

## OVERPOPULATION AND YOU

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It is unfortunate that the problem I am to discuss does not lend itself readily to popular expression. Though writers in the field have used terms designed to catch the public fancy, such as "population explosion," there is little concerted awareness of the overall dimensions of this problem, and even less concern about how it will affect our future existence as a nation and as a world. Part of the reason for this apathy is, of course, that we are not as yet overcome by the effects of an increased population that will soon exhaust the physical resources needed to sustain it. We have plenty to eat, room to move about, and we are used to thinking that our resources are taken from a bottomless pit. An important link in our spiritual heritage is the belief that we learned from the pioneers - that there is an inexhaustible supply of resources, and that when things get a bit crowded you need only move further west.

As an Easterner, often perplexed by the density problems of a great metropolitan area, I can understand this belief when I am in the vast open spaces of the Southwest. From the standpoint of a Philadelphian, it seems rather curious that I should be speaking of the population problem in a state that has a total population of less than one-half of the city of Philadelphia and about one-fifth of the greater Philadelphia area. But it is short-sighted to think of the problem in these terms. Your concern with water resources points up the problem much more significantly, so that it becomes stated in terms of the population a given area of land will support. Put this way, it is quite possible that New Mexico is more crowded than Philadelphia or New York City. You may even be overpopulated.

With this factor in mind, what is the evidence that there is a population problem? First, let us bear in mind certain statistical matters. In general, we may say that world population is growing at approximately twice the rate of available food resources. The population growth figure is slightly more than two percent annually. Food resources are increasing by about one percent. What this means in terms of population is that the 3.4 billion people presently alive in the world will become 7.4 billion by the end of this century. Here we must be careful to understand that when talking about percentage increase that the calculation works like compound interest in respect to one's savings account. If you take, for example, an imaginary village of a thousand people who in 1965 each had a bowl of rice per day, apply the percentage figure 2.5 (which some population experts claim is a more correct figure), there would be 1,280 people in that village by 1975. But, given a one percent food resource increase,

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there would only be 1,105 bowls of rice. Twenty-five years beyond that, at the year 2,000, the original 1,000 people become 2,373, and 1,000 bowls of rice become 1,417. This means that whereas at the beginning of this period each of the 1,000 people had a bowl of rice a day, thirty-five years later there would be nearly a thousand people in the same village without any rice at all. Notice that our imaginary village is not in some remote part of the world, but is in some sense a microcosm of the world itself. If we then overlay on that model actual world population, and projected increases in population and food resources to the year 2,000, we can foresee the most awesome tragedy in all history. But that tragedy is already begun. Taken on an average, there is not now a bowl of rice a day for all the world's citizens. If we also consider the noticeable fact that we are gluttons at the table, we are forced to conclude that the great wheel of world starvation has already begun to turn for a sizeable portion of the world.

We may look at the problem of a mounting world population another way in order to impress upon our minds the sheer weight this problem is. Right now world population is growing by something like a million and a quarter every week. By 1980 that figure will become a million and a half; by 1990 it will jump to two and three-tenths millions; by the year 2,000 three and three-tenths million new world citizens will join us every week of the year. This represents a staggering problem in assimilation. Cold statistics such as these begin to take on meaning when one thinks about the additional number of houses, schools, jobs and other requirements for living that will be needed. Assuming for the moment that it is possible to assimilate one million people each week - to offer everyone what is minimally required to live beyond the mere subsistence level - is it possible to undertake this project when the figure is three times what it is now?

There are other ways to describe the problem. We can, for instance, think of the land area required for over seven billion people to live. The land area of the world is 52 million square miles. Only one-tenth of that, or 5 million square miles, is presently suitable for cultivation. Taking into consideration the varying types of land used for agricultural purposes, something like one-half to one full acre of arable land is required per person to fulfill his minimum needs. On the basis of one acre per person, the present population increase each day necessitates the cultivation of 180,000 acres of new arable land. This is 281 square miles, or an area the size of Chicago. If you feed 650 pounds of food a year, the average in starvation plagued India, to each additional person now being added to the world's population, arable land area the size of the state of Colorado is required. That is according to the annual rate of increase at present - better than sixty million a year. If you look ahead to the year 2,000 when the figure projected is one hundred eighty million a year, you have to add New Mexico and Arizona to Colorado to get the additional arable land needed yearly.

