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POLLUTION: INTERNATIONAL COMPLICATIONS

*By Marshall I. Goldman**

The United Nations Conference at Stockholm on environmental disruption is coming none too soon. As with so much in the field of pollution, the sudden concern about its international implications is something that has caught all but a few environmentalists by surprise. Until now, discussions have focussed on the local, regional or national dimensions of the issue. It has taken the general public a long time to recognize that an ecological crisis does not always confine itself to national boundaries. Yet an international approach to the problem becomes especially important as the technological consequences of what we do spreads further and further beyond national borders. Moreover not only the technology, but frequently the attitude toward pollution control in one country has a direct effect on the environment in neighboring countries and sometimes throughout the world. Therefore, it is not only appropriate but imperative that we examine the implications of pollution control from an international perspective. After discussing some of the complications that have arisen, we will consider some of the steps that may be necessary beyond Stockholm.

RICH COUNTRY POLLUTION

Because pollution is frequently a direct byproduct of a growing GNP and because the wealthy can afford the leisure to worry about such things, the rich are usually the first to concern themselves with environmental disruption. Unfortunately, increasing concern about the environment is usually outpaced by the even more rapid expansion of the economy, technology and pollution. With few exceptions, most of the countries of the developed world find it impossible to do more than hold overall pollution conditions to existing levels. Confronted by modern technology, which is ex-

panding both in terms of quantity and complexity, the normally resilient forces of nature are often overrun and overtaxed. Thus even if a particular battle is successfully fought and won by the conservationists, there is usually no time for a victory celebration, since it is likely that several other battles will have erupted and even been lost in the meantime.

Even though many environmental questions can be handled on a local basis by local authorities, increasingly jurisdiction over such matters is being transferred to national authorities. The main reason for this centralization is that if all regional jurisdictions are forced to observe the same standards, then manufacturers cannot play one region off against another in the hope of winning a variance in the regulations. Uniform laws also prevent one area from taking the initiative by lowering regulations as a device to attract industry.

As might be anticipated, there is a parallel need for uniformity of regulation at the international level. As we shall see, competition to offer lower pollution controls is particularly intense between the rich and poor countries but the rich countries are also tempted to lower standards in order to attract industry from other rich countries. The most extreme case where the environment has been sacrificed in order to make production as cheap as possible is in Japan. In an effort to build up Japanese industry after World War II, everything possible was done to make it easy for Japanese industry to produce at the cheapest direct cost. In effect no resources would or could be diverted from anything that might lead to increased production. Since very few pollution controls lead to higher profits or increased production, the environment suffered badly. Now that the Japanese have done so well on foreign markets, they have come to realize that they may have been shortsighted as they look around at the shocking deterioration of their air, water and land resources.

Despite some initial efforts to generate increased concern for the environment, it has been hard for Japanese environmentalists to induce much change in the underlying mentality of Japanese society. Despite the fact that after much effort, some of the large and profitable Japanese companies have come to accept the need for pollution control and the expenditures that go with it, the small companies continue to avoid such costs by warning that if such sums were spent, they would have to go bankrupt. Thus in the middle of a model industrial park in Osaka harbor, where the latest

pollution control techniques are proudly demonstrated by several large Japanese corporations, a small foundry sits puffing away large quantities of dark smoke. When the incongruity is noted, it is acknowledged that this foundry does violate the laws. It is explained, however, that any effort to force compliance with the law would drive the foundry out of business and no one wanted to take the responsibility for that.

The possibility of unemployment and the pressure to lower standards in order to attract industry generates what can be called a "Gresham's Law of the Environment." Just as in economics where Gresham's Law says that bad money tends to drive good money out of circulation, so poor pollution control tends to drive out good pollution control or at least it makes it harder to enact good environmental law. It is only natural then that executives of American steel corporations should complain that the pollution control laws being imposed on them put them in an unfair competitive position with the Japanese. Since the Japanese steel industry until recently has been spared almost all the costs associated with environmental protection, there is considerable merit to such charges. The cost of thorough pollution control for American firms could in many instances add 10% or more to the prices of American steel-makers compared to Japanese steel. This is a legitimate complaint and the American producers deserve more sympathy than they get from most environmentalists when industry opposes increased controls for such reasons. Their charges of unfair competition by the Japanese should arouse somewhat less sympathy, however, when pollution controls facing the American steel industry are compared with the controls imposed on West German producers of steel in the Ruhr Valley. There the controls, at least on water pollution, are even more thorough and costly than they are in the United States. A steel producer in the Ruhr Valley requires an average of only 6 cubic yards of water to produce a ton of steel compared to the 130 cubic yards needed by producers in most other countries of the world. Logically enough, the West Germans in turn complain about the "unreasonable" laws they have to contend with in contrast to the less stringent laws of the United States, not to mention Japan. It would make it much easier in West Germany to upgrade or maintain existing laws if comparable laws were passed in the United States and Japan. The existence of unfair competition in one country complicates the whole international effort toward environmental improvement.

