

ASTRONOMY

Dr. Shapley Is Awarded Aztec Eagle Decoration

► DR. HARLOW SHAPLEY, director of Harvard Observatory, was presented the Order of the Aztec Eagle, third class, highest decoration of the Mexican government awarded to non-Mexicans, at a reception given by Mexican ambassador and Senora de Castillo Najera on Saturday afternoon, July 22.

Instrumental in advancing scientific cooperation between the United States and Mexico, Dr. Shapley has cooperated in placing one of the most advanced astronomical telescopes of today in the National Astrophysical Observatory at Tonanzintla, near Puebla, Mexico.

Honored at the same time with the same decoration as Dr. Shapley was Dr. Alberto Sevilla Sacasa, secretary of the Nicaraguan Embassy at Washington who has lived in Mexico and has promoted cultural relations between his country and Mexico.

Science News Letter, July 29, 1944

BOTANY

Tomatoes Without Pollen Make Hybridizing Easy

► TOMATO PLANTS that produce no pollen, and can therefore bear fruit only when fertilized by pollen from other plants, are reported (*Science, June 30*) by Dr. Charles M. Rick of the University of California College of Agriculture. They are expected to be of use in establishing new, heavy-yielding hybrid varieties.

First hint of the existence of these conveniently pollen-sterile mutant plants was given when one of Dr. Rick's colleagues, Dr. Paul G. Smith, found a tomato plant that persistently bore no tomatoes. Investigation disclosed the fact that its stamens contained no pollen.

Pollen-sterile plants are useful to plant breeders because the customary procedure of pulling out the stamens by hand is slow, tedious and costly. If a natural mutation results in the production of flowers with functional female parts but with the male elements (stamens) either absent or non-functional, this speeds up the breeder's task tremendously. So pollen-sterile plants are always being sought.

What appears to be a side-effect of the inability to produce pollen makes the search for these particular mutant tomato plants easier. Dr. Rick states that they

stand out among the normal, pollen-producing plants by their greater vegetative vigor, especially late in the harvest season. Three varieties of tomato were scanned in this manner for male-sterile types in 1943, he says, and the desired pollenless plants were readily found in each variety.

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INVENTION

Ripening of Tobacco Is Speeded by New Process

► QUICKER RIPENING of tobacco, with resulting savings in time and tied-up storage space, is claimed on behalf of a controlled-temperature process on which U. S. patent 2,353,718 has been issued to Thomas H. Garber of Richmond, Va. Patent rights have been assigned to Larus and Brother Company, Inc.

In the customary tobacco-ripening process, the bundles of leaf are packed in hogsheds and stored in warehouses. Natural processes produce "sweats"—rises in temperature and moisture content—which bring about the desired mellowing of taste and improvement in smoking qualities. Under natural conditions, these "sweats" occur about twice a year. Tobacco is ordinarily kept in the warehouse from one and one-half to three years.

In Mr. Garber's process, the temperature and moisture are artificially raised at shorter intervals, with each heating-up kept about ten degrees Fahrenheit lower than the preceding one. Steam is the means used for controlling humidity as well as temperature.

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ENGINEERING

Faraday Medal Given to Nobel Prize Winner

► THE FARADAY Medal of the Institute of Electrical Engineers, British counterpart of the American Institute of Electrical Engineers, was conferred on Dr. Irving Langmuir, Nobel Prize winner in chemistry in 1932, and associate director of the General Electric Research Laboratory. The medal was presented at the meeting of the AIEE in St. Louis on June 26.

The Faraday medal is given to Dr. Langmuir in recognition of his worldwide services to electric engineering. He is the fourth American to receive the award.

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IN SCIEN

MEDICINE

Dextrin Seen as Aid in Increasing Penicillin

► POSSIBILITY of increasing commercial production of penicillin by substituting starch dextrin for lactose in the growth medium is suggested by Dr. Irwin A. Pearl and Dr. John W. Appling, of the Institute of Paper Chemistry.

In a report (*Science, July 21*), they point out that lactose "definitely serves as a preservative for penicillin," whether or not it acts as a nutrient for mold growth. In preliminary experiments using corn steep liquor, the scientists find that the more plentiful starch dextrin can be substituted for lactose "to give equally high quantities of penicillin."

