Another method forced them to choose on the basis of organic appetite — the chemical state of the body.

Taste and smell deceive; the deeper cravings of the body are wiser, it was found. When the rats chose what they liked the taste or smell of, they continued to select sugar rather than casein even after 29 days of being deprived of the needed casein. They preferred casein, however, when they judged on the basis of the body craving.

Unreliability of taste was confirmed in another experiment conducted by Dr. Shapiro in which the animals went for several days without either food or water. When relying on taste to make their choice, the rats took dry food. When they followed the dictates of their organic state, they drank instead, even though the period of total deprivation was shorter.

Science News Letter, May 16, 1942

Fast Talkers and Spenders

YOU CAN be on your guard against the smooth talker who wants your bank roll if you follow the tips given to psychologists by Dr. J. E. Janney, of Western Reserve University, speaking before the Midwestern Psychological Association meeting.

"Fast talkers and fast spenders," is how Dr. Janney summed up the personalities of both large-scale and small-time swindlers, on the basis of the experience of 40 Better Business Bureaus throughout the nation.

The small operator tends to be flashily dressed, he wants to put over his deal in secret, probably has a bad retail credit rating, will lie when investigated and feels persecuted when convicted.

The big-time operator comes right out in the open. He advertises widely, is well and conservatively dressed, and is careful to keep an excellent credit rating. But he is more likely to be truthful when investigated and sportsmanlike when convicted.

The appeals with which they work on you differ, too. If you are small prey, the swindler will play on your love for your family, any superstitions you may have, and on your desire for health and beauty.

In big frauds, prestige is used more extensively as a lever.

Big and small, swindlers make the most of the human weaknesses of gullibility, cupidity, conceit and concealment.

Science News Letter, May 16, 1942

CHEMISTRY

Japs Have Reproduced Nylon In Preparation for Post-War

Articles Found in Japanese Chemical Journals Show Oriental Rayon Company Is Ready To Compete in Field

JAPANESE industrial chemists are already preparing for an industrial struggle to follow cessation of the shooting war.

This is the conclusion that may be drawn from three articles published in Japanese, in the *Journal of the Chemical Society of Japan, during* 1940 and 1941. The author, K. Hosino, research man for the Oriental Rayon Company, Ltd., tells how he analyzed nylon, the synthetic plastic fiber that has made the U. S. A. independent of silk. After he had determined how the molecules were put together, he duplicated them and then made modifications which he claims are improvements over the American product.

This procedure, reminiscent of prewar tales of how Japanese mechanics would build a duplicate of any machine that Occidental manufacturers would sell to their employers, might give Japanese textile factories the means to compete to great advantage with nylon mills in this country and Europe. Japan has persistently refused to enter into any patent treaty with any foreign country, so that the du Ponts, originators of nylon and owners of basic patents thereon, will have no protection against Japanese attacks on their business.

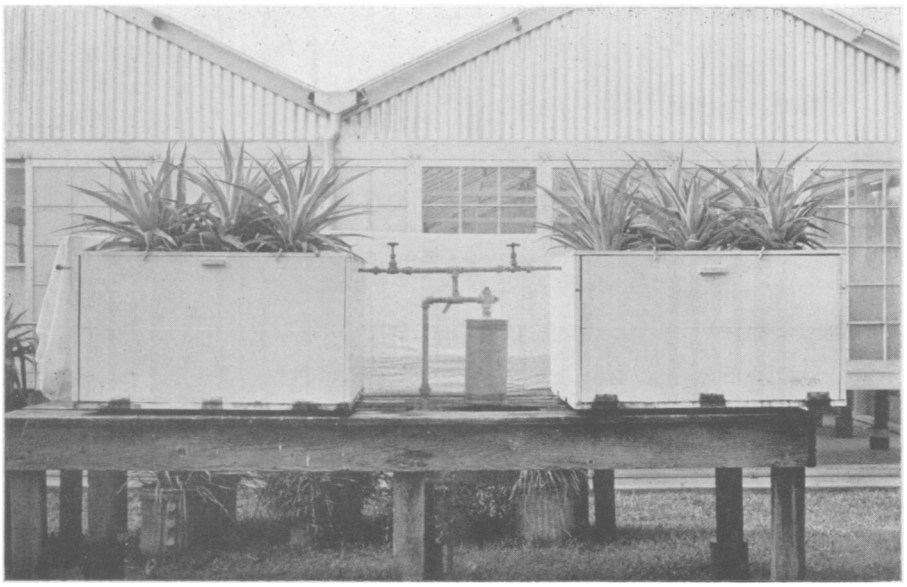
Nylon, the Japanese chemist states as a result of his analysis, is a "polyamide of hexamethylenediamine combined with adipic acid."

If Japan goes into the nylon business, the silk industry, already hard hit first by rayon and then by the cessation of American silk purchases even before the outbreak of war, may never come to full revival. It is reported that hundreds of thousands of mulberry trees have already been felled in Japan, to make room for more food-crop production. These groves may never be replanted.

Science News Letter, May 16, 1942

BELOW

This is how the root development in the water vapor culture box looks. These plants are three months old. This photograph and the one on the facing page are from the Pineapple Research Institute.



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, requiring 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.

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ENGINEERING

Movie Star Can Sing And Still Look Beautiful

REACHING for that high note with 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.