Now arable land in anything like this quantity is simply not available. Land mass is limited, and it is not possible to go on adding areas the size of Colorado indefinitely. Moreover, such undeveloped farm lands as now exist will not be sufficient unless there is radical advance in agricultural technology of the kind that can turn the desert into a garden, can refurbish the topsoil in the tropical rain forests, and can bring water to vast areas of the world where the soil is now arid.

Being part of a large urban area, my own interest in population increases is partially reflected in the problem of urban density. In the greater Philadelphia area, which includes a part of New Jersey and Delaware, the present five million population is scheduled to jump well past the eight million mark in thirty years time. As is well known, the Boston-Washington, D.C., corridor is becoming one great megopolis. Now it is possible to put eight million people in the same space where there are now 5 million, provided somebody plans for this. But let me tell you about how we have thus far failed in our planning in reference to water. Both New York City and Philadelphia tap from the same Appalachian watershed. During the recent eastern drought that lasted for five years, this normally ample and productive watershed began to dry up. Now there are agreements between the two cities and others regarding how much New York can tap per day, in order to guarantee that there will be enough water still flowing down the Delaware River so that Philadelphia's needs can be met. But New York was drying up at an alarming rate and so they took their full quota rather than a reduced percentage quota. As a result, the salt line at the Delaware River mouth began to creep up the river toward the intake. It became daily news on the radio, along with the weather and traffic reports. The man on the radio would say, "The salt line has now reached the airport." The next day he would intone, "The line has moved forward to the Navy yards." I tell you, that was scary business.

If you put eight million people where there are now five, and if you can imagine a megopolis running from Boston to Washington, D.C., it is clear that something has to be done about the water requirements other than praying for rain - which incidentally is not the answer. Water requirements for the expected population in that area will be so great that if rainfall alone is depended upon, it would have to rain constantly over the whole eastern section of this country. Those who care to speculate about this problem talk mostly about desalination of the Atlantic Ocean and tapping the water resources in the upper reaches of Canada.

Problems involving density are reflected in other ways than the need for an abundant supply of water. How will people live? Buchminster Fuller has projected a mammoth pyramid city, something that looks remotely like a colossal building but which is really a complete city in itself capable of supporting 200,000 persons who would theoretically never have to step outside and breathe polluted air. The Russian Exhibit at Expo included a similar plan. Both of

them suggest a beehive or rabbit hutch approach to living. Now it is possible to live like that. Hong Kong, Tokyo, and even New York City illustrate, without any noticeable effort at planning for this, that people can adjust to a vastly increased density rate. It is not certain, however, that it can be done for long without serious consequences to the health of people. Experiments with mice suggest that higher population density reduces general health and longevity.

Overall, there were 40 people per square mile in 1930. By 1965 there were 63, and by the year 2,000 there will be 142. At present Europe has the highest density with 233 people per square mile. But by the year 2,000, Europe will have 301 and Asia will have jumped to 423. This means that by the year 2,000 there will be two acres of land arid and arable available per person where there are now three. But in largely rural and undernourished Asia there will be only 1.5 acres of land per person. We are talking here about total land. Of this total only a fraction is suitable for habitation by present standards, and even less for cultivation.

The statistical problem is expressible in still another way. It took about two million years, all the way to 1850, to get one billion people together on this planet at the same time. In the next 115 years, 2.4 billion were added. In the next 35 year period, bringing us to the year 2,000, 4 billion more will be added. In the next decade the world's population will increase by one New York City per month, 8 million people. In the final decade of this century, two such cities will be added monthly.

