

## PLANT PATHOLOGY

**Plant Disease Control by Streptomycin Predicted**

➤ STREPTOMYCIN may one day be used to control certain plant diseases.

Tests by Prof. Peter A. Ark, plant pathologist at the University of California's College of Agriculture, show this drug effective in treating seeds infected with certain bacterial diseases.

Streptomycin has controlled both bacterial speck and canker of tomato. Limited field experiments were also encouraging. Even when left in streptomycin until germination, the seeds have produced strong plants.

Streptomycin is obtained from a soil-inhabiting microorganism known as *Streptomyces griseus*. In laboratory cultures, certain products are manufactured as a result of utilization of component parts of the medium for growth requirements. These materials are extracted from the medium in which the *Streptomyces* is growing. One of these compounds is streptomycin.

Experiments are now in progress at the University of California to study further the use of streptomycin and other similar compounds from *Streptomyces* and related microorganisms in controlling diseases.

Although streptomycin has shown no control action when applied to diseased plants, such as those affected with crown gall, Dr. Ark believes that research will reveal its effectiveness.

Science News Letter, October 6, 1951

## MEDICINE

**Week-Old Babies Get Anti-TB Vaccination**

➤ MORE THAN a thousand newborn babies have been vaccinated against tuberculosis at St. Mary's Maternity Hospital in Manchester, England.

The vaccination with B.C.G. vaccine has been given during the first week of the baby's life. Of 1,109 vaccinated, 820 have developed immunity according to results of tuberculin skin tests.

Results of the vaccination program are reported by Drs. Wilfrid Gaisford and Margaret Griffiths of the University of Manchester department of child health in the *BRITISH MEDICAL JOURNAL* (Sept. 22).

The aim of the program is to wipe out tuberculous meningitis in babies. This TB brain infection takes its heaviest toll during the first months of life, the doctors point out. Modern drugs are saving many from this once always fatal disease. But some 40 to 50 of each 100 who get tuberculous meningitis still die.

Immunity to tuberculosis can be given to babies in as short a time as three weeks, the doctors report. This takes a rather large dose of the vaccine, which is more

apt to produce complications. If, however, a baby has to return to a home where there is a case of tuberculosis, or if baby's mother has TB, the rapid immunization may be worth the risk of complications from the larger vaccine dose.

In answer to the question parents often ask, Is the vaccination harmless to newborn babies, the Manchester doctors answer:

Generally speaking, it is harmless, but there may on very rare occasions be harmful complications.

Science News Letter, October 6, 1951

## INVENTION

**Carrying Box With Launching Frame Designed for Rockets**

➤ ROCKET BOMBS used on the battlefield, instead of cannon and shells, are easily carried and directly launched from a combination packing box and launching frame which was recently awarded a patent. The standard size of this expendable or refillable unit holds three of the missiles.

The packing case is a flat box-like device, made of strong wood or other lightweight material within which is an extra base of frame design hinged to the true base at one end. This frame holds the rockets. When the box is flat on the ground, the frame can be turned upward to any angle desired. Props hinged to its lower surface have ends that fit into holes on the sides of the box and hold the frame at the correct tilt.

A cross piece at the rear end of the rockets carries a pair of electrical contacts for each rocket. Suitable wiring is provided to bring the electric current to the rocket motor igniter.

Investors are Frederick C. Lindvall, Altadena, and Paul E. Lloyd, Pasadena, Calif. Patent 2,568,455 was awarded to them. Rights have been assigned to the United States as represented by the Secretary of the Navy.

Science News Letter, October 6, 1951

## VETERINARY MEDICINE

**Squirrels' Blood Clotting Changes With the Season**

➤ THIN BLOOD for the summer sleeping, or dormant, period and blood that clots faster for cold weather activity is the rule for ground squirrels and perhaps other animals that lie dormant in their nests in summertime.

In the dormant state, the animal's heart beats very slowly, so blood that clots slowly is an advantage. When the animal is active and exposed to injury, blood that clots quickly is an advantage.

