

VETERINARY MEDICINE

Rinderpest Ravage Hidden by Snow

► SNOW, 15 to 20 feet deep, hides from the outside world the extent of Afghanistan's latest outbreak of rinderpest, considered the most costly animal disease in the world.

Answering a call for help from Afghanistan authorities two months ago, Dr. Keith V. Kesteven, head of FAO's Animal Industry Branch, went to Kabul equipped to show Afghanistan's two veterinarians how to prepare vaccine against the deadly cattle disease.

Because weather conditions interfered with the fighting of the outbreak, the world headquarters of FAO in Washington have not yet learned how successful the fight with vaccine has been.

During the war, it is now known, biological warfare against the world's meat supply was possible through germ warfare using the rinderpest virus. The present vaccine was developed on Grosse Isle as a result of counter-measures against the use of this deadly virus.

Science News Letter, April 8, 1950

AGRICULTURE

Better Hybrid Corn Without Detasseling

► IN a program aimed at eliminating the need for detasseling hybrid seed corn, University of Wisconsin scientists are starting work on the introduction of a corn plant with sterile pollen, one which cannot reproduce itself.

Scientists say that if the work is successful, it will change the still new but large hybrid seed corn industry by making possible more vigorous corn. It is pointed out that one objection to the costly and laborious detasseling process is that it often results in the stalk being damaged, making the plant easy prey to disease or insects.

With sterile corn, it would be possible to plant from two to six rows of this kind to one or two of normal corn and avoid detasseling. Using the kind with sterile pollen as one of the parents, the process could be used to grow any hybrid.

At present, it is necessary to detassel one of the types to prevent the plants from pollinating themselves. In other words, if type A is to pollinate type B, the tassels from B must be removed so that the B plants cannot pollinate themselves. Self-pollination of the A plants is unavoidable, but the seeds of these are not used. The result of the process is a pure hybrid seed; a cross of A upon B.

The search for ways to develop sterile corn began with a discovery in Peru by R. A. Emerson, of Cornell University, and Dr. F. D. Richey, formerly of the U. S. Department of Agriculture. While investigat-

ing new South American plants, these scientists found a few corn stalks that produced only sterile pollen, and samples were brought back to this country.

Experiments showed that these plants had inherited the sterile characteristics, indicating a possibility for such plants for hybrid corn development.

In the work at the University of Wisconsin, W. H. Gabelman will work with Prof. N. P. Neal, who is in charge of the corn breeding and development program at the university. The work will be done at the university farm near Madison.

Mr. Gableman, a former associate of Dr. D. F. Jones, plant breeder at the Connecticut Agricultural Experiment Station, will also work on hybrid onions suitable for truck farms, using the same principle used to produce hybrid corn.

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PSYCHOLOGY

Hypnotic Suggestion Persists for Three Months

► IF someone tells you while you are hypnotized that a chapter in a book will appear to consist of blank pages any time you look at it, you will think and act in accordance with this suggestion even as long as two months later.

At least this was the case with the University of Oklahoma student who was told while under hypnosis that a certain group of pages in a borrowed book would appear blank to him any time he looked at them. No mention of this was made to him until about two months later when he was asked to return the book. He then volunteered the information that the book was defective, adding that some pages were blank.

On finding the book he pointed out the "blank" pages which were those previously chosen. He expressed astonishment at this point that the other person had not noticed this defect.

This was only one of the suggestions made to the same student which Dr. Andre M. Weitzenhoffer reports in the *JOURNAL OF ABNORMAL PSYCHOLOGY* (Jan.).

The student underwent extensive hypnotic training for about a month. Each experimental session was preceded by a period of 15 minutes of suggestion in order to deepen the trance.

The shortest period over which hypnotic suggestion appeared effective was five days, and the longest period was 134 days. The persistence of the suggestion for 134 days confirms the work of earlier investigators that post-hypnotic suggestions can remain effective for a period of at least three months when remaining hypnotization is present.

Dr. Weitzenhoffer believes that not only the depth of hypnosis but also the nature of the task are determining factors in the effectiveness of hypnotic suggestion.