One of the tragic factors in this explosion is that the great masses of new population will be added to the nations of the underdeveloped part of the world. Presently two-thirds of all the world's people live in Asia, Africa and Latin America. By the end of this century four-fifths of the world's people will live there. What this means can be seen in terms of Central America, a region growing at the rate of 4.3 percent each year. In 1965 there were 56 million people there, but in less than 35 years there will be 195 million. In the year 2,000 alone just under ten million new people will be added to the Central American countries. In that same year India will add 30 million and will have a total population of one and a quarter billion. Comparatively, the United States, growing at 1.8 percent, can hardly be said to have a problem at all. We will add 6.5 million in the year 2,000, bringing the total population to 360 million. I do not mean to say that there are no serious problems for the U.S.A. Our slower rate of growth suggests the possibility of assimilation, but there will be immense social, political and human resource problems, some of which we have already indicated. There is the possibility, for instance, that our major cities will have to be torn down and rebuilt. It may be necessary to stop the urban drift and to develop totally new cities in the more sparsely settled areas of the land. This will mean colossal projects involving

the total economy of living, and, of course, overcoming our water deficit in areas where new cities will have to be located. But such problems are infinitesimal when compared with those faced by the underdeveloped nations where four-fifths of total population will be found.

It should be clear that the problem we are discussing cannot be seen in terms of a single dimension, as if the answer is to miraculously provide sufficient food and water to India which will have one-sixth of the world's population thirty years from now. That alone would be a great help, of course. But its possibility is questionable. Even if that could be done, the real needs of the stricken nations extend into every aspect of their social and economic environment. For example, half of the city dwellers of India must carry their water from ponds in heavy jars for great distances that force its limited use. Also, the increasing demand for water means that its purity cannot be guaranteed with the result that the threat of tuberculosis constantly hovers over the crowded masses. It is not, therefore, just more water that is needed in India, but a whole new system by which water can be made available for industrial use as well as individual consumption. This illustrates that a wholistic approach is required to head off the catastrophe that has already claimed thousands upon thousands of lives, that has made these nations desperately poor, and posed the likelihood of suicide revolutions.

But even here there is a curious irony. Sometimes the population explosion is misunderstood in that it is assumed the real cause is a rising birth rate. In fact, this is not the cause. Birth rates are remaining rather constant in most areas of the world, and have even dropped in a few instances. One of the real reasons for the population increase is increased longevity. New medical techniques and the availability of health services in almost all parts of the world have lowered the death rate. Infant mortality has decreased substantially and the age span has lengthened. To put it sharply, people live longer and clutter up the earth, use up its resources, and demand an increasing amount of services, and then some of them die of starvation. Now there are certain amoral types who say that the problem will be eliminated when the big bomb hits or there is a great epidemic. Of course, this perversion of Malthusian doctrine hardly rates a respectable reply. Nevertheless, it is a matter of extreme irony that the successful attempt at saving life has helped put whole continents in jeopardy.

Now we could decide that the problem is so far beyond the bounds of our own country, and, in light of the particular and peculiar problems we face in the United States, that we should forego American planned attacks on the world problem. Or we could take an intermediate step and go with the Paddock brothers who in their book, Famine - 1975, recommended the triage theory which is to concentrate aid on the salvagable nations. In their interpretation, India is a lost cause, but Pakistan isn't yet at that stage. Since we do not have

enough essential resources to go around wherever the need is, we should focus what we have where something can be salvaged and by-pass hopeless situations such as India. I must say at once that I have yet to find anyone who does not find the Paddocks' approach entirely repugnant and politically impossible. But the situation is so serious that they may, in part, be right.

Yet, how can they be? Imagine, for instance, the political consequences for a free world if India is abandoned and Pakistan is favored. Abandonment of India would automatically be interpreted to mean that we no longer care about the fate of millions of human beings, whether twelve million Indians starve or live in the coming year. What this means is that the strategies involved in solving the problem of world hunger immediately become political and economic factors of importance likened unto who has the bomb. If Mrs. Gandhi says the wrong thing President Johnson can withhold aid or cut it back. If De Gaulle gets out of hand, a change in our own aid program and policy can force him to act in a different way. In such ways a rich in resources United States can empirically decide the political course of much of the world.

