MEDICINE

Cortisone in Pill Form Relieves Severe Asthma

➤ CORTISONE pills may prove a boon, temporarily at least, for patients with severe, exhausting asthma who cannot be helped by other treatment.

Good results in nine out of 12 such patients are reported by Drs. Sidney Friedlaender and Alex S. Friedlaender of Wayne University College of Medicine, Detroit. (JOURNAL, AMERICAN MEDICAL ASSOCIATION, Aug. 11).

The good effects in asthma of cortisone and ACTH "shots" have already been reported. The pills, or tablets, of cortisone, however, have the advantages of being easier to take and giving quicker relief.

They have the disadvantage, the Detroit doctors warn, of being subject to greater abuse. Patients taking them should be constantly supervised and carefully watched for possible bad side effects of the hormone. The Detroit doctors think the medicine should be restricted to periods of extreme stress when nothing else helps, and that asthma patients should have careful, thorough examinations to determine and remove the cause of the trouble, rather than relying on cortisone.

Science News Letter, September 1, 1951

INVENTION

Patent Machine to Cut Tobacco Stalks in Field

➤ THE LONG-PRACTICED method of cutting tobacco stalks in the field with hand cutters can be replaced by a machine cutter, a type of a truck with a rotary blade at the front end of the right side of its low platform body. Workmen on the platform gather the stalks as cut and string them on regular drying sticks. The rotary cutter can be adjusted vertically, and means are provided for lifting drooping leaves at the lower end of the stalks.

Inventors are Mark D. Lynn and Russell D. Burkett, both of Columbia, Tenn. Patent 2,560,729 was awarded to them.

Science News Letter, September 1, 1951

PHYSICS

Sound-Wave Device Charts Ocean Floor

➤ IMPROVED EQUIPMENT of the sound-wave type for measuring the depth of the ocean has been developed by Pennsylvania State College at State College in work for the U. S. Navy in its ordnance research laboratory.

The sound-wave method of measuring the depth of water sends powerful waves through the water to the ocean bed and picks up reflected waves. Elapsed time gives the measurement. This improved device uses what is called a magnetostriction transducer to send out and receive the sound waves.

The device works on the principle that several metals, including nickel and certain nickel alloys, will contract and expand when a magnetic current is passed through them. The device developed utilizes an iron-nickel core. It gives powerful sound waves through water when an alternating current is used.

An important use for the device is in the location of obstacles under water and the charting of the ocean floor. Commercial fishermen can employ it to locate schools of fish. The new device is claimed to be more compact and efficient than types previously developed.

Science News Letter, September 1, 1951

GENERAL SCIENCE

Fine Hairs on Filled Piled Jute Sacks May Spread Fire

➤ FINE HAIRS that project from the surfaces of jute sacks filled with materials in storage enable fire to spread rapidly and unnoticed, it has been determined by the British Fire Research Organization.

A lighted cigarette, accidentally coming in contact with the hairs, can start a fire. The path the flame takes into the center of a stack may be almost invisible. Only the fine projecting hair may burn along this path, the fabric of the bag not being even scorched.

However, when the flame meets frayed fabric inside, a smoldering fire is sometimes started. Such fires are sometimes attributed to spontaneous combustion.

Science News Letter, September 1, 1951

METALLURGY

Official Greek Coins Plated with Solder

➤ ANCIENT Greek coins that were silver-plated were manufactured by use of a silver solder placed upon a copper blank, two University of Manchester metallurgists, F. C. Thompson and A. K. Chatterjee, report in NATURE (July 28).

The plated coins were not counterfeit, but officially issued. Previously it was believed that they received their silver coats by a fusion process similar to that used later in the making of Sheffield silver plate in England.

But the Manchester metallurgists have determined that the Greeks in 300 B.C. carried out the plating of coins by making a shallow silver cup to fit the copper core, lining this with a thin sheet of solder consisting of a silver-copper alloy, inserting the copper core and then covering the combination with another inverted cup similarly lined with solder. Reheating fused core and platings together. The plated blank was then struck hot and formed into a coin.

