

HORTICULTURE

Removing Tops of Carrots Keeps Moisture in Roots

► REMOVAL of part or all of the foliage of carrots in shipping and marketing has been advocated from time to time as a means of conserving shipping space and containers.

A series of storage experiments at Cornell University shows that the principal effects of removing carrot tops at the time of harvest is to preserve moisture in the roots.

When stored for seven days at 70 degrees Fahrenheit, and a relative humidity of 65%, topped carrots lost about 40% less moisture than did roots of carrots with tops attached. At a storage temperature of 40 degrees and relative humidity of 70%, the topping of carrots resulted in a 55% reduction in shrinkage losses during a 17-day period.

When the tops were cut back to a length of four inches, the roots lost only little more moisture than did those from which the tops were removed entirely.

At the end of each storage period, the topped carrots had a decidedly better appearance than did the roots with leaves attached, reports Prof. Hans Platenius of the vegetable crops department.

Changes in carbohydrates were practically the same, regardless of whether the carrots had been topped. No significant effect could be observed in the carotene content of the roots as a result of removing the tops.

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RADIO

Broadcasting Celebrates 25th Anniversary

► RADIO broadcasting is now 25 years old as an American system and its silver anniversary will be celebrated by a National Radio Week, beginning Nov. 4. The week is sponsored by the National Association of Broadcasters in cooperation with the four major networks and the Radio Manufacturers Association.

The first regularly scheduled broadcast, it is claimed by Westinghouse Electric Corporation, was a report of returns of the Harding-Cox presidential election, Nov. 2, 1920, presented on its Pittsburgh station.

The year 1920 does not mark the discovery of radio or of radio broadcasting, but it is the date of the origin of the American broadcasting system. Experimental licenses were granted as early as 1916, but they were for stations experimental in character. In 1920, radio broad-

casting ceased to be an experiment and became a permanent adjunct to American life.

The first radio broadcast in history, it is claimed, was on Christmas eve, 1906, from the Fessenden station at Brant Rock, Mass. Morse code radio operators on vessels at sea were among those who picked up the human voice from the air, very much to their surprise, instead of the familiar dots and dashes.

Prof. Reginald A. Fessenden was one of the pioneer radio experimenters. This first broadcast was made possible by the development of the high frequency alternator by Dr. Ernst F. W. Alexanderson, consulting engineer of the General Electric Company, who earlier this year was the recipient of the highly prized Edison medal for 1944, awarded to him for this and other outstanding radio and electronic discoveries.

During radio week, broadcasters, equipment manufacturers and others identified with the American system of broadcasting will tell the public the meaning of this kind of broadcasting, how it came into being, its position in local and national affairs in war and peace, its role as a guardian of free speech, and its contributions to the welfare of the nation and to individual citizens.

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AGRICULTURE

Cotton-Picking Machine Operates on New Principle

► A MECHANICAL cotton picker operating on a new principle is the subject of patent 2,387,004, obtained by Charles R. Berry of Vicksburg, Miss. It is designed to take advantage of the recently developed method of defoliating the cotton plants with a chemical spray before picking the bolls, which greatly simplifies the mechanics of picking.

The machine runs astride of a cotton row, passing the plants through a kind of tunnel with slots in its sides. From one side, a series of flexible arms mounted on a revolving vertical cylinder keep pressing the plants against the other side. Through the slots on that side reach innumerable slender pins mounted on what the inventor calls a carding cylinder, and these pick off the cotton bolls. Next to the carding cylinder, within the machine, is a second cylinder, the doffer, which has rows of bristles that knock the bolls off the carding pins and into a conveyor chute that carries them to an accompanying truck or trailer.

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IN SCIENCE

MEDICINE

Flu Virus Can Also Act Like a Poison

► SOME STRAINS of influenza virus can act like a poison, damaging the liver and other organs, as well as causing the disease, influenza, it appears from studies reported by Drs. Werner and Gertrude Henle of the University of Pennsylvania. (*Science*, Oct. 19)

Their findings in studies with mice may explain why some influenza epidemics are worse than others.

The poisonous or toxic effect of influenza virus was discovered when it was injected into the peritoneum of mice. The peritoneum is the membrane which lines the abdomen. The mice died, usually within 72 hours after these injections, although they apparently did not have influenza. In some cases lungs as well as other organs showed the damaging effect of the virus, but in other cases, when a less toxic strain of virus was injected, the lungs were not involved at all. Although the virus may have this poisonous effect on various organs, it can propagate only in the respiratory tract of the mouse.

The poisonous action of the virus shown in their experiments may, the scientists feel, play a part in the development of influenza in man. Different strains of virus varied markedly in their poisonous action in mice which suggests a reason for the difference in severity of influenza epidemics.

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PHYSICS

Continued Atom Research By Bohr Assured

► THE CONTINUANCE of the scientific researches of Dr. Niels Bohr, leading Danish scientist and Nobelist who worked in America on the atomic bomb, has been assured by the establishment of an endowment fund of \$175,000 contributed by 35 Danish firms and funds.

The fund was established in honor of Dr. Bohr's 60th birthday and one of the greetings he received came from Dr. Albert Einstein in Princeton, N. J., who observed that the atom is undoubtedly much more grateful to Bohr for his theory of its structure than for its splitting.