In any event, it becomes clear that the feeding of the majority of the world's population must involve the entire economic, social and political structures of the nations of the world - both our own and the underdeveloped. CARE Packages, noble as their sentiment is, just will not do. Charity even becomes a questionable virtue when the whole of the economic, industrial and social structures of these lands are not taken together and seen as requiring the maximum kind of restructuring. Neither can such an effort be the result of one nation's undertaking. What is required is the resources of the total free world, and of all the nations that live in abundance. What is also required is an intensification of development within those nations that are presently victims of the dual assault - too many people and too few resources.

So great is the problem that I am now forced to say something that may evoke surprise and even anger. Since 1947 the United States has been guided in its foreign policy by the basic elements of the Marshall Plan. The plan, in its more generalized form, has eventuated in what we now call the containment policy. That is to say, what began as a humanitarian effort to rebuild a war ravaged Europe soon became a policy to stop the spread of Communism. So we undertook to rebuild Germany, for instance. And thus NATO. This policy, begun in Europe, was soon transplanted to southeast Asia and took on a military coloration in the Korean War. This was followed by SEATO and now the Vietnam war. It is not my purpose to discuss the morality or immorality of our participation in that war, but I think it is fair to say that the generally accepted ideological justification for being there is to contain the spread of Communism.

Where the surprise comes in is that I think there is a very credible argument in favor of dropping the containment policy as now interpreted because it is no

longer relevant. From my point of view, the most sensitive problem the emerging world faces is exploding population coupled with its overall "have-not" quality in Asia, Africa and Latin America. Based on the evidence, the countries of these continents - which we may call "the Third World" - either will be forced to go backwards into a primitive and jungle-like existence, or they will face a catastrophic future unlike anything recorded in the history books. It is this fact that is throwing our old East-West polarization out of kilter and rendering it obsolete. I think, in light of the evidence, that the future indicates a much closer relationship between the nations of the present free world and the Communist nations who will together become engaged in a new polarization with the "Third World."

My point is this: I think it time for the free world to address itself to the problems of the "Third World" with the kind of diligence that has up to now been given to the warding off of Communism. In that case, the Vietnam war, seen as the attempt to build a barrier beyond which Communism cannot spread, may be a mistake for two reasons. One, we are pouring fantastic resources into this war to create further ravaging, misery, death and poverty - resources that would go far to alleviate the horror the "Third World" must now endure. Two, we are fighting those whom we may imagine to be our allies in the future when the full impact of the "Third World" forces a new polarization with the presently divided East and West. In short and in particular, the United States and Russia will be forced to become allies in the struggle with the "Third World."

It is possible to discuss this particular aspect of the population explosion at length. It can be seen, for instance, that there is a growing sense of mutuality between Russia and the United States, as is indicated by the Moscow to New York City air flights that are soon to begin. We may see that in these and other more subtle manifestations of cooperative strength that the old pattern is breaking up, that our old animosity to Marxist's theories is not completely justified in political history, and that the future will demand a new perspective on the old enemy. This will not come because of a natural inclination for reconciliation, but because four-fifths of the world's population will provide us with no real choice. If that is so, then our present struggle in Vietnam must be re-evaluated, as a possible deterrent to the original aims of the Marshall Plan which were to provide the oppressed of the world with the resources necessary to make them self-sufficient and independent. One may imagine that this responsibility will be shared jointly by the nations of the free world and the Communist nations.

A hard look at the population problem and its possible effects usually brings forth the response that one ought not be such a pessimist, that things usually work out some way, and that good ol' American know-how will win the day in the

end. We are so used to thinking of ourselves as Mr. Clean that it is difficult for us to take any problem really seriously. Science, technology and a general spirit of uninvolved optimism has put us in a position in which we look for the relatively easy and sure answer. So we say, "All you have to do is . . ." But what a tremendous "All!" Thus I must answer the oft-repeated charge of pessimism - the kind that implies defeat, that admits to no possible and workable solutions.