There are numerous other examples of the Gresham Law effect. For instance, the production of the SST in the Soviet Union, France, and England made it very hard to reject a similar program in the United States. Indeed it would be a bold gambler who would bet that the SST will not someday be built in the United States. Similarly supertankers keep becoming more super, and the oil spills and tar accumulation in the oceans keep spilling and accumulating. In the same way, fish and whale operations are becoming ever more efficient and all encompassing so that the danger of species exhaustion increases season by season. The lack of effective international control over such matters becomes more pressing as we continue to develop an ever more imaginative technology that leaves less and less to chance. Of course, this technological revolution has affected not only the fishing industry, but the whole environment. Over the centuries man has designed highly ingenious projects that previously he could only dream about. Now, unfortunately, with vastly increased powers at his command, he is capable of carrying them out. There are many examples. For centuries man has sought to harness the Nile. With the completion of the Aswan Dam, his dreams have come true. To his shock, the dream has turned out to be more like a nightmare. Among the horrors generated by the dam is the spread of schistosomiasis, the serious erosion of the river bed between the dam and the Mediterranean Sea, the elimination of the natural fertilization that used to take place each year along the river banks from the spring floods, seepage, evaporation and the buildup of silt behind the dam, a sharp rise in the salinity of the Mediterranean, as well as the curtailment of the flow of nutrient to the sea which until recently served as a food base for a healthy fishing industry.

More and more frequently the activities of one country have environmental ramifications beyond their borders. Just as the impact of the Aswan Dam involves all the countries in the Eastern Mediterranean, so projects in the developed countries affect other countries. Switzerland discharges waste into the Rhine River which then passes through the countries along the Rhine. Since the Netherlands is at the mouth of the river, it receives the pollution of all the Swiss, German, and French cities and industries upstream. Sweden apparently suffers from the sulfur emissions of Great Britain and the Germanys, West and East. Similarly the Baltic is affected by the wastes discharged by all the countries along its shores.

Pollution is not only oblivious to national boundaries, it is also

no respector of ideological niceties. The Swedes are not concerned whether the air that bothers them comes from East or West Germany; all they want is that it be stopped. Similarly oil discharged from Soviet ships in Estonia affects Communist Poland as much as they affect noncommunist Finland and Sweden.

As with all international pollution, the absence of a supreme international legal authority makes it very difficult to impose and obtain adherence to a uniform set of controls. Frequently, there is even a tendency to adopt a "beggar my neighbor" policy. Just as one city will locate its incinerator upwind of an adjacent municipality, so a country will site its waste producing activities upwind and upstream of the neighboring country.

THE ATTRACTIONS OF THE DEVELOPING COUNTRIES

Competition over natural resources and the lack of environmental cooperation between different regions becomes increasingly important with time, especially as labor becomes more and more expensive. At one time, industry would be attracted to a region by the promise of cheap labor, at least relative to wage rates that prevailed in the more expensive sections of the country. But as the cost of labor relative to other factors of production increased, the competition focussed less and less on relative labor costs and more and more on the availability of natural resources, including water and air. Generally the developed economies have become more and more capital and natural resource intensive. Profit maximizing businesses conclude that they will do better to economize on the use of labor and to splurge on the use of natural resources. Such tendencies are reenforced by the failure of the normal pricing system to reflect the social costs of pollution in the costs of using the raw materials.