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IN SCIENCE

MEDICINE

Ulcer Operation Eliminates Stomach Removal

► A NEW operation for ulcer patients which will in most cases eliminate the need for the radical procedure of removing most or all of the stomach has been perfected by Dr. A. Davis Beattie, surgeon of Leicester General Hospital in England.

The operation consists in snipping a small diamond-shaped piece from the pylorus, which is the opening from the stomach to the first part of the small intestines, called the duodenum. Details are reported in the *LANCET* (March 25).

This is done at the time of a nerve-cutting operation, vagotomy, for stomach and duodenal ulcers. Snipping the piece from the pylorus, Dr. Beattie finds, completely eliminates the spasm of the pylorus and acute stomach distention which have been distressing after-effects of the nerve-cutting operation. No special care after the operation is needed, nor is stomach suction needed as with vagotomy alone.

"The door is now open," Dr. Beattie declares, "for the recognition of vagotomy as a standard surgical procedure for duodenal ulcer."

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VETERINARY MEDICINE

Pussy Should Have Her Teeth Cleaned Too

► CAT owners should take Pussy to have her teeth cleaned regularly two or three times a year, it appears from a report in the *JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION*, Chicago, Ill.

"Cats which live easy lives are likely to be victims of tartar incrustation with attendant pyorrhea and eventual loss of teeth," states the report by Dr. W. A. Young, Chicago veterinarian.

Cleaning and a varied diet, especially one containing fresh or uncooked foods, will clear up the gum disease in many cases. But when this does not help, Pussy must have her teeth pulled.

"Marked improvement in general health with probable extension of life has been noted in many cats having all their teeth extracted," Dr. Young reports.

The cats are better off without their teeth than "to have their bodies constantly absorbing the toxic products of chronic infection, as is the case in extensive pyorrhea."

Chronic stomach inflammation, kidney disease and other debilitating conditions have in many cases been traced to infections in the cat's mouth.

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E FIELDS

WILDLIFE

Lead Shot Fatally Poisons Wild Ducks

➤ A DUCK'S proper diet should not include lead shot. But wild ducks, mistaking shot for seeds on marsh bottoms near shooting blinds, eat them anyway, sometimes sicken and die.

Two Illinois naturalists have found, however, that if a lead-eating duck munches also on leafy plants, lead poisoning somehow is averted.

James S. Jordan and Frank C. Bellrose of the Illinois Natural History Survey told the 15th annual North American Wildlife Conference in San Francisco that ducks sickened by lead poisoning often recovered after aquatic plants were added to their otherwise unbalanced diet of corn and seeds.

A new material for shotgun pellets, which will kill wildfowl from the gunbarrel but not poison them later, is the goal of a two-year joint study by the Natural History Survey, the University of Illinois and the Western Cartridge Co., a leading manufacturer of shotgun shells. No practical alloy without the toxic effect of lead has yet been found.

More than 60 papers on soils, water, forests and wildlife were presented at the international conference.

Now going on are a series of nine public wildlife meetings in key cities across the country. Top officials of the U. S. Fish and Wildlife Service discuss the current status of migratory waterfowl. Three have already been held, in Omaha, Memphis and Atlanta. The next is scheduled for April 12 in St. Louis.

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ASTRONOMY

Easter Date Fixed for Centuries to Come

➤ EASTER, this year, coming on April 9, falls almost exactly in the middle of the 35-day period during which the resurrection of Christ may be celebrated. It can come as early as March 22, or as late as April 25, though it rarely occurs on those dates.

However, this is the last time Easter will fall on April 9 during this century. It also happened during 1882, 1939 and 1944.

A familiar rule for figuring the date on which Easter falls is "the first Sunday after the first full moon after the 21st of March."

The rarest date for Easter is March 22, the earliest date on which it can occur. It comes on this date, in the long run, about once every 207 years. Last time it happened

was in 1818 and it will not happen again until 2285. Easter was last celebrated on the latest date it may occur—April 25—in 1943.