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CHEMISTRY

Waste From Paper Making Made Useful for Farms

► A METHOD of converting waste liquor produced by sulfite process paper mills into a valuable soil amendment has been devised by R. B. Alderfer, soils technologist, and M. F. Gribbins and D. E. Haley, agricultural biochemists, of the Pennsylvania State College. Farmers and fishermen will benefit from this research.

The 27,000,000 tons of waste liquor which annually are poured into the streams of the country constitute a serious pollution problem. This liquor contains 1,500,000 tons of lignin, a major constituent of the original wood used. Lignin, a humus-forming material, is precipitated when added to soils as a result of chemical and biological processes.

This material, after certain constituents harmful to crop growth have been removed, when added to freshly plowed ground, will bring about in the course of time the formation of water-stable granules which render the soil more permeable to air and water. This condition appears to be brought about by the lignin itself or by bacterial action which is induced by this and other constituents of the waste liquor, or by a combination of these factors.

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CIE FIELDS

FORESTRY

Ancient Sequoia Tree Falls in California Grove

➤ AN ANCIENT sequoia tree, 250 feet high and eight feet in trunk diameter, fell recently in Whitaker's Forest, Tulare County, Woodridge Metcalf, University of California extension forester, reports. When the old tree started to go, it signalled its impending fall with a series of loud cracks like rifle-shots, as its tough roots broke. It was the fourth old sequoia to fall in this area since Horace Whitaker deeded the 320-acre tract to the University 34 years ago.

The wood from the fallen giant will be cut up into split fenceposts and grape stakes during the summer. It is expected to yield 4,000 posts and 2,000 stakes.

At the present rate of fall, one tree every seven years, it will be 1,750 years before the last one goes. By that time the present stand of seedlings will have grown up to replace them.

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ICHTHYOLOGY

Teeth Tips Left in Wound Identify Killer as Shark

➤ SHARKS do attack humans. Scientific evidence for this from one fatal case is reported by Capt. B. H. Kean, M.C., A.U.S., (*Journal, American Medical Association, July 22*).

The victim was a young sailor who dived into the Pacific off the north shore of Rey Island, Gulf of Panama, to see whether the ship's propeller had been fouled or damaged. As he came up he was attacked by a "man-eater" shark, six or seven feet long, although no sharks had previously been seen. The shark was seen by the captain and several members of the crew.

Conclusive scientific evidence that it was a shark was obtained through identification of the tips of two shark's teeth found in the victim's leg by the surgeon who repaired the wound. The identification, rare in such cases, was made by John T. Nichols, curator of recent fishes, of the American Museum of Natural History, New York. Dr. C. M. Breder, Jr., curator of the New York Aquarium,

concurred in the identification of the teeth tips as coming from a "small so-called man-eater shark, *Carcharodon carcharias*."

In spite of immediate application of a tourniquet and dressings aboard ship and treatment three hours after the accident at a Naval hospital, the sailor died in shock seven hours after the injury, apparently as a result of blood loss.

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ENTOMOLOGY

Tartar Emetic Effective Against Mexican Fruit Fly

➤ TARTAR EMETIC nasty, disagreeable 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 entomologist working 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.

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CHEMISTRY

Small Electric Crucible Is Safe to Handle

➤ A SMALL electric crucible, capable of producing intense heat and yet safe for the chemist or metallurgist to hold in his hand, is covered by patent 2,351,594. The patentees, L. F. Black and C. H. Mellor of Denver, have assigned rights for use to the government, royalty-free.

The cup of the crucible is hollowed out of a solid block of carbon, which serves also as one of the electrodes. The other electrode is a cylinder of carbon that forms the bottom of the cup. A small but powerful high-tension induction coil, with leads through a well-insulated handle, supplies the power.

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PHYSICS

Wilson Cloud Chamber Used To Control Germicide in Air

➤ 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 meeting in Berkeley 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.

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MEDICINE

Penicillin Promises to Be Effective in Erysipeloid

➤ 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.

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 handle 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, the Mayo scientists 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% instead of 100%. On the basis of these and test tube experiments, made with the technical assistance of Miss Constance Carter and Miss Nellie Greenburg, the scientists conclude that penicillin should prove effective in treating the disease in man and, if it becomes practical, in swine also.

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