. That is understandable. Their task is now to restore themselves to their former spontaneity and gaiety within a society that is proof against exploitation by others. Their greatest danger is that in their desire to secure themselves against outside interference they will destroy the very elements in Cambodia's village cultures that make them so worth protecting. They have a hard course to hold, in a hostile world. They deserve our best wishes, our sympathy, and our attention. We might learn something.

Robert Allen.



CAN WE FEED OURSELVES ?

by

Michael Allaby

In this article Michael Allaby argues convincingly that given the will this country could produce all the food we need to free ourselves from dependence on imported food. To achieve it the first priority will be to bring about an enormous increase in the agricultural labour force which can only be accomplished by bringing agricultural wages into line with industrial rates. Such a programme would result in a reversal of the urbanisation process which began with the Industrial Revolution and has continued ever since.

Some years ago Paul Ehrlich warned the British that unless they mended their ways, the day might come when they found themselves trying to eat machine tools. Today, with supermarket prices rising fast and apparently uncontrollably, some housewives may wonder whether that day is near — except that we are not even manufacturing machine tools! There is a feeling of siege in the air and among the groups debating the possibilities of survival without imports, even the Ministry of Agriculture and the National Farmers' Union agree we should grow more food. Things must be bad!

Can we do it? Is it possible in this small, densely populated group of islands for us to grow all the food we need? I believe it is, but we cannot even begin the complex calculations that would provide us with some kind of answer until we have answered two preliminary questions: should we attempt to grow more and what do we need?

Any major increase in agricultural production will be difficult and expensive. It will require investment that must be diverted from other sections of the economy and once we have embarked upon a programme of expansion it will be difficult to abandon it. If the world prices of those commodities we import should fall and stabilise at new, low levels once we have passed

some point of economic no return in such a programme, we could find ourselves nursing a white elephant of an agricultural policy whose cost would make such minor extravaganzas as Concorde look extremely amateurish.

The "cheap food policy" concept is based on the theory that for Britain it is comparatively advantageous to concentrate on industrial manufacture and to sell high-priced exports in order to pay for the import of cheap food. We have seen during the EEC Referendum campaign that it takes more than a few high prices or shortages to shake the theory. After all, it is argued, there are places where food can be grown in large amounts more cheaply than it can be in Britain, places where the sun shines longer and warmer and where there is more and better land. So we should locate our farm lands there and help to hold down inflation. Prices may be high for a few years, but in the end the climates and soil systems of the world will prove that cheap food is there for those with the will to find it and the foreign exchange to pay for it. The protectionist EEC Common Agricultural Policy may produce large amounts of food, but it does so expensively and it denies us access to cheap food to which we, as the world's largest net food importer per head of population, have an inalienable right.

We need some idea, then, of how much food will be available in the world in the years ahead and of how much it will cost. The picture becomes confused and obscure. It is bound to do so: after all, no one can predict the size of harvests that have not yet been sown. At present it seems that world supply and demand are running just about level, so that in an average year they almost balance. Both are increasing, but if anything demand is increasing a little faster than supply. Meanwhile, carryover stocks for the main commodities wheat and rice are so small as to afford no cushioning against violent fluctuations in price.

The "carryover stocks" are the quantities left over at the end of one year's trading to remain in storage until the following harvest. Should that harvest be small, then stocks can be released to satisfy demand and to prevent prices from rising too rapidly. Should the harvest be large, then the stockpile will go on growing until eventually there is little left over to take into storage and the world becomes, and remains, dependent on one year's harvests for next year's food. In itself, this situation is neither new nor especially serious. The problem arises from its effect on prices.

This is all very well, you may say, but world shortage or not, for the first part of 1975 wheat and sugar prices have been falling. This is true,

*Associate Editor
Michael Allaby now
works as a freelance
journalist and
consultant*



although wheat has not fallen back to its pre-1972 price and sugar has not fallen to the price we paid under the old Commonwealth Sugar Agreement. When supply and demand are closely matched we may expect swings of this kind. Russia and China ordered large quantities of American wheat against the 1975 harvest — which forced prices up — and then cancelled their orders — which forced prices down again. As prices fell, a minor panic set in as individuals holding small quantities in reserve privately feared a collapse of the market. So they sold their stocks and the price fell again. China re-ordered!

A shortage raises prices and stimulates production, but it may also stimulate the conservation of stocks. A substantial part of the world's cereal production is used to feed livestock. Rising grain prices can lead to reductions in livestock herds as meat becomes unacceptably expensive. The cereal growers produce quantities appropriate to a demand that has fallen and suddenly there is a surplus. Prices fall, small dealers panic and release stocks and the price falls further, and farmers plan to grow less. So there is a shortage again. It is difficult enough to iron out fluctuations of this kind within a national economy; on a global scale it is all but impossible.

To a large extent this is what the 1974 Rome Conference was about. Over a number of years, the effect of such fluctuations is to depress production. Farmers cannot tolerate for long a situation in which they find themselves alternately starved of the raw materials they need and producing huge surpluses that are difficult to sell. They will be bankrupted unless they become extremely conservative and produce only the food they know they can sell. No one is interested in large yields or acreages. Ironically, it becomes economically impossible to increase home production and so achieve some security within such an unstable world situation.

Demand is subject to fluctuations that are no less violent. There is no clear one-for-one relationship between population growth and food demand. It is true that a population that is increasing is unlikely to require less food in the future, but it is quite untrue that a doubling of population will bring a doubling of demand. It may bring much less or much more. Of the many people in the world who are hungry most are hungry not because there is no food, but because they cannot afford to buy it. Poverty is the problem, not agricultural productivity. If these people become a little more prosperous, they will buy the food they need, so constituting an effective demand and raising prices. Should they

become more prosperous still, they will begin to choose more expensive, interesting foods. They will move from a diet consisting mainly of grain to one that includes meat from grain-fed livestock. Since the efficiency with which animals convert grain protein into animal protein is 20 per cent or less, this change of diet, of no great nutritional significance in itself, represents a huge increase in the demand for grain. They will be only just across this threshold, however, and able and willing to revert at once to their old diet should meat prices rise. So their grain requirement will begin to swing crazily. There are several groups of countries whose peoples are hovering on the brink of prosperity and they will exert considerable influence on the availability and price of grains in the years ahead. It is all very well to urge everyone to eat less meat in order to provide food for the poor, but in the real world people eat the food they enjoy and can afford to buy. Each time grain prices rise it is the poor who suffer by being unable to buy the little they need to keep body and soul together, but I wonder to what extent our new-found altruism is a product of our fear that we may be fated to join their numbers? We made the switch to a meat-based diet. So did the peoples of North America and so have the Japanese. The peoples of the USSR are in the process of doing so and those of the Arab oil-producing states and several others who possess vital minerals will follow. Are we to tell them they may not do so?

In my opinion, then, the trend in world food prices will be upward, although we may expect fluctuations, perhaps violent ones, around this rising mean. From time to time there will be cheap food, but it will never be quite so cheap as it was last time we bought it and we will have no way of predicting its availability. Our traditional suppliers are already entering the most profitable markets, and they will be unable to subsidise us. If we are to continue to import food at the present level, then, we must be prepared to pay a great deal more for it.

It is here that the advantage to us may change. It may actually become cheaper for us to grow the food ourselves — if we are able to do so. This is the conclusion we reached in *Losing Ground*, the discussion paper that was summarised for publication in *The Ecologist* ("Will Britain Starve?", 5, 3, 84, March/April 1975). We should aim to provide as much food as possible in order to provide a secure supply at relatively stable prices. If we can become self-sufficient, so much the better.

The object — of increasing agricultural production in order to provide more food — is important. It is possible to approach the problem from another direction and to regard agriculture as an industry with the capacity to save on import costs. The distinction between the two approaches may seem subtle, but they lead to very different conclusions. Of the studies published and in progress at present, some take one approach and some the other.

So far, the National Farmers' Union have published a paper ("Farm and Food Policy for the Next Five Years", *Insight*, March 22 1975), the Government has produced a white paper (*Food From Our Own Resources*, Cmnd. 6020), there has been an article in *New Scientist* by Dr. Kenneth Blaxter FRS ("Can Britain Feed Herself", *New Scientist*, 65, 941, 697, March 20th 1975) and Dr. Kenneth Mellanby has written a book, *Can Britain Feed Itself?* (Merlin Press, London, 1975, price £1.95). In addition there is the Friends of the Earth study, in which I am involved, that has now been funded for two years by the Anglo-German Foundation and that will issue its own reports from time to time.

The white paper and the NFU study are the ones that adopt what I will call the "Treasury" approach. They were produced in close collaboration and so it is not surprising to find them reaching similar conclusions. Both aim for a very modest increase in production of around 2.5 per cent per year for the next five years. This is nothing like enough to achieve self-sufficiency, but it is not meant to be. The aim is to improve the profit-

ability of farming. So it is possible to talk of increasing arable yields and the productivity of grasslands by expanding acreages — in the case of cereals largely by growing more wheat and barley at the expense of oats and other grains — and by increasing the consumption of chemicals. We must import phosphates; whether or not we import the hydrocarbon-based nitrogen fertilisers and pesticides depends on the view you take of British self-sufficiency in offshore gas and oil. Predictably, these papers take a somewhat optimistic view. Potash, the third main fertiliser ingredient, can be produced in adequate quantities from our own reserves. After

Any major increase in agricultural production will be difficult and expensive. It will require investment that must be diverted from other sections of the economy and once we have embarked upon a programme of expansion it will be difficult to abandon it.

all that has been said about diminishing returns from fertiliser use on cereal crops, would further increases in the rate of application bring improved yields? They might, if we used enough, but the main hope lies in new varieties that will utilise fertiliser more efficiently. These are the short-strawed "green revolution" types being developed for temperate climates, as well as such promising plants as the triticale wheat-rye hybrid and, in the longer term, varieties that utilise much more of the solar energy available to them. The danger here — and it is a grave one — is that such new varieties might be so successful that farmers would be compelled to grow nothing else in order to achieve the only levels of yield that were economic. Should this happen, the

degree of genetic uniformity of cereal crops throughout the country could render the entire harvest susceptible to attacks from fungal disease. Today, a mutating parasitic fungus may reduce yields of one or two varieties, but so great is the genetic diversity of the varieties being grown that the effect on the national harvest is minimal. Were all the plants so similar that each one carried those genetic components that rendered them vulnerable, the whole national crop might be at risk (see my article "Miracle Rice and Miracle Locusts", *The Ecologist*, 3, 5, 180, May 1973).

The NFU proposes a 3 per cent increase in wheat production between 1973-74 and 1979-80. While the area of grassland will decline, livestock stocking densities will increase from the current average of 0.65 animals per acre to either 0.72 or 0.73, depending on which of the two projections the paper offers that you choose. It is also proposed, however, to increase the pig herd by almost 40 per cent and the poultry flock by almost 12 per cent. A small allowance has been made for improvements in the efficiency of conversion of feed into product — which I suspect is based largely on wishful thinking — but any increase in the population of non-ruminant livestock, which eat mainly grains, at a time when the country is less than self-sufficient in grains, needs a word of explanation. Traditionally, these animals and birds were used to store surplus grain after bumper harvests. They could convert this surplus into luxury food items that were a welcome addition to the diet. Their population was allowed to float, so that it increased in good years and fell in poor years, with pigs and poultry being maintained as marginal enterprises on most farms. Today, an increase in the population of either must mean an increase in our imports of grains to feed them. This has nothing to do with self-sufficiency, but it is not meant to have.

It is here that the difference between the two approaches becomes obvious, and to underline the point the white paper talks about the extent to which our food is

processed. Processing adds to the value of the food — monetarily, of course, not nutritionally — and so it is a good. Similarly, the import of grains is a cost that can be converted into a benefit by processing the grains through livestock for subsequent sale at a much higher price. Both forms of processing add value to the food, but neither contributes so much as a single bacon-flavoured crisp to the national larder. Indeed, large amounts of food are lost, as we saw earlier in the effect of meat-eating on the demand for cereals. The white paper and the NFU, then, would see agriculture expand modestly in purely economic terms. At the end of the programme we would be no closer to feeding ourselves, but we might be a little wealthier.

The alternative approach, which seems to me more relevant, is very different. It suggests that we should consider at least the possibility of making Britain entirely independent of imported food, or of imported raw materials for the growing of food, or of both. Professor Mellanby seeks to show simply that self-sufficiency is possible. He is very modest about his proposals which amount, he says, to much less than a full, detailed study, but nonetheless his rough and ready calculations show the task to be well within the bounds of feasibility. This is a daring statement, for until now thinking on the subject has been influenced strongly by the findings of earlier studies, conducted during both wars and by a Royal Commission in 1905, all of which concluded that the problem was insoluble, although our dependence on imports could be reduced. Dr. Blaxter agrees that self-sufficiency is possible, but he seems to find it difficult to take the idea seriously: "It is reassuring to know that we could feed ourselves given the original, curious premise that we cannot purchase food from abroad. Whether such an eventuality is likely to occur is another question altogether and beyond my brief". The sigh of relief is almost audible! He does urge, though, that British food production be expanded for immediate and obvious reasons, but also to provide a better base for a later expansion to full self-sufficiency should this be needed.

Dr. Blaxter bases his scheme on bringing two million acres of permanent grassland into arable cultivation and reducing the area of temporary grass; he eliminates the beef herd entirely, while allowing the dairy herd to increase to supply both milk and meat. Poultry and pig populations are allowed to float again and there is a large increase in the area sown to oil-seed rape, based on varieties low in erucic acid (which is poisonous to humans) to provide more vegetable oils. He bases his calculations on the acreage of land available to us — which is decreasing at a rate estimated to be anywhere between 50,000 and 100,000 acres a year — and the nutri-

If we ate all of the 15 million tons of cereals we grow each year and fed none of it to animals, we would have nearly 90 grams of protein and more than 3000 calories a day each as well as some of the vitamins and minerals we need.

Professor Mellanby

tional requirements for 61 million people, which is the population estimate for the end of the century to which he works. He then marries the two and produces an agricultural programme.

Prof. Mellanby adopts a broadly similar procedure. He begins by discussing population, accepts the estimate of 60 million by the end of the century, but suggests that pressures would be less acute and life altogether more pleasant were our population half that size. Then he discusses our diet and changes that might be made in it, based partly on our experience of the war-time diet. The problem is much simpler than it may seem. We need do no more than calculate the number of calories needed to sustain the average adult and we have an average that will allow for the

higher requirements of large people engaged in heavy physical work out of the smaller requirements for small people in sedentary occupations. A diet that provides sufficient energy will also, by and large, contain sufficient protein, fats, vitamins and minerals. The problem diet for us is the one that contains large amounts of sugar. Sugar contains nothing but calories and so a diet that derived most of its calories from sugar would leave a person with little appetite for other nutrients and would lead to serious malnutrition. So, if it should transpire that we cannot grow all the sugar we eat at present, this may be regarded as a nutritional gain, rather than loss!

Prof. Mellanby believes it may be possible to increase cereal yields between now and the end of the century by as much as they have increased since 1946 — nearly 80 per cent — but he bases no part of his argument on such speculations. If we ate all of the 15 million tons of cereals we grow each year and fed none of it to animals, we would have nearly 90 grams of protein and more than 3,000 calories a day each, as well as some of the vitamins and minerals we need. To this we can add potatoes and some beet sugar. There need be no shortage of energy, although there might be problems in the kitchen as cooks found themselves faced with a daily diet that contained two pounds of grain per person! This would require 9 million acres of land and it would leave us with 13 million acres that will grow crops or grass and a much larger area — about 16 million acres — of poor grazing. This land could be used to maintain the present dairy herd of about 3.5 million animals, together with one million followers. They would produce our milk and a little butter and cheese, on about 6 million acres and if we allow the same area again to raise surplus stock to beef weight, the total of 12 million acres will yield about a million tons of beef a year. This works out at about two ounces per person per day, which is more than is provided in many canteen meals. Meat and dairy produce also contribute calories, so they can be used to "liberate" cereal land for

other crops. Even so there are several million acres left that can produce mutton and lamb, and of course, the by-products of the dairy industries and surplus grains can go to feed pigs and poultry, whose population floats.

We forget too easily the extent to which our diet has changed in one generation. When I was a child, in war-time Britain, I seldom saw a fresh egg, far less tasted one. The ration was one egg per person a fortnight. I remember my grandmother frying an egg and giving the yolk to my father and the white to me. I was 18 before I ate steak and 12 when I ate the first banana I can remember. I dare say I ate bananas before the war as a very small child, but at the age of 12 I had to be shown how to open one. Yet I never felt hungry and I was certainly not under-nourished. Nor did I find meals boring. Prof. Mellanby's diet would provide each of us with one meal a day that contained meat or fish — everyone is agreed that there will be no significant increase in the contribution to our diet of the fishing industry — as much milk as we have at present, and unlimited bread, mostly baked as wholemeal, potatoes and vegetables, augmented by the produce from private gardens and allotments. We would have to do without sweets, sweet biscuits and cakes, fizzy drinks and ice creams, but when children did receive them they would once again be treats. It would not be long before children lost their taste for sweets and acquired one for savoury foods.

The model sounds plausible even attractive, but it has gone only part of the way toward full self-sufficiency. It still depends on the heavy use of agricultural chemicals in our present linear kind of farming, whereby fertiliser is put in at one end to produce vegetable crops, which produce animals, and organic wastes are discharged at the other end to be disposed of as hygienically as we can manage. Prof. Mellanby argues that the dangers of modern farming have been exaggerated. Soil structure is not being harmed seriously, fertiliser use is not experiencing diminishing returns, the fertiliser requirement

to sustain crop yields rises to a particular level but does not go on rising after that, and provided they are used sensibly, pesticides do not lead to uncontrollable problems of pest and weed resistance. There are economic arguments in favour of burning straw and the only effect the removal of hedgerows has is to increase the area available for cultivation.

These rather bald statements need some qualification. Prof. Mellanby does not give them. It may well be that fertiliser use is not harmful, although much more remains to be discovered about its effect on soil micropopulations and, indeed, on the role of those micropopulations. The point is that unlimited access to fertilisers leads to a total farming system that does harm soils — soil "blows" are not uncommon — that may aggravate weed and pest problems, so requiring greater use of pesticides, and that is wasteful. Hedges may harbour pests, but they also harbour predators and if pest populations increase, so may predator populations. Hedges may also constitute a kind of "cordon sanitaire", inhibiting the spread of crop disease from one field to the next by presenting an entirely different microclimate that vector organisms must cross between the open fields to which they are adapted. Hedges and hedgerow trees also provide valuable shelter for livestock. This may not be essential, but it probably makes life more comfortable for the animals. It is true that hedgerows contribute little in terms of crop yield, except in the prevention of wind erosion on certain very light soils that are common in parts of northern Germany but uncommon here, but it is equally true that hedges play a role in the total water economy of farmland. Their removal may provide more cultivable land, but it is land that may have too much or too little water.

It is difficult to see just why Prof. Mellanby introduces these issues, since they are not really relevant. Even the hedgerow controversy, guaranteed to raise conservationist blood pressure, is an old one and except in East Anglia, much of the mileage

removed has been in the West-country, where it has increased the average field size from about five acres to six. Sometimes I wonder whether Mellanby the conservationist finds himself in conflict with Mellanby the agronomist. He talks of "middle class conservationists" half disparagingly, yet he must include himself in their number and it is in their name that he advances some of his own ideas. Does he find his environmentalist bedfellows embarrassing? Does this explain why he says, unnecessarily and not altogether accurately, that while there are those who favour "more and more productivity, and consider that their standard of living may be measured by their beef consumption" there are also, at the other extreme, "some so-called 'ecologists' who want to go back to the simple life, and to the agricultural techniques of the dark ages. The first group would ruin our environment, the second condemn us to starvation".

The fertiliser argument is not really relevant, either, for we must consider whether it is possible to achieve self-sufficiency within our own resources. Prof. Mellanby does this, pointing out that while many people write about organic husbandry, there are some farmers who practise it successfully and produce large and sustainable yields. A national switch to organic farming, he concludes, would not be catastrophic by any means.

The system that emerges puts an end to the pollution caused by livestock effluent, since this is now returned to the land once more. It ends the pollution caused by fertiliser run-off, by basing itself much more on slow-releasing organic manures and fertilisers. Prof. Mellanby does not mention it, but it also reduces pesticide use, since the higher standards of husbandry that organic methods require if they are to produce the yields he hopes for will also minimise pest, weed and disease problems. The landscape will remain largely unchanged and certainly there is no need to reduce its quality, either aesthetically or as a favourable environment for wildlife.

My own studies follow this line

of argument quite closely. At present, for example, we grow roughly 2.8 million acres of wheat and 5.6 million acres of barley, and we import nearly half the wheat we eat. Were we to halve the barley acreage and grow wheat instead we would be self-sufficient in wheat. Our bakers would have to learn to use soft wheats rather than hard, for bread making. This would mean that instead of our beloved wrapped, sliced, white loaves we would have to steel ourselves to eat the kind of bread they eat in France — baked from soft wheats.

