

## CHEMISTRY

## Police Force of 300 Men In Shirt-Shrinkage Test

► THE entire police force of Springfield, Mass., were, unbeknown to the public, experimental guinea pigs during the past year. They wore woolen shirts treated with a special chemical preparation to prevent shrinkage. Both police and shirts withstood the test.

A report on the shirts, and policeman reaction to them, was made recently by Police Chief Raymond P. Gallagher. He stated that after a year's wear the reaction of his entire force was most complimentary. The 900 shirts tested had been worn in all sorts of weather and subjected to all sorts of laundering both in commercial plants and home washtubs. They should be good for another two years, he said.

This experiment was conducted by the Monsanto Chemical Company of St. Louis and Everett, Mass. The chemical used is known by the trade name of Resloom, and is a melamine resin preparation. Police were selected because of the nature of their duties. The only precaution given the men when the shirts were issued was not to boil them. Individual records made by the officers after each washing show only 33 noted any shrinkage, and these were marked as slight.

Science News Letter, July 24, 1948

## VETERINARY MEDICINE

## Penicillin Saves Turkeys With Swine Disease Germ

► PENICILLIN has been shown capable of saving turkeys infected with the same germ that causes swine erysipelas, in experiments by Dr. C. G. Grey of the U. S. Department of Agriculture.

He injected doses of 20,000 units of penicillin, suspended in peanut oil, into the wattles of a group of turkeys infected with the swine erysipelas germ, leaving a similarly infected group untreated as controls. All of the controls died, whereas the loss was only 10% in the treated group.

Dr. Grey chose the wattle as the site of the injection because it is not used for food. This is believed to be the first practical use ever found for this curious appendage on the turkey's head.

Science News Letter, July 24, 1948

## PSYCHOLOGY

## Guinea Pigs Trained to Go into Hypnotic Trances

► GUINEA PIGS can be trained to go into a prolonged hypnotic trance, reports Dr. W. T. Liberson, of the Research Laboratory, Institute of Living, in Hartford, Conn.

The training is very simple. It consists of putting the animal on his back. If he turns over, he is immediately put back on

his back and this is repeated as often as necessary for a two-hour "lesson" each day.

In the hypnotic state the animal lies with paws out, eyes popped out and rolled down and with a fine tremor. At first he may stay in this condition for about half a minute. But after a week of training he may be kept in the same state for two hours without interruption.

Some animals were able to retain their ability to go into a prolonged trance even after three months without further training.

This ability to keep laboratory animals in a prolonged hypnotic state is useful to experimenters on abnormal behavior. It has been difficult to use animals in such experiments previously because hypnotic states in the laboratory animals have previously been very brief and complicated.

Science News Letter, July 24, 1948

## GENETICS

## Formaldehyde Produces Mutations in Fruit Flies

► FORMALDEHYDE, familiar through its uses as disinfectant, preservative and embalming fluid, is able in low concentration to produce mutations, or sudden evolutionary changes, through its effects on the hereditary characters carried by the chromosomes within cell nuclei.

Experiments demonstrating this were carried out on fruit flies in the laboratories of the University of California, by William D. Kaplan, who reports his results in *Science* (July 9). Mr. Kaplan's results support and confirm earlier researches along the same line conducted in the USSR by a Russian investigator, I. A. Rapoport.

The mutations produced in both series of experiments were of the type known as lethal; that is, the individuals in which they occurred all failed to live.

Science News Letter, July 24, 1948

## GENERAL SCIENCE

## Proposed Measures Would Decrease Trade Barriers

► DECREASED barriers to international trade are expected from international standards for textiles and textile test methods proposed at Buxton, England, at a meeting of representatives of 13 nations. Countries included, besides those of western Europe, are Australia, New Zealand, India, the Soviet Union and the United States.

United States participation is through the American Standards Association. The American delegation was composed of 12 men representing the association, the National Bureau of Standards, and other organizations concerned with textile studies or manufacture. Important steps were taken to organize the standards, but further studies must be made by special committees. Americans will head two of these committees.