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CE FIELDS

PHYSIOLOGY

Aviators' Visual Blackout Due to Anemia in Eyeballs

► **BLACKOUT** of eyesight in aviators during sharp turns or dive pull-outs at high speeds is due to a temporary anemia in the eyeballs themselves. It can be prevented by suction applied to the eyeballs by special goggles.

These findings, locating the site of origin of this disturbance in the eye, were reported by Dr. E. H. Lambert and Dr. Charles Sheard of the Mayo Clinic at the meeting of the Optical Society of America in New York.

Application of suction to the eyeball, however, is not of practical importance to the aviator to prevent loss of vision during high speed maneuvers because it does not prevent the unconsciousness which occurs at higher levels of centrifugal force than those required to produce visual blackout.

In the experiments reported, a man seated comfortably in a chair on the ground suffered temporary loss of vision, or blackout, when air pressure was applied to his eyeballs through specially constructed goggles. The visual changes were of the same nature as the blackout produced by centrifugal force in high-speed aircraft. Both resulted from a similar impairment of blood supply to the eyeball. The application of mild pressure to the eyeball of a man on the human centrifugal caused him to blackout at lower levels of centrifugal force than usual.

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ENGINEERING

Metal-Plated Plastics Coming Into Wider Use

► **PLASTICS** plated with metals, now coming into wide use, particularly in the electrical field, have opened up a large new field in electrical engineering and electronics and inspired laboratory research to develop better electroplating methods of applying the thin metal coatings. A report on such investigations was given at the meeting of the New York section of the national Electrochemical Society by Harold Narcus of the Plating Processes Corporation, Holyoke, Mass.

Metallizing a plastic, he stated, is done either to save critical metals, or to produce a product which has the inherent properties of the plastic in addition to the desired properties of the deposited metal. The most important advantage of plating on plastics, he explained, "is the greater corrosion resistance of a metallic deposit when it is applied to a plastic basis than to the usual metallic basis, since there are no galvanic couples with a basis metal."

Important use of plastics plated with metal is in electrical insulation where screening against magnetic fields is required, high frequency currents, or radium emanation, he stated. Articles made of plastics for these purposes, such as phenols and styrenes, which are excellent electric insulators, are plated with copper, cadmium, or lead.

"This combination of a non-conductor and a conductor promises wide use in radio, television, and in electronics in general," Mr. Narcus continued. "Metals such as aluminum and magnesium are being replaced by plated plastics in aircraft electric shielding and in radio shielding devices." Metallization of plastics is also employed in frequency modulation and television antennae.

"Generally, the most economical, commercially successful method for metallizing plastic," he concluded, "consists in the application to the surface, after proper preparatory treatment, of a highly conductive and strongly adherent bond coat of metallic silver, by reducing an ammoniacal silver nitrate solution with a suitable reducing agent, followed by an intermediate layer of copper and finally a top layer of the desired metal."

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INVENTION

Thawing Beef Carcasses From Inside Outward

► **FROZEN** beef carcasses may be thawed from the inside outward, as well as from the surface inward, by a technique on which patent 2,387,221 was awarded to B. E. Williams and L. L. Cadwell of Chicago. The process is very simple: the carcass is left whole, and a flexible rod containing electric heating elements is inserted into the cavity of the spinal column. The same method may also be used for a uniform tenderizing of the beef through mild heat application. Rights in the patent are assigned to the Industrial Patents Corporation.

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ASTRONOMY

Discoverer of Planet Goes to UCLA

► **THE DISCOVERER** of the planet Pluto, Clyde W. Tombaugh, is to be visiting assistant professor of astronomy at the University of California at Los Angeles. During the term beginning Oct. 26 he will give classes in celestial navigation, an essential part of air navigators' training, as well as in elementary and stellar astronomy.

Mr. Tombaugh was a young assistant at the Lowell observatory at Flagstaff, Ariz., when he discovered the ninth major planet in the solar system. Subsequently he was first holder of the Slosson scholarship at the University of Kansas, founded in memory of Dr. Edwin E. Slosson, first director of Science Service. Mr. Tombaugh received his bachelor's degree there in 1936, and his master's degree in 1939. In recognition of his discovery of Pluto, he was awarded the Jackson-Gwilt medal of the Royal Astronomical Society in 1931.

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ENGINEERING

Gas Turbine Laboratory To Be Established

► **THE IMPORTANT** role that gas turbine engines are expected to play in the power field in the future is indicated by plans recently announced to establish a gas turbine laboratory at the Massachusetts Institute of Technology. It will be used for graduate instruction and fundamental research in this new and promising field in engineering.

The gas turbine was applied during the war with spectacular success in jet-propelled aircraft and is considered one of the most important technical developments to emerge from the war. As a power plant it holds great promise for many other transportation and industrial uses. However, it is as yet far from perfect and there is a need for technical research and the discovery of new techniques required in the construction of these engines which operate at extremely high speed, high temperature, and high compression.

The new laboratory will contain a supersonic wind tunnel and unique facilities for research on the elements of compressors, combustion devices, jets, and gas turbines. It will also have testing facilities for the operation under controlled conditions of such devices.

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