I believe we could increase the sheep flock very substantially. At present it is growing by about 2 per cent a year, but a quarter of a century ago it was about 75 per cent larger than it is today. If sheep were to be made profitable again, improved pasture and better grazing management in the uplands together with combined cattle and sheep enterprises in the lowlands could achieve increases of this kind. Cattle and sheep graze differently, so complementing one another rather than competing. I, too, would allow pigs and poultry to float. I agree with Prof. Mellanby, too, that wild foods will contribute little, although such innovations as domesticated red deer might produce some meat from very harsh environments, and that we can derive proteins from beans and various more or less conventional farm crops should we need them to boost human or animal diets. My final diet would contain rather more meat than Prof. Mellanby's.

Sheep also produce wool and while most of the studies at present concern themselves exclusively with food, we also import fibres and if we can find room for some fibre production, this will provide a welcome economic bonus. In this country we would produce mainly wool and flax, although some braver spirits may urge us to grow hemp. We might also consider growing nettles — they can be used in cloth and paper mixing. Flax is not a pleasant crop to grow. It is difficult to harvest and it is very "hungry", exhausting the land quickly, but it yields more fibre more flexibly than the alternative, which is the expan-

sion of forestry into farm land.

There is little talk, either, of the implications of changes of this kind. All the published papers talk, in one way or another, of an increase in the intensiveness with which crops and livestock are managed. The white paper says that "agricultural workers will have a key part to play if higher output is to be achieved". The NFU produces a delightfully convoluted sentence: "The adoption of a policy of expansion would mean the retention of a larger labour force in the industry than there would otherwise be, though a continued reduction in labour numbers is anticipated". I think that means that the labour force is going down when it should be going up. How many more workers would we need? No one is prepared to say, but if we brought our farm labour force up to, say, the EEC average as a proportion of the total working population, we would need another 1.2 million workers. The total of 1.9 million would come to the 7.8 per cent of the national work force that is the average for the Nine. This average includes Ireland, of course, with an unusually high 24.9 per cent, and France, with 11.5, but even if we move in the direction of Denmark, whose agriculture is far more intensive, and expensive, than ours, our farm labour force would need to double. My guess is that we would need about a million more workers. If each of them has a wife and two children, there will be four million people moving into rural areas. We will need adequate training schemes to ensure that they arrived skilled to their new jobs, we will need to provide them with houses, schools, shops, pubs, churches, cinemas, hospitals, roads, bus and rail services and the million other requirements for the modern worker. So this simple movement of workers will generate quite a lot of employment — a good thing, you may think, when the motor, steel, textile and other major industries are shedding manpower.

However, this is only the start. The four million will be accompanied, or followed, by workers in the agricultural support and service industries — the mechanics, doctors,

teachers, shopkeepers and so on, until the final shift amounts not to four million but perhaps eight million, or ten. We would be witnessing a reversal of the urbanisation process that began in the eighteenth century and that has continued to the present day. Nothing like it would have been seen before.

Not only would we grow more food, but we would economise on transport by eating more of it close to where it was grown. Rural housing would have to be at high densities, with much in-filling in villages and small towns, but there would be a major revival of provincial life with a corresponding reduction of the pressures on housing and other services in the large cities. Rural land values would rise, while urban prices fell.

Is it possible? Yes, of course it is if we will that it should be so. Probably the first prerequisite would be the equalisation of agricultural and industrial wages. With our present tiny farm labour force this would not be prohibitively expensive. It would mean our food would cost more, but it will cost more no matter what we do.

Is it desirable? Personally I find the picture attractive, but in the end the choice must be made by society as a whole. It seems to me, though, that if we are to free ourselves from our dependence on imported food by achieving really large increases in home production, we may be talking of programmes whose implications are of this order. It is interesting to speculate that with such a redistributed population the devolution of economic and political power from the centre to the regions might be unavoidable. It is interesting, too, to speculate about the other problems that solve themselves once we set out to feed ourselves. There is a great deal of talk about the "post industrial society". Is this what the term implies?

Michael Allaby is currently working on a survey of world food resources for Applied Science Publishers, and is engaged on a funded FOE study of the future for food supplies in Britain. His book *Ecology* is to be published this summer as a "Hamlyn all colour Paperback". He has edited *The Survival Handbook* to be published later this year by Macmillan, and has written a book on the present human dilemma, probably to be called *Inventing Tomorrow* which will be published next year by Hodder and Stoughton.

The Fall of the

A Social and Ecological Interpretation

by Edward Goldsmith



EDITOR: *Edward Goldsmith, writer and lecturer. Has recently returned from a lecture tour in India and shortly departs for Canada and the United States. Is never working on fewer than four books at a time.*

*There is the moral of all human
tales;
Tis but the same rehearsal of the
past;
First Freedom, and the Glory —
when that fails
Wealth, Vice, Corruption —
Barbarism at last
And History, with all her volumes
vast,
Hath but one page.*

Byron

It is said of the Bourbons, that during all the time they were in power they neither learnt nor forgot anything. This could equally well be said of our political leaders, probably too, of the scientists and economists who advise them. It is in fact a great tragedy that we seem to be incapable of learning the lessons of History.

Of these, one of the most instructive would undoubtedly be that of the Fall of the Roman Empire. The parallel it affords with the breakdown of industrial society, which we are witnessing today, is indeed very striking. The two processes differ from one another in two principal ways. Firstly, the former was a very slow one, spread out over hundreds of years, whereas the latter is occurring at a truly frightening pace, and secondly, the role played by slavery in the former case was fulfilled in the latter by machines.

In both cases, the collapse was unexpected. In the same way that even today many intelligent people cannot bring themselves to believe that the industrial world is about to disappear for ever, the intelligentsia of Imperial Rome undoubtedly found it impossible to accept that Rome could be anything but 'eternal' and that its great civilising influence could ever wane.

Roman Empire

Surprising as it may seem, Rome's Barbarian conquerors also seemed to share this belief. The Vandals belied their reputation and never really destroyed Rome. They had far too much respect for what it stood for. Even after Odoacer had defeated the last Western Emperor, Romulus Augustulus, and had assumed the government of the Western Empire, he carefully refrained from proclaiming himself Emperor. His letter to the Emperor Zeno of Byzantium, after his victory, illustrates his great respect for the institution of the Empire. First of all he tried to justify rather apologetically his abolition of the Western Empire, on the grounds that, "The majesty of a sole monarch was sufficient to protect, at the same time, both East and West".¹ Then he goes on to ask the Emperor to invest him with the title of 'Patrician', and with the Diocese of Italy. This also seems to reflect the attitude of his successor, Theodoric.

The Barbarian Invasions

It is customary to regard the Barbarian invasions as the main cause of the fall of Rome, just as thermonuclear war might one day mark the end of our industrial society. However, though the invasions undoubtedly contributed to the plight of Roman society, they were probably but a minor cause of its collapse.

Let us not forget that Roman armies had been successfully fighting migrant German tribes since the days of Augustus. Why should they suddenly be overcome by those which they came up against in the sixth century?

In fact, Samuel Dill² considers the invasions of the third and fourth centuries to have been considerably

more formidable. But, "The invaders, however numerous," he writes, "are invariably driven back and in a short time there are few traces of their ravages. The truth seems to be that, however terrible the plundering bands might be to the unarmed population, yet in regular battle, the Germans were immensely inferior to the Roman troops." Ammianus, who had borne a part in many of these engagements, says that, in spite of the courage of the Germans, their impetuous fury was no match for the steady discipline and coolness of troops under Roman officers. The result of this moral superiority, founded on long tradition, was that the Roman soldier in the 3rd and 4th centuries was ready to face any odds.

It would thus appear that if the invasions of the fifth and sixth centuries were more successful than the previous ones, it was not because of the increased strength of the invaders.

The Barbarian Rule

If the fall of the Empire cannot be attributed to the invasions, still less can it be ascribed to the subsequent Barbarian rule. From all accounts, life during this period suffered no radical change. If anything, it changed for the better under the rule of the very able Theodoric, who, according to Gibbon, re-established an age of peace and prosperity,³ and who did everything he could to restore the facade if not the spirit of the old Roman State, and under whom the people "enjoyed without fear or danger the three blessings of a capital:— order, plenty and public amusements."

It must also be remembered that Barbarian generals had taken over long before Odoacer defeated Romu-

lus Augustulus, but, for reasons already mentioned, were content to remain in the background, allowing the Empire to survive under the titular head of an emperor having some claim to legitimacy. In fact, since the death of Theodorus, the Emperors of Rome ruled in name only. When Orestes, a Pannonian who had served in the army of Attila the Hun, took over power, he characteristically refused the purple though he accepted it in the name of his son, Romulus Augustulus, the last Emperor of the West, who was, in origin at least, a Barbarian himself.

In fact, to refer to these men as Barbarians is very misleading. As Dill⁴ points out, "Many of these German officers were men of brilliant talents, fascinating address and noble bearing. To military skill they often added the charm of Roman culture and social pattern which gave them admission even to the inner circle of the Roman Aristocracy". Valuable testimony to this is provided by letters of the Christian, Salvianus, who passionately decried the individualism and selfishness of the ruling classes of the Empire and the vice and shameless oppression that characterised it, "and considered the Barbarians to be without question, their moral superiors."

The Forces Which Made Rome

The fall of the Roman Empire can only be understood if, first of all, we examine what were the features of Roman society which assured the success of the Republic. One can then see what were the factors which caused the erosion of these qualities during the latter days of the Republic and of the Empire.

First of all, one must realise

that the Roman Republic was originally made up of three separate tribes, the Ramnes, Tities and Luceres⁵; in turn each divided into ten clans or 'curies', of which many of the names have come down to us, and indeed the institutions of the Republic as well as the structure of its army faithfully reflected these tribal and curial divisions until the reforms of King Servius, who like Cleisthenes in Athens, established geographical divisions to replace tribal ones as the basic administrative units of the State. Nevertheless the tribal character of the Roman City persisted throughout the Republic.

Tribal societies are remarkably stable. Like all stable systems, they are self-regulating or self-governing. Liberty, in fact, among the Greeks meant self-government, not permissiveness as it means to us today. The Greeks were free because they ran themselves, while the Persians were slaves because they were governed by an autocrat. Self-government is only possible among a people displaying great discipline and whose cultural pattern ensures the subordination of the interests of the individual to those of the family and the society as a whole. Under such conditions, there is little need for institutions and, as has frequently been pointed out, the only institution that one finds among tribal peoples is the Council of Elders whose role it is to interpret tribal tradition and ensure that it is carefully observed and handed down as unchanged as possible to succeeding generations.

The qualities which the classical Roman writers extolled were in fact those which are usually extolled in tribal societies, especially in those among whom war plays an important part in their normal behaviour pattern.

Ennius attributed Rome's greatness to three causes: divine favour, which presided over Rome's destiny from the very start, the steadfastness and discipline of the Romans and finally, their moral character. This he expresses in his famous line: 'moribus antiquis res stat Romana virisque' or 'the Roman State stands firm on its ancient customs and on its men (or heroes)'. It is significant that in his *Annals*⁶ he makes no

mention of the form of the Roman State as such. One can only assume that he realised that political forms are of little importance when compared with the spirit which animates them.

If in early times the Plebeians did not participate in government, it was because they were not members of the original tribes, nor further organised into gens and families. This meant that they could not practise the religion of the Roman State which consisted of the cult of the family gods, the Lares and the Penates, of which the Paterfamilias was the priest, the gods of the gens, those of the curie, the tribe and those of the City itself, of which the high priest or Pontifex Maximus was originally the king himself. An essential feature of these associated cults was their social nature. Without them the cohesion and stability of Roman society could not have been possible. It is significant that the Romans had no word for Religion. 'Religio' simply meant matters of state. The reason is very simple. There was no need for such a word, no more than there is in the case of any African tribes. All the beliefs and rituals which we regard as making up a society's religion were an essential and disassociable part of its culture, which controlled its behaviour, i.e. which provided it with its effective government.

As Fustel de Coulanges wrote, of the Ancient City: "This State and its religion were so totally fused that it was impossible not only to imagine a conflict between them, but even to distinguish one from the other."⁷

In the case of Rome, as in the case of many tribal societies, the land it occupied was itself closely associated with its religion. It was holy land, the land where the society's ancestors were buried.

In the same way society itself was holy, since Roman religion consisted in worshipping, at each level of social organisation, deities who were specifically organised in such a way as to reflect its essential structure.

It is not surprising that the Plebeians were originally excluded from active participation in public affairs. If they had no place in the body religious they could have none

in the body politic, since the two coincided.

The story of their mass departure from Rome, and voluntary exile to the Sacred Mountain is well known. They left: "since the Patricians wish to possess the City for themselves. Let them do so at their leisure. For us Rome is nothing. We have neither hearth nor sacrifices nor fatherland. We are leaving but a foreign city. No hereditary religion attaches us to this site. All lands are the same to us."⁸ However, their voluntary exile was short lived. This structureless mass of people was incapable of creating a city on the model of that which they had known. Consequently they returned to Rome and after many struggles established themselves as citizens of the Republic. If they were eventually enfranchised, it was because they had become culturally absorbed into Roman society, but for this to be possible the latter had to undergo considerable modification. Its tribal nature, in fact, had to be considerably attenuated. Thus, whereas previously it was the Patricians, an aristocratic elite, who ruled Rome, a new elite slowly developed, the Senatorial Class composed of both Patricians and Plebeians. Its power was not so much based on hereditary status as on wealth. Such a change in itself must seriously undermine the basis of social stability by substituting to a large extent the bonds established by *contract* for those dependent on *status* as a basis for the social order.⁹ The resultant society however was still reasonably stable and probably would have lasted a very long time if it had not been for Rome's expansionist policies which led to the establishment of the Empire. The changes which this slowly brought about to every aspect of social life were far-reaching and profound and it is to them that one must look for the causes of the decline and fall of Rome.

Foreign Influences

Foreign influences were undoubtedly the first cause of the changes which overcame Roman society. The cultural pattern which holds together the members of a traditional society and controls its relationship with its environment

rarely survives the onslaught of powerful and unfamiliar foreign influences. Consider how that of the tribes of Africa has been disrupted by the colonial powers. The literature on the subject is voluminous. Think of the terrible cultural deterioration which has overcome the society of South Vietnam as a result of harbouring in its midst half a million affluent and pleasure-loving American soldiers. Look at the havoc at present being wrought to the very essence of Indian society by the cinema — which reflects a spirit totally alien to the Indian tradition.

But what were these foreign influences in Rome? First of all, after Sulla's conquest of Greece, Roman society was seriously affected by Greek influences. Greek literature, Greek philosophy, Greek manners, Greek dress became the rage. It spread from the fashionable circle of Aemilius Paulus and his friends to the people at large. These influences were not those of the Greek City States of the age of Pericles, but those of an already degenerate Greece — one that had been long subjected to autocratic Macedonian rule, that had largely forgotten its ancient traditions and with them its spirit of self-government. The warnings of the elder Cato were in vain. Greek influence was highly disruptive, just as several centuries later was the influence of a decadent Rome on the German tribes that had the misfortune to be attracted within its orbit.

To the Romans, however, more destructive than Greek influence was that of the Eastern Provinces. In antiquity there had been stable traditional societies in Syria, Palestine, Persia and Mesopotamia. These however had been engulfed into the Empires of Babylonia, Assyria and that of the Achaemenids and their successors, and within them there had predictably arisen vast shapeless cities like Ninevah, Babylon, and Persepolis with their structureless and demoralised proletariat, which had much in common with the conurbations of our own industrial society. Rome was undoubtedly seriously affected by it. Indeed, the vogue for Eastern religions spread throughout the

Roman Empire. The philosopher, Themistrius, during the reign of Valens¹⁰ writes of the "mass and confusion of varying pagan religious views". He thought that there were at least 300 sects and "as much as the deity desires to be glorified in diverse modes and is more respected, the less anyone knows about them". Christianity was in fact but one of these importations. It is probable that if it had not been adopted by the Empire, another and very similar one would have been adopted in its stead. Ernest Renan¹¹ considers that "If it hadn't been Christianity it would have been Mithraism" — which after Christianity was perhaps the most popular.

If these cults spread so easily within the Roman population, it was that the ground was fertile for them. In fact the Roman people had grown more similar to those, among whom these cults had originally evolved, and had developed the psychological requirements which they were designed to satisfy. Undoubtedly they would have had little chance of spreading among the Romans of the days of Cincinnatus, no more in fact, than would the strange sects (many of them too of Oriental origin) which are gaining ground today among the culturally deprived youth of our own conurbations, slowly to replace the discredited culture of Industrialism.

Other-Worldliness

I have already referred to the fact that the organisation of the Roman gods reflected the highly structured Roman society of old.

The Oriental cults which replaced the traditional Roman religion were very different. They were largely monotheistic and, I think it can be shown, that *monotheism reflects a structureless, i.e. a disintegrated society*.

In a stable tribal society, the supreme God plays but an accessory role. He is usually referred to as the creator or 'moulder'¹² and is regarded as too divorced from human affairs to have any interest in tribal matters, let alone those of the individual.

The society's protection is assured by the family gods and those of the clan and the tribe, ancestral figures who rather than being regarded as

having gravitated at the time of their death, to some instant paradise, are on the contrary, considered to have graduated to a more prestigious age grade. Indeed, a tribe is often said to be composed of the living, the dead and the yet to be born — hence its great continuity or stability. The god of these cults, however, had no connection with any specific society, nor indeed any great interest in society as such. His interest was specifically with the individual. His character too had changed. He was no longer a worldly, pleasure-loving figure like Jupiter, but a stern autocrat, and this undoubtedly reflected the autocratic nature of government in the structureless society from which these cults originally sprang. Also he possessed a wife and child. This, too, was a great innovation. Their function was probably to satisfy psychological requirements previously fulfilled by the now defunct family gods. The male god was too stern for this purpose. As Erich Fromm shows,¹³ a more indulgent figure was required, that of the Mother. In later years, a still more indulgent figure was required, that of the grandmother, Santa Anna. It is interesting to note the same changes overcame the Pantheon of Ancient Egypt with the disintegration of Egyptian society during the Ptolemaic era. Indeed, with the triumph of Christianity, statues of Isis holding the baby Horus in her arms, were frequently identified with the Virgin Mary and the baby Jesus, and unknowingly introduced into Christian churches.

As already pointed out, the essential feature of these cults was that they were eminently asocial. Duties towards society were replaced by duties towards God, and success in the next world was substituted for success in this one, as the ultimate end of human activity. Lecky¹⁴ emphasises this essential point throughout his *History*. "The first idea which the phrase 'a very good man' would have suggested to an early Roman would have been that of a great and distinguished patriot, and the passion and interest of such a man in his country's cause were in direct proportion to his moral elevation. Christianity diverted moral enthusiasm into another channel

and the civic virtues, in consequence, necessarily declined."

This meant that there was no longer any moral authority to prevent asocial behaviour. Thus one finds the extraordinary spectacle of people who succeeded in combining the pious fulfillment of their religious obligations with the most socially aberrant behaviour. As Lecky writes, "the extinction of all public spirit, the base treachery and the corruption pervading every department of the government, the cowardice of the army, the despicable frivolity of character that led the people of Treves, when fresh from their burning city, to call for theatres and circuses, and the people of Roman Carthage to plunge wildly into the excitement of the chariot races on the very day when their city succumbed to the Vandal: *all these things co-existed with extraordinary displays of ascetic and missionary devotion.*"¹⁵ As in our case, the inhabitants of Imperial Rome suffered from a cultural split-personality. They were denizens of two contradictory worlds — or rather two half-worlds — since man has always required a spiritual as well as a physical existence — but in the stable societies of the past, they coincided.

The Imperial System

People tend to ignore the important principle that autocracy is unknown among stable traditional societies. Yet it is the basic principle of stability that it can only be achieved by a self-regulating system. Indeed the term 'homeostasis', normally used for stability, includes the concept of self-regulation.¹⁶ When stable societies were governed by kings, these were in no way autocrats. The Homeric king could be dethroned by a simple show of hands just as his West African counterpart can be 'destooled'. This was undoubtedly true of the original kings of Rome, whose main social function was probably that of High Priest or Pontifex Maximus.

In the Homeric city the sovereign power resided not in the person of the king, in fact, but in public opinion: *Demouphemos* — as it was referred to. This power became institutionalised into

Demoukratos,¹⁷ the latter without the former being but an empty facade. The role of public opinion was to ensure the maintenance of the traditional law. This was further ensured by the prestige of the Council of Elders and also by the fear of incurring the wrath of the ancestral spirits — the ultimate guardians of tradition, and hence of the society's continuity or stability.

It is essential to realise that the kings of Rome were not thrown over because they represented a 'reactionary' force opposed to 'social progress' — the reason normally given for dethroning monarchs today — *but for precisely the opposite reason.* They were guilty of causing a departure from traditional law by attempting to incorporate the Plebeians in the body politic — which would have meant radically modifying its tribal nature.

