A Recent Outbreak of Equine Infectious Anemia

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Assistance in diagnosing a suspected outbreak of equine infectious anemia (swamp fever) was requested of the Bureau of Animal Industry on Aug. 20. The request came from Dr. E. W. Smith, state veterinarian of New Hampshire. The suspected outbreak occurred at the Rockingham Park race track near Salem, N. H.

Dr. L. O. Mott of the Pathological Division of the bureau, visited the area immediately, examined some of the affected animals, and interviewed various persons concerned. He collected blood specimens from 14 suspected cases of the disease for laboratory examination and horse inoculation tests at the bureau's animal disease station at Beltsville, Md. From the history and clinical symptoms of the suspected cases, Dr. Mott was of the opinion that the disease affecting the horses was swamp fever.

According to Hutyra and Marek, the incubation period of infections artificially induced by parental injection is usually 5-30 days. It may be as short as 1 day or extended to 3 months or more, however. The acute form is of sudden onset with great latitude and weakness (especially of the hind legs). The animal tires quickly, readily stumbles, falls and rises again with difficulty, or is unable to rise at all. Irregularity of gait and incoordination of the movements of the hind legs are sometimes observed. The posture, in some cases, resembles that seen in laminitis.

Etiology

The blood samples collected by Dr. Mott were divided into 2 lots; each lot being made up from 7 horse specimens. Lot 1 consisted of the pooled blood from horses affected with the acute form of the disease, and lot 2 consisted of pooled blood from horses with a more chronic form. Two types of samples were then prepared from each lot. One was an oxalated, whole-blood specimen, and the other was blood serum that had been passed through a Mandler 8 filter and found sterile on bacteriological examination.

A normal horse was injected subcutaneously with 14 cc of the oxalated sample from lot 1. This horse, after an incubation period of 7 days, showed a rise in temperature which reached 104.6°F. Later, the temperature subsided, and the animal suffered a second febrile attack. In addition to the typical, intermittent temperature reactions, the animal showed the usual clinical manifestations of the acute form of swamp fever. These symptoms included an appearance of general depression, some loss of appetite, accompanied by consumption of approximately half the usual volume of water. There were also icterus of the visible mucous membranes, loss of 50 lbs. weight, and a constant shifting of weight from one hind leg to the other accompanied by alternate flexing of the joints.

Another horse, that received the filtered serum from lot 1, after an incubation period of 8 days, showed a temperature rise which reached a maximum of 106°F. It also developed icteric mucous membranes, the shifting of weight in the rear legs, and was partially off feed for a few days during which time it drank less...
water than usual. In addition, profuse sweating, marked increase in urination, and a loss of 120 lbs. body weight were noted.

A third normal horse injected with 44 cc subcutaneously of the pooled oxalated blood from lot 2, after an incubation period of 12 days, showed a temperature rise reaching a maximum of 105.6°F. This animal also showed an icteric mucous membrane and a shifting of weight from one hind foot to the other. The temperature reaction was continuous, and the horse died 21 days following exposure. The post-mortem findings were typical for acute swamp fever.

Since infected carrier animals show little or no reaction when injected with known virus, 2 animals of this type infected 4 and 5 years previously, were also injected with the filtered sample. These horses received 14 cc and 7 cc respectively of lot 1 oxalated blood subcutaneously and showed no reaction.

Field Examination

Dr. C. D. Stein of the Pathological Division, on Aug. 29, was detailed to make a further investigation of the conditions at Rockingham Park and other points in the New England area. He spent 1 week in the area making clinical examinations of many horses naturally infected and had the opportunity to hold post-mortems on several horses that had died or were destroyed.

Dr. Stein concluded from his observations that the disease in question was swamp fever.

Anamnesis

It appears that this disease was first observed in New England in May or early June. Horses that had been racing in Florida were shipped to the race track at Suffolk Downs near Boston, and it was reported that a few sick horses were in the group. Shortly after their arrival at Suffolk Downs, there was an influx of horse flies of a considerable proportion from nearby marsh lands. These flies were present for a short time, and for sometime following this, additional cases of the disease appeared.