It is cheaper, for example, for most soft drink bottlers to sell their product in nonreturnable bottles and cans rather than hire the labor necessary to sort, clean and account for returnable bottles. The cost of disposing of the containers is transferred from the manufacturer to society and the landscape as a whole. It also happens that most consumers value their leisure more than the 5¢ they might collect in returning the containers to the retailer. Until new automated methods of ripping apart used automobiles were developed, the high cost of labor had made it unprofitable for most junk dealers to sort out the different types of metals found in an automobile. It was simpler to scrap the entire chassis and let society

as a whole bear the cost of the automobile graveyards that have sprung up across the country. This was cheaper than attempting to salvage and recycle parts of the automobile, as scrap dealers used to do in the United States and as they continue to do in most of the developing world where labor is still cheap and metal scrap and parts are expensive. For much the same reasons, in most countries the sewage treatment plant has gradually come to replace the daily honey bucket collector. As labor costs rise, it becomes more expensive to finance the labor needed to cart human sewage to nearby farmers who simultaneously find that they can generally obtain more uniform and aesthetic results from using artificial fertilizer.

After a time the environmentally unsound exploitation of natural resources may reach such serious proportions that some self-correcting mechanisms may be set in motion. As physical and aesthetic conditions deteriorate, some of the offenders begin to suffer from their own misdeeds. In the words of the economist, some of the external social costs become internalized. Such internalization took place in Pittsburgh shortly after World War II. Because of the heavy air pollution that perennially hung over the city from the steel mills, steam locomotives, and other industrial activities in the city, the management of these companies found it increasingly more difficult to recruit new executive personnel. Consequently companies like United States Steel, which helped to create the unhealthy and unpleasant conditions, had to pay higher and higher wages to attract new personnel to Pittsburgh. In some cases, neither higher salaries nor promises of a promotion were enough of an inducement to attract the needed people. Led by Richard King Mellon, the Pittsburgh business community committed itself to a plan of smoke and air pollution abatement. It was concluded that the expense for control and smoke reduction would be offset in large part by the reduced costs of recruitment and health care and the higher productivity that would follow in the wake of such a program.

Somewhat similar forces have been at work in cities like New York and Tokyo. Because of increasing congestion and pollution, the costs of doing business in such cities has mounted rapidly. As a result, over the last decade (as these social costs are transformed into direct costs of doing business) manufacturers have moved out of New York in large numbers, and a similar exodus is beginning

in Tokyo. This outmigration tends to reduce the growth of environmental displeasures, but, unfortunately, so far it does not seem to have brought about much of an overall improvement. Nonetheless the reduced level of manufacturing in such cities reduces somewhat the tension on those who remain.

While such self-correcting tendencies do help somewhat in particular areas, the onslaught on the planet continues as nations seek to expand their economic growth. Raw materials which took aeons to form are ripped off in less than a generation. Because they were near at hand, the raw materials resources in the developed countries were mined first. As incomes and consumption increased, these deposits were rapidly exhausted. With improved transportation, it became feasible and necessary to turn to virgin deposits in the developing countries for new supplies. In the short run, this suits the developing countries because it provides them with foreign exchange. Moreover consumption rates in the developing countries are far below those in the richer countries of the world. Thus, each year the average American citizen reportedly has fifty times the impact on the earth's environment that a citizen of a poor country like Pakistan has. For that matter, the average pet in the United States sometimes has as much as 25 times the impact of a Pakistani.

Given such differences in consumption, it is inevitable that the developed countries turn increasingly to the poorer regions of the world for their sources of raw materials. Initially the quest was almost solely for the traditional raw materials. Now that air, water and land in the developed countries have joined the ranks of the natural resources that are in short supply, some enterprises are not only shifting their mining activities to the developing countries, but their manufacturing activities as well. Japanese manufacturers seem to be especially alert to the short-run advantages of such arrangements. To invest in the expensive pollution treatment equipment required for new factories in Japan would sharply lower the expected rate of profit. After a point the higher treatment costs in Japan tend to offset the lower labor productivity that prevails in most of the developing countries. At that point it is more profitable for the manufacturer to build a new plant overseas. In the case of the Japanese, they seem to have favored Southeast Asia, Taiwan, Korea, and Latin America as particularly attractive locations.

THE POLLUTION OF THE POOR

The prospect of attracting new industrial activity is very tempting to almost all underdeveloped countries. For them a smoking chimney is still a positive sign. New industrial activity means new jobs and income. In areas where annual per capita incomes rarely exceed \$200 or even \$100 a year, planners are seldom willing to make a fuss about pollution controls. First things first—concern for jobs and livelihood comes before concern for the environment and pollution control.

