World Population: U.N. on the Move but Grounds for Optimism Are Scant

This year is World Population Year, says the United Nations. While the U.N. is always having "years," this one marks the full emergence of the U.N. as the focal point for international cooperation in the matter of world fertility reduction. The highlight of the year, a conference to be held in Bucharest in August, will mark the first time that all 130 member governments get together to confront the issue.

Every year is world population year, in terms of the annual record number of souls inhabiting the planet. Yet, Malthus notwithstanding, no government has taken action to respond to the dangers of uninhibited population growth until after World War II, when Japan decided to cut its annual growth rate from 2 to 1 percent. The topic was not considered fit for discussion by governments in international forums until the 1960's.

As is customary with controversial subjects, the impetus for official nationwide family planning programs started with and continues to be supplied by private organizations. The International Planned Parenthood Federation (IPPF), formed in 1942 under the leadership of Margaret Sanger, has been supplying services to private programs and pressuring governments to get into the act for years. Largely as a result of their efforts—plus the example set by the U.S. Agency for International Development's (AID) population office (which got into the business of delivering services in 1967), and years of tireless campaigning, official and unofficial, by retired General William F. Draper (known to his admirers as "Father Pop")—the U.N. set up a Fund for Population Activities. UNFPA, which is responsible for planning the population year, got rolling at the beginning of 1970.

Family planning and population limitation are preventive medicine in the most obvious sense and, as has always been the case with preventive medicine, it occupies a very small place in the overall money picture. The biggest budgets are those of UNFPA, which has received about $103 million in contributions since it started; IPPF, whose annual budget grew to $43 million in 1973; and the AID population and family planning program, with an annual budget of about $120 million. (The AID program, according to its director, R. T. Ravenholt, supplies two-thirds of the money applied internationally for such programs* and is the major contributor both to UNFPA and IPPF, so the above figures overlap considerably.) As the picture now stands, the U.N. and the IPPF cover the international waterfront, with the former dealing with governments, the latter with private organizations.

Considering how recent these developments have been, it may indeed be as remarkable as its organizers claim that an official year for population is with us. The U.N. efforts to get beyond the talking stage on population have been thwarted for years by blocs of Catholic countries on the one hand, and socialist countries on the other, who believe that with proper development of resources and redistribution of wealth, population growth will take care of itself.

The year is studded with symposia, censuses, fertility surveys, and regional conferences, all of which feed into the World Population Conference. The U.N. has sponsored two worldwide conferences already, one in 1954 and one in 1965, but these were gatherings of scientists, not policy-makers. The Bucharest meeting, considered by many to be the culmination of a quarter century of politicking and fund-raising by the 79-year-old Draper, will bring together the people with power. The conference may also be unusual for the number of female participants. A major event of the year was a women's conference (also U.N. sponsored) held this month near Washington, D.C., to which women holding high positions in participating governments were invited. It is hoped that many of these will go on to be delegates at Bucharest.

Former Senator Ernest Gruening, who played a major part in bringing U.S. attention to bear on the implications of world population growth, once observed: "The taboo of the day before yesterday becomes the controversial of yesterday, the accepted of today, and the wanted of tomorrow." With all these attitudes existing contemporaneously at the conference, it is clear that any consensus will be vague and cautiously expressed. The central goal of the conference is to obtain broad endorsement of a "world population plan of action," Sweden's idea, which has been developed in the past year under the auspices of the U.N. Population Division. The plan, which probably could more appropriately be called a suggestion, will be based on the principle enunciated by the 1968 U.N. Conference on Human Rights: that "couples have the basic human right to decide freely and responsibly on the number and spacing of their children, and the right to adequate education in this respect." The plan, according to a U.N. spokesperson, will range over all population-related matters such as mortality, migration, distribution, and national developmental goals, and will outline steps countries "might wish" to take that are appropriate to their own circumstances. There will be an enormous amount of talk at the convention around its major topics—population and its relation to human rights, the family, resources, the environment, and economic development. But the most to be hoped is that governments will commit themselves to some kind of population growth policy, or at least give evidence that they regard the topic as something worth thinking about.

