

BOTANY

Embryo Corn Plants Grown in Lab Vials

► EMBRYO corn plants, tucked tightly away in recently formed grains, are carved out and grown in sterile laboratory vials, by a technique developed at the California Institute of Technology. Prof. A. J. Haagen-Smit, with R. Siu and Miss Gertrude Wilson, report details of the new method in *Science*, (Mar. 2).

The grains are cut under aseptic conditions with a very sharp, narrow razor blade, and the little plants are lifted out with spear-shaped dissecting needles. They are fed on a solution containing sugar and other materials necessary for growth.

In earlier work done elsewhere, embryo jimsonweed plants had to be given a little coconut milk in addition to the regular nutrient solution. It was found, however, that the corn embryos would grow without this particular kind of infant food.

Laboratory cultivation of plant "incubator babies" is sometimes necessary when plant hybrids are being produced, because in some cases these hybrids, though desirable for scientific purposes, are unable to grow if the seed is planted in the ordinary manner.

Science News Letter, March 17, 1945

MEDICINE

Penicillin for Civilians On Sale at Drug Stores

► PENICILLIN for civilians is now on sale at drug stores. On March 15, the War Production Board lifted restrictions on the life-saving mold chemical and made it available through normal trade channels to all hospitals and physicians.

You will be able to see and perhaps to buy the chemical but it will be put up in form for hypodermic injection for your doctor to give you. There is not yet enough of the material for use in manufactured products such as pills, ointments, lozenges and other forms which the layman might use himself. If and when it becomes available in such form, the Food and Drug Administration will decide whether it may be sold without a doctor's prescription.

Between March 15 and March 31, 1,280,000 vials, each containing 100,000 units of penicillin, will be released, WPB states. In April and each month thereafter, an additional 1,500,000 vials, approximately, will become available. The

2,700 civilian hospitals that have been getting penicillin through special arrangement with WPB have been using about 400,000 vials a month.

Supplies exported via the Foreign Economic Administration will not be affected by release of the drug for general civilian use in this country. WPB plans within the next two months to increase the allotment for export also.

The fact that penicillin can now be made available for civilian use generally is due, WPB states, to the cooperation and stupendous production job of the penicillin industry and its employees.

Science News Letter, March 17, 1945

MEDICINE

War-Wounded Men Aided by New Devices

► TWO DEVICES to help the healing of war-wounded men are among recently patented inventions. One, protected by patent 2,362,466, is an adaptation of the familiar baby-walker to the needs of grown men who need to re-learn the use of their legs. A wheeled framework, hinged and swiveled for greater flexibility, supports a pair of crutch-like members on which the patient may lean as he makes his way about. This device is the invention of Frank E. Carter of Minneapolis.

The second surgical invention, covered by patent 2,362,741, is by Joseph D. Berke of New York City. It is an extension of the now-familiar pin-splint principle to take care of fractures of the jaw. A curved bar goes around the outside of the jaw, with openings for the insertion of bone-securing pins where they are needed.

Science News Letter, March 17, 1945

CHEMISTRY

High Volatile Substances For Food Preservation

► SOMETHING new in chemical food preservation methods is offered by Francis K. Baerwald of Berkeley, Calif., for patent 2,370,768. Instead of using a germ-killing preservative that stays permanently in the food, perhaps injuring its quality, he uses a high volatile substance, such as ethylene oxide or methyl bromide. The food is packed in bags of Cellophane or Pliofilm, which are permeable to the vapors of these substances, so that after they have killed the molds and fungi present they soon vanish without a trace. The well-sealed film covering, however, prevents any further entry by spoilage organisms.

Science News Letter, March 17, 1945

IN SCIEN

MEDICINE

Warning Comes to Use Sulfa Drugs With Caution

► THERE seems to be growing up a potentially dangerous custom of passing sulfa drugs around the family or even the neighborhood. It starts in a typical case when Junior has a bad sore throat or bad earache. The doctor is called, examines Junior and prescribes a sulfa drug. Junior gets well fast. So fast that mother and all the relatives and neighbors are impressed and mother puts the bottle or box with the remaining sulfa drug carefully away in the family medicine chest. Sometime later she or another member of the family has a bad cold and aching throat. Remembering Junior's speedy recovery after he was given the sulfa drug, she gets out the bottle and proceeds to dose herself or whoever is sick.

This custom is dangerous for a number of reasons. Sulfa drugs are powerful but not completely harmless medicines. That is why most of the 48 states have laws or regulations forbidding their sale except on a doctor's prescription. Some persons have gotten very sick from sulfa drugs. They may have been sensitive to them, in the same way as some people are sensitive or allergic to strawberries or seafood and get sick from taking them. The sulfa drugs may do more than make the sensitive person feel sick. They may cause marked changes in the blood and damage the kidneys.

Another danger in indiscriminate use of sulfa drugs comes from the fact that marvelous as they are, sulfa drugs are not cure-alls. When the doctor prescribed the sulfa drug for Junior he knew that Junior's sickness came from germs susceptible to sulfa drugs. If he was not sure from the symptoms, he took a swab from Junior's throat or a sample of blood and sent it to a laboratory for testing. Junior's mother could not know that her sore throat was caused by the same germs, she could only guess. And she could only guess at how much of the drug to take. The dose for Junior might not be right for her. She ran the risk of taking too much or too little or of wasting precious time taking sulfa drugs when she needed something else.

