

AGRICULTURE

Agriculture Needs Tropics

NEW FOOD crops may soon be developed for growing in the hot, rainy climate of the tropics.

Even though man has not domesticated an important new food plant since prehistoric times, he may be forced to do so, Dr. John E. Cantlon of Michigan State University, East Lansing, Mich., believes. A growing world population and the current wear and tear on farm land will probably make it necessary to develop tropical areas into major producers of food.

"This is not an easy task," he said, "even though hot, rainy climates produce immense amounts of vegetation.

"The trouble is that our major grain plants, except for rice, are not suitable for large-scale farming in the humid tropics.

"One approach is to domesticate new food plants that will be suitable."

Many of the world's important crops, he explained, were first domesticated in such semi arid regions as the area around the Tigris and Euphrates Rivers in Iraq and the Central and South American highlands, where it was not necessary to clear forests to start cultivation.

"These plants are suitable for farming in much of the temperate zones because

they are similar to the natural vegetation," he said.

"But when, for instance, corn is grown in the rainy tropics, unlike the native vegetation, it is not in harmony with the climate and cannot retain the soil's fertility.

"Farming for crops such as corn means there will be exposed ground during parts of the year. The rain beats down on the bare earth, leaching nutrients out of the soil. Even many of the current tropical crops such as the yam do not fit into the pattern.

"It is different with the natural vegetation of the humid tropics—the rain forests. Here, trees and plants retain the nutrients within themselves. As they die and leaves fall and decay, the nutrients are released and re-utilized. The forest roof is so thick that only a small proportion of the rain reaches the ground directly."

Fertilizers are being used to make up for the loss of nutrients, Dr. Cantlon said. However, there are definite limitations to the supply of some important substances, such as phosphorus and potassium. That is why we cannot continue to exploit the world's farm lands indefinitely at the present pace," he said.

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PUBLIC HEALTH

Urge Cycling for Health

BICYCLING would be a popular American form of exercise if our road builders would provide parallel paths on all highways.

Cycling is far more popular in Europe than in America, Dr. W. W. Bauer, director, department of health education of the American Medical Association, reported to the American Public Health Association at Atlantic City, N. J. Chicago recently closed four miles of Lake Shore Drive for Pan American cycle race qualifying heats, and again for the races themselves. Many lesser streets are being closed for play purposes. Many persons now believe that if main business streets can be closed for parades on busy weekends, they can be closed also for cycling and games at appropriate times, he pointed out.

Americans are currently going all out for physical fitness, Dr. Bauer said. He then commented that he considered it to be a "popular act." "How long this interest will be sustained is anybody's guess," he added, pointing out that the American public is famous for quick enthusiasms and equally sudden boredom.

Recreation itself may or may not involve activity. There is nothing wrong with the quieter pastimes such as reading, card games, collecting, photography, appreciation of music or other forms of art, he explained. But there must be another facet to fitness—activity.

Dr. Bauer then pointed out that emotional unrest turns up in the body as som-

atic diseases—ulcers, colitis, hypertension (with emphasis on the tension), arteriosclerosis, heart attacks, strokes and allergies, to mention just a few.

There should be emphasis, during youth, on a personal sport or activity which can be carried on when the demands of adult life render participation in team sports, or in activities requiring much time, space or equipment, impractical. Then such exercises as walking, cycling, gardening, swimming, rowing, golf, mountain climbing, or nature study involving field excursions should get Americans "out of the stands and onto the playing fields" he said.

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ROCKETS AND MISSILES

Scale Model Tests Satellite Recovery

See Front Cover

FULL-SCALE and model tests of instruments, space capsule and materials are being made at the National Aeronautics and Space Administration's Langley Research Center, Langley Field, Va.

The photograph on the cover of this week's SCIENCE NEWS LETTER shows a scale model of a space capsule being dropped in a water tank to simulate landing in an ocean after flight.

As the capsule nears the water surface it is reflected in the water in this multiple

exposure photograph. In such tests, information is obtained through photographs and instrumentation on water landing characteristics of the capsule, which will parachute to earth at a speed of 30 feet a second or about 20 miles an hour.

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TECHNOLOGY

Record Heartbeats For Long Periods

A HEARTBEAT counter has been developed that can be strapped to a person's chest so that it will record his heartbeat for as long as 24 hours at a time. The device is small and rugged and contains a transistorized amplifier, a watch movement made into a counter, and a battery. It is connected to two electrodes that are cemented to the chest.

The counter was developed by Donald A. Rowley, Seymour Glagov and Peter Stoner of the University of Chicago in cooperation with engineers of the Illinois Bell Telephone Co. It is described in *Science* (Oct. 16).

Science News Letter, October 31, 1959

Questions

ASTRONOMY—How old does one astronomer suggest the universe is? p. 289.

GEOLOGY—What is the complete scientific name for the Moho? p. 290.

PEDIATRICS—When is the most favorable time for correctly diagnosing multiple pregnancies? p. 288.

PHYSIOLOGY—What new theory has been proposed explaining baldness? p. 289.

PUBLIC HEALTH—What is one disease humans may contract from monkeys? p. 286.

Photographs: Cover, National Aeronautics and Space Administration; p. 283, Smithsonian Astrophysical Observatory; p. 290, National Academy of Sciences-National Research Council; p. 296, Roberts Colonial House, Inc.

Do You Know

In 1958 forest *insects* killed enough timber in the United States to build 600,000 five-room houses, five or six times as much timber as lost to forest fires.

Most of the 8,000 species of *ants* known to man live outdoors, but a few nest in human residences.

Vanadium improves the toughness, mechanical properties and heat-treating characteristics of some steels often used in engine and motor parts.

In a recent U.S. survey of 2,623 patients more than 60 years of age who underwent major or minor *surgery* during a four-year period, there was a mortality rate of only 3.2%.