In spite of the remarkable efforts of Augustus to establish a more flexible type of government under his 'Principate' which at the same time maintained as many features as possible of the Roman Republic, the Imperial system grew to resemble the latter less and less, until eventually it became its diametric opposite.¹⁸

The Caesars, as described by Suetonius¹⁹ were Oriental tyrants with little regard for anything but the satisfaction of their ever more extravagant personal caprices. Suetonius may have been biased, but it is also true that where there is smoke there is usually fire. The Antonines were undoubtedly an improvement, but after them the quality of the Emperors went from bad to worse.

At the same time the influence of the Senate, which itself was undergoing a considerable change, waned increasingly. Eventually sovereignty resided, in effect, with the army and the urban masses.²⁰ In the fourth century they took it in turns to name the Emperor, whose average reign was something like two years and the vast majority of whom met their death by violence.

In the fifth century and after, — certainly after the reign of Theodosius, the emperors, as we

have seen, were but puppets in the hands of some Barbarian general or of some foreign power. The Imperial system was indeed a disintegrative force, but it must also be remembered that, as Aristotle points out in his *Politics*, it is only in a mass society that tyrants can hold sway.

The Changing Army

Roman expansion also led to radical changes in the nature of the army.

During the early Republic, the Roman army was a citizen army. The soldiers were very much part of the body politic and its members owed allegiance to the Senate like all other Roman citizens. It was only after the Punic Wars, when Rome had acquired an Empire which stretched as far as Spain and North Africa, which meant that soldiers posted in these far away places were forced to remain for long periods away from home, that it became necessary to establish a professional army. As a result, soldiers became isolated from the rest of the body politic, and their loyalty to the Senate became progressively replaced by that to their local commander. But for this there would never have been the civil wars, nor for that matter would the Imperial system have taken the form it did in its later phases when the legions made and unmade Emperors at their leisure.

Later, as we have seen, the commanders were increasingly foreigners, and eventually so were the troops themselves. This reduced still further the efficacy and loyalty of the Roman army.

Public Games

Another disintegrative influence was the institution of the Public Games. As Lecky writes: "One of the first consequences of this taste was to render the people absolutely unfit for those tranquil and refined amusements which usually accompany civilisation. To men who were accustomed to witness the fierce vicissitudes of deadly combat, any spectacle that did not elicit the strongest excitement was insipid."²¹ Once more the parallel with our own disintegrating society is very striking. In order to pander to the increasingly barbarous

audiences of twentieth century industrial society, TV and film producers vie with each other in their efforts to devise ever more garish spectacles based on increasingly exotic exploitations of the twin themes of sex and violence. Not to do so, in the age we live in, would be to court inevitable bankruptcy. It must be noted, however, that it is only in a very degenerate society that such spectacles would in the first place be tolerated let alone have any hope of flourishing. In tribal societies entertainments are of a very different kind. They take the form of feasts devoted to dancing, singing, eating and drinking in which everybody participates. These events are not frivolous entertainments. In all sorts of subtle ways, they play an essential part in maintaining a society's social structure, and, at the same time, its stable relationship with its environment.²² They are in fact rituals, and as a society disintegrates, social activities become correspondingly de-ritualised. They lose their social purpose. They become, socially speaking, random events: cathartic outlets at best.

Slavery

The institution of slavery was undoubtedly one of the chief causes of the fall of Rome. Among other things it permitted the growth of large-scale business enterprises with which neither the artisan nor the small farmer, who were proverbially the backbone of the Roman Republic, could possibly compete. As was the case with our own Industrial Revolution, and as is today the case in the Third World with the advent of the Green Revolution, they must inevitably migrate to the cities to

swell the ranks of the depressed urban proletariat. What is more the slaves were progressively freed, and swarmed to the capital to take advantage of the free distributions of corn and the public games. Eventually these freed slaves made up the vast proportion of the urban population.²³ Rome had increasing difficulty in accommodating these growing masses. They were made to live in squalid and overcrowded conditions and to provide them with their sustenance became one of the major preoccupations of the Roman State, causing it to indulge in ever more distant military campaigns for booty and tribute and to adopt ever more destructive agricultural methods. Every expedient had to be resorted to so as to feed and otherwise satisfy the ever more menacing multitudes.

But the institution of slavery had other consequences. It permitted the development of the *Latifundia*, which together with the military campaigns, provided the basis of

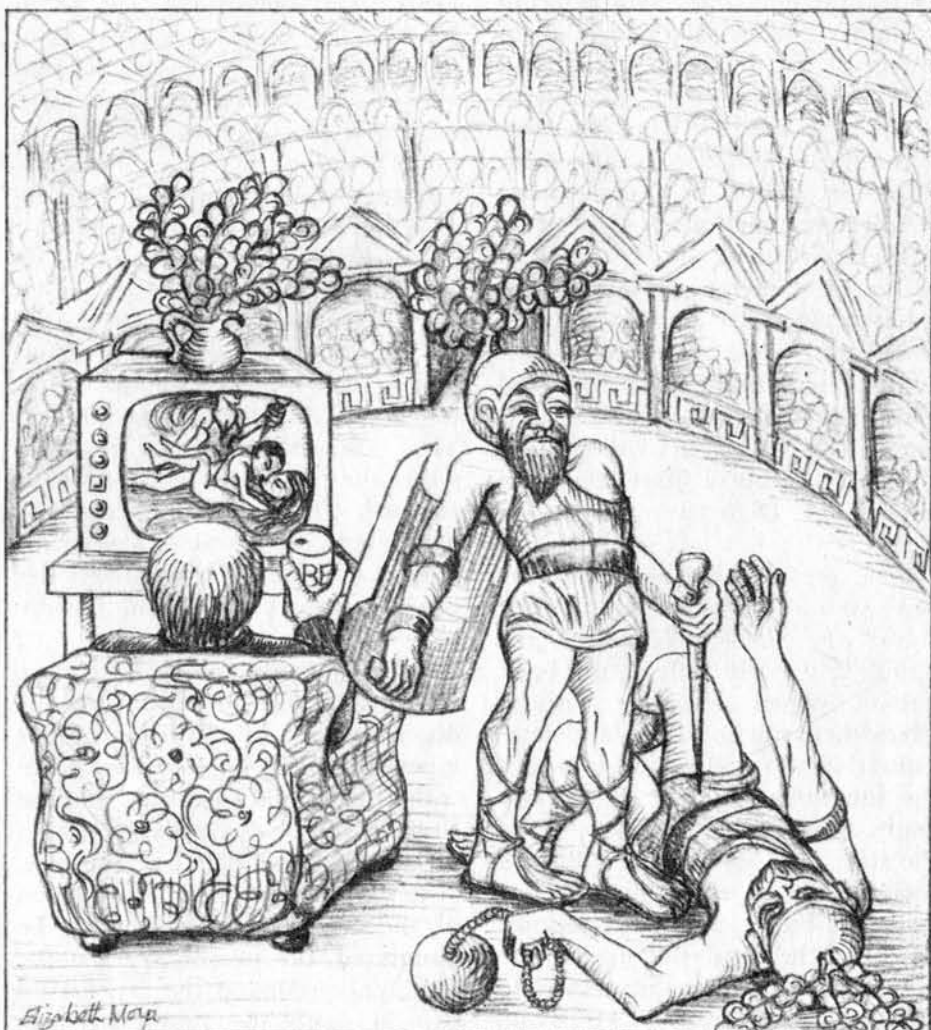
massive fortunes.

The great wealth which it generated changed, perhaps more than anything else, the nature of Roman society.²⁴ It provided a striking contrast with the austerity which was an essential feature of early Roman society and which was possibly a condition for the maintenance of the other virtues which characterised the Romans during this period.*

A further consequence of the development of slavery was the ruin of the artisan and the yeoman farmer. They could not possibly compete with the *Latifundia* worked by slave labour, and were systematically driven out of business to swell the ranks of the depressed urban proletariat.

Indeed, as the scale of economic activity increases, so must there be a corresponding proletarianisation of society. In our society this process occurs ineluctably as machines are introduced to replace men, as only the richer and more successful can afford the machines. The others are

* On this question it is interesting to note that the Venetians early in their history promulgated strict legislation to prevent the abuses which great wealth normally gives rise to. Equally interesting is the fact that Venice is one of the few powers ever deliberately to forego the joys of Empire. When the Venetians captured Constantinople in 1204 they could have taken over the lion's share of the Byzantine Empire. They declined to do so and left it to their Norman and Flemish allies. This must have been one of the wisest political acts in history. The only other example of this was Ataturk's behaviour at the Treaty of Paris in 1922, when he declined to take over Greek occupied territories, which were his for the asking.



"... ANY SPECTACLE THAT DID NOT ELICIT THE STRONGEST EXCITEMENT WAS INSIPID."

driven out of business and enterprises become increasingly large to take advantage of the economics of scale. In the latter part of the Roman Empire it was the introduction of slaves instead of machines which led to precisely the same results.

The Free Distribution of Corn

This played the same role as does our own State welfare system in the decaying conurbations of the industrial world. In New York today, well over a million people subsist entirely on state welfare. In the U.S. as a whole the figure is about fifteen million.

In Britain, according to a study undertaken by the Department of Health and Social Security, within the next ten years, social work and 'caring' organisations will be one of the most significant employers of manpower in the country. In Rome, the scale of the free distributions of corn was eventually such that, in the words of Lecky,²⁵ "To effect this distribution promptly and lavishly was the main object of the Imperial policy, and its consequences were worse than could have resulted from the most extravagant poor-laws or the most excessive charity. The mass of the people were supported in absolute idleness by corn, which was given without any reference to desert, and was received, not as a favour, but as a right, while gratuitous public amusements still further diverted them from labour." This reminds one of the 'Claimant's Union' — or 'Trade Union' of welfare recipients, which has been set up in the U.K.

The greatest damage done by state welfare, however, is to bring about the disintegration of the family unit itself. Indeed, this basic unit of human behaviour, without which there can be no stable society, cannot survive a situation in which the functions which it should normally fulfil have been usurped by the state. The family, in traditional societies, is an economic unit, as well as a biological and social one. If the father and the mother no longer have to make any effort to feed their children, if they no longer have to ensure their proper upbringing and education, then it

must almost certainly decay.

A society in which the family has broken down is in the final stages of disintegration. Such is the case today in the ghettos of the larger American conurbations — not only in the U.S. but in Mexico, in Venezuela and elsewhere. Such a society is characterised by all possible social aberrations; crime, delinquency, vandalism and every form of retreatism, drugs, alcohol, etc. are indulged in as a means of divorcing oneself as much as possible from a social environment which is increasingly intolerable.²⁶ One can safely assume that these social deviations also characterised the depressed areas of urban Rome during the later Empire.

The Consequent Breakdown in the Spirit of the Nation

All these changes led to the total demoralisation of the Roman people and the elimination of those qualities to which must be attributed the success of the Roman State in its earlier phases. One can do no better than quote Lecky²⁷ again on this subject, "all the Roman virtues" he writes, "were corroded or perverted by advancing civilisation. The domestic and local religion lost its ascendancy amid the increase of scepticism and the invasion of a crowd of foreign superstitions. The simplicity of manners, which sumptuary laws and the institution of the censorship had long maintained, was replaced by the extravagancies of a Babylonian luxury. The aristocratic dignity perished with the privileges on which it reposed. The patriotic energy and enthusiasm died away in a universal empire which embraced all varieties of language, custom and nationality".

Lecky could not be more eloquent in his description of the degeneration of Roman morals especially when he compares them with the moral qualities of the Romans during the early Republic.

"In the Republic", he continues, "when Marius threw open the houses of those he had prescribed to be plundered, the people, by a noble abstinence rebuked the act, for no Roman could be found to avail himself of the permission. In the Empire, when the armies of Vitellius

and Vespasian were disputing the possession of the City, the degenerate Romans gathered with delight to the spectacle as to a gladiatorial show, plundered the deserted houses, encouraged either army by their reckless plaudits, dragged out the fugitives to be slain, and converted into a festival the calamity of their country. The degradation of the national character was permanent. Neither the teaching of the Stoics, nor the government of the Antonines, nor the triumph of Christianity could restore it."

Soil Deterioration

At once both a cause and effect of social breakdown was a steady decline in the productivity of the land from which the Roman masses drew their sustenance.

Like all governments which depend for their survival on the support of a growing urban population, that of Rome adopted a cheap food policy. Just as in Britain today, agricultural decline was partly caused by the import of cheap foods from abroad whenever the occasion arose. Just as in Britain too, it was caused by forcing the farmers to pay taxes which they could not afford, and also, as we have seen, by creating conditions in which only the largest enterprises could survive. What is more, everything was geared to the short-term. Food must be produced at any price. The long-term consequences of the totally unsound agricultural practices which inevitably arose led to the most terrible deterioration of the soil. To this day, Southern Italy is a semi-wilderness, and the Italian Government, rather than attempt to restore the soil's lost fertility, is misguidedly attempting to combat the resultant poverty by large-scale industrialisation.

The deserts of North Africa, once the granary of Rome, bear even more eloquent testimony to the destructive agricultural practices of the times. The area bristles with the ruins of once magnificent cities, where there is now the wretched village of El Jem, once stood the Roman city of Thysdrus, of which the most conspicuous remnant is the ruin of a colosseum which once seated 65,000 spectators.

Where there is now the equally

wretched village of Timgad, once stood the great city of Thamugadi, built by Trajan in the year A.D. 100. This city was supported by extensive grain fields and olive orchards, of which there are now no trace. To quote Carter and Dale,²⁸ "water erosion, as well as wind erosion, has been at work on the landscape. Gullies have been cut out through portions of the city and have exposed the aquaduct which supplied the city with water from a great spring some three miles away."

"Ruins of the land are as impressive today as the ruins of the city. The hills have been swept bare of soil, a story which may be read throughout the region."

Those who refuse to face the terrible destructiveness of human activities have often argued that all this was caused by a change in the weather. The research of Gsell, Gautier and Leschi, shows that this simply was not so. Evidence of unchanged climate in the last two thousand years is provided by the successful planting of olive groves on the sites of ruins of Roman stone olive presses.²⁸

Let us look a little more closely at the development of Roman agricultural practices.

The Etruscans, whose influence spread throughout most of Italy, before it was halted by the power of Rome, appear to have been remarkable farmers. Their underground drainage systems were masterpieces of engineering, which nobody today could afford. The Romans, therefore, inherited reasonably fertile land. To begin with, the Republic occupied but a small area of Latium, perhaps no more than 400 square miles, but its population was very dense: apparently, something like a thousand persons per square mile. It is suggested by Carter and Dale, that the fact that the Romans were mainly vegetarians may well reflect this early land shortage, since it needs a great deal of land to provide people with a meat diet. As could be expected, the average farm holding was very modest, between one and five acres of arable land. The farmers produced mainly for themselves, though a small surplus was sent to Rome to feed the relatively small urban pop-

ulation.

It may well be that land shortage was one of the principal motives behind Rome's initial policy of expansion.

In any case, it was this policy of expansion which appears to have caused the first major ecological deterioration.

When England built her fleet to fight the Spanish Armada, not only was it necessary to cut down all suitable trees at home, but more had to be imported for this purpose from as far afield as Norway. In the same way the Appenines and their foothills were stripped of their forest cover to supply timber for the Roman fleet during the First Punic War.

Meanwhile, much farmland was abandoned because the farmers were serving in the army, and later because of the devastations caused by Hannibal and his troops in Italy.

Significantly, it was around 200 B.C. that malaria seems to have developed in Italy. The marshes which bred the Anopheles mosquito were man made. They were created by soil erosion from badly-cultivated sloping lands, which by being deprived of their topsoil, were, by the same token, made largely unproductive. The Pontine marshes supported sixteen Volscian towns in the seventh century B.C. Five hundred years later they only supported mosquitoes.

Also significantly, it was after the Second Punic War that Rome first became a grain importing country, or more precisely, that grain had to be obtained in the form of tribute from Sicily, Sardinia, Spain and later North Africa to feed the urban population.

It was during the first and second centuries B.C. that the Latifundia began to replace small farms; at the same time arable land was converted wholesale to pasture land, while much land was abandoned since its soil had become totally exhausted.

There is considerable literature on this subject.

Lucretius described it in detail. He believed that the earth was dying.²⁹ Livy wondered how the vast armies of the Volscians,

Aequians, and Hernicians, which the Romans had fought four centuries earlier could have been sustained by lands which, in his time, were so poor that they could support but a small population of slaves tending their master's livestock and caring for sparse olive groves and vineyards.³⁰

St. Cyprian of Carthage, around 250 A.D., complained that the world was dying, springs were drying up and famines were increasing over the whole Mediterranean area.³¹

Most eloquent perhaps was Columella, who argues convincingly against the thesis that the deterioration of the land was a natural process — 'an act of God', as we would refer to it — the consequence of the earth's natural ageing process, "It is a sin", he wrote "to suppose that nature, endowed with perennial fertility by the creator of the universe, is affected with barrenness as though with some disease, and it is unbecoming to a man with good judgement to believe that earth, to whose lot was assigned a divine and everlasting youth, and who is called the common mother of all things — because she had always brought forth all things and is destined to bring them forth continuously — has grown old in mortal fashion. Furthermore, I do not believe that such misfortunes come upon us as a result of the fury of the elements, but rather because of our own fault."³² He attributed this to the disappearance of the yeoman farmer and his replacement by slave labour. Slaves simply did not bestow on the soil the care it required — also, the owners of the Latifundia, in their haste to get quick returns, starved the soil of manure. For all land exhausted by cropping, he writes, "there is one remedy, namely to come to its aid with manure". Columella's knowledge of the different types of manure, was extensive. Their uses are extremely elaborate and reflect generations of experience of careful small scale farming designed as much to produce high quality food as to preserve the soil's food producing capacity. Columella considers that it is a lazy farmer who cannot get at least 20 bushels per month from his small animals. He also dwells on

the practice of interchanging soils, which is also done in traditional Chinese farming. This involves bringing in or taking out, with an extraordinary expenditure of labour, different soils, in hand baskets, to provide for the requirements of different crops. To the Roman farmer this laborious process was known as 'congestica'. As Columella wrote, "it is not because of weariness as many believed, not because of old age, but manifestly because of our lack of energy that our cultivated lands yield us a less generous return."

In the same way, a succession of wise and learned agricultural theorists such as Sir Albert Howard, Lord Lymington, Sir George Stapleton, Ralph Gardiner and Robert Waller, have warned succeeding British Governments of the folly of our short-term agricultural methods, and shown that no sustainable agriculture is possible without systematically returning organic matter to the soil.

Sewage

Subsistence farmers tend to return to the soil almost everything which is taken out of it. They are not looking for quick returns, on the contrary they have probably inherited the land from their parents and intend to leave it to their children — and in as good a heart as when they obtained it.

To this end, the soil is properly manured, not only with the excrement of their livestock but also with their own — 'night soil' as it tends to be called. Also, the livestock is usually killed and consumed on the spot so that the remains of the carcass too, will be returned to the land. All this drastically changes when large-scale agriculture replaces subsistence farming, and the produce of the land is transported to be sold in a distant market, to be consumed by a predominantly urban population. In mediaeval cities, as in many cities in Asia and Africa today, the 'night soil' is still collected, though often, rather than being returned to the land, it is burnt as fuel. In the more 'advanced' civilizations, however, the tendency is for human waste to be evacuated by means of complex sewage systems to end up in the waterways,

and eventually in the sea. As everybody knows this was the case with Rome. It is proverbial that the fertility of North Africa went down the sewers of Rome. Characteristically, we have learnt little from this sad experience and are today repeating the same unpardonable error on a vastly greater scale.

Vulnerability

As the Roman Empire expanded, and as Rome itself became increasingly dependent on it for its sustenance so did life within the city become increasingly precarious. Instability is a necessary feature of a system which expands anarchically in this way from its optimum size.