Science News Letter, March 17, 1945

CE FIELDS

CHEMISTRY

Ammonium Nitrate Used In Powerful Explosive

► A POWERFUL explosive, useful for blasting and demolition purposes, is made out of a substance that hardly rates as an explosive at all, simply by dusting it with a finely powdered mild explosive and setting it off with a small booster charge of TNT. The basic substance is ammonium nitrate, widely used as a fertilizer and in chemical manufactures; the dusting is done with nitro-starch, to the extent of from 0.5% to 3% by weight. A little adhesive of some kind (even corn syrup can be used) helps the two to stick together.

The new, low-cost, easily-made explosive is described in U. S. patent 2,371,000, recently issued to Dr. Walter O. Snelling, research chemist of the Trojan Powder Company, to which concern rights in the patent are assigned.

Secret of success in getting the usually inert ammonium nitrate to rip itself apart with destructive violence seems to be in the even distribution of the provoking explosive, and the chemical pace-setting by the booster charge of TNT. The very fast detonation wave started by the TNT, helped along by the nitro-starch, travels at its initial rate through the entire charge.

Science News Letter, March 17, 1945

ASTRONOMY

Infrared Auroral Display Detected in Night Sky

► AN INFRARED auroral display has been detected in the night sky. This radiation of waves, invisible to the human eye and far more intense than the ordinary persistent aurora, is probably due to a large number of nitrogen atoms in the high atmosphere, state Prof. Joel Stebbins, Prof. A. E. Whitford and Dr. P. Swings of the Mount Wilson Observatory of the Carnegie Institution of Washington and Washburn Observatory of the University of Wisconsin.

This strong infrared radiation was first detected in 1940 on a photograph of the great Andromeda nebula made with an infrared filter, they report in the *Astrophysical Journal* (Jan.). In 1944 the infrared sky was found unexpectedly to be

of nearly twice its ordinary brightness and to be fluctuating by 10% to 15% within 10 minutes.

"The infrared radiation is obviously much brighter than any other part of the spectrum, including the persistent auroral line at 5577 Angstroms, for which we have never found any effect," the astronomers state. "With allowances for the continuous sky spectrum, the infrared radiation is probably scores of times—perhaps even a hundred times—as strong as the line in the green."

The main source of the radiation is probably near 10,000 Angstroms, where it would be between two strong water-vapor absorption bands.

The infrared radiation is believed to be atmospheric because it varies with the distance from the zenith, decreases through the night, and varies irregularly from night to night and from season to season. It is brightest immediately after twilight.

In order to estimate the height above the earth's surface at which the rays are emitted, it is suggested that measurements be made at widely different zenith distances every minute or less, and that they be carried to near the horizon. The radiation should also be studied soon after sunset and before sunrise to find the effect of solar radiation.

Science News Letter, March 17, 1945

ORDNANCE

New Mount Can Deliver High-Angle Cannon Fire

► TANK gunners will in future be better able to "shoot upstairs" at such targets as the upper floors of fortified buildings and pillboxes on steep hillsides, thanks to a new gun mount devised by an officer of the Ordnance Division, U. S. Army, Col. Joseph M. Colby of Grosse Pointe, Mich. The mount permits the tank's heavy gun to be elevated to any angle up to 60 degrees, and depressed to 10 degrees below horizontal.

The gun is mounted within a hood of strong armor, which also completely protects the forward end of the recoil mechanism, left vulnerable in many present-type mounts. This hood, in turn, is set in a vertical circular shield, which gives close cover to the gun-port through all degrees of elevation. Traverse of full 360 degrees is provided by the usual turret arrangement.

As is customary with all Service-originated inventions, rights in the patent, No. 2,370,148, are assigned royalty-free to the government.

Science News Letter, March 17, 1945

MEDICINE

Penicillin Successful For Syphilis in Babies

► PENICILLIN may restore to health babies born with syphilis, it appears from studies in four university medical schools reported in the *Journal of the American Medical Association* (March 10). The report is signed by Drs. R. V. Platou and Allen J. Hill of Tulane, Norman R. Ingraham of Pennsylvania, Mary S. Goodwin of Johns Hopkins, and Erle E. Wilkinson and Arild E. Hansen, of Texas.

A total of 69 babies have been treated by the group. Of these, 39 have been followed for from four to 12 months. Twenty-five of these are now "physically normal" and blood tests are negative in 21, doubtful in four. Another nine of the babies are "also well" although their blood tests are still positive.

Clinical relapse in two and serologic relapse in five babies occurred. Five of the 69 babies died, three of them soon after or during treatment. These three had active syphilitic sores, were under two months of age and in poor general condition. Whether the two deaths five and 14 weeks respectively after treatment were due directly or indirectly to penicillin or syphilis is not known.

Best dosage schedules for penicillin treatment of congenital syphilis in infants, the doctors report, has yet to be worked out.

Science News Letter, March 17, 1945

CHEMISTRY

Polymerized Silicones Produce New Substances

► SILICONES, the new family of organic compounds of silica that have already created a considerable stir in chemical society, are joined by a group of new members described in patent 2,371,050, obtained by Dr. James F. Hyde, of the laboratories of the Corning Glass Works.

Dr. Hyde polymerizes silicones, with the addition of other chemical elements, to make new resin-like substances of remarkable physical properties, ranging from tough and rubbery to hard and brittle, with high resistance to both heat and electricity. As an example, phenyl ethyl silicon, used as an impregnating agent in glass-fiber cloth, produces an insulating material of double the electrical resistance of standard varnished cloths now on the market.

Science News Letter, March 17, 1945