POPULATION

Population Needs Curbing

If Eastern countries would restrain their high birth rate to the pace set by the Western world, there would be no danger of starving for the world.

➤ THE world will not starve due to inadequate food production if population increases as it does in Western countries, Sir John Russell, leading agricultural expert and director of famed Rothamsted experimental station, told the British Association for the Advancement of Science at Newcastle, England, in his presidential address.

But the world's food can easily be outstripped locally if the high birth rates of Eastern countries prevail, he warned. If standards of living such as in the United States, Europe and other western areas are desired, the rest of the world must adopt population restraints, such as birth control, he intimated.

Great increases in food production have resulted from the application of science to agriculture, Sir John told his fellow scientists. Whereas a food producer can feed four to five people under the old system of agriculture, modern methods can feed about 15 to 20 persons per farmer, provided the industrial civilization gives him the mechanized tools with which the up-to-date farmer can work.

There are on the average only about one and one-half acres of land per person in the world used to produce food, whereas there exist about five acres per head that might be used so far as climate is concerned. One great problem is to bring the unused three and one-half acres under cultivation.

"The limit to the world's food production at any time is set by the efficiency of the plant as a transformer of radiant energy," he said. "At present this does not exceed 5% and, reckoned on the basis of the amount of food produced, it is much less. Whether this can ever be raised, whether we can ever do more than increase the proportion of assimilation products useful as food, cannot be said. But the present limitations to food production: utilization of 7% to 10% only of the earth's surface; conversion by the animal of 10% to 25% only of its food into human food; and fixation by the plant of no more than 5% of the radiant energy it receives. These are all challenges to agricultural science—which its workers are vigorously taking up."

Sir John warned that food will not be produced in the world merely as a sense of duty.

"If more food is needed, more work must be done," he said. "Food producers will labor to obtain a surplus for the outside world only on a condition that they are provided with adequate appliances and incentives. The replacement of craftsmanship by mechanization is inducing in agriculture, as in industry, a flight from labor. In many cases now the problem is not so much to increase output as to maintain markets and reduce hours of work. Happily, in spite of modern tendencies, a strong sense of individual responsibility in regard to hungry peoples still survives among food producers."

Great as are the powers of science, he warned, they are of only limited help in the case of human problems, such as population control. "Science can do much to overcome material difficulties and, better still, to satisfy man's thirst for knowledge of the universe in which he lives," he said. "It can insist continuously on our high duty to seek out the truth fearlessly and honestly, and having found what we believe to be the truth, to proclaim it—but in all humility, and recognizing that we may be wrong. Apart from that, science can give little guidance in those great moral and spiritual problems which lie at the root of our most serious troubles today. It opens up many possible ways of life but gives no help in choosing which to follow; it deals with the facts of existence but not with the values of existence. It gives some light to them that sit in darkness, but it has little consolation for those in the shadow of death and it does not guide our feet into the way of peace.

"Even if science should make large scale fighting wars impossible it can do little against the more subtle wars by infiltration. It offers us great possessions but as the old aristocracy knew, great possessions imply great personal responsibilities. Democracies still have this to learn."

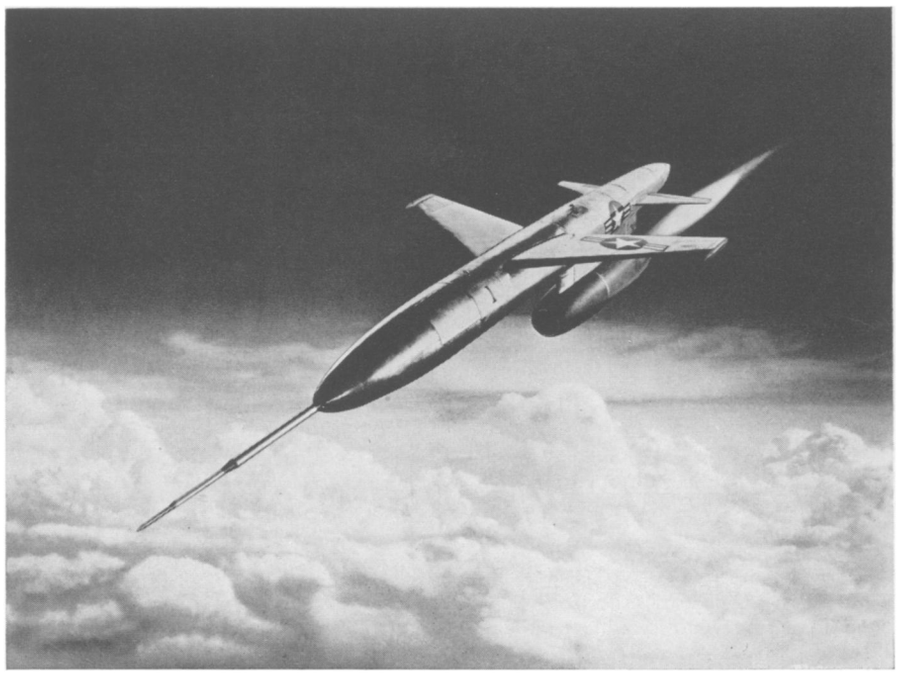
Science News Letter, September 10, 1949

AERONAUTICS

Navy Gunners' Skill Against Fast Target to be Tested

➤ THE effectiveness of Navy anti-aircraft gunners in bringing to earth pilotless, radio-controlled targets, traveling at speeds well up to that of sound, is to be tested soon. The speedy target will be the Navy's plane-like, ram-jet powered KDM-1, built by the Glenn L. Martin Company of Baltimore.