Although, astronomically, the date of Easter is determined by the sun and the moon, in practice certain arbitrary but fairly exact mathematical rules have been set up. Using these rules it is possible to calculate the date for many centuries in advance.

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ENGINEERING

Device Measures Pull of Air Masses on Earth

➤ A DEVICE to measure the pull of slow-moving air masses on the earth's surface is being developed by University of California engineers, Los Angeles, Calif.

Called a "shear meter" by its designers, Dr. H. F. Poppendiek and J. E. Vehrencamp of the U. C. L. A. engineering research staff, the gadget will actually be a small-scale model of the terrain to be studied, floating in a tank of water.

Drag caused by air moving over the model will be measured by sensitive coil springs.

The engineers hope to learn how the hills and dales of rough terrain affect the spread of atmospheric irritants such as "smog." Other uses might include studies on the diffusion of heat-carrying smoke sometimes needed to help citrus groves through a cold snap. Weathermen may use it to study turbulence in the atmosphere.

Development of the instrument was sponsored by the Office of Naval Research.

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GEOLOGY-BOTANY

Growing Plants Clue to New Metal Deposits

➤ THE prospector for new metal deposits of the future will go about collecting living plants, analyzing their leaves and stems, in order to detect the hidden deposits that lie underground, the American Chemical Society was told in Houston, Tex.

Dr. Paul Weaver, chief geophysicist of the Gulf Oil Corporation, predicted that important new ore deposits would be discovered through this sort of geo-botanical-chemical prospecting.

"Certain plants are selective in concentrating certain metals," he explained. Selenium, for example, if located below the surface but fairly near it would be dissolved in the ground water. Any protein-building plant will take selenium from the water and use to replace the usual sulfur. Tumbleweed is such an accumulator of selenium and could be used to detect underground deposits.

Rocks containing metals in small concentration could be utilized as sources of metals when chemists develop new techniques of processing, Dr. Weaver also predicted.

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PHYSICS

Most Powerful Electron Accelerator Planned

➤ ATOMIC scientists at the California Institute of Technology will get a new tool for nuclear physics study under plans announced by the Atomic Energy Commission.

It will be the world's strongest electron accelerator, capable of delivering billion-volt electron streams and X-rays, AEC said.

The machine will be rebuilt from a quarter-scale pilot model which scientists at Berkeley's Radiation Laboratory of the University of California used to check plans for a new seven-billion-volt "bevatron" now under construction.

The bevatron when completed will speed proton bullets with 6,000,000,000 electron volts. Protons, positively charged, are the building blocks out of which all atomic nuclei are constructed. The quarter-scale model is being rebuilt to speed electrons to velocities only one-millionth of one per cent less than the speed of light. The speed of light is the theoretical but unattainable top velocity for any material particle.

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AGRICULTURE

Pneumatic Gun Shoots Hay into Loft

➤ THE modern way to get bales of hay up into the loft of a storage barn is to "shoot" them up with a pneumatic gun. A special gun, developed for the purpose, is described in AGRICULTURAL ENGINEERING (March), published in Saint Joseph, Mich.

The gun was developed by a New York State farmer, F. W. Moffet, Jr., and used by him in 1948 to store 15,000 bales of hay. During 1949 it was used at the Iowa State College, where it was subjected to engineering scrutiny. The description is by Prof. J. B. Liljedahl, formerly of Iowa State but now with the University of Tennessee, and Prof. E. L. Barger of Iowa State.

The principal parts of the gun include a pneumatic cylinder into which a bale of hay can be dropped, piston and rod, and a pusher plate which heaves the bale. Surrounding the cylinder is an air tank which holds a measured amount of compressed air that serves as the "explosive" for the gun. The compressor is charged by a 5-horsepower engine.

At 200-pound pressure, the gun can heave a 58-pound bale to a height of 21 feet and a horizontal distance of 48 feet. The gun can be pointed to take proper aim. It shoots accurately enough to send the bales squarely through the hay doors.

Its working speed, when shooting into a door 21 feet above the ground, is a little less than three bales a minute. It is considerably faster than hand methods of handling, or the use of the common grapple-fork method.

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