This all seems pretty weak medicine for a world whose population is expected to arrive at 4 billion this year and, if present trends continue, will be approaching the 7 billion mark by the end of the century.

Nonetheless, many students of population as well as public and private officials see grounds for optimism. Population has become politicized, they say, which means it is now a live issue. They point out that over the past decade, particularly in the past few years, leaders of less developed countries (LDC's) are finally making the connection between economic development and the need to regulate population growth, and are turning their attention less to flashy projects and more to the arduous business of promoting

*On a per capita basis, the Scandinavian countries, led by Sweden, give more than anyone else for international family planning efforts.

the health, education, and welfare of their people. They observe that all the socialist bloc countries, despite pronatalist policies in many, have agreed to send representatives to the conference. They say that one of the prime philosophical obstacles to population regulation—the Marxist belief that reallocation of wealth is the key to well-being—has been dealt a telling blow by the fervent and systematic family planning program inaugurated in the Peoples Republic of China. They say that despite the papal encyclical Humanae Vitae of 1968, the fact is that bishops throughout the world are giving it a far more liberal interpretation than the Pope would dream of, and polls indicate most Catholics will practice artificial birth control if they want to limit their families. They regard as significant the sudden reversal of pronatalist policies espoused until a few years ago by Indonesia and until last year by Mexico—two of the countries with highest birth rates. According to the Population Council, only three of the big LDC's, Brazil, Ethiopia, and Burma, have failed to join the general policy trend. Finally, they believe the U.N. will be an important agent in legitimizing the idea of population planning and in acting as a neutral conduit for funds, thus avoiding the political perils of bilateral assistance.

Despite all the apparent movement, there are abundant grounds for gloom. As Philander P. Claxton Jr., assistant to the Secretary of State for population affairs, observes, "You are trying to reshape the whole thinking of mankind"—a mankind that for over 2 million years has equated rapid proliferation with survival.

The conference comes at a time when old theories are crumbling. The economic threshold idea, which postulates that population growth will subside once a country has attained a certain measure of development as measured by per capita gross national product, has been shaken by Brazil, Mexico, and Nigeria—not to mention the Arab oildoms—where economies are booming while populations continue to multiply hand over fist. On the other hand, the People's Republic of China, with far less to work with, is, at least by its own account, successfully altering its fertility patterns.

There is an increasingly pronounced schism between social scientists and population activists over whether family planning programs, as presently constituted, have any effect in developing countries if they are pursued in the absence of profound changes in social institutions. Ravenholt, very much an

Plutonium and the "Hot Particle Problem":

In what could evolve as another round in the great debate over radiation standards, one of the nation's leading environmental law groups is asking the government to reduce drastically the legal limits on releases of plutonium from nuclear fuel, weapons, and power facilities. The Natural Resources Defense Council (NRDC) contends in a lengthy petition filed with the government on 14 February that present standards relating to plutonium are based on erroneous biological assumptions and should be reduced by a factor of at least 115,000.

Neither of the two federal agencies that share responsibility for radiation standards—the Atomic Energy Commission (AEC) and the Environmental Protection Agency (EPA)—had any immediate comment on the NRDC's proposal, although officials of both agencies said it would receive serious consideration. Strict new plutonium emission regulations would probably increase the cost of fabricating and processing nuclear fuel and weapons. But the NRDC contends such strictures are technically feasible and "would not price the nuclear industry out of business."

The NRDC consists of about a dozen attorneys and four staff scientists in New York, Washington, D.C., and California, all supported by a Ford Foundation grant and membership subscription. (One of the scientists, and the main author of the NRDC's case for stricter plutonium standards, is Arthur R. Tamplin, a biophysicist on leave from the AEC's Lawrence Laboratory at Livermore, California. Tamplin and his colleague John Gofman were central figures in the radiation standards debate of the late 1960's that led the AEC to tighten emission standards for water-cooled reactors by a factor of 100.)