Some horses from Suffolk Downs were reported to have been moved to Narragansett Track in Rhode Island, and others to Rockingham Park. Following the arrival of the horses at Rockingham, there was a continued increase in the number of cases of the disease, which developed to such an extent that the Bureau was called upon for assistance on Aug. 20. This was the first intimation to the Bureau that this trouble was present.

Quarantine

Dr. Smith, New Hampshire state veterinarian, placed a quarantine on Aug. 23, for an indefinite period on the horses at Rockingham. On the recommendation of Dr. Mott, an isolation quarantine area was established about ½ mile from the race track where a number of the clinically affected horses were moved. This area consisted of a large tent equipped with individual box stalls, with facilities for separate feeding and watering of horses. In addition, a system of insect control was inaugurated using DDT, and other sanitary precautions were taken.

Treatment

No effective treatment is known. It seems advisable, therefore, to rid the stable of infection as quickly as possible by slaughtering all sick animals and others which are known to be infected with, or have recovered from, the disease.

Transmission

From the number of cases that have appeared at Rockingham, it seems probable that there has been a further spread of the disease through the medium of bleeding needles, hypodermic syringes, and other instruments that might have been contaminated with the blood of an infected horse.

When a horse is once infected with swamp fever, the virus remains present continually in its blood until death of the
animal. The disease can be very easily reproduced by the transfer of minute amounts of blood, excretions, or secretions from an animal sick with the disease to a healthy animal. Any instrument which draws blood can be capable of transmitting the infection should that instrument be contaminated with the blood or other infectious material of an infected horse. Such objects as surgical instruments, knives, hypodermic syringes, bleeding needles, and tattooing instruments are examples. This emphasizes the extreme importance of thoroughly cleaning and sterilizing instruments before being used on different animals.

**Disposal**

The carcasses of diseased animals should be disposed of by incineration or deep burial in quick lime. Since there is no recovery from this disease, the animals are a menace to normal horses. They have little value as either work stock or racing stock and are dangerous to use for breeding purposes.

Animals infected with the disease should be detected as soon as possible and then removed as quickly as possible from uninfected animals. Detection may be facilitated by taking all animals' temperatures twice a day.

**References**


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**Sulfathiazole For Fowl Cholera**

Two years of experiments have proved sulfathiazole to be a valuable aid in the control of fowl cholera.

Dr. H. M. De Volt, College Park, Md., has described experiments in which a total of 320 chickens in 6 different groups were used.

When sulfathiazole was administered in the feed 48 hours before experimental infection of chickens, a "highly significant" difference in the death rate was observed between the medicated birds and those which did not receive the drug.

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**Hormone Therapy**

Sex hormones, once hailed as a possible wonder-working solution to breeding problems in farm livestock, are not producing miracles and still involve many handicaps and hazards.

Three general factors are given as being responsible for difficulty in getting satisfactory results. These factors were outlined by Dr. C. F. Cairy, veterinary research authority at Michigan State College, to the 1947 American Veterinary Medical Association section on surgery and obstetrics.

The factors are:

1. Lack of fundamental physiological knowledge. Dr. Cairy cited the relative infancy of the field of hormone study, and the confusion of terms. He referred to the cyclic nature of female physiology, which results in different responses to treatment at different stages of the cycle. Various species of animals respond in various ways, and the principles learned from research are sometimes applied to other species without sufficient testing.

2. Failure to make complete, specific diagnosis. Hormone treatment may erroneously be employed even though no deficiency exists, Dr. Cairy said, or an unwise choice of hormones may be made. An infection or other irregularity may be the real source of the trouble, rather than a hormone deficiency.

3. Uncertain content and high cost of hormone compounds now on the market. Some of these products are cheap and relatively harmless, and they may be used freely before their properties are well established, Dr. Cairy explained. On the other hand, some of the best products are too expensive for general use in livestock practice.

Dr. Cairy pointed out that his remarks were not intended to discourage the use of hormone therapy in veterinary practice, but rather to stimulate thinking in terms of a more rational use of the endocrine products.

He indicated that the greatest hazard with the use of hormone products lies in their use by uninformed persons.