SCIENCE NEWS

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SOILLESS FARMS ON BARREN ISLANDS

FRESH vegetables for United States Army Air Force personnel living on barren atolls and islands in the Atlantic and Pacific Oceans, and on isolated tropical posts will be provided by hydroponic or soilless farms now being established by the Air Quartermaster.

Growing vegetables by hydroponics, a system of raising greenstuffs in water with the use of chemicals, on isolated islands is not new. Experiments on Wake Island in the Pacific in 1938, using a system originated by Dr. W. F. Gericke, of the University of California, have proved that vegetables can be grown by this method.

The vegetables are grown in boxes 4 by 11 feet. These are filled with water in which mineral fertilizer salts are dissolved in the right concentration to feed green plants. Over the tops of the boxes, wire netting is stretched, on which, supported in sawdust, excelsior or other suitable material, tomatoes, peas, beans, carrots and other vegetables grow, drawing their water and minor nutrients out of the tanks in which their roots dangle.

In experiments, tomatoes reached their maximum growth in about 2½ months. They were about the size of a baseball, had smooth skin with unbroken surfaces and fine texture as well as excellent flavor.

This water-chemical method of vegetable farming is not practical for a large number of troops, but has application in isolated areas for feeding a small number of men, according to the Air Quartermaster, Colonel H. R. W. Herwig. The serious problem of preservation in transportation and storage prevents men in some isolated areas from getting fresh vegetables. Air Force pilots and crews need fresh vegetables rich in vitamins and minerals to keep them in the best condition for carrying out their missions successfully.

Gardens will be set up at Ascension Island in the Atlantic; Canton Island in the Central Pacific; Espiritu Island in the South Pacific; Port Moresby, New Guinea, and Karachi, India. It is expected that trained crews to establish and train other personnel in soilless gardening will leave the United States within sixty days.

ITEMS

WHEN air-borne diseases are controlled by keeping the atmosphere health-conditioned with small amounts of glycol chemicals, non-toxic to man but death to germs, an instrument widely used in the study of atomic particles, the Wilson cloud chamber, will be useful in controlling the amounts of the chemicals to be placed in the room. The American Physical Society at Berkeley, Calif., heard two University of California scientists, Dr. C. E. Nielsen, of the department of physics, and K. B. DeOme, of the division of veterinary science, tell how the formation of fog or mist in the chamber can be used to determine the amount of additional chemical needed to make the air antiseptic.

TARTAR emetic, a drug that used to figure prominently in old-fashioned medicine chests, has been found an effective poison for the Mexican fruit fly by Dr. C. C. Plummer, U. S. Department of Agriculture, working in Mexico City in cooperation with the Mexican Secretaria de Agricultura y Fomento. Tried out thus far principally under laboratory conditions, the drug has proved most deadly to the flies when given in a sugar-water bait at a concentration of two pounds to 100 gallons of thin sirup. Higher concentrations were not very much more effective. Flies fed (and died) most readily in the forenoon, which is their natural feeding time. The Mexican fruit fly is not only a pest to fruit crops in Mexico but constantly menaces citrus and other orchards in the southwestern United States. For this reason the U. S. Department of Agriculture constantly maintains a combat mission of scientists in Mexico.

USE of air cargo planes seems to have solved the problem of shipping baby chicks over long distances, something which heretofore has been impractical by other modes of transportation. In tests conducted by the University of Illinois College of Agriculture in cooperation with United Air Lines, numerous shipments were made by air from Chicago to San Francisco and return. Altitudes on the trips ranged from 5,000 to 12,000 feet. Temperature readings inside the shipping container ranged from 36 degrees Fahrenheit to a high of 92 degrees, while temperatures outside ranged from 30 to 72 degrees Fahrenheit. On one flight 100 day-old baby-chicks were 56 hours in transit, including some hours at the west coast stop. Only one chick died. Professor H. H. Alp, poultry specialist at the College of Agriculture, is supervising the investigation.

PROMISE of a new triumph for penicillin with benefits extending to the swine industry later, when supplies of the mold chemical are more plentiful, appears in a report by Dr. F. R. Heilman and Dr. W. E. Herrell, of the Mayo Clinic at Rochester, Minn. Penicillin, their studies show, will probably prove effective in treatment of erysipeloid, a skin disease acquired by infection with the organism of swine erysipelas. In man, erysipeloid is chiefly an occupational disease, affecting those who handled infected carcasses and the like. The disease is usually mild but may at times be serious and debilitating, with painful arthritic symptoms and even blood and heart infection. Swine erysipelas is a major problem of the swine industry. Immune serum has so far been the only treatment of value for the infection in man. Sulfa drugs have not helped. In laboratory experiments with mice, it was found that all of 40 untreated mice infected with the swine erysipelas germ died. Among 40 infected mice given penicillin, only two died, a mortality rate of 5 per cent. instead of 100 per cent. On the basis of these and test-tube experiments, made with the technical assistance of Miss Constance Carter and Miss Nellie Greenburg, it is concluded that penicillin should prove effective in treating the disease in man and, if it becomes practical, in swine also.