

GENERAL SCIENCE

Use of Population as Weapon

Soviets condemn need for birth control, claiming technology can support all born and increased population will speed economic development, Watson Davis reports from Geneva. (Other reports on pages 114 and 116.)

► THE IDEA that the world can support in plenty all the people that can be born into it without population restraints is being vigorously advanced by some delegates to the U.N. Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas at Geneva.

Soviet Russia's spokesmen are notably vocal in condemning the need for birth control. It is startling to see this non-religious Communist country aligned against family limitations with the Vatican and predominantly Catholic countries, like Spain and Ireland.

Malthus, British scientist, who over a century and a half ago direly predicted that population would outrun the food production of the world, is the current whipping boy of the Soviet experts.

Modern agriculture and industry with their immense gains in production in the developed nations have indeed in this century shown that Malthus was too pessimistic, but in the populous areas like China and India human fruitfulness has outrun the food and other necessities of life. Use of food surpluses of the more affluent nations has prevented disastrous famines, although the people are underfed and hungry in many areas.

The Russians are attempting to conquer and take into their Communist realm the developing nations by attractive claims and promises, not by atomic threats. They say:

"Look what we have done in a few years in the formerly backward areas of the Soviet Union, the Central Asian Republics."

This has a persuasive sound to some nations emerging from colonialism.

Their policy of producing as many babies as possible is directed at populating great empty areas in Asia with Communists of the Russian variety, not the Chinese. This is the surmise from watching the population interplay in the conference.

The Russian thesis is that increased population will speed economic development because the world knows how to increase industry and utilize natural resources as demanded, provided these include the human resources of workers. For instance, Academician E. K. Fedorov, head of the USSR delegation, held that there is no limit to economic growth and that it can increase faster than population, the increase of which can be left to the family.

The American demographer, Prof. Philip M. Hauser of the University of Chicago, told the conference that the worldwide population explosion is a major obstacle to

economic growth. The world's population is expected to increase at the rate of 1.8% annually until the end of the century when there will be six billion, 300 million people, or two and a half times as many as at midcentury.

Unless this increase is stemmed by persuading families to have fewer children, which is difficult to do, increases of material goods and services must be achieved to keep the world as well off as it now is. To match the present per capita income of North America there would need to be an almost impossible twelvefold increase.

In less developed areas, like Africa, families must continue to have a large number of children in order that a few of them will live to grow up and support their parents in old age.

Even today only two or three children out of ten live to maturity because of many diseases not serious in advanced countries. Family limitation is unattractive under these primitive conditions.

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Energy for Remote Areas

► POWER-HUNGRY developing nations are turning to sunshine, wind, heat from the earth, as well as fissioning atoms, to provide energy needed for their transformation from primitive conditions to modern civilization.

Although requiring complex and expensive mechanisms, the best long-term possibility for useful energy will come from nuclear reactors, the U.S. conference was told.

The world's nuclear energy production is doubling every year, whereas conventional power production doubles in a decade. Two Russian scientists, J. Korjakin and V. Schmelev, in a report transmitted to the conference estimated that nuclear energy will become competitive by 1970.

Most of the atomic power so far produced comes from uranium. Reactors that breed power-producing atoms out of thorium are being developed. This will allow countries possessing that element to become atomic power producers.

Solar energy has been tested experimentally in several countries of the world for distilling, heating and boiling water, for cooking, for refrigeration and production of ice, for drying fruits, and also for producing small amounts of energy.

Arid regions of the world with little coal or oil and no water power look forward to the development of energy from the sunshine. Particularly promising is the use of water heated by the sun for air conditioning houses.

In regions where there are hot springs and steam issuing from subterranean regions as in Italy, New Zealand, California and Mexico, these sources of energy are being tapped and put to work.

Wind is being utilized in some sections, particularly for pumping water to reclaim



Urs G. Arni

GENEVA CONFERENCE—Dr. Walsh McDermott (left) and Mrs. McDermott are shown receiving at the U. S. delegation reception at Geneva. Dr. McDermott, professor of public health and chairman of the department, Cornell University Medical College, New York, headed the U. S. delegation to the U.N. conference.

waterlogged areas and for drainage. The application of wind power to such minor power production is considered suitable primarily for rural regions where electricity is not yet available.

The greatest hope of unconventional power aside from nuclear energy lies in fuel cells which convert the chemical energy of the combustion of a conventional fuel, such as gas, directly into electrical energy. Although still experimental, British research upon fuel cells indicates they will become practical energy producers that can be used to provide small-scale and mobile energy where needed. They will operate trucks and automobiles in the future.

