

treatment systems must be developed and adopted widely for the removal of the soluble nutrients if we are to preserve some of our most precious natural resources of water.

Air pollutants include many potentially hazardous materials such as wastes from the combustion of fossil fuels, pesticides, radioactive materials from nuclear detonation, and various industrial effluents.

Irritation of the eyes and respiratory tract from polluted air has been common for many years in Los Angeles because of the geographic and climatic peculiarities of that area. Los Angeles no longer is unique in this respect. Many other American cities, including New York and even non-industrial Washington, D.C., have experienced episodes in which the atmospheric concentration of automotive effluents reached irritating levels—and this will get worse before it gets better because every day there are more automobiles, burning more gasoline which crowd into the centers of our cities.

Up to the present time, except for a very few catastrophic episodes, there is little proof that the levels of air pollutants which accumulate in the air over our cities adversely affect the health of normal people, even though the pollutants may cause irritation. This does not mean that there are no detrimental effects on health, but only that by our present methods we are unable to detect or assess the effects of low levels of toxic compounds over long periods of time. In making these assessments it will be necessary to conduct detailed epidemiological studies on the young and healthy segment of the population but, probably more significantly, on the aged and infirm and those who suffer from cardiac or pulmonary ailments. Because of our judgment that smog may be harmful to human health and to the quality of living for city dwellers, we have embarked upon a program to reduce the concentration of pollutants from automotive exhausts. This is only "stop gap" action, however. Much research and development, and probably some major changes in transportation, will be required to ultimately control the problem.

One of the most intriguing and potentially significant changes that is taking place in our environment is the buildup of carbon dioxide in the atmosphere from the tremendous consumption of fossil fuels. At the present and projected rates of coal, oil, and natural gas consumption, there is good reason to believe that the carbon dioxide level in the earth's atmosphere will increase to an extent which could cause a significant rise in the air temperature of the earth by the time year 2000 is reached. If this occurs, the communities of natural vegetation can be expected to change, which would effect changes of corresponding magnitude in the natural populations of terrestrial animals. Glaciers would melt and ultimately even the temperature of the oceans would rise. Melting of the ice caps would cause rising of the ocean levels, or if the increase resulted in increased rates of precipitation in the polar regions, the ice caps might grow.

At this time, we can only theorize what might happen if the carbon dioxide content of the atmosphere continues to increase. Our understanding is insufficient to predict with confidence what will happen to the plants and animals and to the rest of our physical environment.

Pollution of our soils originates from many sources but at the present time the most important are related mainly to agricultural practices. The pollutants include such materials as pesticides, increased alkalinity or salinity due to irrigation practices, and in some areas wastes from domestic animals.

Solid wastes, including discarded packaging and junk automobiles, which so obviously degrade our landscape, constitute another aspect of our pollution problem which is in dire need of action. Of equal importance to the unsightliness of such materials is the waste and loss of the materials that they contain as well as the distressing propensity to destroy valuable natural resources such as marshes by dumping this junk into them.

Under natural conditions many species tend to live together in communities. This complex of species and the interrelationships that they share functions to maintain a stability which is commonly referred to as a "balance of nature." These ecological systems have been developed by the slow process of evolution, by each species finding its niche in a particular environment. As the environment becomes more harsh, the diversity of species decreases.

Many of the activities of man have resulted in the reduction of species. As the concentration of pollutants in a particular natural environment increases, the number of species decreases until finally all life there may be destroyed.

Another interesting correlation may be found in the results of intentional alterations of the bioenvironment to meet increased immediate needs for human