VETERINARY MEDICINE

Plans for Long Siege on Cattle Disease Being Made

➤ LEADERS in the American forces of scientists conducting the defense against foot-and-mouth disease already have provisional plans ready for their campaigns, in case the bill approved by the Senate agriculture committee is enacted. Defeated in their hopes for ending the danger by a quick, sharp mop-up of the infected area in Mexico, they now expect a long, tenacious, step-by-step siege.

Among the objects of research will be the various vaccines now used in Europe and other lands where the disease has long been entrenched. Some of these seem promising; though American workers have been reluctant to consider using vaccine defense as long as there was a chance to wipe out the Mexican infection and thus spare American stock-raisers and farmers the expense and trouble of buying and administering a vaccine.

Better and more scientific methods for clean-up and sanitation of infected premises will also be sought by the researchers. Up to now, emergency methods were employed that were known to be effective, with little regard to cost. Since we are going to have this thing to fight for years, probably, it seems advisable to refine methods and try for equal or greater efficiency at lower cost.

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VETERINARY MEDICINE

Red Squill Rat Poison Can Harm Other Animals

➤ RED SQUILL, widely recommended as a "safe" rat poison, non-toxic to other animals, is not as safe as commonly believed, declares Dr. Albert C. Nagle, veterinary physician of San Antonio.

Recently a valuable collie was brought to him, after it had been sick for three days. Only the most heroic treatment sufficed to save the animal's life.

When Dr. Nagle checked back on the history of the trouble, the owner at first could not recall seeing his dog eating anything that might have brought on the attack. Then he remembered that the dog had eaten a quantity of red squill wafers he had been using against rats, but because he had been told that red squill could poison only rats he had paid no further attention to the matter.

Because red squill in small quantities will cause vomiting, the poison usually serves as its own antidote in case of accidental swallowing. Since rats cannot vomit, the drug is effective against them. But this and other cases demonstrate that it can be poisonous to other animals if taken in sufficient quantity.

Dr. Nagle recommends, in a communication to the American Veterinary Medical Association, that a statement to this effect be added to the labels on commercial preparations of red squill intended for rat-killing purposes.

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NUTRITION

Appetite Is Poor Guide For Best Nourishment

➤ THE idea that you can rely on your natural appetite to guide you to the foods you need for best nourishment is not borne out by latest scientific studies, states Dr. Charles Glen King, scientific director of the Nutrition Foundation in New York.

Under controlled conditions, white rats have been shown to possess an ability to select certain minerals and vitamins on the basis of critical need. But their appetite guidance in that respect is not fool-proof. And when it comes to protein food, such as we get from meat, eggs, fish and milk, the animals' appetite may be way off as a guide.

Animals in a test by Dr. E. M. Scott at the University of Pittsburgh showed such gross lack of ability to select essential protein that they were at the point of starving from lack of protein even when the needed protein was in food cups beside them.

The animals also showed marked variation in ability to make proper selection of foods, even when genetic and environmental conditions were highly standardized. Rat A might select a pretty fair diet for himself but his brother from the same litter and living under the same conditions would fare badly.

"If a highly standardized animal, under laboratory conditions, has only a faulty guidance by spontaneous appetite," Dr. King points out, "it seems far less likely that human guidance would be adequate under the highly artificial and varied circumstances that surround the selection of foods in daily life.

"This does not mean, of course," he added, "that consideration of appetite can or should be disregarded. But the new evidence does reemphasize the necessity of providing for sound educational measures.

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IN SCIENC

MEDICINE

Nerves to Hip Joint Cut To Relieve Arthritic Pain

➤ RELIEF from pain caused by chronic arthritis of the hip is possible for aged patients who are not strong enough to undergo regular surgery, doctors were told at the Chicago meeting of the American Academy of Orthopedic Surgeons.

This merciful measure results from cutting the major nerves to the hip joint, explained Dr. Benjamin E. Obletz of Buffalo, N. Y.

The operation can be done on patients of any age for it involves a rather simple procedure, does not produce shock and enables the patient to walk the next day and leave the hospital in one week.

Forty-two patients on the average over 60 years old have received this new surgical treatment since May of 1946 and of these 28 have obtained some degree of relief from pain, Dr. Obletz stated. While in 14 no beneficial results were noted, there were no complications or ill effects in any of these patients.

This new type of operation was first reported by a Dr. Tavernier of Lyons, France.

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MEDICINE

Sulfa Tablets Should Be Crushed for Children

➤ WHEN you give a sulfa drug tablet to a young child, be sure the tablet is crushed and moistened with water, warns Dr. C. L. Heald of Sigourney, Iowa, in the *Journal of the American Medical Association* (Jan. 31).

The death of a two and one-half year old child prompted his warning. The child died of suffocation caused by half a sulfadiazine tablet prescribed by a physician. The tablet had stuck in her larynx when she tried to swallow it and although Dr. Heald rapidly cut an opening into her throat and removed the pieces of tablet it was too late.

Physicians should, Dr. Heald states, instruct parents on how to give these tablets safely or else prescribe one of the sugar lozenges or pleasant-tasting liquid sulfa drug preparations now available.