Despite its small size, the NRDC has scored some noteworthy courtroom victories in the past couple of years, and along the way has established itself as a bête noire of the AEC's liquid metal fast breeder program. Last year, the NRDC won an appellate court decision directing the AEC to assess, as best it could, the environmental impact of a nuclear breeder industry, rather than confining its analysis to the limited effects of a single breeder demonstration plant the AEC plans to build in Tennessee. The decision, which the AEC accepted without protest, established an important precedent for other R & D programs and encouraged the AEC itself to begin thinking about breeder-related problems that may not actually arise for decades. The NRDC now hopes to force one of these potential difficulties to an early resolution.

At issue is what health physicists have dubbed the "hot particle problem." Briefly stated, the problem is how to predict the biological effects of radiation when the radiation is absorbed by man or animal not uniformly (as in a chest x-ray) but rather as tiny radioactive particles that lodge in the lungs for months or years. Small insoluble particles can deliver very intense doses of radiation to microscopic areas of the lung. Are the resulting effects—and is the risk of cancer—the same as if the total amount of radiation absorbed were applied uniformly over the lungs?

The question has been debated in radiological circles off and on since the late 1940's, with no general agreement and little evidence one way or the other. Present radiation standards treat the distribution of a given dosage to lungs as irrelevant; the NRDC disagrees.

* "Radiation Standards for Hot Particles," Arthur R. Tamplin and Thomas B. Cochran (available from NRDC, 1710 N Street, NW, Washington, D.C. 20036). 52 pages, $3.

activist, believes the poverty problem can be wrestled into a semblance of manageability if the means and awareness of contraception and abortion are made universally available. Women want fewer children than the experts think they do, Ravenholt argues, so mankind's best hope lies in the improvement of contraceptive technology and the dissemination thereof. The easier it is to obtain and use effective contraception, he says, the less motivation is required for it, and more people will get on the bandwagon.

To Ravenholt's detractors, the beauty of his theory lies more in its simplicity than its truth. Among those is sociologist Kingsley Davis of the University of California at Berkeley, who states flatly that family planning will not achieve population growth control. According to people who attended the American Mexican (AAAS-CONACYT) conference last year, representatives from Latin American countries were infuriated by what they saw as the AID population program's single-minded preoccupation with pushing contraceptives while ignoring what they considered more important: reduction of mortality, improved nutrition, and better maternal and infant care.

Social scientists like Davis see population problems as a big vat of spaghetti: The problem is discovering which strands to pull to start straightening out the whole mess.

One strand on which there is wide agreement is the need for reduction of infant mortality. Where high mortality reigns, as in Africa, infants are only seen as tentative human beings until their survivability is proved. The trouble is, it takes at least a generation for lowered mortality to influence parents to stop overcompensating. In Bangladesh, for example, the death rate in 1920 was 50 per 1000 and the birth rate was 55. Now the death rate is 15 or so, but the birth rate has only gone down to 40.

Many other factors have been identified: education and literacy rates, the status of women, levels of urbanization and industrialization, and so forth. But no one knows where to start. Most of Europe went through the demographic transition—a substantial and permanent lowering of birth rates—without the aid of modern contraception in the 19th century, but this happened because external conditions made it desirable. Now, the world not only does not have the time to await spontaneous lowering of fertility, but the shortages of food, energy, space, and natural resources in many parts of the world deprive people of the motivation. In the past, in other words, lowered birth

Environmental Group Proposes a Draconian Answer

According to a position paper* prepared by Tamplin and NRDC physicist Thomas B. Cochran, present standards set the maximum permissible radiation dose to a nuclear worker at 5 rem per year to the whole body or 15 rem per year to the lungs. (The rem is a unit of radiation dosage; the limit for a member of the general public is one-tenth the occupational standard.) To receive the maximum permissible lung burden (MPLB), a worker need inhale only 0.016 microcurie of plutonium oxide dust, or about 53,000 aerosol particles.

