tween distribution of population and agricultural productivity, Jacks points out. By and large, land fertility increases with the size of towns, not with the number of persons engaged in farming. At first, crop land does little more than supply food for the actual cultivators. Little or nothing is left to put back into the land out of which something is taken by each successive crop. Exhaustion comes soon and the people must find new land.

Then a surplus population flocks together to establish towns supported by industries. They require some of the farm products, and this need tends to make agriculture more stationary in the neighborhoods of towns. Actual money flows back to the farmers. They are able to buy fertilizers or apply more effective measures to prevent soil depletion and raise bigger crops. The process is continuous as long as the industrial centers continue to pour more and more back into the land. Jacks continues:

"Will the world of a hundred years hence be able to feed the 6000 million people who will then be in it? The answer is yes, provided most of them live in towns and produce enough wealth to pay for the food they need. If they offer enough money for their food, the food will be produced."

Coeducation in Turkey

Robert College and the American College for Girls in Istanbul, Turkey, have merged, paving the way for a Western-style coeducational college, effective next September. Two of the oldest American schools in the Near East, the colleges have a combined enrollment of 1800. Robert College this year has 1150 men students, while 650 women attend the College for Girls. Alfred Ogden of New York City was elected chairman of the new board. Duncan S. Ballantine will continue as president.

Although courses were designed primarily for young Turks, students from 50 nations have studied at the two colleges. Robert, founded in 1863, claims to be the first American college established overseas. It is chartered under the Board of Regents of New York State. The American College for Girls was given a charter under Massachusetts law in 1891. The campuses lie less than 3 miles apart on heights overlooking the Bosphorus.

Homicide in the United States

In contrast to the marked increase in other major crimes, the incidence of homicide in the United States has decreased in the period since World War II, according to statisticians of the Metropolitan Life Insurance Company. The homicide rate fell about one-fifth between 1946–47 and 1955–56, from 6.1 to 4.8 per 100,000 of population.

The relative decline was greater for white than for nonwhite persons, and for each race was considerably greater for males than for females. Among white males, the decrease amounted to one-fourth; among nonwhite males it was one-fifth.

Among white people, the homicide rates vary but little in the range of ages from early adult life through middle age, and decrease only moderately at the older ages. Among nonwhites, and particularly for males, the toll from homicide rises to a definite peak in the late 20's and early 30's, and then falls rapidly with advance in age.

Despite the marked increase in juvenile delinquency in recent years, the homicide rate at ages 15–19 decreased. Moreover, the rate at these ages is much lower than that for most adult age groups.

Germ-Free Laboratory

A new and simplified germ-free laboratory, believed to be virus-proof as well, has been successfully tested at the University of Michigan Medical Center. A goal of biological scientists since the turn of the century, the apparatus is an outgrowth of two other systems developed in the United States and Sweden.

Guinea pigs born in the sterile laboratory last September have survived. The achievement recalled stormy debates that raged early this century on the proposition that all animal life depends, for its very existence, on certain "beneficial bacteria" prevalent in normal life. The apparatus is a sealed metal and glass box about the size of a deep-freeze cabinet. It was designed by Richard Horton, a former postgraduate student at Michigan who is now with the National Institutes of Health.

Nothing rots inside the miniature laboratory. Excess food and animal feces have remained for weeks without decomposing and without odor. Guinea pigs were delivered by Caesarean section directly into the cabinet, employing an intricate surgical procedure that used a plastic membrane to prevent possible contamination by the mother's body. By means of sealed-in rubber gauntlets, investigators can work in the sterile area.

A pressure compartment attached to one end of the unit permits steam sterilization of food and equipment. All air entering the cabinet is first heated to temperatures above 750°F and then cooled. These precautions kill all living organisms, and have prevented contamination for more than 4 months. It is believed, though not tested, that the apparatus will prove as invulnerable to environmental viruses as it is to germs.

News Briefs

The AAAS has received a $250,000 grant from the Carnegie Corporation of New York to continue until 1961 its nationwide program to improve the teaching of science and mathematics in the secondary schools. The Science Teaching Improvement Program is headed by John R. Mayor, director of education for the AAAS. For details of the program's first years—it was launched in 1955 with Carnegie support—see the article on page 1262 of the 21 November issue of *Science*.

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Dedication exercises were held on 5 December for the U.S. Department of Agriculture's new National Seed Laboratory, just completed at Colorado State University at Fort Collins. The laboratory will provide storage for seeds of thousands of different plants—representing the world's most valuable food, feed, pasture, fiber, and tree crops—for use as breeding stock. The Crops Research Division of USDA's Agricultural Research Service will administer the new facility. Operations will be supervised by Edwin James, director of the laboratory and Louis N. Bass, seed physiologist.

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The Woods Hole Oceanographic Institution reports that its new 214-foot research vessel *Chain,* the fourth ship in the institution's ocean-going fleet, left on 6 December for a 16-day cruise between Nova Scotia and Bermuda. The *Chain,* equipped with four large laboratories, has accommodations for a crew of 33 and 28 scientists. She has a cruising range of 10,500 miles. On 2 January she will begin a 3½-month trip for the International Geophysical Year in the southern South Atlantic, and on 1 May she will depart for a 3-month cruise to study the bottom of the Mediterranean.

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Two vocational guidance booklets on careers in chemical engineering and chemistry have recently been published by the Chemical Institute of Canada. The booklets discuss job opportunities, salaries, and the two professions in general. For free copies, write to the institute at 18 Rideau Street, Ottawa 2, Ontario.

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The Medical Research Center at Brookhaven National Laboratory was dedicated on 16 December, following a 2-day conclave of deans of medical colleges. The dedicatory address was de-