This natural protective mechanism in the blood of ground squirrels was discovered by Drs. Arthur Svihla, Howard R. Bowman and Ruth Ritenour of the University of Washington at Seattle. They report their findings in the journal, *SCIENCE* (Sept. 21).

Science News Letter, October 6, 1951

**IN SCIENCE**

## PLANT PATHOLOGY

**Deadly Oak Disease Hits Michigan's Trees**

➤ OAK WILT, the deadly disease that threatens oak trees over the eastern half of the nation, has now been found in Michigan for the first time.

The disease was spotted in a dying red oak tree in Cass County in southern Michigan. An aerial survey later revealed that trees in six other counties of the state were infected.

Oak wilt is caused by a deadly fungus, *Chalara quercina* Henry, which lives in the outer rings of wood tissue just beneath the bark. It is known that the disease moves through root grafts to other oaks in the area but how it travels greater distances is not known.

The infected trees were spotted by Prof. Forrest C. Strong of Michigan State College in East Lansing.

Science News Letter, October 6, 1951

## MEDICINE

**Yellow Fever Outbreak In Costa Rican Jungle**

➤ AN OUTBREAK of jungle yellow fever in Costa Rica, the first occurrence of this kind of yellow fever in that Central American country, took Dr. Fred L. Soper, director of the Pan American Sanitary Bureau, on a flying trip down to size up the situation personally.

The outbreak in itself is not considered serious. Since its beginning in June, only 2 cases have been reported to date. The local government, with the cooperation of the United States, the Pan American Sanitary Bureau and the yellow fever vaccine laboratory at Bogota, has the situation well in hand.

But Dr. Soper is an old yellow fever fighter. Report of an outbreak is like the clang of the bell to an old fire horse. And in this Costa Rican outbreak, Dr. Soper sees fresh ammunition for his current fight to get all American countries, including the United States, to wipe out the dangerous *Aedes aegypti* mosquito, carrier of yellow fever in cities.

Jungle yellow fever lurks as an animal and human disease in the jungles. Persons going into the jungle can be protected by vaccination. But an unprotected person coming out of the jungle with yellow fever virus in his blood can be the starting point of a dangerous outbreak any place where *Aedes aegypti* still buzzes and bites.

Science News Letter, October 6, 1951

# E FIELDS

## MEDICINE

### Rotating Patient Improves X-Ray Treatment of Cancer

► A GROUP of patients who two years ago were dying of cancer are today "walking around," apparently well, thanks to treatment with a special two-million-volt X-ray machine and a rotation method of using it.

Whether these patients are "cured" or not cannot be told for another three years or more. But the promising results and the additional lease of life given them can be extended to patients in other parts of the country because this X-ray machine, though large and fairly costly, can be installed in any hospital with a room of conventional size for deep X-ray treatments and 12-inch concrete walls for protection of personnel.

This two-million-volt machine, developed by Dr. Robert Van de Graaff of Massachusetts Institute of Technology, was among the many cancer-fighting weapons shown at the meeting of the American Roentgen Ray Society in Washington.

Object of such a supervoltage machine is to get as much as possible of the killing X-rays into the cancer within the patient's body in a way that spares the skin and tissues between the skin and the cancer.

The very fine focal spot of this Van de Graaff machine plus a rotating chair in which the patient sits combine to cut down scattering of the rays with consequent skin reaction. As a result, a 100% dose of radiation is delivered to the cancer area in comparison to a 10% dose just below the surface of the skin.

Science News Letter, October 6, 1951

## TECHNOLOGY

### Glass Fiber and Plastic Fabric Resist Bullets

► GLASS FIBER and plastic layers are the materials used in bullet-stopping jackets now being tested by Medical Corps litter men on battlefields in Korea. Designed to stop low velocity shell fragments and bullets, they are capable of stopping a .45 caliber bullet at pointblank range.

The jackets themselves are made of cotton, and they cover the body, including the lower part of the abdomen, but leave the arms free. The protective material, one-eighth inch thick, is made in panels which are inserted in pockets all over the sleeveless garment. Some panels are flat. Others are shaped to fit the conformations of the body.