Tacitus observed as early as the reign of Claudius, that, "Italy, which had once supplied the distant provinces with corn, had become dependent for the very necessities of life, upon the winds and the waves."³³ As Lecky points out, the situation was hopeless, "Adverse winds, or any other accidental interruption of the convoys of corn, occasioned severe distress in the capital; but the prospect of the calamities that would ensue if any misfortune detached the great corn growing countries from the Empire, might well have appalled the politician".³⁴

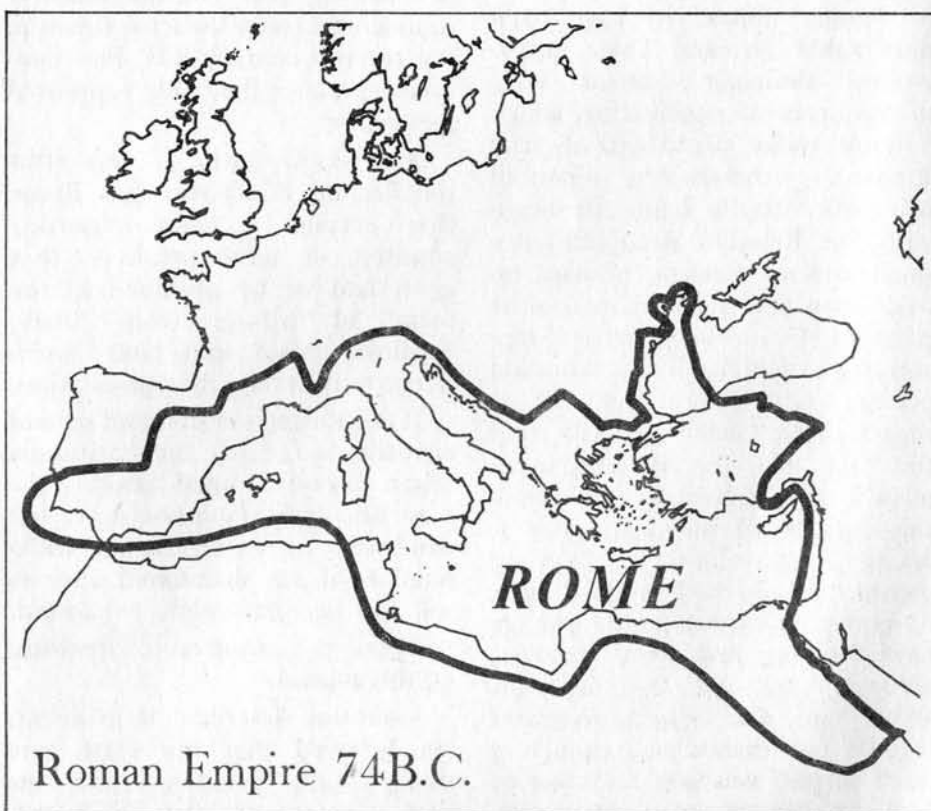
This nearly occurred with the revolt of Gildo, in Africa, in 397-8, and actually did occur, when, in the fifth century, the Kingdom of the Vandals established itself at Carthage and grew to become a great naval power, its fleet gaining control of the Mediterranean itself. As a result, it lay within its power to cut off Rome from its food supplies in North Africa, just as it is in the power of the Arab Sheiks today to cut off the industrial world from the only available source of cheap energy on which its economy, indeed its very survival depends.

The Romans, by this time, had become too weak and too demoralised to oppose the Vandals with the force of arms, and when the Vandal King Gaiseric, advanced with his army on Rome, in 455 A.D., there was no army there to oppose him. All the degenerate Romans could despatch against him was a procession led by priests, pathetically appealing to him to spare their city from the flames.³⁵

Rome never really recovered from this blow. When the Vandal Kingdom was eventually destroyed by Justinian, its fate was already sealed.

Government Reaction

Like ours today, the Roman politicians never really understood



the problems with which they were faced. They dealt with the symptoms of the disease rather than with the disease itself.

The Gracchi thought they could solve the problem by legislation. Land distribution under the Gracchi law, was a failure. There is no point in giving the people a few acres of worn out land if social and economic conditions do not favour the survival of the small farm. *It is the social and economic conditions which must be changed.*

Once the fertility of the soil had become so reduced that some of the Latifundia did not even produce enough grain to feed the slaves who worked them, Domitian issued an edict forbidding the planting of grapes in Italy. He even went so far as to order each land-owner in the provinces outside Italy, to destroy half his grape vines. Needless to say, this was unenforceable and had to be repealed. If grain was not grown, it was because socio-economic conditions did not permit it. *It was these conditions which had to be changed,* and this Domitian was powerless to do, just as our politicians are powerless to change those in which we live, and which render unfeasible any sustainable agricultural practices.

Pertinax, in A.D.193, offered to

give land to anyone who would cultivate it, but there were few takers. Eventually, Diocletian, A.D. 284-305, attempted more drastic measures and issued an edict binding all free farmers and slaves to the land which they occupied. This was the beginning of the 'Coloni' system which eventually led to mediaeval serfdom.³⁶ It is interesting to note in this respect, that if the rural population started grouping itself around local strong men, it was not in order to obtain protection against marauding bands, but against the tax collectors (Curiales) from the central government.³⁷ Who knows what our burgeoning Ratepayers' Associations might lead to?

It is also interesting to note that both in China and the Soviet Union, the intolerable trend towards urbanisation has also been halted by legislation. The peasants are simply not allowed to leave their villages and are effectively tied to the land. These so-called progressive states have thereby adopted one of the principal features of the mediaeval feudalism which they have so vehemently decried.

Such legislation, however, was, in the chaos of the disintegrating Roman Empire, very difficult to apply, and in effect no government was ever able to contribute signifi-

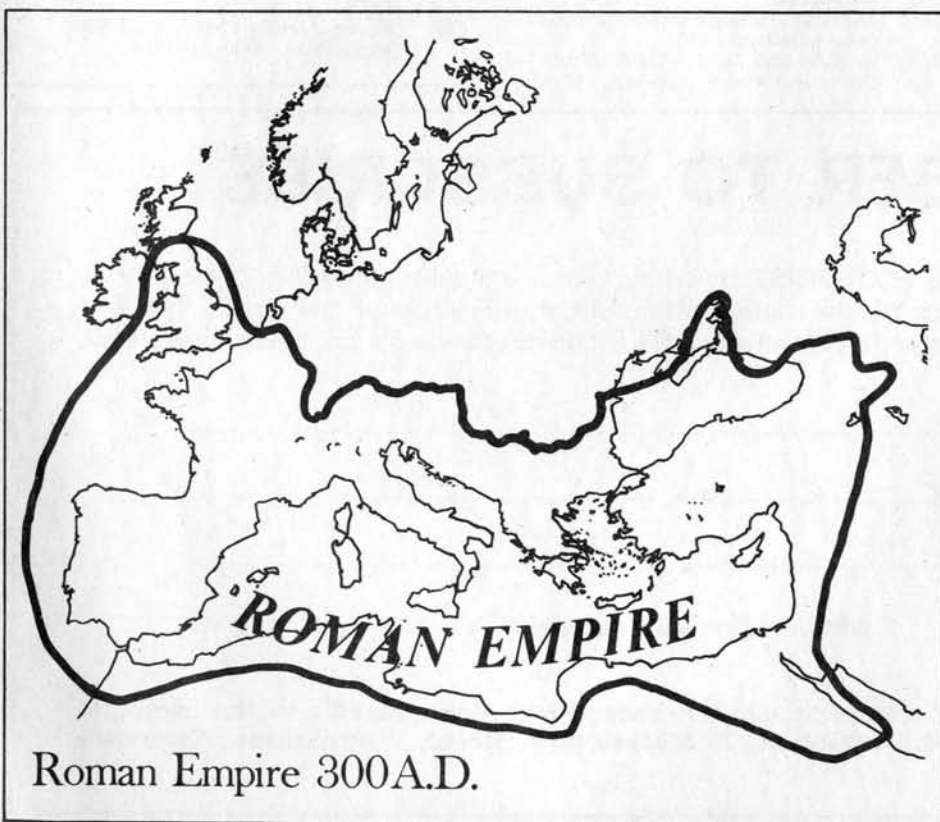
cantly to the reversal of the process of disintegration, in which the Empire was irreversibly caught up. The wise emperor, Marcus Aurelius advocated a stoical attitude towards a process which could not be halted.³⁸ As Lecky points out, no emperor could have survived an effort to eliminate the more obvious causes of social and ecological degeneration. The free distribution of corn had become an essential feature of life in the capital, to which everything else had adjusted. The people were simply hooked on it, just as the population of our larger conurbations are becoming hooked on our state welfare system. What politician today would have the courage to abolish, nay even to reduce the extent of this pernicious institution?

Against slavery they were equally powerless. To interfere with it would be to disrupt the economy itself, which was as dependent on slavery as ours is on machinery. Without slaves Rome's already precarious agricultural system would have collapsed, just as would our equally precarious one, were it to be deprived of its tractors and chemical inputs.

To re-establish a socially orientated religion in a mass society which had been deprived of its basic social structure, and which had largely forgotten its ancient traditions, was an equally hopeless task. The Emperor Julian tried. For his efforts he has become known to history as the Apostate, and he failed miserably.

To reform the political institutions was equally impossible. Augustus, after the civil wars, tried to restore the institutions of the Republic, or rather to reconcile them with his Principate. He did so very ingeniously, but the structure he built was a bastard one. The institutions of the Roman Republic were admirably suited to a City State but not, as Hammond shows, to an Empire.¹⁸ It is not surprising that such diametrically opposite social forms could not be forced into the same institutional framework. By becoming an Empire, Rome was in fact forced to break away from its past, and as Burke said, "no greater tragedy can overcome a nation."

Diocletian's efforts at reform



were even less successful. In the absence of a real society held together by public opinion reflecting its traditional cultural pattern, there was no power base other than the army and the urban masses, both of which were only concerned with the acquisition of ever increasing short-term benefits. This is true today of most of the disintegrating societies throughout the world, as they fall within the orbit of industrial society.

In the meantime, the situation could only go from bad to worse. By accommodating undesirable trends rather than reversing them, a chain reaction was set in motion, which, just as it will in the present day situation, could only end in total collapse. Thus, welfare caused the increasing demoralisation of the urban masses. The Public Games made them still more degenerate. Both helped attract more people to the cities, thereby increasing the dimensions of the problem. Government expenditure could only keep on rising, which caused further increases in taxation and encouraged further military adventures in search of tribute and booty. In the meantime, the consequent depopulation of the countryside and the ruin of the yeomen and rural middle classes, made agriculture increasingly dependent on slave labour, further accelerating rural depopulation and further swelling the urban masses. The shortage of money to buy food

and the inevitable soil deterioration also called for further taxation and ever more expeditions undertaken by an ever less effective army, whose loyalty to the State was ever more in doubt, and which eventually simply disintegrated along with the rest of the body politic.

Our politicians are today caught up in a very similar positive feedback process, from which they appear even less capable of extracting us. With neither vision nor courage, they simply allow the Ship of State, to drift into ever more turbulent waters and content themselves with superficially repairing its ever more battered hulk, for no other purpose than to defer, for ever shorter periods, the inevitable day when it must flounder beneath the waves. Such is the cost of violating in so radical a manner the basic laws of social and ecological organisation.

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37. W. E. Heitland *Agricola - A Study of Agriculture and Rustic Life in the Greco - Roman World from the point of view of Labour* Cambridge University Press, 1921.
38. Marcus Aurelius *Pensees Pour Moi - Meme* Paris - Garmer Freres.

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Associate Editor, Nicholas Gould.
Freelance writer.

George

by Nicho

Does anyone read George Sturt nowadays? Presumably so: at an-
back, and a weighty two-volume section from his journals was
appreciate his knowledge and insight have, in my experience, sel-
of one of his own virtues, and that his marvellously lucid and
ornament of English literature, while positively distracting atten-
find writing from our prophets.

Sturt's life is easily told, for it was "uneventful" enough, as the world judges such things. He was born at Farnham in Surrey in 1863 (just a hundred years after Cobbett): his father was a wheelwright there, as his grandfather had been. As a boy he did well at school, and embarked on a career as a teacher: but in 1884 his father died, and Sturt abandoned teaching to take over the family business. His connection with the wheelwright's shop was to continue until 1920; and during these 36 years he successfully combined the trades of master-craftsman and man of letters. Sturt's writings reflect his position as a man of two worlds. He was close enough to his craft, to his workmen and his country neighbours, to understand them from the inside, but as an intellectual, a journalist and a writer, he was also capable of observing them objectively and transmitting his observations to the outside world.

It is easy to sing the praises of the old rural way of life from a comfortably remote viewpoint: most of us do it, and few topics set the generalizations flowing faster. Numerous writers, in Sturt's day and ours, have catered for the (largely urban) demand for romanticized descriptions of country life. But Sturt had no time for that sort of thing. He went out of his way to point out the suffering and injustice which were a part of the traditional life of the English countryside; and he was convinced that many of the

evils of his own time were symptoms of a transition from the old to a new and better social and economic system. Thus he is far from being a single-minded propagandist — a fact which lends credibility to his observations and opinions.

For most of his adult life Sturt lived at The Bourne, a village two miles south of Farnham. (From this place he took the pen-name George Bourne, under which most of his writings first appeared.) The Bourne was far from being a typical English village — it had never had the centralizing, authoritarian influence of a church or a manor-house, but had developed from the settlements of squatters in a valley surrounded by common land: left largely to their own devices, the villagers had become a self-supporting community. In 1861, however, the common was enclosed: the land which had been the mainstay of the peasant economy became private property, and the villagers' whole way of life was altered as a result.

In his book *Change in the Village*, first published in 1912, Sturt analysed the effects of the enclosure and other modernizing influences upon the lives of the villagers. He wrote as a reporter rather than a historian: for all his facts were drawn from personal observation or from the reminiscences of villagers who had lived through the changes he described. By painting a picture of fifty crucial years in the history of one community, he shows us in

microcosm the fate of a whole civilization — "the home-made civilization of the rural English". Indeed, his study evokes wider parallels than he ever dreamed of: *mutatis mutandis*, the story of The Bourne is the story of a million villages under the impact of industrialism, in Asia and Africa and Latin America. No one could read Sturt today without being aware of the wider implications of the story: but the minute observation of particular detail is his greatest virtue, and lends authority to his cautious generalizations. Travel, perhaps, does not *always* narrow the mind: but Sturt (who seldom went as far as London, and never to my knowledge out of England) proves that the converse is sometimes true — the intimate and lifelong study of a man's own parish may best equip him to make pronouncements of universal application.

Economic self-sufficiency was the keynote of the old life of the village. A few goods came in from outside — salt and iron, for example — but in general people's well-being depended on their detailed knowledge and careful use of the resources of their own parish. Several times Sturt compares the villagers' relationship with their countryside to that of animals with their territory: they were "not *residents* so much as *fauna*". The peasant "knew the soil of the fields and its variations almost foot by foot; he understood the springs and streams; hedgerow and

Sturt

as Gould

rate, his two best-known works are currently available in paper-published a few years ago. Yet the very people who would most have heard of him. I can only conclude that he has been the victim of a vigorous prose style has caused him to be regarded as a minor contribution from what he had to say. Perhaps we have given up expecting



George Sturt.

ditch explained themselves to him; the coppices and woods, the water-meadows and the windy heaths, the local chalk and clay and stone, all had a place in his regard". Moreover, although the villagers included a few specialist craftsmen — smith, wheelwright, shoemaker — "the trades of these specialists were only ancillary to the general handiness of the people, who with their own hands raised and harvested their crops, made their clothes, did much of the building of their homes, attended to their cattle, thatched their ricks, cut their firing, made their bread and wine and cider, pruned their fruit-trees and vines, looked after their bees, all for themselves".

This "organic community", as Sturt is fond of calling it, received its death-blow from the enclosure of the common. In itself the enclosure might not have been fatal; but its indirect result was to leave the villagers powerless against all the influences of the new industrial civilization. The common had been vital to the economy of the old village — "It was only by the spacious 'turn-out' which it afforded that the people were enabled to keep cows and get milk and butter; it was only with the turf-firing cut on the common that they could smoke their bacon, hanging it in the wide chimneys over those old open hearths where none but such fuel could be used; and, again, it was only because they could get furze

from the common to heat their bread ovens that it was worth their while to grow a little wheat at home and have it ground into flour for making bread".

After the enclosure, the cottager became a "broken man — a peasant shut out from his countryside and cut off from his resources". Self-sufficiency was no longer possible: the goods he had formerly produced for himself now had to be bought in a shop; and, to spend money, he had first to earn it. Wage-earning was not a new thing in the village: but in the past it had been supplementary to the cottager's main income. Now, he no longer had a reserve of *real* wealth — a side of bacon, a sack of flour, a stack of firewood — to survive on for long periods independent of the outside world. He must find a regular money income: and before he realized what was happening he was a slave of the new commercial and financial system.

So much for the economic effects of enclosure: but Sturt saw that there were wider implications. "The results have spread from the economic centre outwards until the whole life of the people has been affected". In the old village, co-operation had been frequent and spontaneous: "those who had donkey-carts would willingly bring home turfs for those who had none, in return for help with their own turf-cutting. The bread-ovens were at the disposal of others besides the owners. At pig-killing, at thatching,

at clearing out wells . . . the people would put themselves at one another's service". The new system made the villagers compete against one another for the available jobs, and every hour's work acquired a market value.

The destruction of the village as an organic community was accelerated, towards the end of the century, by the influx of new residents — middle-class commuters buying "a place in the country". Sturt felt the utmost scorn for such people, though, with characteristic modesty, he saw himself as one of them. "Resident tourists" was how he described them in his journal: "impertinent intruders, who . . . do not wed themselves to the countryside, but . . . make of it a prostitute, a harlot: trick it out in finery, of gardens and costly houses, and then, wearying of it, are ready to sell it and be off". His fierce honesty was such that he came to distrust any aesthetic, intellectual appreciation of country life as in some sense a betrayal of the true countryman, the peasant who did not love or admire his native place as something external to him, but was *part* of it, in exactly the same way as the native plants and animals.

In earlier times there had been differences of wealth in the village, but these had been no more than quantitative. The richer villagers "ate the same sort of food and wore the same sort of clothes as the poorer folk, and they thought the same

thoughts too, and talked in the same dialect, so that the labourer working for them was not oppressed by any sense of personal inferiority." The new arrivals, however, brought a new scale of values; and in consequence the everyday activities of the villagers at home, such as the care of their gardens, lost their wider significance — "Instead of being a part of the general thrift of the valley . . . they have no relation now to anything save the labourer's private necessities, because now the dominant interests of the valley are those of a different sort of people who care nothing for such homely things". At the same time, the rift between town and country had grown to a chasm: when Sturt was a child, Farnham had still been economically and socially the heart of its own countryside, but by 1912 it was rather the spearhead of an alien invasion.

One of the supposed benefits of the new order was (and still is) the "leisure" given to people by the division of labour. Sturt makes the point that a society in which leisure is greatly valued is a society in which work has become mere drudgery. The peasant's work was varied and interesting: admittedly it left his reasoning and imaginative powers undeveloped, but it satisfied one basic human need — the need to exercise one's skill and experience. Modern work, on the other hand, tends to be too dull, too *easy*, to be satisfying: and since it is undertaken primarily for money, it is not an end in itself. "The act or fruition of living is postponed during the hours in which the living is being earned; between the two processes a sharp line of division is drawn".

The question of work plays a larger part in Sturt's other major book, *The Wheelwright's Shop*, the account of his own trade which he wrote towards the end of his life. Is there anything else in literature quite like this book? — a thoughtful, widely-read man distilling into words the fruits of half a lifetime's experience in a skilled manual craft. I cannot hope, in a few paragraphs, to do full justice to the technical side of the book: but to ignore it altogether would be a misrepresentation. There are too many theorists

of pre-industrial handicrafts, whereas very few of the people who have actually worked at them, not as a pose but as practical men earning a living, have been capable of interpreting them to outsiders. Of those few, George Sturt stands in the first rank.

It is an odd fact of history that many of the masterpieces of an essentially pre-industrial technology — for example, sailing ships and windmills — were produced long after the industrial age had begun. The greatest period for engineering in *wood* was probably the 19th century. Thus the English farm waggon reached near-perfection, both practical and aesthetic, no earlier than the eighteen-seventies, when the changes which would render it obsolete were already under way. I speak of "the English farm waggon" as if it were something of a standard type: but in reality, waggons were a species subdivided into many local races. To a trained eye, a hundred points of detail would immediately identify a waggon as the product of Surrey or Lincolnshire, Gloucestershire or Norfolk. Similar regional diversity characterized almost every type of artefact in the days of hand-production; and Sturt's experience in the matter of waggons suggests that the diversity was not arbitrary or the result of mere aesthetic preferences, but the embodiment of a close, one could say an *ecological*, relationship with a particular locality. "We got curiously intimate with the peculiar needs of the neighbourhood. In farm-waggon or dung-cart, barley-roller, plough, water-barrel or what not, the dimensions we chose, the curves we followed . . . were imposed upon us by the nature of the soil in this or that farm, the gradient of this or that hill, the temper of this or that customer or his choice perhaps in horseflesh". Even the space between the wheels had to be of a measure traditional for the locality; otherwise a cart or waggon would not fit the deep ruts which constant traffic had engraved on every farm track and lane.

A craft of such complexity and such extreme regional specialization could not be learned from books: it was passed on in the old way, from

master to apprentice. "What we had to do was to live up to the local wisdom of our kind; to follow the customs, and work to the measurements, which had been tested and corrected before our time in every village shop across the country. . . The work was more of an art — a very fascinating art — than a science". It took Sturt years, for example, to work out why a waggon wheel needed a certain convexity, though he had seen badly-made wheels fall to pieces for want of it. In his own workshop it was a detail the men attended to very carefully — "but I think none of them, any more than myself, could have explained why it had to be so".

