



ABOVE

Two water vapor culture boxes showing the pineapple plants growing through the holes. See facing page.

PLANT PHYSIOLOGY

Soilless Gardening Aids In Study of Plant Diseases

Pineapple Plants Were Kept Growing With Their Roots Dangling in Atmosphere Saturated With Water Vapor

SUCCESSFUL growing of plants with their roots dangling in an atmosphere saturated with water vapor, instead of being embedded in soil, has recently been accomplished and is expected to become an important contribution to the science of soilless gardening.

Dr. Walter Carter, entomologist for the Pineapple Research Institute, Honolulu, Hawaii, tells of his adaptation of the method in the technical journal, *Phytopathology*. In his studies of root damage to pineapple plants caused by infestation with mealybugs, Dr. Carter found that the necessary examination and sampling of roots during the experiment produced considerable mechanical injury. To overcome this difficulty, the water vapor method was developed.

This method consists of setting the plants in holes in the top of a fairly tight wooden box. Inside the box is an atomizer such as is used in air conditioning apparatus, and in keeping green vegetables from wilting in retail stores. In this device water from an ordinary

main goes through a valve to form a fine jet which impinges on a flat plate. The resulting spray keeps the air in the box saturated with water vapor.

The pineapple cuttings soon begin to grow and develop roots which hang down inside the box. More vigorous growth is produced, Dr. Carter found, if a nutrient solution is added to the spray. To accomplish this, he connected an eight-quart tank in parallel with the water supply. A needle valve from the main line leads into the bottom of the tank and a pipe from the top makes a T-joint with the pipe leading to the atomizer. The fresh water gradually replaces the nutrient solution. One tankful lasts about three days. The liquid in the tank becomes progressively more dilute but this does no harm to the plants. When the nutrient solution needs replacing, the needle valve is closed and the tank drained and refilled.

The water vapor method has several advantages over other soilless methods. Once set up it is almost automatic, re-

quiring no adjustment of acidity or refilling of jars. Root aeration is better at all times, and no trouble is encountered with algae or other contaminating organisms.

Science News Letter, May 16, 1942

ENGINEERING

Movie Star Can Sing And Still Look Beautiful

REACHING for that high note with a facial contortion is a movie scene not viewed by theater audiences, thanks to a double-recording technique revealed to the Society of Motion Picture Engineers, meeting in Hollywood.

Beautiful music and good camera appearance is not always possible at the same time, Bernard B. Brown, of Universal Pictures, explained in letting out the studio secret that some of the best artists often resort to pre-scoring. The singer performs for the sound track without the camera seeing the funny faces made. Then the camera grinds while the singer does the scene again for pictures, free to concentrate on appearance and camera angles.

Tap dancers frequently use a reverse method, first performing for the eyes and then for the ears, on a sound stage.

Science News Letter, May 16, 1942

AERONAUTICS

65 Bombers Could Be Made In Time Lost By Accidents

STARTLING costs in manpower of industrial and other accidents are revealed in figures from the Metropolitan Life Insurance Company.

Each week at least 800,000 employee days, enough to make 65 bombers, are lost in absenteeism due to temporary disabilities sustained in occupational accidents.

Enough working time to build eight destroyers is lost each week, in addition, through fatal occupational accidents or those causing permanent disabilities.

Enough men for 16 Army divisions were lost in accidents of all kinds which took the lives of boys and men in the United States during the past 10 years. Motor vehicle accidents alone during this period robbed the nation of 110,000 potential soldiers, sailors and fliers.

Science News Letter, May 16, 1942

The mathematical symbol *zero*, without which our mathematics would be impossible, was apparently invented by the Hindus twelve or fifteen hundred years ago.