Science News Letter, July 24, 1948

# IN SCIENCE

## ENGINEERING-AERONAUTICS

## Floating Drydock to Hold Largest Flying Boats

► TESTING an experimental floating drydock for the Navy's largest flying boats has been completed in Port Hueneme, Calif., and the dock pronounced a success, it was revealed. The floating drydock is designed to permit repair work on giant seaplanes without hoisting them aboard seaplane tenders.

The drydock consists of four pontoon strings connected side by side, each 18 pontoons long, on which wingwalls are imposed, and has a timbered deck. It is equipped with three water jets on each wall to assist in warping the seaplane into place by throwing water pressure against the sides of its hull.

Under present plans, an LSD (Landing Ship, Dock) will serve as a tender for the floating drydock. This type of vessel was built to serve as a parent ship to landing craft and to coastal craft. It is large enough to receive in its well deck the drydock with cradled seaplane for maintenance. The drydock is 103 feet long and nearly 40 feet wide. The LSD will carry it from place to place where needed.

Science News Letter, July 24, 1948

## NUCLEAR PHYSICS

## Glasgow Is New Center of British Nuclear Research

► WITH the British Government's decision to build a new 300,000,000-electron volt synchrotron at Glasgow University, Glasgow has become an important center of nuclear research in the British Empire.

Research has been going on there for some time using a 30,000,000-electron volt synchrotron which was built in 1946 and is the world's first machine of this kind. It has been used for industrial and medical research work, but scientists have been limited by the comparatively small scope of the machine.

The new 150-ton synchrotron is being constructed by Metropolitan Vickers in association with the Ministry of Supply's Atomic Energy Research Establishment and the University of Glasgow. The machine is to be used for fundamental research in nuclear physics and medical research in the field of X-rays.

Large-scale synchrotrons now being built in the United States include the 3,000,000-electron volt atom-smasher which the Brookhaven National Laboratory at Upton, Long Island, N. Y., expects to finish in three years.

Science News Letter, July 24, 1948

# CE FIELDS

## MARINE BIOLOGY

### Color Photos of Life in Ocean To Be Attempted

► COLOR photographs of life in the ocean at two miles straight down will be attempted by this year's expedition of the research ship *Atlantis*, which left Woods Hole, Mass., July 15. Leader of the oceanographic group aboard is Dr. Maurice Ewing of Columbia University.

To produce light enough to make color pictures in the everlasting darkness of great ocean depths, powerful flashlamps will be used, with specially built transparent covers to protect them against the crushing pressure. Black-and-white pictures will be made at depths even greater than the two-mile limit set for the present on the color cameras.

Other research objectives include further mapping of the Midatlantic Ridge, the great submerged mountain chain that runs down almost the whole length of the Atlantic, the collection of 60-foot cores of its surface materials with a long sampling tube, and collection of bottom life with special deep-water trawls and dredges.

The expedition is sponsored jointly by Columbia University, the Woods Hole Oceanographic Institution and the National Geographic Society.

Science News Letter, July 24, 1948

## PLANT PATHOLOGY

### Elm Disease Outbreak In Denver Confirmed

► DUTCH ELM disease, deadliest enemy of the favorite American shade tree, is now known to exist far to the west of Ohio, long thought to be its western limit. Very recently an outbreak in Denver, reported by Colorado state entomologists, was investigated and confirmed as the true elm disease by workers of the U. S. Bureau of Entomology and Plant Quarantine. The destructive fungus has been attacking elms in several places in Ohio, and at least one spot outbreak in Indianapolis, Ind., is known to have occurred.

Entomologists in Washington are disturbed over their lack of information about possible outbreaks between the Ohio-Indiana area and the Rocky Mountains, for elms are valued shade trees throughout the Midwest. Lack of funds has forced them to curtail survey work formerly carried on in zones around the area of known infestation.

The fungus that causes the disease is carried by a bark-burrowing beetle that is known to be sensitive to DDT. Spraying with this insecticide therefore is recommended for the protection of trees suffi-

ciently valuable to justify the cost. Two sprays are commonly applied: one before the leaves develop, to get the beetles as they attack the bark on the twigs; the other in July, which kills leaf-eating insects and caterpillars as well as any beetles that may be about at the time.

