PLANT PATHOLOGY

Disease of Tomato Plants From Use of Weed Killer

➤ A SAD story of ill consequences following an effort by farmers to do good in their fields is told by Dr. John T. Middleton of the California Experiment Station at Riverside, Calif. A disease of tomato plants that seemed to be a kind of mosaic appeared in certain California tomato fields. Leaves were mottled, fruits few in number and small in size. However, efforts to reproduce it by inoculating other plants with juice from diseased specimens were found to be unsuccessful.

When a check-up was made of the history of the fields in which the trouble occurred, it was learned that in every case a chemical weed-killer, sodium chlorate, had been used at some time in the past in an effort to control bindweed, one of the worst of plant pests. The more recent the treatment, the more severe were the symptoms on the tomato plants. However, effects were noted when the last application of the chlorate had been made five years previously.

Science News Letter, March 31, 1945

AERONAUTICS

British Jet Propelled Planes Are Announced

➤ THE FIRST jet-propelled plane to be used by the Allies in action against the enemy is the "Gloster Meteor," a British plane which was brought out from under the cloak of secrecy at the same time that information was released on the American P-80, "Shooting Star." It was used in France against the Germans last summer.

Although the exterior design differs from the Lockheed-built plane, the jet operation is similar, since both planes are powered by engines developed from basic designs of Air Commodore Frank Whittle. The P-80's engines are produced by General Electric, while the jet engines of the British plane are a Rolls Royce product.

The Rolls Royce engine is reported to be more efficient and have a longer life than the JUMO engine of the German Messerschmitt Me 262, the Nazis' jet plane. The engine emits no flame, as does the jet propulsion unit of the flying bomb, and in only certain rare conditions does it leave any smoke trails. The passage of a jet plane on the ground leaves in its wake the characteristic smell given off by a hot kerosene stove or a storm lantern.

Called the "Squirt" by Royal Air Force pilots, they have plenty of power, and are easy to handle at high speeds. Pilots who have flown Spitfire planes, equipped with conventional reciprocating engines, prefer the jet-propelled craft.

Science News Letter, March 31, 1945

MEDICINE

Critical Shortage Exists Of Physical Therapists

➤ MORE THAN a million dollars has been appropriated by the National Foundation for Infantile Paralysis to train physical therapists, Basil O'Connor, the foundation's president, has announced.

A "critical shortage" of qualified specialists in this field exists, he said. More than half of the nation's 2,500 physical therapists are in the armed forces, but double this number, 5,000, could be used for treating infantile paralysis victims alone, he pointed out.

Of the $1,267,600 appropriated, $1,107,000 will be for scholarships to train new physical therapists, $82,000 for fellowships to provide additional teachers, and $78,600 for general development of the field of physical therapy.

Applications for scholarships should be made to the National Foundation for Infantile Paralysis or to the American Physiotherapy Association. Applicants should be graduates in nursing, physical educators or have had two years' college training including biology and other basic sciences.

A special committee to assist in development of the new program has been formed under the chairmanship of Dr. Irvin Abell, Louisville, Ky., chairman of the board of regents of the American College of Surgeons.

Science News Letter, March 31, 1945

AGRICULTURE

Plant Patent on New Sugarcane Variety

➤ ONE LONE plant patent issued last week contrasts with 571 "regular" patents. The plant patent, No. 655, protects a new variety of sugarcane, bred by Dr. B. A. Bourne of Clewiston, Fla., who has assigned his rights to the United States Sugar Corporation. The new cane is described as heavy-stalked, rich in sugar, highly resistant to half-a-dozen plant diseases, maturing from mid-season to late.

Science News Letter, March 31, 1945

IN SCIEN

SOIL SCIENCE

Epsom Salts Useful as Horticultural Fertilizer

➤ EPSOM SALTS, old standby of the family medicine chest, can be useful as a horticultural fertilizer, reports Prof. W. L. Powers of Oregon State College (*Science*, Mar. 23).

The salts' chief value is in correcting a shortage of the essential element magnesium in certain soil types. Epsom salts, in the chemists' vocabulary, is magnesium sulfate.

In one test with the unusual fertilizer, a deficiency disease that caused blotched leaves on gooseberries was remedied. Yield of the berries was materially increased, and their content of vitamin C was found to be 24.4% higher than that of berries grown on untreated soil of the same type.

Science News Letter, March 31, 1945

CARTOGRAPHY

Coast Lines Surveyed Before Japs Surrender

➤ FOLLOWING close upon the heels of invasion forces attacking islands in the Pacific held by the Japanese, members of the Hydrographic Office and the Coast and Geodetic Survey get to work surveying coast lines, measuring the depth of waters and preparing charts of harbors for ships that may have to be brought in with supplies. This work is often carried on while bullets, shells and rockets are still whizzing through the air.

This information is vitally important to our amphibious operations, to permit the correct types of landing craft to be used, the Navy Department reports. More than 150,000 charts have been prepared for use in the theater. Charts of harbors have been issued days before a campaign was officially completed.

The chart depot is located in the Admiralty Islands under the supervision of Comdr. Lymon D. Graham, of Oakland, Calif., and Lt. C. M. Criswell, of Philadelphia, Pa. This chart depot assists in providing information regarding islands and harbors destined to be occupied by American amphibious task forces. Information gathered for charts is also transmitted to Washington, D. C., where it is disseminated.