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New Air Transport

➤ INSTEAD OF trains on railroads and trucks on expensive highways, the less developed countries in the future are likely to use for their transport hybrid helicopter-airplanes that need only simple landing fields and no roads or rails between.

This possibility was offered at the U.N. conference in a report by Dr. Phillip R. Carlson of the Lockheed Aircraft Corporation, Burbank, Calif.

The new kind of aircraft would be especially useful in the early stages of area development, operating for distances of less than 500 miles, to establish railroad depots, river ports, and ocean harbors. The new type of craft could be designed, built and put into service in a few years if its development could get underway promptly with financial support.

Like a helicopter, the proposed craft would be able to rise vertically from unprepared sites, but, like a conventional airplane, forward flight would be possible using wings and airplane engines.

Dr. Carlson explained that this type of air transportation could be used when there is insufficient capital available to build a highway or railroad or when a transportation system is needed to operate within a very short time.

This unusual aircraft would need to travel only about half the distance between destinations of trucks or railroads because of natural land and water barriers.

A modern equivalent of the DC-3 workhorse of aviation was suggested by J. J. Furniss, director of Civil Aviation, East African Common Services Organization. This airplane would not travel as fast as jets, but would be relatively simple and not require elaborate ground facilities.

Flying vehicles sustained on a cushion of air a short distance above the ground are also possibilities for the future. These hovercraft or cushioncraft are being developed in both England and the United States. They use brute force instead of aerodynamic characteristics to keep aloft, but need less landing and takeoff areas than the helicopter. For navigation they need only the devices of any surface vehicle.

This kind of craft could carry bulky loads across the country if suitable graded tracks were prepared at a cost which would be much less than for railroad tracks.

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Mental Health Important

➤ MENTAL HEALTH is a factor which must be dealt with in planning for the future of developing nations, the U.N. conference was told.

While psychiatry cannot hope to solve the many problems facing new nations, better understanding of psychiatric symptoms and the relationship between mental health and social and cultural change can contribute much to their development, Dr. Alexander H. Leighton, professor of social psychiatry at Cornell, and Dr. T. Adeoye Lambo, medical superintendent of the Aro Hospital for Nervous Disease in Abeokuta, Western Nigeria, declared.

Dr. Leighton directs the Cornell Program in Social Psychiatry, which has been involved for more than a decade in studies of mental health in different cultures, including a recent project in Dr. Lambo's hospital in Nigeria.

Here Dr. Lambo initiated in 1954 the "village scheme," at first merely a housing arrangement for the patients because the hospital had not been completed, but later an important factor in psychiatric treatment.

"By degrees," Dr. Lambo reported, "the village itself became a therapeutic milieu and several other villages were brought into the picture. Native religious leaders played a conspicuous part in the psychotherapeutic management of some patients. The villagers and their leaders developed a remarkable understanding of the patients and contributed in a major way to making the village environment an effective force in treatment."

When patients were treated in a community setting, and lived with their families, they often failed to develop certain symptoms which are apparently induced in a hospital situation.

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Small Manufacturing

➤ SMALL INDUSTRIES may make more economic sense in less developed countries than large manufacturing operations. Dr. Eugene Staley, director of basic research at the International Development Center, Stanford Research Institute, Menlo Park, Calif., told the U.N. conference.

"Economies of scale" are not necessarily more easily realized in large manufacturing operations than in small ones. He feels that countries striving for accelerated economic growth rates should study very carefully the advantages of small and medium sized manufacturing units. If stress is given to proper choice of product lines and efficiency in production and business operations, smaller scale units can make key contributions to overall development.

Dr. Staley expects a decline in household industry in many countries and feels that artisan industry will be transformed into modern service trades. Then, the small but modern factory will rise in importance.

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Tuberculosis antibodies play no role whatsoever in immunity, research indicates.

Questions

ASTRONOMY—Which one of the 12 constellations of the zodiac is the least conspicuous? p. 122.

BIOTECHNOLOGY—What is a biotron? p. 120.

GENERAL SCIENCE—Who is the key decision maker in agriculture? p. 114.

Why do Russians believe that increased population will speed economic development? p. 115.

MEDICINE—What is the most common problem confronting the allergic person? p. 126.

VETERINARY MEDICINE—At what age do tumors in dogs usually occur? p. 121.

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