

## BOTANY

**Sugarcane Pollen Flown To Colombia for Tests**

➤ A GOOD turn for a good neighbor, shipped well-chilled by airplane, has already resulted in the production of some thousands of promising hybrid sugarcane seedlings, and at the same time demonstrated the practicability of keeping at least some kinds of plant pollen as much as a week before using for flower fertilization.

Dr. George B. Sartoris, U. S. Department of Agriculture botanist, found in repeated experiments that he could keep pollens of sugarcane and corn in viable condition for from four to seven days, if he held the temperature down to about 40 degrees Fahrenheit. Thorough drying of the air in the container was also found to be an advantage in handling.

Pollens shipped in this way from the United States to Colombia by airplane arrived in three days after packing, and were used on the morning of the fourth day. The hybrid offspring are reported as thriving.

*Science News Letter, February 20, 1943*

## CHEMISTRY

**Versatile Chlorine Made As Potash Byproduct**

➤ CHLORINE, the element of a thousand uses in war and peace, can be made as a byproduct of the potash industry, through a process patented by a Bureau of Plant Industry chemist, Donald L. Reed. Mr. Reed has assigned rights in his patent, no. 2,309,919, royalty-free to the U. S. Department of Agriculture.

When potassium chloride, one of the most common potash minerals, is treated with nitric acid to make potassium nitrate, one of the byproducts is a gas known as nitrosyl chloride, represented by the formula NOCl. Also given off are hydrogen chloride (HCl) nitrogen peroxide (NO<sub>2</sub>) and water vapor.

This mixture has been proposed as a source of chlorine, but previous processes have involved the use of too much energy. Mr. Reed gets around this difficulty through the use of one of those handy chemical go-betweens, a catalyst. Finely divided silica, in one of several known forms, is first heated to 400 degrees Centigrade or above, to activate it. After it has cooled, the gas mixture is passed through it at a relatively low temperature—about 40 degrees Centigrade.

Silica has a selective hold on various compounds: most on water, least on chlorine. So the chlorine comes off first, quite pure. After a while, it becomes mixed with some of the other gases. Then the process is stopped, the silica heated again, and the process starts once more.

*Science News Letter, February 20, 1943*

## INVENTION

**Shoot Holes at Bullet-Proof Gas Tanks, Says Inventor**

➤ ANOTHER military novelty among recently patented inventions is an effort to render bullet-proof gasoline tanks ineffectual. As is well known, such tanks have rubber inner walls that close up any holes caused by enemy missiles. Inventor A. J. De Camp of Molina, Colo., undertakes to make permanent holes in such tanks by literally shooting the holes at them. He provides bullets with tubular jackets around a rather loosely fitting core. When such a bullet strikes, the jacket is supposed to be caught in the wall while the core plunges on. Thus a solid, metal-lined hole would be left, with the inflammable gasoline squirting out. The invention is protected by patent 2,309,887.

*Science News Letter, February 20, 1943*

## PLANT PATHOLOGY

**Sick Spinach Worries Many Vegetable Growers**

➤ SICK SPINACH, thousands of acres of it, might be a pleasing picture to the traditional rebellious small boy, but it is only a severe financial headache to Arkansas vegetable growers who specialize in producing the leafy crop for markets in the North.

In Crawford County, where spinach growing is a really big-time industry, some 13,000 acres were planted very early last fall, in hopes of getting an extra cutting early in the season. What happened instead was a terrific epidemic of a fungus disease, downy mildew, which took from a third to a half of the first cutting. The too-early planting gave the fungus its chance, reports Dr. Seth Barton Locke of the Arkansas Agricultural Experiment Station.

The epidemic died down by mid-December, but dead leaves around the bases of the plants were found to be carrying an abundance of spores, ready to start mischief again when the weather warms up.

*Science News Letter, February 20, 1943*

**IN SCIEN**

## ENGINEERING

**Plastic Goes on Sea Duty; Salt Spray "Oils" Bearing**

➤ WELDING layers of fibrous material together with synthetic resins has produced a plastic that is being drafted for sea duty. Plastic propeller-shaft bearings on Uncle Sam's sub chasers and other light war vessels are given longer life and flying salt spray only makes them run more smoothly. Metal bearings are corroded by salt water and the heavy wood sometimes used wears out nine times as fast as the plastic, recent tests show.

"Naval vessels can stay on active duty longer without drydocking for bearing repairs," V. E. Enz, Westinghouse marine engineer, emphasizes.

Developed by Westinghouse, the plastic is also used for gears to prevent sparks in explosive atmospheres and as valve parts formerly made of bronze. Marine engines are "floated" on blocks of the plastic to reduce vibration and noise.

This same plastic, dubbed Micarta, is being used by the Army for helmet liners.

*Science News Letter, February 20, 1943*

## METEOROLOGY

**Sky Color Experiments May Be Aid to Aviation**

➤ CERTAIN shades of sky-blue indicate good or bad flying weather to a trained aerologist, and can be reproduced on color charts. But whether this principle could be widely applied to aviation will depend on how closely people can agree in their estimates of color.

To find out, Prof. Hans H. Neuberger, aerologist at Pennsylvania State College, is asking 1,000 untrained students to tell him what color the sky is. If a large majority can agree on the shade, the usefulness of color estimations would be established as a meteorological tool. A simple color chart of seven shades of sky-blue could be used instead of expensive instruments to carry on further investigations.