Dutch elm disease, incidentally, is a misnomer. It came to this country from Europe, but definitely not from the Netherlands.

Science News Letter, July 24, 1948

## AERONAUTICS

### Unconventional Flight Control System Abandoned

► A NEW, simplified but unconventional flight control system for British private planes has been abandoned because it is unacceptable to a number of light-plane pilots. Their principal objection appears to be that it does not employ the familiar normal method of stick and rudder pedals.

The system, already officially approved by the British Air Registration Board, was intended to be standard equipment on the *Chrislea Super Ace* light personal plane. The majority of the pilots who gave it a trial agreed that it was admirably suited for private flying, club flying and for planes carrying light loads, but they preferred the familiar type of controls.

The control in this new system was a single wheel, resembling a car's steering wheel mounted on a short column projecting from the instrument panel. With this system, the wheel is rotated in the direction of the required bank. For climbing or diving, the wheel is lowered or raised. To turn the plane's nose left or right, the wheel is swung left or right. A *Chrislea* test pilot pronounces the system as practical once the unusual movements become familiar.

Science News Letter, July 24, 1948

## ENGINEERING

### New Device Measures And Records Vibrations

► VIBRATIONS in a building or in a machine, too minor to be noted by ordinary means, are measured and recorded by a new device small enough to hold in the hand, General Electric revealed. It is called a recording vibrometer.

A short metal prod which projects from one side of loaf-of-bread-sized vibrometer is held against the vibrating object. Inside the instrument's case, a moving sapphire point rests on moving waxed-paper tape. Vibrations are transmitted through the prod, magnified 12 times by a spring, and passed on to the moving point, which records on the tape both frequency and magnitude of vibration.

The tape is moved forward by a constant speed motor. A time mark is made on the tape every three seconds.

Science News Letter, July 24, 1948

## ENGINEERING-AERONAUTICS

### British Airport Lighting Claimed as Major Advance

► A NEW TYPE of airfield approach lighting, claimed to be a considerable advance on any system previously devised anywhere in the world, is to be installed at London Airport this year. It is a system for use in foggy weather or at night which will give pilots a horizon at which to aim in landing.

The system consists of bars of lights placed horizontally across the approach area at intervals of 600 feet, with a central line of lights 100 feet apart leading straight to the runway. As the pilot approaches the runway, the bars of light provide him with an artificially created horizon by which he can gauge his distance from the ground. The central lights guide him to the runway.

It is expected that the use of this lighting system will permit daytime landings when visibility is restricted to 200 yards, and nighttime landings when visibility is down to 100 yards. The system was designed at the Royal Aircraft Establishment at Farnborough, where it has been installed experimentally at the airport.

Science News Letter, July 24, 1948

## PLANT PHYSIOLOGY

### "Pepping-Up" Methods Don't Add Vitamin C to Greens

► A "MESS O' GREENS" from a normally fertile, adequately watered garden will contain all the ascorbic acid, or vitamin C, it is capable of developing. Its content cannot be increased by forced feeding with fertilizers or any other "pepping-up" methods, it was indicated in experiments reported by Dr. G. Fred Somers of the U. S. Plant, Soil and Nutrition Laboratory at the seventh annual meeting of the Laboratory's collaborators in Ithaca, N. Y.

The tests were made by the most delicate and exact of plant physiological methods, with leaf samples of equal area cut from turnip and broccoli leaves of uniform size and age. These were subjected to various chemical and physical conditions and then analyzed for their ascorbic acid content.

Preliminary experiments showed that basic needs of leaf cells for forming the vitamin are the same as those for formation of carbohydrate food: sunlight, moisture, carbon dioxide and the right temperature. Given these, the leaf material doesn't seem to mind what else it gets.

Extra doses of fertilizer salt, of certain sugars, of hormones or growth control substances, even some poisons, either fail to speed up the vitamin production or actually depress it. The sole exception is potassium nitrate, which at some low concentrations increases production to a certain extent. Otherwise, the leaf samples get along best on plain water.

Science News Letter, July 24, 1948