I do have a solution that can be stated in the most broad and general terms. It is for the United States to radically revise its way of thinking about the way in which the world is divided. The older ideological warfare is rapidly becoming antiquarian, and we are rushing headlong for a catastrophic struggle between the "have" and "have-not" nations. The political struggle has become a moral question in proportions unlike anything we have ever known. What the rich world and the richest country in the world must decide in the very near future is that its present military and space ventures are inappropriate as we now interpret them. If we continue to contain Communism in the old way, we reduce the possibility of ally strength with those countries that will be needed to deal effectively with the "Third World." If we reach the moon and conquer that, future historians may say of us that we conquered the universe and lost our souls.

But offering that kind of a solution certainly does not qualify me as the world's leading optimist. Nevertheless, I want to shun the tag of pessimism. There are things that can be done, that must be done and quickly. The first requirement is to establish a priority system in which human want and need - in the face of mass starvation - becomes a more important problem to solve than landing on the moon, and the investment of 30 billion dollars a year in the development of human resources and possibilities becomes more important than containing Communism. We cannot be said to be involved in a vital attack on this problem if political criteria interferes with the dispersal of grain to India, as was the case in 1966. Neither can we be said to have looked at the problem and what it suggests for the future with clear-eyed horror when aid appropriations were cut back in 1967. We again show our disinterest in the matter when we pollute our own streams, erode our land, and generally waste more food than the average Indian citizen eats. We need, then first of all a change of attitude - which comes with some understanding of what the poorer two-thirds of the world is now facing, what four-fifths of the world will face, and what we must be prepared to face in the lifetime of many of us.

Secondly, we must radically revise our understanding of what it takes to feed the world now, and what it will take in a few years when the requirements will greatly exceed what they now are. This understanding begins with a stark fact:



the granaries we were worrying about a few years ago, where we were storing wheat and other surplus commodities, are now empty. The old Liberty ships tied up in the Hudson River that were filled with wheat have been scraped clean. But now a second fact: if all the ships in the world were to be loaded at once with foodstuffs for the hungry world, there would still not be enough food to go around. We get some idea of the dimensions of this problem if we examine the caloric intake factor. The United States government recommends that a 45 year old man should have 3,200 calories per day to meet normal energy demands - something on the more active side than sitting behind a desk all day. The absolute starvation level is 1,350 calories, if there is a balance of proteins, starches and fats. But since such a balance does not exist we must assume something like 1,750 calories per day as the absolute minimum, for want of proteins and fats. Given the present rate of food resources increase (1 percent) and a conservative rate of population growth (1.8 percent); there will be a mere 1,340 calories per day as a world average by the end of this century. This can mean only one thing: that our vaunted technology must go to work at once to discover the means to rapidly increase production everywhere in the world. Fact number 3: The rich nations have been regularly robbing the poor nations of vital protein foods and giving back starches in the form of grain. This fact is related not alone to a kind of international bartering system whereby protein foods are made payment for bulkier foods that have a high starch content; it is also related to our vast foreign industrial investments in which capitalistic enterprise takes on an empirical quality. A fourth fact: Attempts to establish productive possibilities in the hungry world, noble as they may be, cannot exceed the demand stemming from rapid population increases. The Aswan Dam, for example, is estimated to eventually increase Egypt's agricultural production by as much as 45 percent. But during the time the high dam is being built Egypt's population is increasing by that much.