*Science News Letter, February 20, 1943*

# CE FIELDS

## PLANT PHYSIOLOGY

### Chemicals Used to Check Blossoming of Tung Trees

➤ TUNG OIL, one of our serious industrial shortages since the Chinese supply has been cut off, may be increased from our Gulf Coast plantings if means can be found to reduce frost damage. A late frost, catching the developing young flowers, can practically ruin the year's crop.

One method might be to give the buds a chemical treatment to delay their opening past frost-danger time, as is already being done with peaches, apples and other fruit crops in the South. Dr. Harold M. Sell and a group of associates in the U. S. Department of Agriculture, using alpha naphthalene acetic acid and other growth-controlling chemicals, have reported success in preliminary experiments.

*Science News Letter, February 20, 1943*

## PUBLIC HEALTH

### Government Inaugurates Employee Health Program

➤ A NEW program for promoting health and reducing absenteeism on account of illness among federal government employees has been inaugurated on an experimental or study basis under the direction of the Surgeon General of the U. S. Public Health Service.

The program has started among employees of the Public Health Service. It consists of a series of how-to-keep-well-meetings arranged so that each employee may attend one each month for six months.

Since this is the first time a government agency has developed a health education program for its employees, the experience gained is expected to serve as a guide for other agencies both in the government and in private industry. Other government agencies may, if they wish, call on the Public Health Service for assistance in similar programs.

The federal health service's meetings will be held during working hours in meeting rooms of the Public Health Service or the National Institute of

Health. They will last one-half hour and an additional ten minutes will be provided for time going and coming.

Nutrition and what food rationing means to the individual is the subject of the first meeting. For the future, subjects for discussion, lectures, and moving pictures will be selected by the employees who are expected to participate in planning the programs to suit their own health education needs and to elect group leaders to take charge of their own how-to-keep-well meetings.

The groups will range in size from 40 to 75 persons, according to available space in meeting rooms. So while each Public Health Service employee will attend one meeting a month, there will be four weekly meetings throughout the six-month period.

*Science News Letter, February 20, 1943*

## BIOLOGY

### Glass Wicks Supply Food To Fungi During Tests

➤ AMONG the busiest of Hitler's little helpers in this country are several species of cloth-eating fungi that attack canvas used in Army tents and truck covers, and many other fabrics. To thwart them, various chemical treatments are used; and to measure the effectiveness of these, samples of treated and untreated cloth are fed to them, and afterward subjected to comparative tests.

An improved apparatus for these tests has been developed by Dr. Glenn A. Greathouse and associates, of the U. S. Department of Agriculture. Fiberglas, which is a fabric woven out of glass filaments and hence completely indigestible to fungi, is the key material.

The test chamber consists of a large square bottle with a metal screw cap. The top of the cap is cut out and a piece of the glass cloth is inserted in its place to serve as an air filter. A strip of the fabric to be tested is placed in the bottle and inoculated with a culture of the fungi. A strip of the glass cloth serves as a wick to convey measured quantities of dissolved accessory food substances required by the fungi. This overcomes a previously existing difficulty with other forms of wicking, including the vegetable gelatin, agar-agar, which were subject to attack by the fungi and could therefore falsify the tests. Now the decay-causing organism must feed on the test strips of fabric, or starve.

*Science News Letter, February 20, 1943*

## INVENTION

### Knapsack Life Preserver Is Out of the Way

➤ SAILORS are sometimes required to wear life preservers during action, if there appears to be much probability that they will suddenly find themselves in the water. The conventional life preservers, however, are so bulky that the front portions interfere with the work of the men.

To obviate this difficulty a Navy officer, Lieut. Comdr. Lloyd A. Straits, has invented what he calls a knapsack-type life preserver, on which he has received patent 2,307,810. It has only one flotation element, which is to be worn in front when the wearer is in the water—or expects soon to be there. During action on deck, it is carried on his back on a suitable harness, held in place with snap fasteners.

When needed, the wearer simply takes hold of a handle at one side, pulls the float around to the front, and secures it in place with a couple of snap buckles to rings on the other side. In another form, the float is flipped over his head from back to front, instead of being pulled around his side.

Rights in all three of these patents are granted, royalty-free, to the U. S. government.

*Science News Letter, February 20, 1943*

## INVENTION

### New Method Improves Armor-Piercing Bullets

➤ A NEW way of making armor-piercing bullets with hard steel cores has been developed by R. J. Southwell of Nichols, Conn., and E. A. Conner of Stratford, Conn.

As currently made, the pointed steel slug used in such a bullet is forced from the rear into the outer jacket made of softer metal. Sometimes the fit is not too good, and the bullet is consequently likely to stray off its proper trajectory. In the new way, the slug is forced base-first into a hollow cup of the jacket metal, and the open end squeezed down to make a point. This presents a base of uniform metal to the action of the powder gases in the gun; also it is easier for the slug to slip out of the jacket when it hits hard armor and has to punch its way through alone.

The inventors have assigned their patent, no. 2,309,360 to the American Chain and Cable Company, of New York.

*Science News Letter, February 20, 1943*