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## Abstracts

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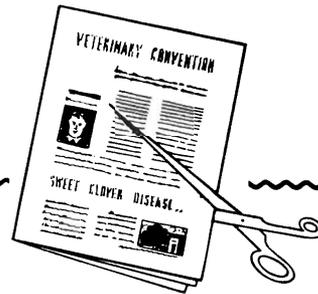
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# ABSTRACTS



**ENTEROHEPATITIS (BLACKHEAD) IN TURKEYS.** It has long been known that *Heterakis gallinae* (cecal worm) is involved in the transmission of histomonads in poultry, but the extent to which they are involved has only recently been determined.

A series of experiments has shown that enterohepatitis is readily initiated in poults by ingestion of embryonated eggs of *H. gallinae*, but, in the absence of such eggs, the disease was not transmitted from fowl to susceptible turkey poults by close contact, nor was it initiated by the ingestion of feces from clinically affected poults. It is suggested that attention be redirected to the possibility of eliminating *H. gallinae* from poultry farms as a basic measure of prevention.

[Swales, W. E., Enterohepatitis in Turkeys. Canadian Journal of Comparative Medicine and Veterinary Science 14: 298-302, Sept. 1950.]

**CARDIAC RESUSCITATION FROM INDUCED VENTRICULAR FIBRILLATION: THE INFLUENCE OF MASSAGE, PROCAINE AND ELECTRIC SHOCK.** The general problem of resuscitation of the pulseless patient has been reviewed recently. This report deals with experimental attempts to revert electrically induced ventricular fibrillation in etherized dogs. The effects of cardiac massage, procaine and electric shock were investigated singly and in various combinations.

Fifty etherized dogs were subjected to ventricular fibrillation by faradization of

the heart muscle. It was shown that cardiac massage would maintain arterial blood pressure of 40-60 millimeters of mercury but would not produce defibrillation during more than 30 minutes. Similarly defibrillation did not result from intrapericardiac or intracardiac procaine (10 milligrams per kilogram) given early during the course of cardiac massage. The only dependable defibrillating agent tested was countershock with 1.5 amperes of 60 cycle alternating current. It was clearly shown that epinephrine and norepinephrine at 10 micrograms per kilogram neither encouraged spontaneous refibrillation nor interfered with resumption of cardiac automaticity. These agents were frequently necessary for maintenance of mean arterial blood pressure during massage. No evidence of a beneficial action of procaine was found. Attempts to obtain survival in these animals were generally unsuccessful. The few animals which did survive were characterized most frequently by short duration of fibrillation (i. e. early countershock) and by not having received intracardiac procaine.

[Sterns, N. S., Maison, G. L., and Stutzman, J. W., Cardiac Resuscitation From Induced Ventricular Fibrillation. The American Journal of Physiology 164: 601-609, March 1951]

**PATHOLOGY OF NECROBACILLOSIS OF THE BOVINE FOOT.** One hundred sixteen naturally diseased bovine feet were collected. They were frozen and sawed into frontal serial gross sections, each 1 to 2 cm. in thickness.

Lesions of intact and cut surfaces were studied grossly and histologically. On the basis of pathologic changes, the feet were classified into eight groups: dermatitis, necrosis of interdigital tissue, arthritis of the coffin joint, osteitis, laminitis, inflammation of connective tissue, arthritis of pastern and fetlock joints, and miscellaneous. The first three groups were related because they were in close anatomic proximity, contained *Actinomyces necrophorus*, and the infective agent penetrated from the surface. Arthritis of the coffin joint developed by extension of infection from necrosis of interdigital tissues into the coffin joint.

Eight calves were injected into the left common digital artery with a living culture of *A. necrophorus*. These animals were autopsied at varying intervals after inoculation. The injected feet contained foci of infection in the joints, bones, tendons, and skin. None of these infections resembled dermatitis, necrosis of interdigital tissues, or arthritis of the coffin joint, as found in natural cases of lameness.

Having studied both natural lesions and experimental hematogenic infections with *A. necrophorus*, the following definition is offered: Necrobacillosis of the bovine foot (foot rot) is a necrotizing infection of the tissues immediately proximal to the coronary band or of the interdigital tissues, often complicated by arthritis of the coffin joint, and caused, in part, by *Actinomyces necrophorus* penetrating from the surface.

[ Flint, Jean C., and Jensen, Rue, Pathology of Necrobacillosis of the Bovine Foot. American Journal of Veterinary Research 12:5-13, Jan. 1951 ]

**MINIMAL VOLUME OF SEMEN AND NUMBER OF SPERM FOR FERTILITY IN ARTIFICIAL INSEMINATION OF SWINE.** Few studies of artificial insemination in swine have been made. From these studies it appears that artificial insemination of swine might be practical under certain conditions. Especially would this be true if the volume of semen needed for fertility could be reduced so that more females

could be inseminated with a single ejaculate from a boar. This study was made to determine the minimal volume of semen and minimal number of sperm necessary for fertility in artificial insemination of sows and gilts.

Forty-six gilts were inseminated with quantities of fresh semen ranging from 0.01 to 20 cc. diluted to a total volume of 50 cc. in a modified Krebs' solution and 40 sows were inseminated with quantities of 1 to 50 cc. of fresh semen diluted to either 50 or 250 cc. In gilts some fertility (29%) was obtained with 0.1 cc. semen and an average fertility of 91% was obtained with 20 cc. semen diluted to 50 cc. In sows fertility was almost as high (42%) with 1 cc. of semen diluted to 50 cc. as it was with 20 cc. of semen diluted to either 50 or 250 cc. (43% in each case). The average fertility per sow was 67% when 50 cc. of semen diluted to 250 cc. was used.

Maximum possible average litter sizes were estimated at 5.7 to 11.8 pigs in gilts and from 4.5 to 13.4 pigs in sows inseminated with different quantities of semen. Sows ovulated 4.6 more eggs, had 11.8 inch longer uterine horns and stayed in heat slightly longer than gilts.

[ Wiggins, E. L., Grummer, R. H., and Casida, L. E., Minimal Volume of Semen and Number of Sperm for Fertility in Artificial Insemination of Swine. Journal of Animal Science 10:138-143 (Feb.) 1951 ]

Most important factor in growing a ton of alfalfa is moisture. It takes about 800 tons of the liquid to produce that ton. Nebraska University specialists point out that alfalfa seeded on non-irrigated land will remove all available moisture to a depth of 30 to 40 feet within 5 years. For that reason, they urge, don't seed alfalfa a second time on such land.

Fertility is still being lost through leaching and erosion 10 to 20 times faster than it is being replaced on the farmlands of our country. This is in spite of the fact that over 13 million tons of fertilizer are being spread annually in the United States!