Using figures presented in a 1972 report from the National Academy of Sciences on the biological effects of radiation (*Science*, 1 December 1972), Tamplin and Cochran estimate that the risk of cancer from 5 rem to the whole body is 1 in 1000 and that the risk of cancer from 15 rem to the lungs is 1 in 300,000 per year.

The Academy's report, however, did not deal with the hot-particle problem. Cochran and Tamplin contend that, in fact, the risk of cancer from such particles is vastly out of proportion to the overall dose they deliver to the entire lung. This hypothesis is based in turn on some research and a review of the rather scanty literature on the subject by Donald P. Geesaman, the last of several scientists once assigned to Tamplin at the Lawrance laboratory. Geesaman was layed off in a "reduction in force" by the laboratory last year and is now on the faculty of the University of Minnesota.

Geesaman calculated that if one were to inhale the allowed 53,000 plutonium particles (for an overall lung dose of 15 rem) the tissue immediately around these virus-sized particles—about 3 percent of the lungs—would actually receive about 4000 rem per year. Each spot dose of this magnitude, Geesaman estimated, carries a risk of between 1 in 1000 and 1 in 10,000 of causing cancer; thus the cumulative risk from the maximum allowed dose of hot particles would add up to almost certain cancer. This contention is the heart of the NRDC's case for a strict hot-particle standard, and is likely to prove controversial.

Tamplin and Cochran arbitrarily pick a middle-range estimate of 1 in 2000 as the risk of cancer from a single hot plutonium particle. They suggest that two such particles—with a total radioactivity of 0.14 trillionths of a curie—be set as the maximum limit for accidental or routine releases of plutonium, for a reduction by a factor of 115,000 from the present MPLB.

The biological evidence to support this proposal is meager, a point Cochran and Tamplin acknowledge. Only one human cancer case is clearly linked to plutonium exposure, although several hundred workers have been accidentally exposed since the 1940's; the best of the few animal studies produced cancer in 20 of 21 beagles exposed to plutonium dust, but all the dogs, Tamplin notes, received doses at least 100 times the current standard, on the assumption that nothing would happen at lower levels. The AEC is supporting new beagle studies with much lower levels of exposure, but they still have a long time to run.

In the absence of countable corpses, canine or otherwise, the NRDC is likely to encounter the same resistance from the radiation standards establishment that led to the acrimonious standards disputes of the late 1960's. Tamplin said he hoped it wasn't so.

"We want to give them something to shoot at, but think we can defend numbers," he told a news conference. "It is the same old issue, but you'd hope we wouldn't get into the same polemic dialogue. There's no place for that."—R.G.

rates ensued from industrialization and attendant prosperity. Now, the world faces the task of reducing population growth first.

Governments Sluggish

So far, despite strenuous efforts by private agencies throughout the world, little is being done by governments. The People's Republic of China is the only country where people are exhorted to limit families for the good of the state rather than just family welfare. Singapore is the only "developing" country that has built-in economic incentives for limiting family size, but such incentives are unworkable in countries where the mass of the populace are self-employed, grinding away at their little plots of land. Some two dozen LDC's have officially proclaimed goals and timetables for fertility reduction—goals which ideally might bring annual population growth from around 3 percent to a little over 1 percent per annum—but degrees of commitment vary widely; besides, they don't know how to do it.