Sturt came to regard waggons almost as living things. This, he argues, was not sentimentality — "the truth is, farm-waggons had been adapted, through ages, so very closely to their own environment, that, to understanding eyes, they really looked almost like living organisms. . . But where begin to describe so efficient an organism, in which all the parts interacted until it is hard to say which was modified first, to meet which other?" Describe it he does, however, in fascinating detail — the various timbers with their properties appropriate to particular uses; the seasoning of the wood, an unhurried business taking a year for every inch of thickness; the fashioning of the various parts of the waggon, and in particular the wheels, the summit of the wheelwright's art. the paring of the squared timbers, so decorative in its effect, but carried out with the sternly practical purpose of reducing weight to the utmost wherever it contributed nothing to strength. Throughout, the reader's admiration is excited at the precision and artistry of Sturt's workmen — the blacksmith, for example, whose duties included making the iron tyres or rims for the wheels. These were put on red-hot, so that as they cooled and contracted they tightened the parts of the wheels as no human strength could have done. "A quarter or a half-inch more or less in the circumference might make or mar the wheel. . . The tyre could not be tried on first to see how it would fit. It had to be right within half-an-inch when it was

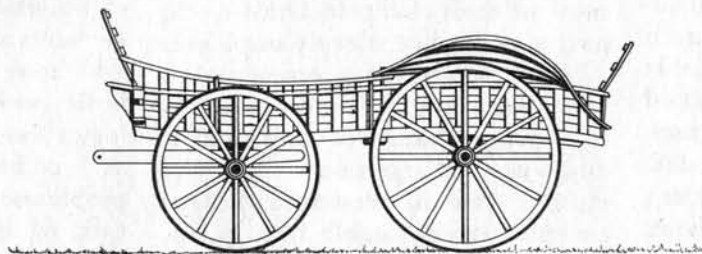
once for all put on, red-hot". Sturt's description of this process is beautifully clear (though he uses no diagrams), and as gripping as a good thriller.

Reading *The Wheelwright's Shop*, one is bound to ask how far the changes brought about by industrialism have been worth while. Probably any close study of the handicrafts of a "primitive" people would create the same impression — that mechanization and mass-production, far from being the great liberators of the human race from the drudgery of manual labour, have robbed us of something more precious than the leisure and material prosperity they have given us in exchange. The ordinary human being is a creature with almost limitless potentialities of skill and creativity: but every tendency of modern life discourages him from realizing

them. His food is grown for him, his house built for him, his songs sung for him, his games played for him. If his creative instincts are sufficiently strong to overcome the pressure to live his whole life by proxy, he is unlikely to find a better outlet than some spare-time hobby, similar in biological terms to the displacement activity seen in caged animals whose natural behaviour is denied to them.

Although Sturt lived to see the final destruction of English rural civilization (before he died the wheelwright's shop had become a garage), he remained optimistic. The old order, he believed, deserved to be overthrown, for with all its virtues it had permitted intolerable injustice and the warping of men's rational and imaginative faculties. In any case, he saw no possibility of reviving it: "you cannot create that

sort of thing by Act of Parliament, or by juggling with tariffs, or by school lessons. An imitation of the shell of it might be set up; but the life of it is gone, not to be restored". Modern industrial civilization, however, he saw as "a digression. . . , a cul de sac". He looked forward to a time when the land would be put to its right use once more, when cooperation rather than individualism would be the keynote of social life, when work and leisure would merge into a single process of skilled and joyful living, when men would regain the organic wholeness of the peasant community without losing their new-found social and intellectual freedom — a time, in fact, in which thoughtful, creative, unambitious men like George Sturt would be able to feel fully at home.



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The Politics of Futurology

by

Brian Johnson

In his February editorial review of the Second Club of Rome Report (*Mankind at the Turning Point* by Edouard Pestel and Mihajlo Mesarovic) Edward Goldsmith points out that it is an unavoidable feature of quantitatively-based models that they must exclude non-quantifiable values. All such modelling incorporates the values inherent in the modellers' choice of statistics and in the statistics themselves. Thus the assumptions underlying the mark II Club of Rome model remain the assumptions of industrialism: external to nature, accepting instability as an inevitable attribute of the human psyche and thus of human society.

Slavery to its masters' values is an unavoidable defect of all statistical modelling. Yet can we not still see considerable usefulness in quantitative modelling along systematic lines?

Aside from the fact that systems dynamics modelling, adapted to individual economic sectors, can help show the way, for example, to policies for zero energy growth (which is what is beginning to emerge from a series of national Workshops on Alternative Energy Strategies) the systems approach to current analysis and future planning has done much, over the five years of *The Ecologist's* life, to crack the mould of neo-classical analysis in development economics, and helped to promote new debate on the values behind development decisions.

Since the first world environment conference (Stockholm 1972) the "systems view" of a single global *problematique* has gradually begun to merge with the continuous post-colonial debate on how to define and then achieve world-wide "development". The incipient merger between development studies and systematic analysis for forecasting is symbolised, among many other indications, by the fact that next September's annual Conference of the Society for International Development — the world-wide society of technical advisors, economists and social scientists who consider themselves the professional corps in the business of Third World development — will have "World Structures and Development — Strategies for Change" as its theme.

For the "hard nosed" development professionals who have, like most of their clients in Third World governments, been deeply suspicious of conservationist environmental or "carrying capacity" questions, this is a major change of emphasis. It embodies recognition that the current crisis of Western industrial societies is inseparable from other, more familiar, patterns of social and economic dislocation: the under-nourishment, indigence, inflation and export earnings fluctuation which have been endemic in most of the Third World since its identifiable emergence from colonial systems. But this integral analysis of the problems of rich and poor countries as part of a total development *problematique* is relatively new to non-Marxist analysis. Indeed it is new to Marxists as well in the sense that it goes further, if as yet with less coherent theory, to explain not only exploitation but also breakdown due to over-consumption rather than the Marxist prognosis of under-consumption.

That a unified analysis of rich and poor nations' problems had been resisted so long by keepers of the conventional wisdom in centres like Britain's development aid think-tank, the Institute of Development Studies at Sussex University, may seem surprising to the layman. But it reflects more on the narrowness of neo-classical economists' assumptions as to what



Associate Editor, Brian Johnson is Director of the Institute for the Study of International Relations at Sussex University.

constitutes acceptable development than on inherent suspicion of corollaries to Marxist or Leninist exploitation theory, though both elements are probably often present. Will more futures modelling within both capitalist and socialist ideologies manage to penetrate, as well as connect, the interlocking problems? Or will it remain the task of individual insight to link empirical understanding and identify the keys to change? On the Goldsmith analysis of current systems dynamics exercises, computer-based quantitative analysis cannot cope with such considerations as men's rejection of ever more risky elitist and centralising technology and its corollary of speeded-up, disorientating, over-stressing change. But the seriousness of this defect is surely a function of the scale of the unit to be studied. There is indeed vital work to be done on modelling inter-relationships and types of technology needed to get maximum yield from the resource required to sustain small social and economic units at close to current standards of comfort and security. This seems a far more fruitful field for computerised systems analysis than playing with interactions over time. For with a "deep" time dimension, any quantitative analysis must always miss the capacity of shifts in values to confound prediction.

Futurologists recognise the central role of values (or ideology) in selecting inputs and building models.

This is why they are now stressing the need for a decentralised international network of futures-directed centres, or in Harlan Cleveland's phrase, "centres for catalytic policy analysis". All such tanked thinking will be more valuable if it is directed by people of broad and general education who recognise that the numbers pushers must be aware of cultural limitations and indeed operate firmly within a single set of cultural assumptions.

If decentralised in this way, futurological numbers-crunching could have a vital interim role to play. Institutionalised analysis of future alternatives, whether done non-governmentally or officially, is likely gradually to become important in international negotiations over trade, aid, energy and other technology transfers. Today we are far from any healthy symbiosis between medium to long-range futures studies and the short-range bargaining process at the green baize tables. But with a widespread network of futures studies that show many countries their alternative technology choices and their limits to such things as demographic growth, some linkage between planning and negotiating will at least become a possibility. And few would question that some substitute is desperately needed for the present negotiating pattern of infinite hopes confronting insignificant gains.

Of course it will be objected that networks of national futures studies are only a clumsy and bureaucratic way of setting forth the rudiments of far more sophisticated models that exist in national leaders' minds. But it is precisely the process of making one's assumptions explicit which permits re-examination and mutual education. The political applications of futurology bear careful examination. Futures think-tanks should not be spurned for their inevitable crudenesses and their sometimes elaborate statement of the painfully obvious. They could be used as an educational tool of considerable potential, and as a practical aid to better government which in future, even more than when Victor Hugo coined the phrase, will consist of "knowing how much future to introduce into the present."

The Call of the Land

by Peter Bunyard

Five years ago when we launched *The Ecologist* the world seemed to be doing very nicely. Economies were booming and politicians plus their economic advisors would have laughed to scorn any suggestion that the world would be reeling within a few years, from soaring oil prices, economic stagnation and from rapidly falling agricultural productivity. In those days any limits to growth were far too distant from the here and now reality of industrial progress and the pursuit of an ever higher standard of living to prevent 'experts' from making all manner of incredible projections about the future. World energy consumption was going to increase eightfold in thirty years, food production was going to double and it wouldn't be long, they reckoned, before every family in the world had its own car, television set and other common gadgets of the industrial society. Was there not plenty of oil in the world, unlimited atomic energy resources and if one dug deep enough into the earth's crust a veri-

table cornucopia of minerals? And what limits to food production could there be when animals and plants could be nurtured on synthetic nutrients manufactured by ingenious industrialists?

Times have changed. There is hardly a soul who hasn't realised that Britain and other industrial nations now exist primarily by permission of OPEC oil, and surely few of us are still naive enough to believe that North Sea oil will solve all our problems, and take us up the next rung of the ladder of industrial progress. Yet we cling desperately to the industrial society we have created for ourselves. For what have we got if it goes? We have had paltry respect for traditional ways of life and have bulldozed away anything that stopped progress — even superb agricultural land has been brutally brushed aside to make way for motorways, airstrips, office blocks and other industrial schemes. In return we have lost the ability to rely on ourselves for our own survival. We have literally cut the



Associate Editor, Peter Bunyard. Farmer and writer, grudges every moment spent away from his farm.

ground from under our own feet.

Nevertheless, here at Lawellan we are trying to achieve as much independence and freedom from the industrial society as we can, even though we are still far from our aim. People from 'outside' are now questioning whether our attempt at subsistence living has any validity beyond the field in which it is practised. Could such a life solve the problems brought upon us by the industrial society? Or is it solely an escape for a few privileged eccentrics who happen to like working ridiculously hard for puny financial rewards?

One of the occupational hazards of being part of a small community with pretensions towards subsistence living is that we attract a continual stream of visitors. We have developed a somewhat ambivalent attitude towards such 'foreigners', gratified and somewhat flattered that they should have come out of their way to see us, but also a little put out that they should demand attention and disrupt our work. Nevertheless, once over any initial resentment at being disturbed, we generally find we enjoy having visits, and would miss them terribly if they didn't happen. Apart from the social contact, they are very valuable to us. People come because they have increasing doubts about the industrial society and are curious to see how subsistence living works, and how it feels to be part of a small land-based community. We, on the other hand, benefit because by asking questions and probing our motives, such outsiders help us to clarify our own ideas and aspirations. Inevitably too visitors bring something of their own experience of life and we often find ourselves learning from them, both on the practical and the intellectual side. One man who dropped by with his family for the day, was excited by our proposal to build a water wheel for our mill and to re-cut the leat bringing water across the fields from the next-door farm. A couple of days later he sent apparatus together with detailed instructions for ensuring that we will level correctly and achieve maximum fall on to the wheel when we dig the leat. We've yet to start, but we shall certainly follow his advice when we do.

Paradoxically it is not always those who are most in sympathy with our ideals that teach us most about ourselves. Confrontations between different lifestyles can in themselves be extremely illuminating because they make us see clearly why we have chosen to live as we do. On that score when someone comes to the farm who carries with him the aura of a person whose life is wholly integrated with that of the industrial society, it is hard not to make a value judgement about his life compared to our own. Not that we have in any way discovered the ultimate truth about existence, or are leading the only possible life — far from it — but at least we have made a conscious effort not to be subservient to a society which is rushing headlong into its own grave.

Recently we had a visit from an American who was curious to see people who had opted out from the industrial society. He himself gave an impression of a terrible aimlessness and dissatisfaction with life, although by modern standards he had a lot going for him. I may be wrong but I had the impression that it was impossible for him to understand what we were really trying to do, because he appeared incapable of knuckling down and doing a bit of physical work for its own sake. He was the sort of heretic who would never understand the meaning of religious conviction because he could never make the initial effort to transcend himself. Consequently for him our attempt at subsistence living was a kind of intellectual game. He wanted to know whether our 'social experiment' as he termed it, had any relevance for the industrial world, or whether we were just an isolated group, out on a limb, doing something of no great significance.

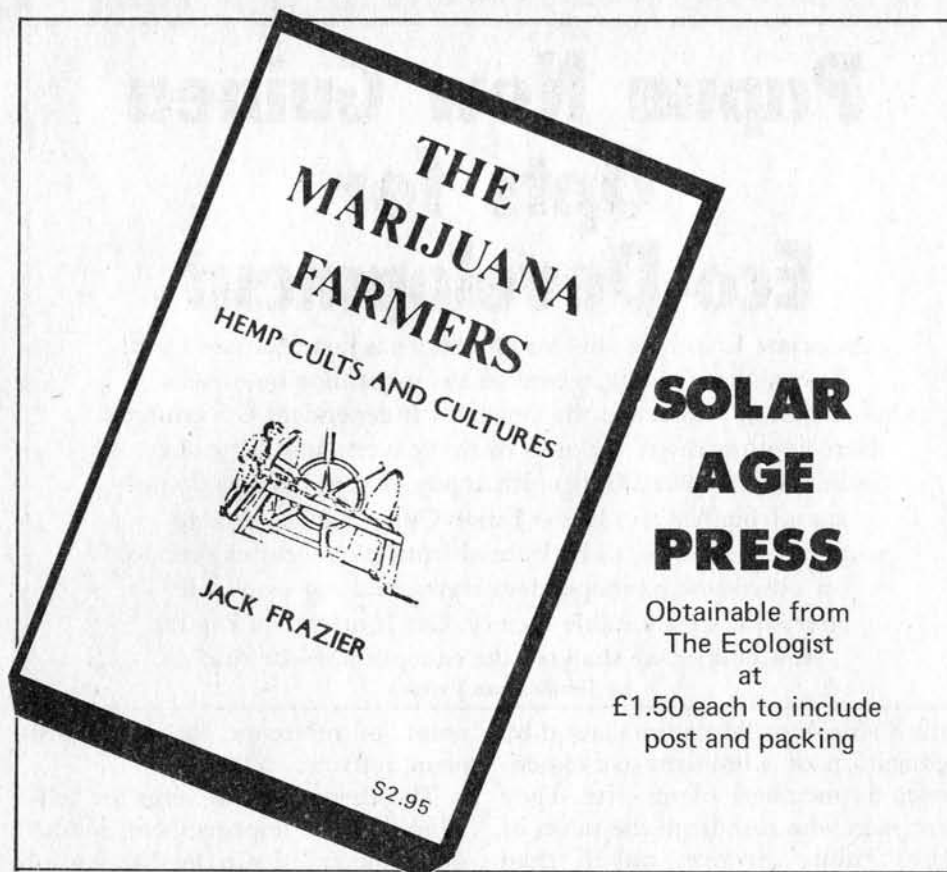
I find it hard to answer such questions without seeming to be a little pretentious, partly because I am unable as yet to live entirely from subsistence farming (hence this article) and partly because we have yet to prove at Lawellan that we farm as well as, if not better than, anyone else, by using special organic techniques with minimal recourse to the products of the industrial society. But the point of

living at Lawellan is not to prove the superiority of our lifestyle, though all to the good if we achieve that, but to live life as completely as we can all the time and to be honest with ourselves and those around us. Of course we fall short, and it is not always easy to throw off the hang-ups and obligations we have carried with us from our industrial society existences, but it is amazing how life within a tight community in the country has perceptibly changed us all, making us more relaxed, certainly physically more healthy and I hope gentler.

The industrial society forces people to live separate existences all within the span of a day. Men and women leave home to go to work where they mix with an entirely different set of people, they then return home to their families and very often to the fantasy world of television. Most of the time most people actually avoid living and this kind of deceit is so utterly demoralising that people have to take holidays to get away from it all. It is surely a sad comment that the aim of most people is to maximise their time away from work and to increase the length of their holidays.

In subsistence living there is no neat separation of the day into work, home and holiday. The different activities blend together into a continuum of existence, and although we need time to ourselves as well as the occasional break, there seems to be much more unity of purpose in our lives than I believe there can ever be for the majority of people caught up in the enmeshing fabric of the industrial society. Our life is not, therefore a 'sociological experiment', and if we should fail, that failure will not prove the non-viability of subsistence living as practised by us escapees from the industrial society. Probably all it would show is that we as individuals were unable to cope with each other for personal reasons, or that our inexperience of farming and the financial problems involved, finally proved our downfall.

Farming, however done, is an unnatural process and one could argue logically that there is no reason why it should not be linked to industrial techniques if it can be



to be 'organic', it is actually to increase soil fertility by building up a deep humus layer such as one might find in a hedgerow. Indeed much of his inspiration comes from the natural fertility of a hedgerow (ironical that farmers should be grubbing them up) which, as he points out, produces a lush growth a good month before most pastureland, and does not dry out even in a drought. Consequently by establishing herbal leys containing a number of plants one might expect to find in the hedgerow, like chicory, burnet, kidney vetch, broad leaved plantain, sheep's parsley as well as many different grasses and clovers, Turner was able to improve his land beyond recognition. Obviously the cost of his seed was much higher than that generally used, but once his leys were established there was no doubt of the handsome return the improved pastures gave on his investment. He demonstrated what every farmer should be demonstrating — that good farming which improves the land is not only worthwhile but actually profitable.

How does Newman Turner relate to us? He used tractors and other labour saving machinery, and although I am sure he would have condemned the running down of the agricultural labour force, he probably had no revolutionary plans for recreating communities on the land. Nevertheless his techniques are ideal for us, specially when we add certain ingredients of our own, like using pigs, instead of a rotary hoe, to break down pasture and knock down weed infestations. Moreover I think that in the end we shall have the advantage over him, because each one of us in the community has a particular interest in seeing the soil improve around us. We have only just started, and like Turner we have started with land in poor heart, and it is apparent to us that the organic humus layer has been eroded away through previous owners' exploitative farming combined with very poor management. But I reckon that in a few years' time we shall really have something to show and that our 'sociological experiment' will have great meaning and relevance for Britain in its approaching years of hardship and decay.

shown that they manifestly improve yields on a long term basis. All the evidence points the other way. The heavy machines now used on the land bring about a definite deterioration in soil structure, compacting it and squeezing out the air, and once soil structure goes so does natural fertility. When used in the winter, tractors scar the land irreparably and at Lawellan we have seen part of our next-door neighbour's field trickle away down our lane because he was constantly crossing and re-crossing the field on a tractor, to gain access to the rest of his farm. An acre lost here and there in this way soon adds up to a sizeable area of land.

In Britain many farmers are now trapped in a very unpleasant vicious circle. For the sake of profits and of cutting labour costs they have sold themselves hook line and sinker to the farming and food industries, which now dictate to them how they must farm. To meet his obligations to his financial backer, be it the bank or a business consortium, he must eliminate the risk of small returns by massive use of chemical fertilisers, pesticides, herbicides and seed dressings. But this type of farming is wholly exploitative because it insidiously diminishes natural soil

fertility, and there can be no doubt that Britain's soils are now far less fertile than they were at the turn of the century, despite the incredible volume of chemicals poured upon them.

The situation is now particularly precarious, because there is no guarantee that industry will survive much longer; and if the fertility of the land has gone how will farmers ever produce the food to feed Britain's population? It is a sad comment on our industrial society that it has the right techniques available to make British farming more productive than at any other time in its history, but has chosen to spurn such techniques primarily because they exclude industry.

At Lawellan we have belatedly discovered Newman Turner and his methods of 'fertility farming', and I might add that we learnt about him from visitors to the farm who sent us a copy of his book *Fertility Pastures*, which is now out of print. Newman Turner himself does not take the credit for his farming system, he learnt from other pioneers before him and went on from there. The main point of his farming is not just to avoid the use of chemical fertilisers, and therefore



Papua New Guinea Opts for Eco-Development

Associate Editor Jimoh Omo Fadaka has just returned from Papua, New Guinea, where he has spent nine months as United Nations adviser to the emergent Independent Government. Here he summarises the aims of that government. Elsewhere in this issue Edward Goldsmith argues that politicians do not learn from history. It was Jimoh Omo Fadaka's role to point out the lessons to be learned from the recent experience of other newly Independent states, and suggest viable alternatives for a stable society. Can it be that in Papua, New Guinea we shall see the exception to the rule?

by Jimoh Omo Fadaka

The Economy

Papua New Guinea is essentially an agricultural country and relies on primary industries for most of its overseas income. Before the mineral resources were tapped in any large quantities its wealth came from the primary crop products of coconuts, rubber, coffee, cocoa and latterly tea and oil palm.

In the last two years the Bougainville copper project has become the country's major overseas money earner. Indications are that extensive mineral deposits exist in other parts of the country. Developers are investigating these and they could contribute significantly to the country's economic prosperity and development in future.