Science News Letter, September 1, 1951

IN SCIEN

ASTRONOMY

Exploding Star Discovered; Third in Magellanic Galaxy

➤ THE THIRD "new star" or nova ever to be found in the Small Magellanic Cloud, nearby galaxy of hundreds of millions of stars, has just been discovered by Karl G. Henize of the University of Michigan's station at Bloemfontein, South Africa.

The exploding new star is temporarily 60,000 times as bright as the sun, but because it is some 80,000 light years away it appears in our heavens as an eleventh magnitude star.

This new star is almost exactly as bright as the novae that appeared in the Small Cloud in 1897 and 1927. Both the Small and Large Magellanic Clouds are so far south they are never seen from the United States. The nova was found on a photograph made Aug. 4, according to a telegram received at Harvard University, clearing house for astronomical information in the western hemisphere.

Science News Letter, September 1, 1951

CHEMISTRY

Fertilizers' Superphosphate Is Soon Available to Plants

➤ GARDENERS and farmers now have assurance based on atomic evidence that when they add superphosphate fertilizer to their soils the phosphate is very soon available to their plants and crops.

Two Swedish scientists, L. Frederiksson and Olle Gunnarssen, of the Statens Jordbruksforsok, Upsala, proved this by adding radioactive phosphate fertilizer to soil and then dissolving out the water-soluble phosphorus and measuring the proportion of radiophosphorus.

This water-soluble material is the "plant available" phosphorus of the soil and the experimenters found that regardless of the amount of radio-labelled fertilizer they added it was soon thoroughly mixed with the plant available phosphorus and was proportionately extractable.

Plants growing in the treated soil began to take up the radioactive phosphorus of the fertilizer very soon after it was added to the soil and in quantities equivalent to the relative amount of added phosphate.

The results of their experiments led the Swedish investigators to conclude that there is in soil a definite quantity of "plant available" phosphorus, part of which is in the soil solution and part "bound" to the soil colloids but in dynamic equilibrium with the portion in solution.

Science News Letter, September 1, 1951

SCIENCE FIELDS

AERONAUTICS

Safety Plane for Private Flying Slows to 35-Miles

➤ A SAFER airplane for private flying, demonstrated in Boston, took off and landed repeatedly from a 100-yard runway and made turns at low altitude while traveling at a speed of 35 miles an hour.

The new plane is called the Helio Courier, but it is a plane and not a helicopter. It is an adaptation of an experimental plane, known as the Helioplane, demonstrated two years ago, which was designed by Prof. Otto C. Koppen of Massachusetts Institute of Technology and Dr. Lynn L. Bollinger of Harvard University. Helio Aircraft Corporation, Norwood, Mass., is the builder.

This craft is a high-wing monoplane which uses a geared 260 horsepower engine. Cruising speed is 150 miles an hour. It can carry six people. A particular feature in addition to its safety is the ability to use an in-town small landing field or a landing strip close to a manufacturing plant, handy for the owner's use.

By skillful combination of long-known high-lift wing devices, including large flaps similar to types used on the wings of large airliners, plus a unique control system, the Helio Courier makes it possible to combine the efficient high-speed and payload of the modern executive type plane with low speed landing and short take-off ability.

Science News Letter, September 1, 1951

CHEMISTRY

Home-Made Lard Life Doubled by Shortening

➤ FARM-MADE lard, rendered in the fall when hogs are butchered, will keep throughout the following summer if any one of several widely used hydrogenated vegetable shortenings (such as Crisco, Spry or Snowdrift) is mixed in it at the time it is being made.

This simple and inexpensive method of retarding rancidity in home-rendered lard was discovered by chemists of the Eastern Regional Research Laboratory of the U. S. Department of Agriculture.

Lard made on the farm late in the fall or in the winter, the usual times for home butchering, keeps well throughout the cold weather but unless kept in a cold place is apt to become rancid in the following summer. By this simple treatment it remains fresh and edible twice as long as it would otherwise.