Another jacket, more flexible than this, is made of several layers of nylon fabric

pressed together. The heaviest models cover the entire body trunk as well as the shoulders and upper arms. Field testing of this and the first mentioned type are to be made with and without a sponge rubber layer on the inside next to the body. The purpose of the rubber layer is to lessen the shock made by a missile when it hits the protective clothing.

This armored clothing, as it is called, is a development of the U. S. Army's Quartermaster Corps. In addition to the jackets is a new helmet made of laminated nylon which seems to have greater resistance to missiles than present steel types. A shell of aluminum is worn over the nylon affair which adds to its ballistic properties. When not needed on the head, the shell can be used as a water container.

Science News Letter, October 6, 1951

## INVENTION

### Lumber Dried Rapidly Using Hot Air and Electric Power

► A METHOD of drying green lumber, using hot air followed by high frequency electric power, brought Harold P. Wood, North Berwick, Me., patent 2,567,983. Rights are assigned to Wood Electro Process Company of South Berwick, Me. Time required for drying is much shortened over conventional processes, and neither distortion nor discolorization results.

Science News Letter, October 6, 1951

## MEDICINE

### Artificial Heart and Lung Use Predicted Within Year

► REPLACEMENT for two vital parts of the human body, the heart and lungs, may go into operation on a human patient in the near future, possibly within the next year, Dr. John Gibbon of Jefferson Medical College, Philadelphia, predicted at a National Institutes of Health symposium in Washington.

These mechanical replacements would be temporary only but they could be life-saving. They would be used to keep oxygen-rich blood circulating through the body of a patient having a heart operation. With their aid, blood would by-pass the natural heart and lungs, thus giving surgeons a dry field of operation for seeing and feeling as they operate. New heart and chest operations and improvements on older ones might be devised.

Dogs have been kept alive for over an hour with a mechanical heart-lung apparatus to do their breathing and blood pumping, thus enabling surgeons to operate successfully on their hearts.

Research efforts to perfect artificial hearts and lungs has currently been awarded \$89,893 in grants from the National Heart Institute.

Science News Letter, October 6, 1951

## PLANT PATHOLOGY

### Hormone Chemical Checks Virus on Tobacco Plants

► A GROWTH hormone used to stimulate rooted cuttings will check tobacco mosaic virus infections in tobacco.

Thomas E. Rawlins and R. J. Kutsky of the University of California College of Agriculture's division of plant pathology in Berkeley found naphthalene acetic acid holds down reproduction of this virus to about one-third of the amount found in untreated plant tissue.

Some yet unknown chemical action of the hormone keeps the virus from multiplying at a normal rate.

Virus concentrations were determined by the amount of ultraviolet light absorbed. This new method was also developed in the division of plant pathology. Ultraviolet absorption tests are made after the virus is removed from the infected plants.

Further work is now under way to test this hormone on field grown plants and to discover new virus inhibiting materials.

Science News Letter, October 6, 1951

## GENETICS

### Honey Bees Bred With Eyes of Various Hues

► CHOOSE a color, any color, and Prof. Harry H. Laidlaw of the entomology division on the Davis campus of the University of California will hand you a honey bee with eyes to match it. Well, almost.

Honey bees ordinarily have black eyes, but Prof. Laidlaw has produced young bees with eyes of various hues. So far he has turned out bees with eyes two shades of red and chartreuse, dark brown, cinnamon, chamois and buff, with intermediate shades, not to mention the blue-eyed type he reported a year or so ago.

Eye color is one of the mutations—changes that occur in the genes of plants, animals, and insects under natural selection—being studied at the Davis apiary.

A selected eye color is being used as a marker that may be followed from one generation to another. A knowledge of how the gene for color is inherited may provide a key to the inheritance of some of the less spectacular but important economic factors in which the grower is interested.

For the researcher, the knowledge is of value in studies of sex determination and certain embryological processes in the bee.

The project at Davis is the most extensive genetic study ever undertaken with the honey bee. Its ultimate objective is to develop bees that will be better producers of honey and better pollinators of California's crops.

Along the way, the geneticists are attempting to add gentleness, longevity, non-swarming tendencies, good comb building, and resistance to disease.

Science News Letter, October 6, 1951