The difference between rhetoric and reality is nowhere more evident than in India. Among the LDC's, India has the world's oldest official family planning program, begun soon after she won independence from Britain. Yet the country—massive, heavily rural, heavily illiterate, with a maze of ethnic, religious, and language barriers—appears to be resistant, from the government on down, to any meaningful progress. Not only is personal motivation low among farmers who want many sons to help work and provide security for old age, but help is scant and faulty for women who want it. The introduction of intrauterine devices in the '60's created great expectations among planners, but the IUD's soon started dropping out almost as fast as they were put in. The distribution of birth control pills, the preferred method of artificial contraception in most parts of the world, was halted by the Indian government, frightened by the alleged health hazards, until recently. They are now used only in a few pilot programs. Abortion was legalized a few years ago, but official statistics reveal no notable results from this method since most abortions are still performed under illegal circumstances. Sterilization has fared somewhat better, owing to mass vasectomy camps held in 1971 and 1972 which lured millions of men by means of financial and other inducements. However, the Indian parliament, with a fastidiousness remarkable for a land where people are dying of starvation on the streets, expressed strong reservations about the propriety of paying people to be sterilized.

Every country has a different set of problems, and an individual solution is required for each. Few African nations, despite the famine in the region south of the Sahara, perceive population as a priority problem. The French-speaking countries carry on the French colonial legacy of Catholicism and pronatalism, and colonial abortion restrictions still remain on the law books. Nigeria (formerly a British colony) is the most populous country in Africa, with 65 million people and the world's highest birth rate, 55 per 1000 (the world mean is 30). Yet the government has expressed only the most tentative interest in a population policy. Nigeria is one of many countries composed of separate religious or racial groups who fear that a nationwide program will diminish the ruling class. One AID official says the results of the last two censuses were suppressed because the government is based on proportional tribal representation, and the results might have weakened the ruling Yorubas. Most people want to reduce *other* people's populations, whether it be nations or tribes. (One alleged reason the pronatalist U.S.S.R. is said to have become more receptive to population talk is that its 1970 census showed its Asiatics were reproducing at a higher rate than its Slavs.)

Of all the world's major governments, perhaps the most hostile to the idea of regulated population growth is Brazil which, like Nigeria, is busily exploiting its abundant resources. Brazil suffers from maldistribution rather than excess population. As is the case throughout the developing world, heavy rural-to-urban migration is putting intolerable strains on public health and housing services. It is also generating widespread unemployment which, according to a State Department document, is "perhaps the most serious problem . . . in LDC's." Thus another question arises: Whether it is better to induce people to stay on their farms where they continue their traditional reproductive behavior, or let them swamp the cities, where eventually too many children are seen as a liability. Bands of roving children, called "abandonados," now roam the streets of some Latin American cities like the packs of abandoned dogs in Saigon. But while members of the medical profession support family planning, leftist political groups regard programs as an attempt to divert attention from social issues, and regard propaganda linking large families with poverty as being outright dishonest.

Contraception for Health

Family planning services are now tolerated in Latin America, but only on the grounds of health, not as part of a larger population policy. In fact, they have been largely stimulated by the epidemic of illegal and botched abortions that, for example, in Chile accounted in 1966 for 30 percent of all hospitalizations and consumed 70 percent of the available blood supply.

Abortion is the world's most prevalent form of birth control, and will probably continue that way for some time to come. Contraception requires planning and foresight, and for people occupied with the day-to-day struggle of living, "hindsight" (Ravenholt's euphemism for abortion) is more likely to be used.

But abortion, inflammable as it is as a moral issue, is merely one way for an individual to avoid bearing an unwanted child. Issues infinitely more ruthless in their range and complexity await the conferees at Bucharest.

The stately preparations for World Population Year and the general optimism of many people connected with international family planning efforts are in marked contrast with the grim trends. As Bernard Berelson, president of the Population Council, has written, "the world is demographically polarized" between developed and developing countries. Polarization will become ever more pronounced at the current rate which predicts that the population of the latter—where malnutrition afflicts some 60 percent of the people, and almost half of them have not yet reached their reproductive years—will double in a generation. The bulk of foreign aid from the haves to the have-nots is immediately neutralized by population growth, and the Green Revolution has lost its miraculous aura. Draper, whose tireless efforts and travels around the world probably give him a more comprehensive view than most, seems among the least optimistic. "We're at a point in history that's never even been dreamed of before," he says. "It's just going to engulf the world."—CONSTANCE HOLDEN