Planners in many of the developing countries have discovered that one of the strongest competitive advantages they have is the absence of pollution controls. Not only does this attract foreign investors, but it provides an important cost saving for indigenous producers. By scrimping on the environment, entrepreneurs hope they will be able to lower direct production costs enough to break international markets. Similarly, when they first started to produce, few if any of the large corporations in the developed countries worried much about expenditures for pollution control.

Against this perspective, the sudden clamor for international standards of pollution control is viewed with suspicion by most planners in the developing world. Ever present is the thought that this sudden emphasis on pollution control is simply a device to inhibit industrialization in the developing countries and to impose unfair costs on infant industries in the developing world that manufacturers in the developed world never had to face at a comparable stage of development. If forced to implement such expensive policies, producers in the developing countries will find that their goods will not be competitive despite the abundance of low cost labor.

Some attribute an even more sinister motive to those concerned with international pollution control. There are skeptics in the developing countries who see the campaign as a subtle form of genocide. Why else they ask, is there such stress on population control, especially since it is the countries of the southern hemisphere which have the higher population growth rates? Some American blacks voice the same distrust. There is even greater concern about the effort to ban DDT. Many residents of the Northern Hemisphere are unaware that DDT is largely responsible for the curbing of malaria throughout the world. This has resulted in the saving of hundreds of millions of lives. An Indian is simply unable

to rouse himself when he hears about the pending extinction of the American bald eagle or the peregrine falcon because of excessive applications of DDT. Even the thought that DDT may be carcinogenic for humans is not especially disturbing. It is better to die prematurely of cancer at age 55 than of malaria at age 5. Nor are the protestors pacified when it is pointed out that the curbing of malaria with DDT may have been good for the individual, since DDT has also been largely responsible for the population explosion that has followed its successful application. This arouses even more pronounced charges of racism as well as other perplexing moral issues.

With this perspective from the developing countries, it may now be a little easier to understand the skepticism and distrust of many of the developing countries toward the Stockholm Conference and what it stands for. An intriguing aspect of such hostility is the relationship between the environment and economic nationalism in the third world. Many radicals insist that pollution in the developing countries is primarily the fault of the capitalist countries that have exploited these countries so wastefully in the past. As we saw, such charges are frequently correct. At the same time, however, there is not too much reason to expect that the developing countries in their desire for economic development will treat the environment much better once foreign involvement is banned and indigenous ownership replaces foreign ownership and domination. Of course, if economic growth slows down in the absence of foreign investment, then there may be less negative impact on the environment, but everything else being equal, the damage is likely to be at least as great. There are several reasons for this. Whether production is carried on by foreigners or by natives, expenditures for pollution control add to the cost of production so that the goods become more expensive and normally less competitive. In some cases, the exploitation of some resources may actually increase with nationalization. Western oil and mining companies are often accused of holding down production to force an artificial shortage and thereby an increase in market price. However in the eyes of the producing country, such agreements are viewed as a device to reduce their royalty income. Consequently the producing countries do all they can to force the concessionaires to increase output. The implication is that with nationalization, there will be no such coordination or agreements, so that exploitation of natural resources will actually be accelerated. So far there has been little to indicate

that this exploitation will be accompanied by parallel environmental controls.

One indication of the damage that may result can be found in the Middle East. For many years the western oil producers have disposed of the byproduct, methane gas, by flaring it at the refinery site. In the climate of mistrust which presently pervades the area, many of the local authorities began to suspect that a valuable product was being wastefully disposed of to their disadvantage. Apprehensive about unduly antagonizing the natives, the oil companies decided they had better respond to the criticism. Unfortunately they could find no way to market the product in the local area. Yet conversion and transportation of the gas required an unprofitable investment. The simplest solution therefore was to snuff out the flame. If the natives could not see the flame, there would be nothing to upset them. Consequently now the methane gas is discharged unburnt into the atmosphere. As a result the methane gas level in the earth's atmosphere has reportedly risen by something like 30%. Based on such experience, there is no assurance that the environment will benefit that much more when people in the third world exercise increased control over their own economic and environmental destinies.

