Reducing the Environmental Impact of Population Growth

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It is generally accepted that population will have to be stabilized: first, because the earth is finite and its resources limited; and, second, because the demand for natural resources creates an ever-increasing impact on the environment and threatens to destroy the stability of the ecosystem. Yet the demographic facts of life make it plain that some further growth of population is inevitable, even if the birthrate were to be reduced to the replacement level which would eventually give a zero-growth population. In addition, social and political factors may delay the approach to stability, thus allowing a still greater increase of population.

It is important to realize that the crisis is produced not just by people but by their consumption of resources. Even if we achieved a zero-growth population, we would still have to work hard to make life more livable. (Of course, if the population grows, we will have to work even harder.) The proposed symposium would spell out just how to make life more livable by reducing the environmental impact of population growth. The symposium will be divided into three parts. The first two will occupy a half-day each (evening of 26 December, evening of 28 December). The third part will last 2 days (29 and 30 December). The symposium is sponsored by the AAAS Commission on Population Problems.

Turning pollution into a resource. The resources that a population consumes are generally turned into waste products which cause pollution. It has been stressed time and again that it is essential to close the cycle and return these wastes into useful products of raw materials. Fortunately, much new technology has been developed recently which makes recycling and reuse economical. This session will discuss what it takes to reclaim junk automobiles; how to extract valuable materials from refuse; the recycling of sewage sludge; the renovation and recycling of water; the extraction of sulfur from fuels; and some uses for waste heat from electric power plants. Leading experts will report on the state-of-the-art and on prospects for the future.

Redirecting growth. A major problem is how to maintain and extend growth, in terms of real personal welfare and quality of life, rather than simply by using the gross national product as the index; how to reorient and shift consumption goals and growth goals away from items which consume large amounts of raw materials—metals, water, fuels—toward items that do not require natural resources and create no unfavorable impact on the environment, such as increased health care and increased educational services. We want to discuss what it takes to develop life styles that will move in that direction, which will allow a greater degree of amenities and indeed continued growth, but without the costly environmental effect—costly because they have to be cleaned up and costly because they are harmful to health and reduce enjoyment of nature.

This session will be organized primarily by SCOPE (Student Committee on Pollution of the Environment), which is a national group established in 1969 by the Secretary of the Interior. It makes sense to hear from students about what they think about life styles for the next generation—whether they will require, for example, yearly model changes in automobiles and household appliances rather than "quality engineering"; what they think about the reliability and repairability of products; and how they feel toward essential and nonessential uses of such items as electric power, water, and minerals.

Toward a better distribution of population. To absorb our current rate of growth, about 2.5 million people per year, we would require the construction of a new city the size of Tulsa or Dayton every month. Instead, the increase in population is adding to the already crowded metropolitan areas. Furthermore, internal migration is depleting population in many states and making the metropolitan areas even more unmanageable. A recent White House report ("Toward Balanced Growth: Quantity with Quality," report of the National Goals Research Staff, Washington, D.C., July 1970) outlines some of the alternatives for a national growth policy and deals particularly with the importance of a better distribution of population by outlining three basic strategies: (i) spread population by generating growth in sparsely populated rural areas; (ii) foster the growth of existing small cities and towns in nonmetropolitan areas; and (iii) build new cities outside the large metropolitan areas.

Of course, these approaches are not mutually exclusive and will probably be carried forward at the same time. However, the establishment of new cities, that is, population centers away from metropolitan areas, is among the most interesting and controversial topics for discussion since it involves some of the more difficult and challenging problems. Once adequate geology, climate, and water are assured, what does it take to establish a new city? How does one move people and provide an economic base at the same time? What should be the role of government? What government policies would promote new cities and what existing policies are stifling the growth of new cities? What is the challenge of new cities to the technologist? What kinds of technological pioneering can be attempted? How can advanced technology be used to provide various products and services, from domestic water to health care, with the lowest impact on the environment? What are the social and demographic problems of new cities, as well as the opportunities for pioneering in human relations? How can new designs for cities make life more livable? What is the optimum size of a city?

These are some of the questions which will attract the attention of physical scientists, engineers, social scientists, as well as political, legal, and planning experts.

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