

PUBLIC HEALTH

Famine Danger Foreseen

The rapid growth of world population as a result of scientific advances makes it doubtful that food supplies can keep pace, British are warned.

► WORLD POPULATION will grow at an even greater rate than it has in recent years, bringing danger of famine, the British Association for the Advancement of Science, meeting in Brighton, England, was warned by Sir Henry Tizard in his presidential address. He is chairman of the British Advisory Council on Scientific Policy and Defense Research Policy Committee.

At least 20,000,000 people are added to the population of the world each year and it is conceivable that in another 70 years or even less the world population will have doubled.

Population is increasing where the world already has too many people, Sir Henry said. India's population is gaining 5,000,000 people a year. Egypt's masses, where there are 2,000 people for every square mile of cultivated land, are on the increase because there it pays to have children who work at an early age to the profit of their parents.

In large part the increase in population is due to new methods of preventive medicine. How this operates was shown by an experience reported by Sir Henry. In 1944 a British special mission visited British Guiana, population roughly 400,000, which has remained stationary for the last 20 years. Two-thirds of the population used to live under conditions of severe endemic malaria. Birth rate was low, and infant and adult mortality high.

In 1945, through use of DDT and other methods, the mosquitoes carrying malaria, and also yellow fever and filariasis, were kept under continuous control. The annual cost was less than a dollar per person.

The death rate was reduced, the birth rate doubled and the population is increasing 10% annually. A suburb of the principal city, Georgetown, with a population of about 3,000, had a death rate equal to the birth rate in the years 1933 through 1944. Infant mortality was about 250 per thousand. It rose to 350 in 1944. By the end of 1947, the birth rate doubled and the infant mortality dropped to 67 per thousand.

"In all countries which have a high standard of education," he said, "the rise in population which follows a rapidly decreasing death rate has been kept in check by a voluntary control of births. As a result the average age of the population has considerably increased, and is increasing. This, in itself, does not yet present any serious problem, for, as the proportion of children is much less than it was, the proportion capable of productive work, between the ages of 15 and 65, is actually somewhat

higher. No fundamental difficulty, from this cause, is likely to arise for many years to come.

"But the population of the world as a whole is now increasing by 1% a year, and its distribution is such as to make it extremely doubtful whether the supply of food can keep pace, even with the present low standard of nutrition.

"It is the advance of science that has made this possible. War, pestilence, and famine have kept the population within bounds since the dawn of history. War has ceased to be effective; pestilence is rapidly losing its power; only famine is left as a brake until education takes its place. Is famine inevitable, or will science again come to the rescue, as it has done before?"

Fifty years ago Sir William Crookes, in

a similar address to BAAS, warned of the danger of famine. He was then alarmed at the prospective shortage of wheat. The chemist by fixation of nitrogen from the air and the plant breeder by improving varieties of crops came to the rescue.

"Now the day has come when we must grapple again with the problem," Sir Henry said. "We must not encourage the easy thought that some entirely new development in science will solve it quickly. There is nothing in sight comparable with the importance of synthetic fertilizers.

"There are certainly some interesting investigations in progress, for instance the production of food yeasts from molasses, and of fats by the action of micro-organisms on carbohydrates. All that can reasonably be said about these new developments at present is that they show the need for fundamental research in an almost untouched field.

"They are very unlikely to lead to a new and substantial source of supply of food within the next 30 years. So far as this country is concerned we must plan our economy on the assumption that food will be both scarce and dear for many years to come."

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50,000,000-VOLT X-RAYS—Heart of a recently completed betatron in the General Electric Research Laboratory, is this glass "doughnut" being examined by Dr. Ernest E. Charlton, head of the X-Ray section. Electrons, emitted from a hot filament inside this vacuum tube, are whirled around thousands of times. As acceleration builds up the magnetic field to its maximum, the orbit of the whirling electrons is shifted and they hit a tungsten target which they missed before. This generates a beam of high-voltage X-rays, and occurs at the rate of 60 times per second.