The use of these commercial vegetable shortenings to preserve lard was discovered by chemists at the laboratory in work aimed at preventing rancidity in animal fats. Rancidity of fats is a partial chemical decomposition promoted by the oxygen in the air. They discovered that it is prevented by the use of anti-oxidants. Such anti-oxidants are abundant in common vegetable oils such as those obtained from cottonseed, soybean and peanuts.

These anti-oxidants are technically tocopherols. When some tocopherol-rich vegetable oil, hardened by hydrogenation to give proper consistency, is added to lard the protection given by the tocopherols is extended to the lard. One pound of the commercial shortening is sufficient to treat 20 to 25 pounds of lard.

Science News Letter, September 1, 1951

AGRICULTURE

Rose Clover From Turkey Found Superior Forage Crop

➤ AFTER SEVEN years of trial, one of the most outstanding introductions of forage plants in recent years has proved to be rose clover.

Imported from Turkey in 1944, this winter annual legume is now being planted by farmers and ranchers in many California winter pastures.

As a forage plant rose clover ranked higher than bur or subclover in 14 of 25 plots in various parts of the state, in tests reported by R. Merton Love, professor of agronomy, University of California College of Agriculture at Davis.

Rose clover grows well on poor soils which would otherwise be unsatisfactory as pasture. After a few years growth this plant crowds out most of the undesirable summer weeds. Like all legumes, this plant adds nitrogen to the soil. Many desirable grasses can then enter rose clover seeded areas voluntarily.

This legume shows great promise as a pasture plant in burned off areas. In many places it has done better than bur clover during severe winters. Ample seed is available commercially.

Science News Letter, September 1, 1951

WILDLIFE

Quail Eggs Stand Heat Better Than Pheasants'

➤ PHEASANTS MAY be less numerous than wild quail in warm areas because of the effect of high temperatures on pheasant eggs.

Studies made by the Illinois Natural History Survey Division of Urbana, Ill., show that pheasant eggs exposed to high temperatures are much less likely to hatch than quail eggs subjected to the same conditions. This may explain why pheasants do not establish themselves in the wild in southern regions whereas quail do.

Science News Letter, September 1, 1951

ENGINEERING

Magnetic Fluid Finding New Applications

➤ NEW APPLICATIONS for the magnetic fluid used in clutches and brakes, announced by the National Bureau of Standards in 1948, were described to the American Institute of Electrical Engineers meeting in Portland, Ore., by Dwight B. Brede of the University of California's division of electrical engineering.

He reported on investigations he made concerning the use of a magnetic fluid. This fluid is a mixture of finely divided iron and oil that becomes practically a solid when it is between two steel plates, as in an automobile clutch, and the plates are made magnetic by an electric current. It then holds the plates in a unit. When the magnetizing current is cut the iron particles lose their magnetism and the mixture becomes a fluid again.

Several scientists in the country are making investigations to determine the best types of oil and of iron to use in magnetic fluids for various uses. Mr. Brede reported that a mixture of seven parts of a particular carbonyl with one part of a silicone oil provides a magnetic fluid of low residual torque and high magnetic fluid torque.

A magnetic fluid dynamometer is definitely feasible and can be a useful engineering tool, he said. A dynamometer is used to measure the torque of a machine in order to determine its power output. The smoothness of control and the possibility of simple water cooling made the use of a magnetic fluid dynamometer attractive, he said, particularly where lead tests on large motors are being made.

Science News Letter, September 1, 1951

MEDICINE

High Blood Pressure Eye Damage Stopped by Diet

➤ THE MOST severe disease of the blood vessels of the inner eye disappears partially or completely in the majority of patients treated by the rice diet for high blood pressure, Dr. Walter Kempner of Duke University, founder of the rice diet treatment, reported to a medical meeting held under the auspices of the American Hospital in Paris, France.

The disease of the eye blood vessels causes loss of eyesight to some degree. It has been considered "an irreversible sign of an irreparable disease."

The rice diet, consisting solely of rice, sugar, fruit and fruit juices and two vitamins, is monotonous, Dr. Kempner admits.

Best results with it, he reported, come to those patients who can stick with it for three months or more, because it works slowly. It also helps diabetics, Dr. Kempner reported.

Science News Letter, September 1, 1951