Next, it is clear that the world's understanding of the meaning of child-bearing must be revolutionized. Here we enter into a most complex subject, one to which we cannot expect to do justice in the scope of this address. We must ask at the outset what must be done to lower the birthrate. Moreover, we must ask what it means to lower the birthrate in specific cultures where the birth of a child has specific religious and psychological meanings that are not immediately clear to us. For much of the world's history, the birth of a child was considered something like legal tender, a positive and contributing asset. Children promised a labor force, an army, and offered the real possibility for the physical control of land. Sheer numbers indicated potential power. To populate the earth meant the possibility of subduing it - a Biblical injunction, by the way. In the Third Century Tertullian argued with the Roman emperor that the number of Christians had multiplied to such an extent that any policy of liquidation was bound to fail. As we know, Catholicism has made much of this ideology in the past. So has Communism. A Chinese political leader is supposed to have said that she need not fear World War III since she

could not be expected to lose more than 400 thousand of her 700 thousand people. Emerging with 300 thousand survivors she would soon be able to dominate the world.

But there are other critical aspects of this problem. An Indian peasant farmer or villager is inclined to estimate his value as a man in terms of a surviving son to carry on the family name. In order to gain this asset, to insure such a son, his family planning might include seven children, four of whom would die in infancy, two of whom might well be girls, leaving him one son to carry on for him. It takes no deep insight to understand that this man must undergo a radical change of perspective when it becomes clear that infant mortality has dropped and that he need not father as many children to achieve his goal.

In certain parts of the world fathering children is a test of manhood. A grim illustration of this is found in Latin America. A year or so ago Oscar Lewis published La Vida, an account of five Puerto Rican families in the culture of poverty. Now the word "La Vida" means "the life," which is a way of saying that one is living the life of a whore. What comes through to me in this study is that the poor women in this study related themselves to a number of men for purposes of survival, and that the price exacted by each man was giving birth to a child. I do not suggest that we can successfully by-pass this notion. In some sense, children are the test of manhood or personhood. But when this notion becomes governing - particularly within a culture that has few other opportunities to express personhood, it becomes clear at once how very difficult it is to establish a realistic program of family planning.

Nevertheless, gains are being made in this area. Japan, for example, has begun to stabilize her population growth. In India, it is common to see along the roadside large billboards urging women to use the Intra-Uterine loop. Clinics and family planning agencies have sprung up in hundreds of places. But again we are tempted to an easy solution, to suggest giving out the pill in wholesale doses, and to think that five dollars worth of contraceptives are worth a hundred dollars of foreign aid. The fact is that an illiterate woman who does not even know how to read a calendar is not capable of using the pill. In addition, even if full scale use of contraceptives were to be employed as of now, it would take a number of years before the impact of a declining birth rate would be felt. The children already born, who will have to be fed, schooled, employed and housed in the next three decades have already posed the problem.

This problem, as it affects Roman Catholicism, is causing a significant change in Catholic thinking. Last summer I was part of a seminar in New Mexico in

which Father Arthur McCormack of London was a participant. Father McCormack is one of the leading population experts in the Roman Catholic Church and was responsible for some part of the thinking on this subject at the Vatican Council. It so happened that I quoted him in my magazine from a 1962 book in which he put forth the notion that contraception was against the teachings of the church, and hence God. When I talked with him, he agreed that the quote was accurate, but that he had completely changed his mind in five years, and could he please send me an up-to-date statement showing the change. I agreed to this, and the statement indicates his own position: that the church will soon find a way to advocate the use of contraceptives. Privately, he told me that is now his position, and he believed that the Bishop's Council meeting in the fall of 1967 would accept that position. As a matter of fact, it has not, but the indications are that it will eventually modify its stand considerably. In fact, in 1967 a study commission produced a majority report in which that modification was outlined. The Pope, however, found reason to accept, at that time, the minority and conservative report.

To conclude this discussion of the population explosion, we now turn to an often neglected aspect of the problem, factors involving water resources. Increased population requires more water - for personal use, for the production of the vast quantities of new food that will be needed, for industrial use, and so on. In addition, as a civilization matures and finds new outlets for productivity and recreation, the amount of water required for each individual person rises swiftly. It is estimated that the average personal use of water in the United States is something like 125 gallons per day, but when the water required to operate a modern technological society is added in the figure mounts to as much as 2,000 gallons per day. This figure, however, does not take into consideration the amount of water needed to supply agriculture, to feed livestock, to irrigate alfalfa fields such as my own organization does at a ranch in the northern part of New Mexico. For instance, if you take all the water required to produce one pound of beef, the water the steer drinks and the water required in the fields to produce grass and grain, the figure is 16 tons.