The Government

The Country is presently run by a Coalition Government headed by Mr. Michael Somare, and composed of the *Pangu Pati* (Papua New Guinea United Party); the *New Guinea National Party*, essentially based in the Highlands; the *People's Progress Party*, representing, broadly speaking, the more economically "advanced" regions and people; and of a few Independents. The Opposition is represented by the *United Party*, also based in the Highlands and a few other groups.

The Country's present leaders are different from those of former colonial territories who led their countries to Independence. Most of

the Cabinet could not be classed by education or administrative experience as members of an elite. They are men who rose from the ranks of the Public Service rather than University.

They have maintained strong links with their own villages. The same is true for students who appear to feel and act as members of their villages much more than as de-rooted intellectuals.

The leaders, because they are still closer to the villages than their counterparts in many of the former colonial territories, are impatient of the smaller details of administration for which they depend on the young University graduates who surround them.

A handful of Ministers have a smattering of education at most, and owe their position to the Chief Minister's need to give every district in the country a sense of having a stake in the Government. They, and the bulk of the members were elected as prominent village "big men".

The Government's Eight Aims

The Coalition Government appears to have made up its mind about the Country's development strategy after Independence. Major decisions have been made and are going to be made in this context. The Government, in its recent booklet, *"Strategies for Nationhood — Policies and Issues"* Dec: 1974 lists Eight Aims:— these provide a

point of reference for all government activity.

The themes of the aims are self-reliance, rural improvement, reduction of inequalities in the distribution of incomes and services, and decentralisation. The booklet makes it clear that the approach to economic development that has been pursued within the country, up till now, by the Australian administration, is foreign to the indigenous cultures and traditions of the people of Papua New Guinea.

The Government wants priority to be given to the development of the rural areas where more than ninety per cent of the population live. In other words it is felt that the country should pioneer its own way, the *rural way* as opposed to the *urban way* of development, which avoids the economic and social pitfalls of the conventional pattern of development.

The Country wants to draw from the experiences of other countries, but modify these models in the light of the social and economic conditions specific to the indigenous cultures of the people of Papua New Guinea, rather than slavishly accepting the standards of the "developed" countries.

Redefinition of Development

In the booklet, Government policies to ensure the creation of a genuinely Papua New Guinean society with its own identity, are summarised. It points out that definitions of

development, which take economic growth as their measure are dangerously misleading; expanding production of goods and services is a necessary condition of development but does not guarantee it.

The booklet makes it quite clear "that economic growth has been replaced as the central aim of Papua New Guinea's development strategy by self-reliance, rural improvement and equality". The Chief Minister, Mr. Michael Somare points out in his Foreword to the booklet, "... it has been the custom in most countries to focus policies on the attainment of economic goals, for example a 5 per cent increase in G.N.P. or growth target of 10 per cent per annum in investment. The hope implicit in this approach was that somehow the benefits from such growth would trickle down to the people. In fact in those nations pursuing those kinds of policies there has been little improvement in the quality of life of the people. Instead the lion's share of any new wealth generated in these countries is captured by the elite. This will not happen in Papua New Guinea."

Strategy for Change Rural Improvement

The Government recognises that "... most people in Papua New Guinea depend directly on agriculture for their livelihood. In the foreseeable future there will not be enough jobs outside agriculture to employ more than a fraction of those who need cash incomes and the Government is strongly committed to continuing support for agricultural development".

The approach envisaged is as follows: developing self-help villages based on the various clans or ethnic groups as far as possible or practicable; diversifying agriculture; developing community or village types of industries, that is small-scale artisan service and business activity and rural industries; education for self-reliance at village or community level; developing rural or community health centres; developing small-scale or appropriate technology at village or community level.

Although the Government recognises that Papua New Guinea will

need technology to achieve its goals, it does not want it to be conceived in terms of marriage between computer technology and indigenous cultural traditions. It wants development to be conceived in terms of increasing capacity to innovate effectively on the basis of indigenous resources which means thinking in terms of *appropriate* technology rather than up-to-date technology, and in terms of human organisation as the principal factor determining whether a technology can be effectively employed. Greater emphasis is to be placed on the use of *people*, rather than *money* or *technology*.

National Sovereignty and Self-Reliance

The Government wants the transformation of Papua New Guinean society to come from a common and spontaneous enthusiasm, and not a series of alien directives. It wants the country to be politically and economically independent and its economy self-reliant. This means, according to the document, "citizen and government control of most enterprises; subordinating foreign investment to national sovereignty and self-reliance; ensuring government control of major natural resource-based enterprises; restraining economic development to the level and skills and resources available in Papua New Guinea; and rejecting any agreement which would create substantial dependence".

The Government recognises that: "Techniques of production and organisation will be required from overseas so that other aims can be achieved efficiently, but the way these are used must be modified, to suit Papua New Guinean conditions". In other words, aid or foreign assistance should be related to the *actual needs* of the country and not to the needs of the donor countries.

To this end, the document states that "... the development of a more self-reliant economy may require giving up some of the economic benefits that foreign investment can bring. To become self-reliant the pace of foreign activity may have to be slowed down".

Equality and Participation

All citizens are to be given an equal

opportunity to participate in and benefit from the development of the country. There will be no attempt to build a mass society out of the various clans or ethnic groups in the country. The Government hopes to create an organisation of stable, self-governing, self-reliant and self-financing human-scale communities enjoying the life style prescribed by their own traditions, customs and beliefs.

Equal opportunity will be given for each citizen to participate in all aspects of the life of the country; there will be *substantial decentralisation of political, economic, social and cultural activities*; there will be equal distribution of Government services.

Cultural, communal and ethnic diversity will be recognised as a strength, and there will be respect for traditional ways of life and culture. Villages are to be preserved and improved. *The family is regarded as the fundamental unit of society and will be protected and promoted.*

The Government wants to increase its awareness of and solidarity with the people of other emerging countries, in order to establish a new International Economic Order.

These national goals and directive principles will become part of the country's constitution of Independence.

The aim of the Government is to remould Papua New Guinean society in such a manner that the humanism of its traditional society re-asserts itself in a modern, technical community. Consequently, it is hoped that structural change in Papua New Guinea will re-introduce a new social synthesis in which modern technology is reconciled with human value; in which the advanced technical society is realised without the staggering social divisiveness and deep schisms of conventional patterns of development.

And the way the Government hopes to do this is by the creation of economic and social communities where people live together and work together for the good of all, and which are interlocked so that all the different communities and ethnic groups also work together in co-operation for the common good of the country.



Friends of the Earth Newsletter

So the Ecologist is five . . . seems to have been around longer. Can anyone explain why I *know* that time flies, and yet *feel* that we've all been around for geological ages? Battle fatigue perhaps. Certainly, five years of shouting into the wind and of wrestling with the legions of the mentally myopic represents a sterling effort on your part. Well done, but stick around, you can't take a rest just yet. Many thanks for giving house room, time and again, to FOE articles; that helped us a lot in the early days. Would it interest you to have a summary of our doings for the same period? If nothing else, it may give encouragement to those who feel that little has been accomplished in the face of society's general indifference.

In five years FOE (UK) has . . .

Fought a successful campaign against large-scale opencast copper mining in the Snowdonia National Park (1970/1/2/3);

Persuaded industry to participate in a debate on wasteful materials used in packaging and elsewhere, which led to a government conference and ultimately to the establishment of the Waste Management Advisory Council (1970/1/2/3/4/5);

Worked with other organisations to achieve a ban on the importation of skins of certain endangered species including those of the tiger and clouded leopard (1972); Sponsored and helped to run conference newspapers at the UN Conference on the Human Environment in Stockholm (1972) and at the UN World Food Conference in Rome (1974);

Submitted detailed evidence to the 1973 IMCO oil pollution conference and to subsequent meetings of the Marine Environment Protection Committee of

IMCO (1973/4/5);

Achieved a ban on the importation of baleen whale products (1973);

Promoted many successful amendments to the Control of Pollution Bill (1974);

Taken part in the successful campaign against the use in the UK of American nuclear technology on grounds of safety (1974).

Persuaded many local authorities to recycle newsprint (1974);

Prepared two bills for the protection of wildlife which are currently under debate in Parliament (1974/5);

Submitted detailed evidence to the Royal Commission on Environmental Pollution on the subject of nuclear risks (1975);

Submitted detailed evidence to the New Zealand Government and public on the subject of indigenous forestry policy (1975); . . . and quite a bit more besides.

Since 1969, FOE's membership has increased from half a dozen to many thousands, and where there were no local FOE groups there are now 100 stretching from the Scillies to the Shetlands.

Yes, you're right, we do take pleasure from that little catalogue. But drunk with success? Not so. Contemplation of what still remains to be done is quite enough to promote sobriety. To begin with, there is still a lot of unfinished business. As I write, the International Whaling Commission meets in London to decide next year's catch quotas, a pointless exercise since not even last year's reduced quotas were met. The IWC has so conspicuously failed to protect either the whale stocks or its own best interests (they happen to be the same thing) that it is time it vacated the stage. FOE and other organisations want to see the

IWC replaced by a truly international body operating under the scrutiny of the United Nations, and we shall not give up on the whales until this has been accomplished. Meanwhile, in Britain, we still want that ban on imports of sperm whale oil. In Snowdonia the copper is still there and just because the Philistines have pulled up their tent pegs and decamped doesn't mean they won't be back. The situation in Snowdonia and in every other national park requires constant vigilance. FOE works both on its own and with such bodies as the Standing Committee on National Parks to keep abreast of 'developments' in the parks. FOE is represented on the Information, Education and Publicity Committee of the Waste Management Advisory Council and has a golden opportunity to put across the ideas on materials reclamation and recycling which it has held consistently for five years. But the job is no sinecure, it means heavy homework, much thought and wide discussion and consultation. The wildlife team, as well as being concerned with whales, still has much work to do in connexion with the Bills now going through Parliament — Lord Wynne Jones' Endangered Species Bill, and the Private Member's Bill from Peter Hardy on indigenous endangered species. Legislative work requires the most painstaking research and consultation with *everyone*.

Looking ahead a little, FOE is eager to nip certain environmental malpractices in the bud by taking their perpetrators to court. A series of prosecutions, some of which might well be attended by success, could do more to give the unreconstructed pause for thought than any number of scholarly treatises or eye catching demos. Isn't litigation risky

and expensive? Yes, it can be both; but not necessarily. A judge has discretion over costs and, if he believes a case has been brought for reasons of public interest and not private gain, may well order each side to pay its own costs. In the case of FOE these costs would be low since we have our own skilful advocate (whose client — in defiance of the old legal adage — has yet to be proved a fool). Of course, things *can* go against . . . which is why we are looking for the equivalent of a theatrical 'angel' to put up the lolly for the first test cases.

Despite the wide variety of FOE campaigns it seems obvious — at least to us! — that our work does have an overall coherence. It is clear that we are preoccupied with the rational use of resources, whether animal, mineral, vegetable, marine, terrestrial or whatever. But what of the longer term? Where are we going? What is our social policy? What, brothers, is the message? Essentially pragmatic, I'm almost afraid to say. When you can number among your colleagues every shade of political opinion from militant Socialist, via fervid Liberal, to the archest of high Tories, the immediate message is 'co-exist or bust!'. Whether by accident or subconscious design, there are no political theorists at FOE, either amateurs or professionals, nor is there any one of the species of conventional economists. We feel this to be a distinct advantage since it enables us to approach the absorbing business of scenario building with minds uncluttered with dogma. To us, it makes no sense to draw up plans for a house and to start building without first having ascertained that there is a sufficiency of bricks to be had. Resources — food, energy, raw materials — these are the bricks

we're interested in. We take it as axiomatic that these resources, their present and future availability, and perhaps their non-availability, are the constraints within which all societies must learn to operate. To us, the rational management of Earth's life-support system comes first. You can argue about social policy later. Appropriately, FOE's two largest projects in terms of 'peoplepower' are concerned with food and energy. The aim of both projects is the same: to show what

options are available now, what options may become available in the future, and — in the case of fission-generated nuclear power — what options ought to be decisively rejected before they lead to disaster. In short, FOE will continue to avoid espousing any of today's political visions, and will content itself with discussing (with whoever cares to listen) the art of the possible. Nothing else is worth the expenditure of breath.

Colin Blythe



"FRIENDS OF ECONOMIC GROWTH,
YOU SAY..."



Report

LAND FOR FOOD

According to Friends of the Earth, there are 20,000 acres of derelict land in Greater London, and every local Authority has land which could grow food spread round its housing Estates or reserved land waiting for projects that can no longer be afforded. At the present rate of inflation, prices double in four years, and these include food prices, while wages double in roughly three years, but only for those who can force them higher by strikes or other industrial action. The rest of us are going to need food more urgently than we do Civic Centres, Car Parks, Open Spaces and everything which Local Authorities spend our money on.

Motorways swallow 70,000 acres a year, but in Greater London 10,000 people are waiting for allotments, in Bristol - 1,887, and the total estimated figure for Britain is 60,000. This estimate is far too low because there is at present something like the spontaneous action by the public which took over the Tube stations as Air Raid shelters in the 1940 Blitz on London, demanding land to grow food. As prices soar, the more we grow ourselves the more we have left over for what we must pay, including rates and taxes.

The Allotments Act of 1908 gives Borough, Urban District and Parish Councils the *statutory duty* to provide Allotments for all suitable persons provided application is made by six registered parliamentary electors or rate payers residing in the district. Under Section 35 of this Act "rooms in public elementary schools may be used free of charge with the consent

of any two managers for the purpose of public discussion of any question relating to allotments". Any rate-payer has the right to inspect the Allotment accounts of his Council.

The Allotments Act of 1922, Section 22 defines the size of an Allotment as 300 square yards and these go 13 to the acre, which leaves space in the 4,840 square yards for paths, sheds and compost heaps, but not much parking space since there were few cars in 1922. The Allotment Act of 1925 allows Borough and Urban Councils even to incur losses in running allotments. These Acts were passed near the end of the 1914-18 War when Governments had a proper sense of the importance of food production, but they have not yet been repealed. Therefore it is highly important that they should be used while they last and before the recommendations of the Departmental Committee of Inquiry into Allotments in 1969 (H.M.S.O. £2.10) are incorporated into new Acts. In 1969 we were not facing headlong inflation, or paying for 9% of the 50% of our food we do not grow by borrowing from other countries. Only publicity and determined action will force M.P.s and Councillors to take action against inflation, instead of twisting the spiral even higher by their expenditure on land consuming non-essentials.

If you have perhaps a thousand people in front of you on the waiting list for allotments, then you need to get together with six electors or ratepayers and apply for allotments, pointing out to your council that their *duty* is to provide allotments for "all suitable persons". They have provided *some* suitable persons with them but not *all*, not by several thousand, or whatever the local figure may be.

Then get hold of the local school headmaster and ask for a free room for the evening under the 1908 Act. Write to your local paper and explain what you are doing and hold a public meeting, at which you appeal to those with local knowledge to suggest sites, even some only temporarily available. Write to your M.P. and tell him what you are doing, and of course ask the local paper to send a reporter.

Under the 1935 Allotments Act and the Local Government Act 1929 your Council can obtain land for Allotments by agreement or compulsion. In the last case a Council can rent land for not less than 14 years and not more than 35 years with power to renew at the end of the period. Under the present Land Nationalisation measures it looks as if a landowner would be safest with his land let for 14 years as allotments, because he would get it back at the end of the time, plus a rise in value from inflation, and if it is taken over under the Allotments Acts, it cannot be used for any other purpose, without the consent of the Ministry of Agriculture.

Local Authorities, Landlords and Allotment Associations can lay down rules which should stipulate

- (1) the date Tenancy begins.
- (2) Length of notice to quit and circumstances under which it can be made, usually breach of regulations or nonpayment of rent. (Nuisance or other annoyance not to be caused to other tenants. Includes such items as dogs and transistor radios.)
- (3) When rent is payable and how much.
- (4) Buildings not permitted without written consent. This allows Authorities to insist on a standard make of tool shed, not just tarred felt and flattened oil drums.
- (5) Subletting not allowed.
- (6) Cultivations to be according to the rules of good husbandry. This allows those who let their land run to weeds to be turned off and permits Organic Gardening clubs, who occupy land on condition that this method of cultivation is used, to insist that chemical fertilisers and sprays should not be employed.
- (7) Soil and gravel not to be removed.
- (8) Barbed wire fences not to be used.
- (9) Roads not to be obstructed with manure or rubbish.
- (10) Planting of fruit trees or bushes to be a reasonable distance from adjoining plots, if these are allowed.
- (11) Wells and water taps to be protected.
- (12) Tenancy to end one month after the death of a tenant.

Local Authorities are required by law to appoint statutory allotment committees if their population is 10,000 or more or they have more than 400 allotments. One third of

the members of these committees must be persons other than councilors "experienced in the management of allotments and representatives of the interests of the occupiers." In 1918 there were 1½ million Allotments in Britain but we need more than this today, because we have about 8 million more people, and inflation is more rapid, so we shall need more food from our own land than we did in either World War. We may expand agriculture, but this demands higher prices and only a proportion of the population will be able to afford these.

The problem we have today, (though not in 1914-18 or 1939-45) is vandalism. Therefore the aim should be to get the Council to provide water, or at least Elsan Lavatories, and chainlink fencing with concrete posts bent outwards at the tops with barbed wire to make them unclimbable. These are quite costly, but Councils spend far more on non-essential amenities.

There is a case for plots larger than 300 square yards, (usually 30 feet wide and 90 feet long) per-

haps called "self sufficiency plots" for vegetarians who wish to grow the major part of their food themselves and the Henry Doubleday Research Association is working on how to provide a balanced diet which can be grown almost entirely in a British garden, including tomatoes and bush fruit preserved by bottling. We shall need another Allotment Act to include this, penalties against vandalism and theft of crops and security of tenure on the lines of the Danish Colony Gardens, which provides for replacement allotments if the Council has to turn the tenants off for development.

We forget that in both World Wars, the U-boat blockade on us was far more extreme than that by the Royal Navy and our Allies, Germany was also digging for "Victory" and we would do well to bring our Allotment Regulations in line with theirs, for they have a great deal to teach us, including the value of home grown food in times of inflation.

When you have your Allotments, which will be when your publicity and hard work have won them in the

teeth of local prejudice and Council resistance, do not have them ploughed, even if this service is offered free. Lay out the main paths, which must be wide enough to take a 2 ton van stuffed with polythene sacks of manure, and take up and stack the turf. Then hire a large rotavator with a skilled man to use it to go over the ground twice with 1 lb of lime a square yard between cultivations which should be 8-12 inches deep.

Car parking space is desirable, so is a rough grass mower to keep the grass and weeds down on this and on roads, plus a shed, ideally second hand, to hold communal tools and provide shelter in thunderstorms and showers. The first essential is those six voters, for any project which can muster six determined people can achieve wonders and make local history.

*Lawrence D. Hills,
Henry Doubleday
Research Association.*

THE NEW VILLAGES ASSOCIATION

The New Villages Association was formed as a positive response to the problems facing the world today. As resources and energy become scarce, there is an urgent need to demonstrate the viability and attractiveness of a lower-consumption lifestyle.

Village-sized communities, applying labour-intensive methods of co-operative agriculture and small industry to their fair share of the land (in this country, about one acre per head), could provide their basic needs without causing undue exploitation of people or resources.

The New Villages Association intends to demonstrate the practicability and desirability of such an alternative, by establishing self-sufficient New Villages to provide the basis for a sustainable and more hopeful society.

New Villages Association, 3 Salubrious, Broadway, Worcs. WR12 7AU.

Why encourage the second population explosion? — that of deliberately bred farm animals. They compete with man for food, land, water and other scarce resources. They yield comparatively little in return — nothing that cannot be obtained more economically direct from plants. Handbook with recipes and practical suggestions for alternative, truly economical life style, 15p from the Vegan Society, Dept. R, 47 Highlands Road, Leatherhead, Surrey.

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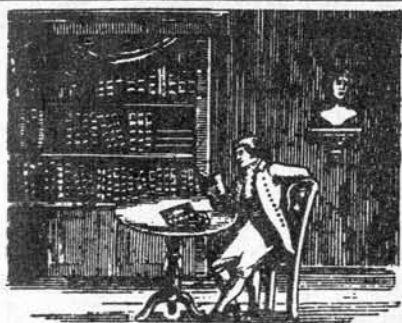
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Books

Manifesto for Survival

ORGANIC FARMING; Yearbook of Agriculture by the editors of Organic Gardening and Farming Magazine. (Rodale Press.) \$2.95.

