

## Food and Population: Thinking the Unthinkable

In one of the starkest assessments of the world food situation yet delivered, five scientists told the House Subcommittee on Fisheries and Wildlife Conservation and the Environment this week that the recently concluded World Food Conference had failed to come to grips with underlying causes of the present crisis, and that the United States has already begun a policy of triage—deciding which people shall live and which shall starve on the basis of political considerations. They suggested that foremost among these considerations should be whether the recipient country had an effective program of birth control in operation.

University of Wisconsin ecologist Grant Cottam, an official observer at the Rome conference, said delegates had failed to face the possibility that the world's "carrying capacity" (the total number of people that can be fed using available resources) may have already been exceeded and that any attempts to increase food production will only aggravate the decline of life quality unless population expansion is brought under control. "The carrying capacity of the world is probably less than the number of people already in existence," he said. In recent years "we managed to survive without serious famine only because of the presence of a large [food] reserve. . . . With no reserves left, there is no way that we can avoid massive famines. The earth simply cannot continue to support an exponential population growth." The food shortfall this year will be equivalent to the needs of roughly 130 million people, he estimates (see diagram).

Georg Borgstrom, a food scientist at Michigan State University, agrees that the natural limits to the carrying capacity of the biosphere have not been properly gauged. By calculating the amount of land needed to produce enough protein to feed people now alive, one finds that three-quarters of the production goes to livestock. Thus, if one billion more people are added to the population over the next decade, as expected, the actual drain on biological resources will be several times greater than that calculated simply on direct protein needs, because of the extra livestock that will also be added. The only way

this could be accommodated (unless world dietary habits change drastically) would be for much of the world's remaining forests to be cut down to yield cultivated land, which will increase the already present danger of ecological disaster, he said.

But other resources are also running out, and these directly affect food production, University of Wisconsin geophysicist John S. Steinhart told the committee. For example, 10 calories of fuel are now required to produce one calorie of food in the United States; so when the price of oil skyrocketed, "working-class Americans whose food budget had required 15 to 20 percent of their income two years ago now must spend 30 percent or more of their income on food and prices which are still rising," he says. And the consumption of such limited natural resources *must* level off or decline: "Only madmen and some economists think otherwise."

If the additional population is not to be subjected to ever increasing misery, money as well as food must be provided, and need for capital grows some three times faster than the population, says University of California human ecologist Garrett Hardin. Thus, if population continues to rise at two percent a year, capital must grow at six percent a year or living conditions in poor countries will merely get worse. Without these additional infusions of money and fuel, the poor "will break limbs off the few trees that still line their public roads. . . . Next year the grain harvest will be still poorer. This is what is meant by the 'vicious cycle of poverty.'" Population growth has become a cancer, and "You can't cure a cancer by feeding it."

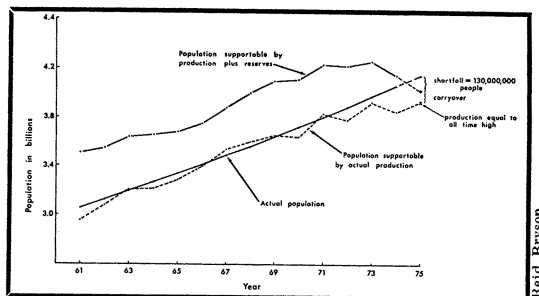
This grim conclusion is shared by other members of the panel. "It is time we recognize the absurdity of today's world and stop pouring rat hole money into a hopeless population sink," agrees Wayne H. Davis, a zoology professor at the University of Kentucky. "You cannot solve a hunger problem by feeding hungry people."

The process of cutting off food has already begun, adds Steinhart: "We already practice triage, whether or not we so name it. When President Ford declined Secretary Butz's and Sen. Hum-

phrey's (D-Minn.) request for one million tons of grain for India and announced a week later that grain would be supplied to Syria, it is triage in action even if the reasons for the choice are diplomatic. He decided that some in India will die and some in Syria will live."

The right to have children implies the responsibility to feed them, says Hardin. If Western countries keep pouring in aid, "the extra food will be converted into more babies." The only way to avoid this is to use food aid as "bait" to encourage rigorous family planning.

Statements such as these are sure to bring a flurry of protest, but they indicate that the nation has begun to think what was once "unthinkable." Subcommittee chairman, John D. Dingell (D-Mich.), probably reflected the sentiment of a growing number of Congressmen when he said that if all to come out of the Rome conference was criticism of the United States for not giving more aid, "It would seem that the delegates might just as well have stayed at home." □



"With no reserves left, there is no way that we can avoid massive famines."

## One little, two little, x little particles

And then there were two. Mysterious new elementary particles, that is. Twelve days after the discovery of the psi or J, a very odd, heavy new particle (SN: 11/23/74, p. 324), comes its partner, a very odd, heavier new particle. At 4:30 a.m., Pacific standard time, a group of physicists from the Stanford Linear Accelerator Center and the Lawrence Berkeley Laboratory found it in an experiment at SLAC's SPEAR storage ring. Details will appear in the Dec. 9 PHYSICAL REVIEW LETTERS.

The new particle is designated psi(3700), 3,700 being its mass in millions of electron-volts. Its earlier, lighter predecessor is now called psi(3105). Psi(3700) is, like its partner, electrically neutral. Also like psi(3105), psi(3700) has an anomalously long lifetime for a particle so heavy, possibly the same as the  $10^{-18}$  second estimated for psi(3105). The lifetime hints that some unusual new structure is present in the make-up of these oddball particles.