It is clear to you, as it has not been clear to many citizens of the United States, that the available water supply is limited. We cannot expect to go on forever digging deeper wells and drawing vaster amounts of water without the underground sources drying up. In Arizona, for example, the groundwater level has already fallen more than a hundred feet from its earlier regular level. The same is true for much of southern California. In this connection we may note that India, desperately short of food, irrigates more than 25 million acres by pumping from wells. This is an area almost as large as all the irrigated land in the United States. Shrinkage of groundwater in the metropolitan areas is also a factor. Around Baltimore the level has sunk 150 feet since 1916. The plain fact is that the great water bank is being used up at a rapid rate and that there are not as yet significant new deposits returned to that bank.

There are, of course, some answers. Chemically treating the great clouds in the Southwest may produce enormous quantities of water. But what if draining the water from these clouds depletes the water resources for the eastern part of the country that has an economy based on a greater consumption? Can we afford to turn the desert into a garden if it means that the lush Ohio Valley and eastern states become parched? As I mentioned earlier, the drought of the recent five years caused an enormous amount of anxiety for eastern cities.

Pipelining water seems to be another answer, but it too has limited possibilities. It is vastly expensive, but in addition there must be an adequate source. Suppose it is possible to drain billions of gallons out of the Great Lakes for use in the more arid areas, what are the consequences in light of the fact that these lakes have already become lowered in their levels. In addition, there is the problem of pollution. Cities such as Chicago must face the fact that they have chemically poisoned their waters for years with sewage and industrial waste.

In Pakistan there is an experiment involving spraying a black substance on desert areas in order to attract rain. To the degree that this works, it is also limited and expensive. Imagine spraying on a regular basis a million acres of desert!

The solution looked to with much hope is desalinization. This involves not alone water from the ocean, but also well water, as in some parts of Australia where the deep wells give forth a saline solution. Again, a vast expense would be required, involving gigantic plants and subterranean tunnels to carry the water to the place of use - subterranean in order to prevent evaporation of the costly processed water. Some thought must be given also to the salt mountains that would pile up around the desalting plants - the salt would have to be prevented from seeping into the land and groundwater sources. And there would be mountains. To garner enough water to produce a ton of milk, the desalting process would produce 35 tons of salt.

Finally, we must mention the reuse of water. Already this is being accomplished to a large degree. In the Ohio River Basin water is now being utilized ten times over. It is likely that in many parts of the world this practice will be utilized in a grand scale. This, of course, does not deal with your specific problem in New Mexico - how to locate new sources of water and how to conserve its use for the greatest effectiveness.

It should be clear that the population and resource problem, when described in these dimensions, does not support easy and confident answers. We, in fact, do not know the means of our or the world's survival. Certainly new technology will be developed to bring new resources to millions who will live in this world during the later third of the Twentieth Century. Certainly too

there will be realignments of priorities that will provide a firmer focus on the problem we have been discussing. We may hope that the wiser political minds will see the larger dimensions of international relationships as they evolve within an exploding population. There will likely be a development of international agencies that have to do with trade, such as is suggested by the recent Kennedy round of tariff talks in Geneva. One possibility is the development of an International Protein Bank, in light of the fact that the use and distribution of protein will be as important to world survival as gold and silver and other metals have been regarded to this point. Finally, there will have to be an overall reduction in the birthrate, particularly in the "Third World."

What we must do is seek to overcome the grand American delusion, and the delusion that has been held by man throughout the centuries, that the resources of the earth are inexhaustible, and that man has somehow been created to exploit the earth. The Biblical injunction was for man to have dominion over all the earth. He was to care for the earth, to cultivate it, to grace it with his presence. Let us hope that we have not passed the point in which man's exploitation of nature, of all the resources that are available to man, has created an irreparable wilderness.