This Martin KDM-1 ultra-high-speed target drone resembles the ordinary jet-propeller fighter with a lance-like projection from its nose, but is smaller. It has swept-back wings and a horizontal tailpiece. Its engine, however, is to the rear and under the bomb-shaped body. It is the ram-jet type, unable to operate until its carrier has a speed of some 300 miles an hour and the engine can gather in enough air to cause



SPEEDY TARGET DRONES—These will be used by the Navy to simulate maneuvers of the fastest fighter planes in order to sharpen the eyes of the anti-aircraft gunners of the surface fleet.

proper combustion.

To get the drone into the air and give it sufficient speed to permit the engine to operate, another plane is used. At proper speed and altitude, the KDM-1 is fired and released. From that point on, the target is on its own except for the radio-controls, operated at will from the earth below.

Upon exhaustion of its fuel, the KDM-1 noses up sharply, a parachute is released and the target drops gently into the water over which it has been flying. Experience shows that any damage that may occur is only slight, and the target drone can be readily made available for another flight.

Science News Letter, September 10, 1949

MINERALOGY

Air Is Mined for Millions In Precious Metals

➤ THE air is being mined for a million dollars and more worth of gold, silver and other metals.

A Los Angeles chemist, Walter A. Schmidt, told how it's done at the United Nations Scientific Conference on the Conservation and Utilization of Resources at Lake Success, N. Y.

Valuable quantities of minerals, precious and otherwise, are released into the air as industrial wastes, Mr. Schmidt explained. Smoke from improvident factories may be worth a fortune, he stated.

Industrial plants which have taken measures to recover these minerals have been well repaid.

Here are some of the findings reported by the chemist:

"One smelter recovers more than $1,000,000 a year in gold, silver and copper out of the gases from 12 multiple-hearth roasters.

"One mint recovers more than $100 a year in gold and silver from the gases ventilating its refining furnaces.

"One lead smelter recovers more than $300 a year in lead and silver out of the gases from 10 sintering machines."

Science News Letter, September 10, 1949

GENERAL SCIENCE

English Is Most Popular Scientific Language

➤ ENGLISH is now the most widely used language for scientific articles, pushing German and French into the background.

More than half, 57%, of all scientific articles are now published in English, Fletcher S. Boig, professor of chemistry at Northeastern University, Boston, Mass., found in a survey of scientific periodicals and articles.

Russian, which was of slight importance as a scientific language 20 years ago, now follows French and German as an important language of science.

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U. N. SCIENTIFIC CONFERENCE—Carter Goodrich (center), professor of economics at Columbia University, New York, and programme director of UNSCCUR, discusses programme with, left to right: Antoine Goldet, director of the U. N. Department of Economic Affairs; S. S. Bhatnagar, secretary to the Government of India, Department of Scientific Research; Fairfield Osborn, president of New York Zoological Society; and Colin G. Clark, director of the Australian Bureau of Industry.

CHEMISTRY

Fertilizer from Dead Sea

➤ THE Book of Moses and modern technology have joined forces to extract "inexhaustible" quantities of fertility from the Dead Sea, resource experts were told at Lake Success, N. Y.

An Israeli potash company is using aerial photography and solar energy to realize potentialities hinted at in the parable of Lot's wife. The curiosity that proved so fatal to that ancient lady is being coupled with the chemical ingenuity of Israeli's chemists to produce large quantities of three other elements in addition to pillars of table salt.

The most important of these is potash which is used as a fertilizer. According to Dr. M. R. Bloch of the Palestine Potash Company "the Dead Sea contains some 2,000,000,000 tons of potash and is a practically inexhaustible source of salt, magnesium, and bromine."

The biblical link was made by Dr. Bloch at a mineral section meeting of the United Nations Scientific Conference on the Conservation and Utilization of Resources. "I believe that chapters 14 to 21 of the first book of Moses should be reread in the light of modern experience," he said. "It is possible that the passage describes happenings in the vicinity of an important salt-supply center for a Babylonian empire."

This biblical area has been carefully mapped from the air. The survey showed two natural formations where the Dead Sea brine is evaporated as if in a huge shallow dishpan. Using specially constructed pans to "harvest" the minerals left after the heat of the sun has evaporated the water content, the chemists then refine out the potash, salt, and the other components. By these techniques, vast quantities of fertilizer and valued minerals will be extracted from the Dead Sea. Vast enough, Dr. Bloch thinks, "to sustain a considerable advance in the standard of life in the world."

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Much of the *horsehair* used in stuffing furniture comes from the manes and tails of wild horses in Argentina; after the hair gets to America it is curled by a laborious hand process.

Much *commercial fish* is now filleted and skinned by machinery, reducing the labor involved in fish processing; all parts of the fish not reaching the human market find their way into animal feed or fertilizer.