Even if authorities in the southern hemisphere attempt to put greater emphasis on environmental control, their task will not be easy. Most of the developing countries are located in tropical climates, and water pollution control is especially difficult to handle under such conditions. Decay takes place at an accelerated rate in warm and rainy weather. Therefore there is more sewage to process, with treatment processes that are more complicated and subject to malfunction.

THE ADVANTAGES OF ENVIRONMENTAL CONTROL IN THE DEVELOPING COUNTRIES

Though poor countries may not be interested in environmental control and find such a program difficult to implement, there are important reasons why such environmental control is to their advantage. First, as valuable as they are now, most raw materials will be even more valuable in the years to come, as the rate of exploitation continues and the known reserves continue to diminish. Even though fresh reserves are continually being discovered, some day this process must inevitably taper off. Second, scholars, such as Reid

Bryson at the University of Wisconsin, have found that poor environmental practices often generate immediately identifiable costs.¹ Specifically, Bryson found that environmental shortsightedness had adversely affected the climatic pattern of vast portions of India. The uncontrolled grazing of sheep and goats had led to deforestation and the removal of grass cover. This brought about an increase in dust, which in turn adversely affected the weather so that there was less rainfall, which in turn affected economic activity throughout the entire area. To his surprise, Bryson has found that particulate matter was four times heavier over some desert regions of India than it was over Chicago. Historically, similar practices apparently have led to the ravaging of similar agricultural regions throughout the centers of early civilization in the Middle East. Bryson has found that by exercising greater control over agriculture, the soil can be restored so that air pollution will be reduced. This in turn can lead to a rapid increase in agricultural production.

Such care and precaution may well be necessary if the planet is to survive. While 200 million Americans may not be willing to give up their 100 million automobiles, it is awe-inspiring to imagine what will happen when the rest of the world catches up to our standard of living and passion for the automobile. The Japanese are well on the way and the West Europeans are not far behind. After insisting they would not follow the automobile road, the Russians have succumbed and now are also rapidly increasing automobile production. Production increased by 70% from 1965 to 1970 and it is due to go up by 270% from 1970 to 1975. If and when the Chinese are able to move in this direction, imagine what will happen when 400 million automobile ignitions are turned on at once.

While mass asphyxiation may be nothing more than another bad dream, the cumulative effect of ever increasing production around the world is to be taken seriously. Even if there should be a massive redistribution of resources, as advocated by some ecological radicals, there is an ever growing likelihood that more and more of our planet's ecological processes will become overtaxed. As the world fills up with people and the byproducts of production, many of nature's recycling operations will start to malfunction. Nature has an amazing ability to regenerate itself, provided there is no major disruption of the ecological system itself. But if there is an abnormal increase in wastes to be disposed of or materials to be

recycled and absorbed, then, like Lake Erie, normal ecological activities break down and abnormal phenomenon like eutrophication take over. Unless proper care is taken now, nature's reserves will be overloaded and a massive breakdown of ecological operations could occur.²

SOLUTIONS

There do not appear to be many easy solutions. While it is likely to provide more questions than answers, the United Nations Conference at Stockholm is at least a step in the right direction. Still, harmony and agreement will not come easily. Unlike the usual east-west splits that are endemic to most UN functions, the probability is that Stockholm will see a north-south division, the rich versus the poor. To prevent the accusation that they are conspiring to encumber or prevent industrialization in the poorer countries of the world, the richer countries may hesitate to press for meaningful standards of environmental quality. It may be necessary, therefore, to establish two sets of standards, one for the rich and one for the poor. Such standards are important for industry as it plans for the future. It is generally easier and cheaper to build in effective controls in a new plant, even when they are more complex, than to upgrade an already operating plant. Although a double set of standards is hardly a satisfactory situation, it is better than a single but temporary standard which is agreed upon only because it is the lowest common denominator of effectiveness. Invariably, it will not be too long before the lower standard is revised upward and expensive controls are made obsolete.

In addition to everything else, the Stockholm Conference will have to steer clear of the internal warfare being waged inside the United Nations itself among its own agencies. Most UN organizations seem to claim that they long ago came to grips with the world's environmental problems. Thus the Food and Agricultural Organization insists everything will be all right if only enough pesticides and artificial fertilizer are applied to crops; the World Health Organization argues that DDT is needed to protect health; the International Atomic Energy Agency cannot understand why there should be fear about power shortages or air pollution when electric power can be generated so cheaply and cleanly with atomic energy; and the World Meteorological Organization is offended to learn that there are those who doubt that it is doing enough to provide measures of air pollution and warnings about impending

hazards. If Maurice F. Strong, the Secretary General of the United Nations Conference on the Human Environment, can steer a course through all these shoals, or even some of them, it will be a blessing for the environment, but it is also likely to be a surprise. Consequently much is also going to have to depend on unilateral action.