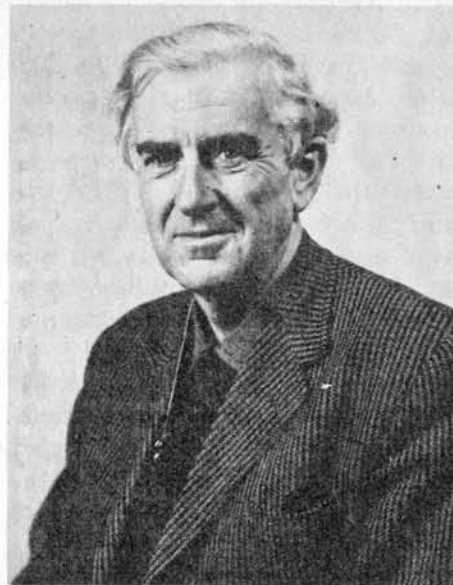
This Yearbook provides what we expect from it, admirable articles on the techniques of organic husbandry, on the achievements of America's 10,000 or so organic farmers and on problems of marketing organic produce; but it gives us something more, an analysis of the political and economic situation within which the organic farmer, and the small family farmer, have to survive. So all through the Yearbook runs another strain, the tactics for survival in an agriculture increasingly under the domination of the multinational corporations. The inputs onto the farm, machinery, fertilisers, fuel, must be bought from the corporations: the outputs from the farm, the produce, have to be sold in markets controlled by the corporations. The independent farmer is squeezed from both sides unless he is organic and sells direct to the public. The corporations are gaining control of every step in the process of growing and selling food (vertical integration). This is defended on the ground that it keeps down price: it does nothing of the sort. I was myself able to observe last year how the livestock farmers were squeezed by the high prices of feeding stuffs fixed by the compound feeding stuff corporations, prices above that justified even by scarcity, since they were able to assure their own profits first (they keep themselves independent of the state and the investor

by financing most of their activities out of retained profits). The proof of this was that the farmers who continued to make their usual profits bought their feeding stuffs from other sources and mixed them themselves.

In the US the squeeze is greater than it is here as an admirable article 'The Case for the Family Farm' by Jim Hightower reveals. This article originally appeared in *The Washington Monthly*, but is reprinted in the Yearbook because the editors fully realise its importance. It reveals beyond doubt how the small farm is threatened with extinction; yet the statistics show that the small farm is more efficient than the large one. But it is being pushed out by the sheer brute force of market and price control. The imperatives of financing modern technology and the mass market have abolished the free market of the capitalist myth both for corporation-industry and the socialist. Modern industrial structures are integrated and could not survive under the old entrepreneurial companies dominated by one or two 'leaders'. There is no place for a Ford or a Nuffield in General Motors.

Integration and system are words much used by organic thinkers: the whole view of a system or process from beginning to end with its interactions on other processes is frequently favoured in articles in *The Ecologist*. What then is wrong with vertical integration and the organised intelligence of the committees that direct it and make the corporational decisions? The articles in the Yearbook provide the answers to the reader who knows what he is looking for; and the articles themselves are more and more shaped to provide this ammunition, as the threat becomes more clearly defined.

First, vertical integration leaves out of account that at the base of the great pyramid there are the soil and the animal; the pyramid is upside-down and rests on its peak. It is evident from the behaviour of the corporations that they exclude from their hierarchical councils the ecologist and the biologist, including the human ecologist; they have to, for despite their protestations of service to the community, their



Associate Editor, Bob Waller. Poet, Novelist, Biographer and well known writer and broadcaster on Agriculture.

primary aim is profit and to assure themselves of this they must have power; this applies to nationalised industries as well. Second then, the need for power corrupts the system. Jim Hightower has collected some telling statistics on this theme. For example, if labour is cheaper in Mexico than California, then the multinational company (in this case Del Monte) moves its vegetable growing to Mexico and sacks its American labour; the social consequence is that the gap between the rich and the poor in the US increases in the same way that it did in 19th century England when it invested abroad in the Empire. This may well lead to a social revolution. But the point of vital importance to us is that the survival of good husbandry the world over is bound up with land ownership, cooperative marketing and economic theory; at present we allow the imperatives of technology (that is, the needs of the machines used in mass production) to dictate how we organise production. Only the kind of knowledge which the organic movement has built up of the ecological and biological imperatives is, in the last resort, the weapon which can be effectively used to counter the technological imperatives and reveal their inadequacy. The organic movement is therefore an important element in modern history: Robert Rodale and Jerome Goldstein, both well travelled and widely read men, appreciate this.

They aim carefully to educate their readers.

They must become implicated in what looks like political attitudes without offending ingrained prejudices. But since all dominant political parties are seduced by the technological imperatives this is not so difficult; by educating people into the realities of the relationship between resources and methods of production the organic movement pioneers an entirely new look at our problems. Nevertheless this does demand critical attacks and political analysis of established positions. The Yearbook has no hesitation in attacking Earl Butz, the American Secretary of State for Agriculture (from whom is derived the name 'Butzculture', the most extreme form of agribusiness).

I believe that the ever growing influence of the *Rodale Press* (their magazine has a circulation of 80,000) and of *Nature et Progrès* in France (their annual conference was attended last year by over 10,000 people) is because they are not flinching from the political issues; so they are making an appeal to the younger generation who begin from the ecological position. In this country *The Soil Association* has been hamstrung by its charitable status which it interprets as meaning that if it indulges in anything that looks political it may lose its tax advantages: as it might, but this is at present a matter of controversy. The result is that the Association is timid and presents a rural Georgian facade of ageing membership. Unable to reform itself and win the co-operation of the young either on its staff or among its members, it stands in the way of the development of a movement that could produce a Yearbook like this based on the British experience or organise a wide ranging conference on the scale of the French one. Without the drive and enthusiasm of a new generation the organic movement is dead.

I must conclude with a sad footnote on my own article in the Yearbook, which is a description of the organic husbandry of Christian de Monbrison, President of the Blonde D'Acquitaine beef breed. His famous herd, which included the champion bull, has succumbed to a severe

attack of brucellosis so that he has had to dispose of it. A heart-breaking experience. During the last outbreak of foot-and-mouth in this country there was no evidence that organic husbandry rendered animals immune — in fact calves on one of Sam Mayall's farms were infected. There is some evidence that organically reared cattle recover more quickly, though with the slaughter policy this cannot be proved. (Sir Albert Howard's herds in India gained immunity after infection.) There is also conflicting evidence, among both humans and animals, that the healthiest go down most rapidly when infected; they lack the immunity given by slight infection. All of which shows the complexity of these problems. But this is all the more reason for the control of the intensive methods of husbandry that require constant drugging, to prevent growth and spread of epidemics, when the innocent suffer as much as the guilty.

Robert Waller

An Ecological Digest

READINGS IN MAN, THE ENVIRONMENT AND HUMAN ECOLOGY, by Arthur S. Boughey. Macmillan Publishing Co., Inc., New York. Collier Macmillan, London 1973.

The purpose of this massive reader (578 pages and 73 articles) is primarily to provide additional material for use with the textbook, *Man and the Environment: An Introduction to Human Ecology and Evolution*. Among the articles presented more than half have been taken from *Science*, *Bioscience*, *New Scientist*, *Environment* and *Scientific American*.

The book is divided into six parts: The first deals with the Ecosphere in general terms. This is a good section, with articles by such masters as Eugene Odum, La-Mont Cole and F. H. Bormann.

The second deals with Human Evolution. This section is a bit light on theoretical material. There is no article, for instance, on evolution itself, a process which has never been adequately defined. This is particularly important as it is only

by understanding it that one realises the anti-evolutionary nature of the industrialisation process with all its implications. I would have liked an article by Stephen Boyden covering this question.

Part three is on the Origins of Society — this section is not very well covered. Most of the articles simply shouldn't be there. For instance, what has Richard Lynn's article, "Genetic Implications of the Brain Drain" or Athelstan Spilhaus's "The Experimental City" got to do with the origins of society?

Part four is on Demography and Population Density. It contains a lot of interesting material. I was particularly impressed by George J. Armelagos and John R. Dewey, "Evolutionary Response to Human Infectious Diseases". The theme is basically that most of the infectious diseases which have ravaged settled populations since Neolithic times, were probably absent among our hunter gatherer forebears who lived in nomadic groups which were too small to constitute a niche for viable populations of the vectors of these diseases.

The fifth part is on Pollution and Environment. Again it is weak on theoretical material. There is no article dealing with the basic principles of pollution for instance, nor is there an article on the social and political factors which are probably more important than the technical ones. Nevertheless, it is an interesting section with very varied articles dealing with such problems as weather modification, radiation, eutropication, pesticides, antibiotics in livestock, noise, oil and thermal pollution.

Part six entitled, "Conservation and the Future", deals more with the former than the latter. The only article which attempts to predict explicitly what the future holds in store for us, is called "By the end of the Twentieth Century" by David Sarnoff. It is a caricature of a technomaniac's dream, which I assume was included as a best available description of what the future is least likely to hold in store for us.

To conclude, this book contains a mixed bag of articles chosen with average discrimination and organized with less.

Nevertheless, it makes interesting reading and does, in fact, contain a few important articles which may have failed to attract the attention of the professionals when originally published in the relevant journal. For the student who requires to get a feeling of the sort of problems mankind faces today, and a vague idea of why present solutions cannot work, it is indeed a very useful book.

Edward Goldsmith.

Ecologists as Historians

HEDGES, by E. Pollard, M.D. Hooper and N.W. Moore. Collins New Naturalist Series. £3.50; GRASSLAND ECOLOGY AND WILDLIFE MANAGEMENT, by E. Duffey, M.G. Morris, J. Sheail, Lena K. Ward, D.A. Wells and T.C.E. Wells. Chapman and Hall, £5.40; BEHAVIOUR AS AN ECOLOGICAL FACTOR, edited by David E. Davis. John Wiley & Sons Ltd., £12.95; CYCLES OF ESSENTIAL ELEMENTS, edited by Lawrence R. Pomeroy. John Wiley & Sons, £11.90; ECOLOGY, by S. Charles Kendeigh. Prentice-Hall Inc.

Are our ecologists growing introspective? Each of these books concerns itself either with the history of ecology itself or with the history of the particular subject matter under review. Whether or not this represents a maturing of the discipline it certainly makes for fascinating reading.

Where man has interacted with natural systems for a long time (in human terms) his history is interwoven inextricably with that of his habitat. In Britain, where people have lived and worked and, most of all, farmed for many centuries, our own agricultural and therefore social and economic history is written into the landscape, and the notes that provide the key to that history may be the hedgerows. Drs. Pollard Hooper and Moore know more about British hedges than anyone. We must be careful, though, in using the word "hedge", for it has many meanings. In Cornwall it may mean a stone wall, elsewhere an earth bank, while the popular image

of the hedge is of trees and shrubs planted to form a boundary. Hedges always mark boundaries, that at least they have in common. In this book the authors deal with all these and several other kinds of hedge. They work for the Nature Conservancy, where they began by considering the environmental impact of farming techniques especially the effect on wildlife. Since most wildlife on farmland is associated with hedgerows in one way or another, the scientists had to learn more about hedges. They grew experimental hedges of their own and began to record the history of hedges and eventually the hedges took over completely — as hedges will, if you let them. Today they study hedges for their own sake, in the end the purest of motives. Their fascination for the subject communicates itself to anyone who reads their book and you would have to be so highly urbanised as to have no vestige of interest left in rural life not to find something of interest and value in it.

The authors deal with the ecological importance of hedgerows, of course, and in some detail. They are very important as narrow strips of simulated woodland edge in landscapes that were once forested. They do more than this, though. They trace the history of hedges from earliest times, even quoting an account from Caesar's *Gallie Wars* of a hedge laid by the Nervii, apparently to halt the advance of his troops, and describing hedges built for defence that may be even older, like the Giant's Hedge in Cornwall. They recount the history of the Enclosures which began after the Parliamentary victory in the Civil War had forced many royalist landowners into exile leaving their land to be enclosed for cultivation, but which reached their peak in the early nineteenth century. They tell, too, of the effects of modern farming, of the controversy over widely varying estimates of the rate of hedgerow loss and of the yardstick developed by Dr. Hooper for estimating the age of a hedge by the number of shrub species found in a measured length. This method ran into mild trouble when it was found that a wide variety of shrubs were sometimes planted in

eighteenth century hedges. Farmers will be interested in the chapters on the pest and beneficial insect populations found in hedges and on the economics of hedge management. Schools may like to use the "hedgerow project" information contained in one appendix that will tell them how to assess the age and species diversity of a particular hedge and the details of mapping techniques in another appendix. Curiously, one of the best land use maps of Britain is based on aerial photographs taken by Luftwaffe pilots in World War Two as the basis of maps for their own navigators.

It is a book for everyone who lives or works in, visits or just dreams about the countryside. It is utterly absorbing.

Grassland Ecology and Wildlife Management is also written by scientists on the staff of the Nature Conservancy. Dr. Duffey, the principal author, has studied the ecology of grasslands since he helped establish the Conservancy's main experimental station, at Monks Wood, in 1949. Well over half the land area of Britain is covered by grass of one kind or another and this book provides a brief description of each of the main types, distinguished by soil type and climate. The factors affecting the ecology are described and then there are accounts of the species and successions to be found in grassland and scrub — to which much grassland will revert if left unmanaged. The effects of management techniques are considered in detail and the book ends with descriptions of the scientific methods involved in assessing grassland and scrub habitats and in monitoring changes in them over periods of time.

Grassland cannot be considered in any depth without reference to its historical importance, any more than hedges can. Most of our lowland pasture was once forested and the forest was cleared to provide grazing for livestock. So grassland has always been of major economic importance and the wide areas of downland and grass heath are far from being the waste lands they may appear. It was grassland that was enclosed when the hedges were planted — earlier than that, of course, children were

used to tend grazing animals on the unenclosed pastures (remember Little Boy Blue?).

Behaviour as an Ecological Factor and *Cycles of Essential Elements* are companion volumes in the "Benchmark Papers in Ecology" series. They are composed of papers collected from a wide range of sources and over a long period of time, so that they provide an interesting – often fascinating – and valuable historical dimension to ecology itself. They are reproduced in their original form, by photographing them, so that the reader is treated not only to the original text, but to its typeface and format as well. The result is a variety of presentation that makes for easier reading as well as adding a touch of historical authenticity. *Behaviour as an Ecological Factor* is divided into five sections, on behavioural adjustments to habitat, reproductive behaviour, social behaviour, the behaviour of populations and (a slightly mysterious term?) applied behaviour, in a total of 27 papers. Some of them date from the 1930s, including one by Dr. (later Sir Frank) Fraser Darling describing part of his study of herring gulls. The 25 papers in *Cycles of Essential Elements* contain both newer and older material, including one real treasure: Dr. Justus Liebig's paper on "Principles of Agricultural Chemistry with Special Reference to the Late Researches Made in England", first published in 1885.

These are rather specialised, and expensive books, but highly relevant now that ecology has taken to examining its origins.

Professor Kendeigh is something of an historian, too. He has taught ecology at the University of Illinois for 23 years and over this period he has developed a course which acts as an introduction to the subject for students with at least one year's training in biology. He covers the entire field of ecological study. The actual course was associated with frequent field trips and I suspect that they have provided much of the material for his descriptions of temperate climate ecosystems, which are very predominantly American. This detracts in no way from the validity of his methods, but it requires the European student

to be alert to differences in species.

This is a textbook, then, whose vast amount of material is organised meticulously into sections each dealing with a main line of approach or a main area of general study. It supplies sufficient detail to give the student a broad picture, but never lapses into sweeping generalisations.

It begins with the general background to ecology and (of course) its early history and most important basic concepts. Then there are six sections dealing with communities, ecosystems, population, evolution, geography and marine ecology. Each section is complete in itself and considering the size of the book – 474 large pages, with its indices – not to mention its price, which is not marked but which must be high, the publishers might consider issuing each section separately as a boon to the impecunious and the weak of arm!

The book's sub-title indicates its special reference to animals and man, and apart from a chapter on paleoecology and the emergence of man, the human situation is dealt with in the section on population ecology, where man's relationship to his competitors and the implications of his own rate of population growth are considered in the light of similar "explosions" among other species. Predictably, the prognosis is not good unless we mend our ways.

The book is intended primarily for the serious student, but it will be a valuable reference for anyone with a more general amateur interest in ecology.

— Michael Allaby

Potted Vegetarians

THE VEGETABLE PASSION, by Janet Barkas. A History of the Vegetarian State of Mind. Routledge Kegan Paul, Paperback. £1.95.

"This is not a book about food: it is a selective history of those notable persons and organised groups who have raised philosophical objections to a diet that includes any slaughtered creatures – persons distinguished by a culinary practice based on ideological conventions rather than taste traditions or

poverty . . ." So writes Janet Barkas in her author's note, and conducts her readers thereafter on a journey from Buddha to the present day. Her claim is justified and there is evidence that her subject has been thoroughly researched. Famous and infamous vegetarians are examined and potted biographies are supplied of such diverse and complex vegetarians as Leonardo da Vinci and Mahatma Gandhi, Wagner and Hitler, P. B. Shelley and G. B. Shaw.

People's reasons for being vegetarian are as varied as the groups or individuals that embrace it. For some it is a part of a philosophy of abstinence that goes hand in hand with celibacy and asceticism, for some it is the profound dislike of killing. For Shelley it was a personal taste linked to a remarkably ecological vision of the agricultural implications. In *A Vindication of Natural Diet* he points out that if a country could become self-sufficient by utilising land to cultivate grain rather than for grazing animals who are eaten by the wealthy ("who then suffer supernumery diseases") that country could become independent of the vagaries of overseas trade.

Groups described include the Jains of India who had a profound influence on Hinduism, the Dukhobars in Russia and Canada and the Seventh Day Adventists. Although tolerant herself in her commentaries Janet Barkas is inclined to overestimate the intolerance of others towards vegetarianism, suggesting that those of more orthodox eating habits are inclined to ridicule vegetarians. No doubt she has her reasons but I would suggest that vegetarianism in the West today is increasingly accepted, respected and catered for.

For the most part this is a fair and scholarly work, but what is one to make of an author who, after years of study and travel, including a long stay in India, can seriously believe that "... Scientific discoveries now unimaginable will enable a complete control over environment food production and therefore hunger (my italics) within the next few hundred years." And I don't think this is a reference to super-nature. What a pity that among all

those persons listed as having helped Miss Barkas with her book none thought to tell her that such a statement seriously undermines her credibility.

Ruth Lumley-Smith

Neighbours and Strangers

COMPANION PLANTS Helen Philbrick and Richard B. Gregg. Illustrated by Audrey Wynne Hatfield. Watkins £1.50.

FOOD FOR FREE. A guide to The Edible Wild Plants of Britain. Richard Maybey. Illustrated by Marjorie Blamey. Fontana/Collins paperback. £1.25.

You don't need to be an ecologist to appreciate the value of *Companion Plants*, and it is my guess that no gardener who comes across it will willingly let it off his shelf of gardening books again. We shall surely come to rely on it at seed sowing and planting time, at least until we have committed to heart all the wisdom that we find in its 90 pages. It is written for farmers as well, but to my mind this is primarily a book for the gardener. Originally published in America it has been revised for British readers and contains not only traditional lore based on the observations of generations of country people, but the results also of modern laboratory experiments in the field of plant companionship.

Richard Gregg first published his findings on the likes and dislikes of plants in the early forties and the present book is an expanded version which includes, as well as additions to his own pioneering work carried out with Helen Philbrick, contributions made by members of the Bio-Dynamic Farming and Gardening Association of the U.S.A. Thus we get among the entries such personal notes as "Whenever the bees swarm we take a handful of lemon balm and rub it into the inside of the new hive to make sure the new swarm will remain there".

From which it can be seen that the world of insects is here with the flowers and the vegetables as it is in the garden, but the greater part of this little book is, as its title suggests, about likes and dislikes among plants. Thus we find

such treasures of practical information as that beets like to grow near dwarf beans but don't do well near runners; broad beans and potatoes are mutually beneficial, but rue and sweet basil are so antipathetic that they cannot survive at all in the same bed. The pungent smell of French and African marigolds acts as a repellent to insects, spinach likes strawberries and peas like cucumbers but hate garlic. I am growing onions (instead of the more conventional chives) among my roses this year, in the belief that this will help to eradicate black spot (not mentioned here) I was delighted to find that Bulgarian gardeners have done this for years, and that they grow garlic too because it improves the strength and quality of the roses' scent. Instead of a can of chemicals try nasturtiums next time to control your greenfly.

The book is arranged in alphabetical order and is easy to use. It has pleasant black and white illustrations, and contains many hints including instructions for making certain specific vegetable based washes as well as for compost heaps. If I have one small criticism of this admirable book it is that this edition is necessarily short of information about specifically English garden pests and diseases, and some of our own plants are missing. A small fault, but one which will surely be remedied by the appearance of the book in this country. We should be stimulated by its example to make our own observations, and by keeping careful records to supply the authors with the new information they seek, for their next edition.

Food for Free is an illustrated guide to wild foods to be found in Britain. Richard Maybey's enthusiasm for the subject is infectious, and yet I suspect that some readers are going to be disappointed. If they think that a wander along the lanes plucking wild plants, is going to be a substitute for the hard work involved in growing vegetables, they will be quickly disillusioned. The book makes no claim to offer such substitutes, although at certain seasons, in the right place, by the sea shore perhaps, and given certain combinations of luck and intuition, you might be able to produce a meal of soup, shellfish, fungi steaks

and green salad followed by fruit and nuts, it is more likely that to give a hungry family one satisfying course of free food will take your average housewife as much time as she can spare.