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E FIELDS

GENERAL SCIENCE

Immigrant Animals Are Quarantined at Athenia

See Front Cover

➤ ANIMALS being brought into the U. S. from abroad, such as the African giraffes shown on the cover of this week's SCIENCE NEWS LETTER, are quarantined at Athenia, N. J., the Department of Agriculture's "Ellis Island for animals." This quarantine helps keep dangerous diseases of both animals and man from being brought into the country by animals from abroad. Built in 1900, the Athenia station covers 52 acres with accommodations for 600 cattle or animals of comparable size.

The four-legged aliens get a thorough checkup from veterinarians, looking for such plagues as foot-and-mouth disease. If the animals are found to be healthy, they are sent on to their destination in this country. Animals with disease or suspected of carrying infections are either slaughtered at the Athenia station or shipped back to their native land.

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GENERAL SCIENCE

High School Student Builds "Glass Heart"

➤ BUILDING a "glass heart" for keeping animal organs alive for prolonged periods is the difficult feat accomplished by Lawrence J. Schaad, 17-year-old senior in Logan High School, Logan, Ohio. He got the idea from the famous device built some years ago by Col. Charles Lindbergh and the late Dr. Alexis Carrell, but his device is an improvement over theirs in at least one respect; it can be assembled out of stock laboratory materials such as flasks, U-tubes, ordinary glass tubing and stopcocks, and requires no special skill in glassblowing to construct.

The first model he built, Mr. Schaad states, was a failure, partly because the specimen to be kept alive could not be introduced easily, also because there was no way of keeping out trouble-making bacteria. In his improved apparatus he has overcome these difficulties. Since it is not practicable to sterilize the machine under steam pressure, he clears it of bacteria by flooding it with alcohol, then drying it with a current of filtered air.

His first test operation was with the heart of a frog. By the time he could get this small, hard-to-handle organ properly mounted it had stopped beating. However, it began again, and after two and one-half hours it was still beating as strongly as ever. It lived for several hours more.

Mr. Schaad sees research possibilities in the use of his device: "To me this seems to be an excellent way to study the action of living tissues because they are readily observable at all times. Possibly this method will prove useful in studying cancer and viruses, since affected tissues could be observed under controlled conditions. It might also be used in the isolation of tissue secretions."

Mr. Schaad is a winner in the Seventh Annual Science Talent Search, and will go to Washington, D. C., at the end of this month, for the finals of the competition for $11,000 in Westinghouse Science Scholarships. There he will meet with the 39 other finalists, attending the Science Talent Institute, to be held Feb. 27 through March 2.

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GENERAL SCIENCE

Bars on Cages Replaced With Shatterproof Glass

➤ SHATTERPROOF glass like that used on wartime airplanes has replaced bars in some of the cages in Chicago's Zoological Park. So strong is it that when several powerful great apes attacked it vehemently, immediately after its installation, they were completely baffled. Some of them continue stubbornly to hammer at it, but all they get is exercise.

The glass is of a familiar sandwich construction, consisting of two quarter-inch sheets of plate glass on the outside with a layer of tough plastic between them. Glass fronts on cages in reptile houses have previously been in use, but these consist of one thickness of plate glass only, and would not be safe for use in confining more aggressive animals like chimpanzees and orang-utans.

There are mutual advantages for animals and spectators in this more complete separation. Visitors can no longer toss peanuts, in violation of the rules, and poke through the bars at animals with umbrellas and canes. On the other hand, mischievous or malicious apes are no longer able to reach out and grab the hair or necktie of an unsuspicious visitor getting too close to the cage.

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ENTOMOLOGY

Ants Recognize Friends; Strangers Get Bum's Rush

➤ ANTS readily identify their friends; they also quickly recognize strangers that get into their colonies and unceremoniously throw them out, reports a youthful Fabre who is a senior at the Bronx High School of Science in New York. He is Kurt W. Kohn, 17 years old last September. At night, when his ants are asleep, he takes startrail photographs with a small telescope.

Immediate contact between individuals is necessary for recognition among ants, he states; either scent or touch seems to serve as means of identification. One stranger ant which he dropped into a colony of a different species was attacked by every ant she met but ignored by all the others, even though they sometimes missed contact by only a small fraction of an inch.

Mr. Kohn built an observation nest for better observation of his ants. The insects were penned between two eight-inch squares of glass, in an eighth-inch layer of soil. The whole nest was placed on a block of wood, with a water moat around it to keep the ants from straying.

Certain scents can disguise friends so that they are treated as strangers, he states. He scented up several ants with formic acid, the chemical-warfare agent the ants often use in their combats, and returned them to their nest. They were immediately thrown out, in exactly the same manner as were stranger ants that had been touched up with the same scent. Ants drowned in water, which presumably washed away their formic acid, were ignored by active worker insects. When other ants were stupefied with carbon tetrachloride vapor, which does not dissolve formic acid, the colony's judgment was better, though still not inerrant. They carried three unconscious friends into the nest and threw two out; at the same time they threw out four strangers but carried one into the nest. Apparently they discovered their mistake after a while, for they brought her out again and threw her away.

Mr. Kohn has also found evidence that the recognition-scent is hereditary; for when several ants reared from the pupal stage by stranger nurses were returned to their parent colony they were at once accepted, while their nurses were not.

Mr. Kohn is one of 40 high school seniors from all over the country who are winners in the Seventh Annual Science Talent Search.

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