Science News Letter, March 31, 1945

CE FIELDS

CHEMISTRY

Compound Keeps Aviation Oil from Thickening

➤ A NEW organic chemical compound has been developed, for mixing with aviation oils in aircraft, which prevents dangerous thickening at extreme low temperatures and excessive thinning in tropical heat. Warplanes, using the mixture, can climb from desert heat to far-below-zero temperatures in the stratosphere with assurance that their mechanisms operated by hydraulic oils will continue to work, and recoil oils will function properly.

The new material, developed by the Rohm and Haas Company, is a water-white acrylic polymer, known as Acryloid HF. Acrylics are the foundation of the transparent plastic that is widely used in aviation for bomber noses, gun blisters and other plane enclosures.

Power transmission using hydraulic oils raises and lowers landing gear, operates power turrets, and controls rudders, elevators, ailerons, and even propeller pitch. The recoil oil is the shock-absorbing medium in guns of large and intermediate calibers. If the recoil oil freezes, the plane might readily be torn apart by the kick of its own guns. If the hydraulic oils thicken too much, controls and power transmission mechanism will fail to operate. These dangerous conditions will not arise, it is claimed, when the new organic compound is properly mixed with the oil.

Science News Letter, March 31, 1945

CHEMISTRY

Melting Point of Alumina Is Lower Than Supposed

➤ ALUMINA, the common oxide of aluminum which is used as an essential ingredient of super-duty spark plug insulators, high-temperature refractories, and insulators in the field of electronics, has a lower melting point than previously supposed, it is now determined by the National Bureau of Standards.

As a result of recent measurements made by R. F. Geller and P. J. Yavorsky of the Bureau staff, the melting point of alumina has been determined as lying within the range 3630 to 3690 degrees Fahrenheit. This is lower than the value usually quoted, 3720 degrees.

A reasonably accurate knowledge of the melting point of this material is important because of its wide industrial uses. Three samples containing over 99.9% of alumina were used in the tests. They were heated in an oxidizing atmosphere in an electric furnace, and the temperatures determined by means of an optical pyrometer.

Science News Letter, March 31, 1945

MEDICINE

Highest Soviet Title Given to Army Surgeon

➤ THE HIGHEST Soviet title, Hero of Socialist Labor, has been given to Academician Justin Janelidze, Lieutenant General of the Red Army Medical Service, according to a report recently received from the Soviet Scientists' Antifascist Committee.

The title was awarded for outstanding services rendered in developing Soviet surgery and in effecting improvements in surgery in naval hospitals and naval medical schools in wartime. Gen. Janelidze is a member of the Academy of Sciences of the USSR and a well-known surgeon who has specialized in surgery of the heart.

Science News Letter, March 31, 1945

BIOLOGY

Glycerin Produced by Action of Bacteria

➤ GLYCERIN has been produced by the action of a strain of bacteria on a glucose solution, in experiments conducted under the auspices of the Division of Applied Biology, National Research Council of Canada. The work is briefly reported in *Science* (Mar. 9), by Prof. A. C. Neish, A. G. Blackwood and Dr. G. A. Ledingham; full details will soon appear in the *Canadian Journal of Research*.

The special bacteria used are known as Ford's strain of *Bacillus subtilis*. The three researchers state that to the best of their knowledge this is the first time any species of bacteria has been shown to yield glycerin through the breakdown of a carbohydrate.

Some years ago, glycerin was produced in Germany by yeast fermentation; but yeasts are quite different organisms from bacteria, though both are microscopic. A somewhat analogous fermentation process, with molds as the active organisms, produced butylene glycol in experiments at the Northern Regional Laboratory of the U. S. Department of Agriculture.

Science News Letter, March 31, 1945

INVENTION

Seagoing Patrol Craft May Use Sail for Cruising

➤ MEMORIES of the historic Wasp and Hornet, and the many other small but swift-sailing and sharp-stinging ships of the early American Navy, are revived in a proposal to put at least a small part of the modern Navy under sail again. This idea is embodied in a design for a seagoing patrol craft that will use sail for ordinary cruising, at an approximately 13-knot speed, but can turn on a powerful internal-combustion engine and charge ahead at 25 knots when a submarine is detected, or some other fighting emergency arises. The designer, A. A. Steele of Los Angeles, has been awarded U. S. patent 2,371,478.

High speed is attained on moderate size through the use of long concavities under the hull, which trap air over which the craft rides. The designer states that on a 96-foot ship of this type a crew of 18 can be carried, with fighting equipment that will include 40-millimeter guns, depth charges and listening devices. Patrolling noiselessly under sail, the craft will not beteray its presence to listening submarines, while it can pick up the throb of the U-boat's diesels or the hum of its motors and be ready to strike before the enemy is aware of its presence.

Science News Letter, March 31, 1945

GENERAL SCIENCE

Franklin Institute Medals To Be Awarded in April

➤ THE BROWN medal of the Franklin Institute will be presented April 18 to Dean Gilmore D. Clarke of Cornell University of Architecture, for outstanding work in town and city planning, and the Clamer medal to Dr. Zay Jeffries of the General Electric Co. for work in the science of metals.

The Howard N. Potts gold medal has been awarded to Edwin A. Link, president of Link Aviation Devices, Inc., Binghamton, N. Y., for valuable contributions in aviation training devices.

The Longstreth medal has been awarded to Sanford L. Cluett of Troy, N. Y., and the Louis E. Levy medal to Dr. Rupen Eksergian, consulting engineer of the Edw. G. Budd Manufacturing Company. Mr. Cluett is honored for the processes developed by him for preshrinking fabrics, known as "Sanforizing", and Dr. Eksergian for a paper on the reaction of fluids and fluid jets.

Science News Letter, March 31, 1945