

MS Study Uses Frogs

► SCIENTISTS are coming closer to understanding the baffling symptoms of multiple sclerosis. The isolated spinal cord of a frog in a recording chamber and in test tubes is reported from Belgium as a model that could lead to something more than speculation on localization of nerve problems.

Understanding precise relationships between the immune processes, long believed to play an important part in the cause of the central nervous system disease that attacks hundreds of thousands of young people in the prime of life, and other symptoms such as destruction of the fatty sheath of nerve fibers, is the aim of research that is going on in many laboratories.

Dr. Jean A. Cerf of the University of Brussels and Dr. Guy Carels of the Centre National de Triage et de Readaptation in Melsbroek, Belgium, reported in *Science*, 152:1066, 1966, that although more work along different lines of investigation will be needed to "obtain precise information on the site of the blocking effect" they hope the method of their experiment will be useful in other research.

The frog's spinal cord was used to investigate the effects of serum from multiple sclerosis patients on bioelectric responses of a highly organized nerve center. The preparation was mounted in a recording chamber and submitted to a constant flow of Ringer's solution with oxygen.

Serums from normal persons were used as controls. The control experiments showed that exposure to normal serum sustained or even enhanced the electrical activity of the isolated frog spinal cord. But when the cord was exposed to serum from multiple sclerosis patients there was significant depression of reflex discharge from two or more adjacent nerve cells (polysynapses).

To make it easy to apply solutions, the researchers cut the frog's spinal cord from front to back in the experiments dealing with the single nerve responses, but they sectioned it transversely above and below the lower-back enlargement when they were investigating the segmental reflex activity. Reflex discharges were affected much more than motoneuron responses.

The Belgian researchers compared their results with those of Dr. Murray B. Bornstein of Mt. Sinai Hospital, New York, and Dr. Stanley M. Crain of Columbia University, but said their own work suggests that "major alterations should be looked for in other spinal structures participating in reflex activity."

Both the Belgian and American researchers, however, found that there is an active factor in MS serum that depends on complement.

• *Science News*, 89:451 June 4, 1966

Zoo Babies Numerous

(Continued from p. 441)

site for running a zoo as it should be run, agreed the National Zoo's veterinarian, Dr. Clinton W. Gray. It is needed also for space for the animals, and cognizance of the human personnel.

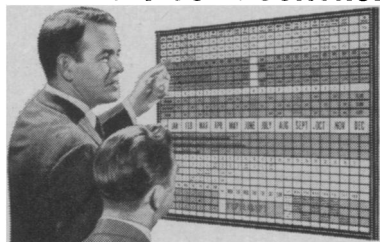
Zoo officials still have much to learn about wild animals—their stresses, their ailments, and their proper handling, he said.

Zoo veterinary medicine is still in its infancy with only less than 100 authentic zoo veterinarians in the world, more than 20 of whom are in the United States.

Medicine for animals started as a science about 1870, Dr. Gray said. Since 1900, most efforts have been directed to only 10 animal species—primarily the horse, cow, dog, cat and lately the swine. Since there are about 1,500 species of zoo animals, there is need for much more study and specialization.

Parasites—the flukes, worms, amoebae, ticks, and other small creatures that live off other animals—are probably the largest problem in Dr. Gray's realm of zoo medicine. An apparently healthy animal can waste away and die in a short time before the particular destructive parasite can be isolated, identified, and a proper cure found.

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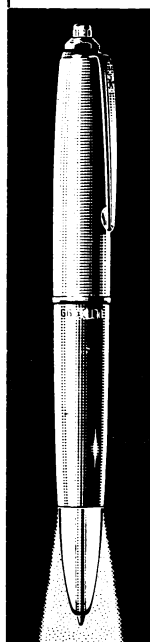
One of the famed Komodo dragons from Indonesia, lost its life because of a rare amoeba. Dr. Gray worked hard to save the other, now alive and well, drowsing in the reptile house.

Every animal needs constant observation, to make sure it eats its "spinach," or vitamins and nutrients, with its "ice cream," the foods it prefers, said Dr. Gray. Pregnant and nursing animals and growing youngsters need special attention to keep them healthy. There is only a small proportion of fights that break out between the animals, and little wound infection.

Animals go through a state of stress on close association with man, if they do not get proper food, clean cages or enough space for their sense of ease. At this time, diseases have a tendency to crop up. Particularly critical periods for wild animals occur during transportation from the wilderness to captivity or from one zoo to another, during their arrival at their destination and introduction to their new quarters, and during their mating period. At these times, the animals should be handled with special care, in adequate cages. A well-cared-for animal in an uncrowded cage is an animal in healthy condition. Chances are good that it will not sicken or die, but will thrive, mate and care for its young. This means the difference between perpetuation of the world's wild creatures or their possible extinction.

• *Science News*, 89:440 June 4, 1966

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