UNILATERAL ACTION

At first glance it may seem that there is not much that one country by itself can do to raise international environmental standards. Moreover, it may appear foolhardy for one country to impose its own set of higher environmental codes irrespective of what other countries do. Yet the United States as well as a few other countries have already moved in this direction. If the United States, for example, continues to oppose the construction of the SST and bars it from landing at American airports (and thereby violates Gresham's Law of the Environment) the whole venture may be doomed to collapse. Since the transAtlantic market is the most lucrative, without permission to land in the United States, the plane will require even larger subsidies, which may prove to be the breaking point. If the United States can be resolute in banning the plane, this may encourage others to take a similar stand. Similarly the United States is beginning to ban the sale of materials from endangered species that are hunted in the developing countries. It is trying to protect whales in somewhat the same manner. Likewise we have banned Japanese swordfish even though the Japanese protest that it is safe to eat. Naturally this increases pressure on them to reduce the discharge of mercury from their factories. The United States is also moving to reduce, if not ban, the manufacture and use of DDT. While DDT will probably continue to be used for some purposes, such action by the United States will have the desirable effect of discouraging the indiscriminate application of such pesticides. Additionally, the United States is now taking steps to force foreign automobile manufacturers to meet American exhaust standards. Although such standards may not be formally adopted in a country like Japan, or Germany, the foreign automobile manufacturers must master such standards if their cars are to be sold in American markets. Once this technology has been mastered, it usually happens that domestic pressure builds up for installation of similar equipment on the cars sold in Japan and Germany.

If all else fails, it may come to pass that those nations that want

to protect themselves may decide to erect unilateral trade barriers. Such laws would be designed to protect domestic producers who complain that the added costs of pollution control makes them non-competitive. These laws would go beyond the regulations which state that automobiles cannot be sold without pollution control devices. In effect, these laws do not discriminate because both American and foreign producers have to observe the law and install the devices on all cars sold in the United States. Therefore both sets of manufactures have to bear the costs for such devices. In contrast, steel can be sold in the United States without there being any way of insuring that the foreign producer has protected the environment of his country in the process. The American producer can be regulated at the plant site and forced to invest in control equipment. To offset or compensate for these costs, we may eventually see laws that impose a pollution tariff on foreign firms which have not committed themselves to such expenditures or have avoided them in some manner. It will be extremely difficult to determine exactly how much should be charged in order to compensate for the absence of such expenditures. Moreover, most economists would tend to view this as just another form of protectionism. Proponents of such a tariff, however, might classify exports from countries without pollution control as just another form of dumping, which, although difficult to measure, is unfair and which fully justifies the imposition of a surcharge.

Given all the interests that have to be satisfied, the prospects for international cooperation in environmental control are not very promising. Lest we be too pessimistic, it is important to remember that some environmental progress has been made, as witnessed by the reduction of radioactivity around the world, the drop in levels of sulfur dioxide by 50% in cities like Boston and New York, the similar drop in particulate matter in the air over London, and the return of fish to parts of the Thames and the harbor and bays off San Diego and Seattle. Yet as one rash of problems is solved, several others break out. As countries around the world continue to stress economic growth and as more and more developing countries are able to achieve such growth for the first time, the seriousness of the situation is certain to become more intense.

The United Nations and countries on their own initiative must begin to insist that such growth can only take place if accompanied by effective controls and forms of recycling. Only then will the

Stockholm Conference and the meetings and mandates that follow be judged a success.



FOOTNOTES

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¹ R. A. Bryson, "Climatic Modification by Air Pollution," paper presented at International Conference on Environmental Future, Jyvaskala, Finland (June 27–July 3, 1971). See also, E. Whitcombe, "Development Projects and Environmental Disruption: The Case of Uttar Pradesh, India," paper presented at Symposium on Political Economy of Environment, Problems of Method, Paris (July 5–8, 1971).

² B. Commoner, *THE CLOSING CIRCLE* (New York: Alfred Knopf, 1971).