But this is a *good* book to have — a good book for the holidays when all the family have time and the children might be persuaded to look for some of the plants. A good book to use as a guide and a reminder. It won't save our lives when we are starving in an alien world, but it could so alter and improve our knowledge of natural life, and our view of the countryside, that it will indirectly help us to achieve a state of mind in which survival will seem more feasible.

Two Soil Association Booklets

THE VALUE OF WEEDS 30p
MAKE YOUR PLANTS WORK FOR YOU 10p. The Soil Association.

The Soil Association launched these two illustrated booklets to support their exhibit at this year's Chelsea Flower Show. *Make Your Plants Work For You* complements *Companion Plants* reviewed above, and has some additional hints and information about who likes what. *The Value Of Weeds* confirms what most good gardeners know, that the presence of certain weeds can tell them much about the condition of their soil. How comforting to know that dandelions and coltsfoot appearing on a rough patch are digging and fertilizing it for you, and that when it is sufficiently aerated for you to take over, the coltsfoot will move off to work on another poor corner. I find that a very endearing picture. This book is full of such gems and has a chapter too on how to make foliar sprays and liquid fertilizer from horsetail and stinging nettles. For a modest 50p (to include p & p) both these useful booklets can be yours from the Soil Association, Haughley Manor, Stowmarket, Suffolk.

Ruth Lumley-Smith

INDEPENDENT COMMITTEE ON ENVIRONMENTAL POLLUTION

Appeal for Funds and Information

The Fourth Report of the Royal Commission on Environmental Pollution headed by Sir Brian Flowers (Cmnd 5780) was presented to Parliament in December 1974.

For many reasons we consider that this document is *grossly misleading*. The report glossed over a number of environmental hazards (i.e.: air-borne lead pollution and fertiliser run-off) as well as misrepresenting some issues (i.e.: SO₂ emissions) and totally ignoring others (i.e.: polychlorinated biphenyls). Since it was compiled by some of Britain's leading scientists there is a real danger that the Government will use it to endorse its own failure to commit itself to a constructive Environmental Policy.

For example —

Mr. Crosland, Secretary of State for the Environment regarded himself as justified when he stated that: "The sober and thoughtful analysis contained in the new report offers no support to those who fear that the quality of our environment is becoming widely and irretrievably degraded."

*(Controlling Pollution. Pollution Paper No.4
Department of the Environment)*

STATEMENTS SUCH AS THESE MUST NOT REMAIN UNCHALLENGED

To this end an independent commission on environmental pollution has been established under the guidance of Edward Goldsmith, Editor of *The Ecologist*, Michael Benfield of the PEOPLE, party and Norma Turner, Freelance environmental journalist. Its goal is to produce a realistic report on the state of environmental pollution in this country, which will be made available to policy makers at both National and Local Government level.

Information. Anyone who has relevant information or who is interested in assisting the commission is asked to get in touch with Peter Bunyard, Lawellan, Withiel, Bodmin, Cornwall, who will collate the information and edit the proposed report.

Funding. Funds for this work will be entirely by private donation, which should be sent to the Treasurer or the Secretary, Independent Committee on Environmental Pollution, New Buildings, Trinity Street, Coventry.



Letters

A Means to an End

Dear Sir,

Just what are the Ecology Movement and ecology minded people about? Perhaps it is time that we answer this question. Hugh de Paul's letter (*The Ecologist*, May 1975) has made me puzzled and amazed. He deplores the fact that *The Ecologist* publishes those "woolly pieces of philosophy", at the expense (he thinks) of organic agriculture and horticulture, of alternative groups etc. Really, the ecology minded people ought to be more *aware* how things are connected together. We praise ourselves for *understanding* that Nature works as a vast interconnecting system, infinitely subtle, but kept in an equilibrium by a large number of interlocked balances. It is time to realise that this is also true of society and of human life at large — they too operate within a subtle network of balances. Within this network our ideas and ideals, as well as values, are not the least important, for they make us *think* and *do* things the way we do them; this leads us to the devastation or alternatively to the preservation of environments. It is not *ecological habits*, but ideas and ideals that are responsible for the present plight of Western society.

Hugh de Paul's exhortations that we should stop "philosophising" and concentrate on ecological bits and bolts strike me as an oversimplification bordering on nonsense, yes *nonsense*.

The whole thing is not about better ways of making hay, is not about more efficient organic gardening, is not about windmills and solar collectors, but the whole

thing is about a better way of life. To repeat, increased efficiency of haymaking, or organic gardening, or of production of windmills is *meaningless in itself*. It is meaningful and admirable only if it is a means to an end, which is an alternative life-style, a human life-style, a sane life-style: individually sustaining, socially co-operative, harmonising and, last but not least, remaining in harmony with the rest of Nature. All those notions are subtle and complex, and we are far from fully understanding them. Therefore we must 'philosophise' so that we fully comprehend what we are after, and that we see that ecological measures are specific means to other goals.

I detect too much fascination with ecological gadgets, as if these were the ultimate things. If our objective is to create a new life-style in which human, social and ecological concerns are harmoniously woven together, then this objective cannot be accomplished by an obsessive preoccupation with silos, windmills, horticulture. I am not saying that these things are unimportant. I am only insisting that we must keep in proper perspective our ultimate goals. Otherwise we become mindless technicians, not very different from those who support the *status quo*.

Hugh de Paul's letter is an expression of this obsessive preoccupation with means.

Perhaps other people might like to express their opinion on the subject: just what are the Ecology Movement and ecology minded people about?

Yours faithfully,
Henryk Skolimowski
St. Antony's College,
Oxford.

The Adman Culture

Dear Sir,

I would like to reply to Mark Elvin's interesting letter (January 1975) on advertising.

I think the term "capitalist realism" accurately describes advertising's function but not its style. Certainly, like "socialist realism" in Russia, advertising serves to condition people to see life in a particular way, but because the artistic

methods used are so various, I think we must use the more general concepts of a symbolic system. Thus, I would prefer to say that advertising is the symbolic system of the consumer society: it provides the jingles, images, slogans, heroes and heroines for a society built on the impersonal mechanisms of endless production and consumption.

Mr. Elvin doubts that the English teacher can do much in the classroom to restrict the powerful influence of advertising. When advertising jingles are replacing nursery rhymes, I agree that one cannot be very optimistic. Indeed most teachers have yet to see how false and manipulated our culture has become, have yet to realise that the escalating violence in schools relates directly to the steady impoverishment and disappearance of genuine cultural forms within the community. But at the same time, the school would seem to be one of the best places for encouraging those qualities of life — of creativity, responsibility, restraint and concern for the past — on which the survival of our species will ultimately depend. I do not think it is "nonsense" to turn to the English teacher and the school even though the task seems all but impossibly difficult.

Lastly, on banning advertising. I cannot see our society banning advertising for the media which determine what issues are to be discussed by the populace and the terms on which they are to be discussed, depend for their revenue (and their style) on advertising. Because the media is locked into the commercial system, a genuine debate on advertising could not be launched in this country. We can only hope to ban the most flagrant abuses. What in the meantime we must slowly work towards is the ecological economy, which being grounded on true wants has no need to bamboozle and deceive and therefore no need for an extensive advertising system. Perhaps the self-sufficient monastery provides one image of the sort of school, society and economy we must, against all the odds, work towards.

Yours faithfully,
Peter Abbs,
Gryphon Press.

The British at Work in France

Dear Sir,

The reputation of your paper is well known to us. We are fighting an enormous building project, the promoters of which are British. Please be assured that we are not attacking the good British people living over here, who are lovers of nature, but the financiers of the society whose headquarters are in Lichtenstein.

On more than two thousand acres the TROCO Society plans to build *a whole new town*, above the old town of Vence, on land particularly rich in rare specimens of animal and plant life — actually one tenth of all the varieties found in France.

The Society plans to build on the whole hillside to the north of Vence, land rich in underground springs which would be polluted, and the well-known healing waters of the fountains of Vence would be given the odour and flavour of petrol and pollutants.

We have among our members Professor Passebecq, President of the Association Vie et Action. He has planted and naturalised a beautiful arboretum on the Col-de-Vence. More trees are being planted. Rare specimens of insects and plants, not found elsewhere in Europe, would be destroyed by this building project, should the plans of the financiers succeed.

Would it be possible for you to inform your readers? A dishonest and misleading publicity for this enterprise would drain capital out of Britain to make a second Vence, entirely polluting the old town, where many of your compatriots have made their homes and where they are respected and loved by local people. Do please help us to stop this fraudulent propaganda.

We are organising a big Fête in Vence, for the Environment and we would be happy if you could help to make us known.

Yours faithfully,

Pierre Fouques,

President, Association Protection
Nature et Environnement,
B.P.55 — 06140. Vence, France.

Organic Farmers and Growers

Modern agriculture has had its faults pointed out many times in *The Ecologist* — and quite right too. Also the desire of many people for a different way of life, the dangers to our environment of much modern technology, the wasteful use of natural resources and the huge pressures exerted by mammoth companies, have been stressed. A welcome trend is the realisation that to tackle these problems and others that are surfacing requires specialist attention and devotion. To dabble in many different undertakings is no longer effective and tends to lead to wasted effort.

My colleagues and I, in The Soil Association, realised this a year ago, and decided to develop an organisation that would be able to tackle the problems of biological husbandry for farmers and market gardeners really effectively. Although one hears a lot about Organic Farming, when it comes to a question of counting heads, there are still remarkably few practitioners among those who must make their farms a commercially viable proposition. One of the reasons is that in spite of all the talk and publicity there has until now been no organisation based on organic principles that has appealed to the mass of commercial farmers.

Organic Farmers and Growers seeks to fulfil this want. The Soil Association Council has given the venture its blessing, and the co-operative came in to being in January this year. Membership is open to all farmers of whatever size and we already have members farming from 80 acres up to several thousand.

The purpose of Organic Farmers and Growers is to supply to farmers wishing to use biological methods, services that are now supplied to conventional farmers free, or for a very small charge, by organisations such as The Milk Marketing Board, A.D.A.S. and I.C.I. The farmer looking for advice on *organic* methods has no such service to turn to. It is therefore our intention to build up an organisation which will make it possible for him to get all the information and advice he needs from one telephone number.

To do this involves being concerned with farming from A—Z. From the provision of bacteria for the soil, biological control, cultivation techniques and so on right through to marketing the end product. It involves being able to advise on rotations and techniques for individual farms to ensure that the farmer stays in business while converting to biological methods. This can be very difficult at times and can lead to a conflict of philosophies, as I believe organic farm advisors found in France. However we are working on these problems, and although it will take time to develop as we hope to, we are already attracting many able farmers who have not previously seen their way to adopting biological practices on their own farms.

Our greatest strength will lie in building up membership so that a viable country-wide co-operative can continue to expand and recruit increasing numbers of farmers and growers to biological husbandry. We shall therefore welcome enquiries from anywhere in the United Kingdom.

David Stickland, Managing Director, Organic Farmers and Growers Ltd., Longridge, Creting Road, Stowmarket, Suffolk. IP14 5BT.

Letters continued on next page.

Dear Sir,

Referring to the article, "Diversify or be Damned" in your March/April issue I fear that some of your readers unfamiliar with tropical crops may have been misled by B. R. Trenbath's assertion that, "... a cover of groundnuts is often maintained under rubber for the whole life of the trees." If Mr. Trenbath had ever seen a rubber plantation he would know that, at the spacing shown in his photograph the stand would have developed a dense closed canopy by the sixth or seventh year at the latest. There are very few plant species, none of them annuals, which can thrive under such conditions. Furthermore, groundnuts are a quick growing crop, so in order to keep a permanent cover on the ground they would have to be re-sown two or three times a year. This would be highly deleterious to the soil, especially if the land was at all sloping. At any rate, by the end of the third year, the ground would have become so matted with rubber roots that further cultivation would be almost impossible.

On other points also, Mr. Trenbath is not quite so well informed as the style of his article would lead one to believe. In Malaya before the war, it was already realised that single pure lines selected out of popular varieties of rice did not perform so reliably as a clonal mixture of the best four or five lines. The same procedure was adopted by plant breeders, Empire Cotton Growers Corporation in Africa from the mid 1940's onward; these mixtures were released as new strains for general use in order to standardize the staple of the crop from a given area. The advantage of using such mixtures seems to lie in the differential response of individual lines to small annual variations in climatic conditions.

In Tanzania in the 1950's a mixture of groundnuts and maize was found to out yield either of them when planted as a sole crop. Again Mr. Trenbath does not yet seem to have realised that plant roots not only absorb nutrients from the soil but also secrete them. It

has been shown by Russian workers by means of radio isotopes that some nitrogen fixed by a legume rapidly finds its way into an adjoining maize plant and that phosphate from the latter can migrate into the former. Herein lies the clue to the advantages (and disadvantages) of mixed species cropping. If the roots of the mixed species all have the same range of secretions, there will probably be a deleterious effect on yield. But, if they are helping to supply one another's needs, benefit will accrue; this may be particularly true for trace elements. For instance clean-weeded citrus trees are far more likely to suffer from zinc deficiency than those having a cover of indigenous weeds and it seems very probable that many of our common garden weeds may have similar functions. Rene Porchet has shown that chickweed can supply boron and zinc, buttercup cobalt, etc. E. Pfeiffer demonstrated the beneficial effect of a few camomile plants in a plot of wheat whereas poppies had an adverse effect.

I do not think there are many people nowadays who would question that diversified planting undertaken in an intelligent manner is beneficial; but it seems to me that the case could have been put in a much more convincing way.

I regret that I cannot quote chapter and verse for these remarks. Many of them are personal experiences; others are taken from books and articles out of print. The Russian work mentioned was reported in the "New Scientist" about a year ago.

Yours faithfully,

J. R. P. Soper,

Holy Cross Green, Stourbridge.

Professor Trenbath writes:

I am grateful to Mr. J. R. P. Soper for pointing out an error concerning the intercropping of rubber in Malaysia: the sentence should have read "... a cover of groundnuts succeeded by shade-requiring cocoa is sometimes maintained under rubber ..." To avoid excessive shading the rubber is thinned before the cocoa is planted.

The results of the experimentation with rice and the E.C.G.C. practice with cotton in Africa to which Mr. Soper refers can, I believe be accommodated within my conclusion (based on many experiments, p.78) that the stability of mixture yields is "only rarely greater than that of the more stable component grown pure". The last comparison known to me of yield reliabilities in cotton showed no greater yield reliability in the mixed crop (1); I would be very interested to have more complete references or details of the cotton and rice examples noted by Mr. Soper.

Concerning the importance of "secretion" or release of nutrients by plant roots which Mr. Soper believes I have not appreciated, on p.78 groundnuts are referred to as supplying nitrogen to the roots of the rubber trees and on p.79 the mechanism is explained. The Russian finding that nitrogenous substances leak from young and vigorous root nodules can be matched by similar findings elsewhere but Australian and U.S. research suggests that the significant release is rather from senescing and decaying nodules (2). The exchanges of other nutrients between root systems that Mr. Soper mentions are of great interest but, so far as I can learn, have not yet been studied in anything like the detail needed to justify any conclusion about their importance in mixed cropping. I look forward to corresponding privately with Mr. Soper to discuss the experimental evidence for his views on trace elements.

May I use this opportunity to disclaim authorship of the introductory note on p.76 which maintained that "diversity is a prerequisite of stability"? On p.78 I quoted R. M. May who argues plausibly that the opposite is true.
Brian Trenbath

1. Meredith, W., Bridge, R. and Chisholm, J. (1970) *Crop Sci.* 10, 295-8.
2. Simpson, J. R. (1965) *Aust. J. Agric. Res.* 16, 915-26.



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A spokesman for Trees for People said at a recent meeting that whilst many adults are now growing food on allotments, there has been no provision of places where children could do similar work.

The Trust believes that one way to curb vandalism among children is to provide them with an outdoor interest involving physical work. The Trust proposes to run a national club and believes that young people could find this a rewarding and profitable hobby. They hope that schools will encourage the setting up of allotments, and Trees for People are now inviting schools to apply for supplies of free seedlings for autumn planting.

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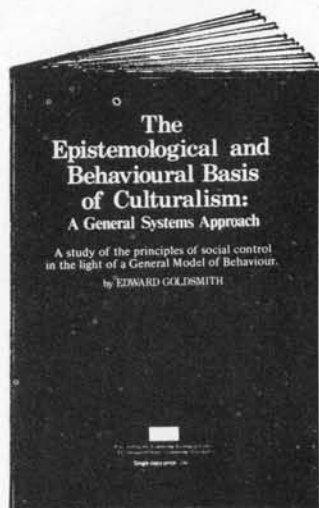
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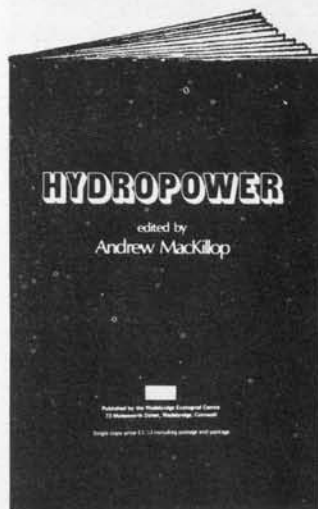
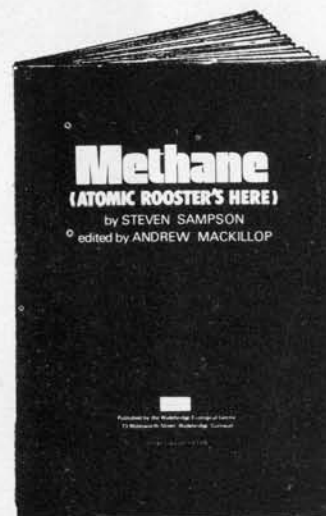
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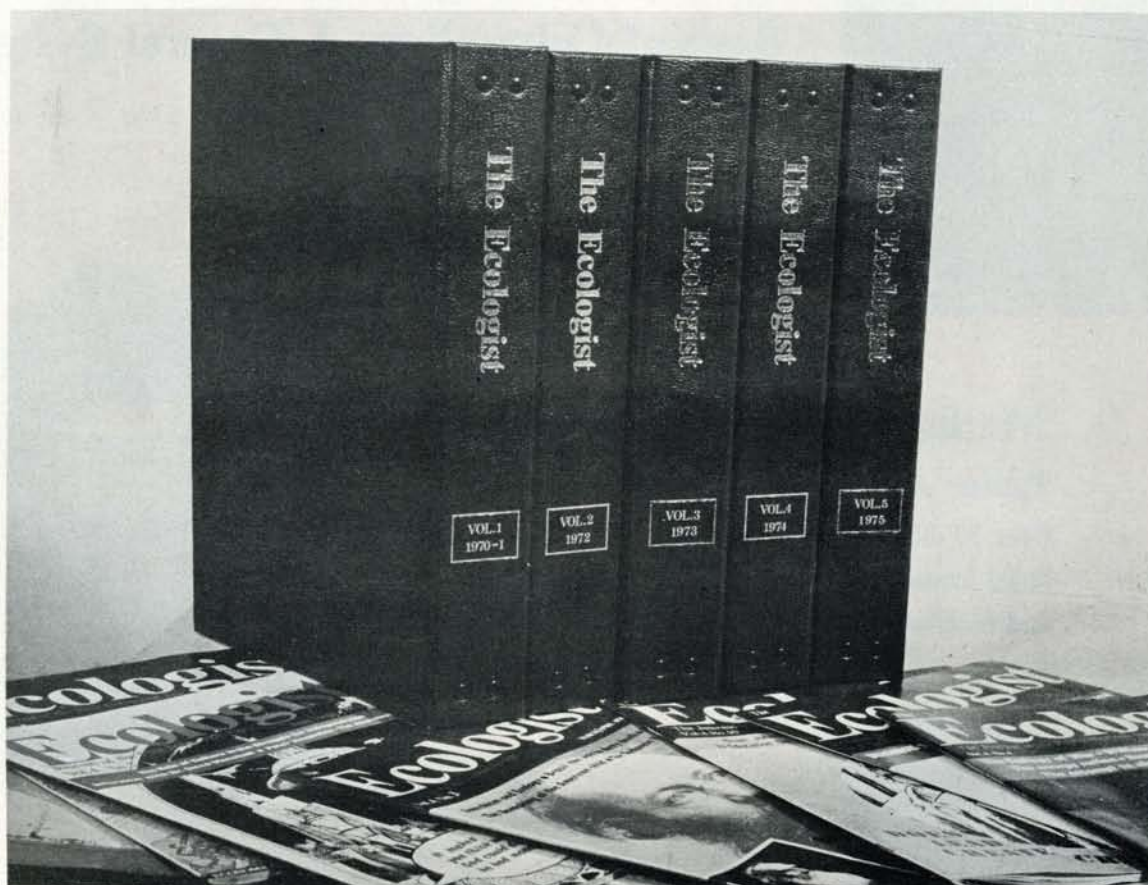
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