



Grappling with crowding

Japan's growing concern
with the environment
is showing progress

by Stuart Griffin

The image of Japan in the minds of many Westerners is of a nation of misty green mountains and the leisurely and contemplative tea ceremony. The truth is that the highly industrialized and urbanized Japanese are as hard-driving toward affluence as any nation in the world. With a population of 101 million squeezed into an area equal to that of California, the pressures on natural resources and environmental quality are great.

But there is increasing awareness by the Japanese public and Government that the future requires careful husbanding of resources and a concerted effort to clean up a befouled environment. The Japanese Government traditionally has concerned itself little with environmental problems, a fact that was pointed out sharply to the Sato cabinet in a recent white paper by Shinichi Nishida, director general of the Science and Technology Agency.

The paper points to efforts in other countries toward assessment of proposed technologies so as to measure their social and environmental effects in advance (SN: 3/7, p. 240), and suggests such a program in Japan. The paper also calls for a higher ratio of Government to industry expenditures in science and technology. This would increase social and environmental concern in a nation that Nishida says is often viewed as "a mere economic animal" whose Government has an overriding interest in economic development to the exclusion of other concerns. And industrial growth in Japan since the end of World War II indeed has been nothing short of stupendous. The 1969 level of production of all goods was twice that of 1963.

One aspect of the environmental crisis that has long been painfully evident in Japan is the heavy population, and the nation began some years ago to attempt to reduce the rate of population growth. The indications are that the effort has been successful and that the population will level off at about 125 million in 1985. Very liberal abortion laws, as well as Government birth control teams that go especially into the agricultural areas where large families are traditional, have been two key factors.

But nothing has stemmed the flow of people from rural areas into the cities where the high-paying industrial jobs are, and Tokyo, with a population of nearly 15 million, is now the world's largest city. Japan is the world's second largest producer of automobiles, and

vehicle-caused noise and air-pollution problems in Tokyo are severe. Tokyo Metropolitan Governor Ryokichi Minobe is aggressively aware of these problems, and ordinances have been passed to control pollution and establish standards; one new standard, for example, aims to limit carbon monoxide levels to no higher than 25 parts per million, just slightly higher than California's new limit of 20 parts per million. The Nissan and Toyota Companies, Japan's largest auto manufacturers, have announced plans to install emission-control devices on their products.

Despite Japan's abundant rainfall and fine mountain sites for storage of water, water supply problems are growing acute in Tokyo and Osaka, where industrial and domestic demands are high. Thus the Japanese Government has launched an urgent program for desalination of seawater, and a \$13.9 million plant that will combine the economies of size with conventional evaporation techniques will be completed near Tokyo in 1976 or 1977. Cost of water from the plant is expected to be about 8.3 cents per ton, as contrasted with 36.1 cents per ton from existing much smaller desalination plants and 10.5 cents per ton from the existing Tokyo river-reservoir system. The water problem may be further ameliorated by a water-pollution law, passed by the national Diet last month, which will require a higher level of sewage treatment.

Because Japan is so mountainous, the percentage of arable land is small—about 5,996,000 hectares in a total area of 36,966,000 hectares—and the nation must import much of its food supply. Canada and the United States are the largest sources of imported food. To increase its homegrown food supply, Japan is looking at the possibilities for reclamation, on the Dutch model, of shallow ocean areas. The Transport Ministry estimates that if all the seas up to 50 feet depth were filled in or diked, some 1.7 million hectares—about 4.2 million acres—of land would become available. The figure would increase to 4.2 million hectares if depths up to 100 feet were included. Osaka is now considering a plan for a 12,000-hectare landfill in Osaka Bay.

But conservationists, who are growing in influence here as in the United States, may oppose such schemes on esthetic and ecological grounds, in a country where seashores are precipitously lovely and where there is a traditional concern for living creatures.