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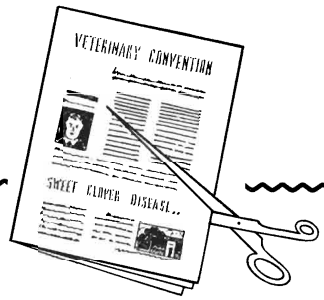
Abstracts

ABSTRACTS



CALF DISEASES. Calf diseases not only cause tremendous losses due to calfhood death, but their effects are also often carried into the adult animal. It is imperative, therefore, that the young remain healthy through their growing period.

Calf pneumonia, an infectious disease, is predisposed by improper stable conditions. In combatting calf pneumonia, a program of prevention is more effective than one of cure. The best means of prevention include the removal of predisposing conditions such as poor ventilation, drafts, overcrowding and chilling. Diseased calves should be placed in quarantine. If an infected calf is nursing, however, it may be allowed to remain with its mother.

Treatment of calves that have contracted the disease is somewhat similar to the disease prevention. The calf should be kept quiet, warm, dry, and out of drafts. Mild laxatives such as mineral oil, and stimulants such as aromatic spirits of ammonia are beneficial. The sulfonamides show considerable promise in the treatment of this disease.

Calf scours may be a disease of an infectious nature or one of improper diet. The infectious variety or white scours which occurs during the first few days of life, often shows some relationship to pneumonia. Although this form of calf scours has always been considered infectious, many of the recent cases at the Wisconsin Agricultural Experiment Station recovered after giving the vitamin B complex. In combatting white scours it is suggested that sick calves should be segregated, taken off feed and made as comfortable as possible. Laxative doses of mineral oil are advisable. Stable hygiene is probably the best treatment.

A second form of calf scours is one of a dietary nature and usually makes its appearance when calves are a few weeks of age. Many cases of calf scours are the result of overeating. A laxative and a restricted diet for a day or two seems to be all the therapy necessary in most cases.

Navel infection is a common condition usually prevented by painting the navel with a tincture of iodine as soon as possible after birth and once each day thereafter until the navel has healed. When enlarged navels appear they are best treated by surgery. It is noted that inflammatory processes in the navel are a fertile field for the development of the screw-worm larvae.

Some calf diseases may be prevented by early immunization. Immunization against blackleg and anthrax has been found effective.

Calves may become infected with lice when confined during the winter months. The application of louse powder and thorough cleansing of quarters will control the condition until spring, when the warm rains will eliminate this parasitism.

It is concluded that good stable hygiene, proper feeding, correct housing conditions, exercise, good judgment, and common sense principles in raising calves cannot be overemphasized.

(Bullard, J. F. 1942. Calf diseases. Shorthorn World. 27(11):79, 163)

VULVOVAGINAL TRACT OF BOVINE. In this article a short review of the gross anatomy of the bovine vulvovaginal tract was given. Special reference was made to the author's original observation on the ducts of Bartholin's glands and the canals of Gartner.

The ducts of Bartholin's glands extend from the glands in the labia of the vulva anteriorly, and empty into the lateral sides of the vulva about an inch from the urethral orifice. Cystic conditions of these glands have frequently been found in nymphomaniac cows, but the connection between cystic Bartholin's glands and nymphomania is problematical.

The canals of Gartner are vestiges of the Wolffian ducts. In 16 dissected specimens the canals were present on both sides in four cases; they were present on one side in seven cases, and absent on both sides in five cases. Cystic conditions and distentions of the canals occur occasionally, but these abnormalities are of little importance in the causation of sterility.

The two anatomical features in the vulvo-vaginal tract were a series of normal circular folds in the wall of the vagina and an abnormal band of tissue in the anterior part of the vagina.

Because of their clinical significance, especial attention was given to the circular folds in the wall of the vagina. Usually four to six of these folds form a series of complete rings in the anterior part of the vagina. The folds are formed by bands of smooth muscle located immediately below the mucosa. These bands have a marked power of constriction and may narrow the lumen of the vagina to such an extent that it may be confused with the cervix. Hence, from a clinical viewpoint, the observer should be careful not to confuse one of the circular folds with the cervix.

The vertical band of tissues in the vagina was found by the authors while artifically inseminating two heifers. Both heifers conceived but at parturition, one of the heifers developed dystocia and the band had to be severed to allow the fetus to be expelled. To prevent dystocia in the second heifer, the band was severed before parturition. These bands of tissue were probably the result of a persistence of the median wall of the Mullerian ducts at the cervical end of the vagina. These two cases support William's contention that such abnormalities have a hereditary basis, because both heifers were sired by the same bull, although their dams were unrelated.

(Scorgie, N. J., and Ottaway, C. W. 1942. Two anatomical features of clinical importance in the vulvo-vaginal tract of the bovine. Veterinary Journal. 98(7):134-138.)

DETECTION OF SALMONELLA IN POULTS. The purpose of this study was to determine the advisability of making intestinal cultures in the routine bacteriological examination of turkey poults.

In culturing intestinal contents the intestinal tracts were first removed and then opened with a pair of flamed scissors. Several loopfuls of intestinal and cecal contents, together with scrapings from the mucosa were added to tubes of tetrathionate broth. After incubating for 5 to 24 hours, a loopful of this growth was streaked on plates of MacConkey's agar, Difco. Following overnight incubation, non lactose-fermenting colonies were selected for study.

One hundred lots totaling 336 young turkeys were cultured. Of these 40 lots and 112 birds were positive for the presence of Salmonella organisms.

Eleven species (classified antigenically according to the Kauffman-White scheme) of Salmonella other than *Salmonella pullorum* were isolated from 22 lots of poults. The author concluded that the culturing of intestinal contents was not necessary to detect *Salmonella pullorum* since the routine method of culturing the heart, liver, and other organs revealed all infections with this species.

For the detection of paratyphoid infections the routine method of culture was found to be inadequate since one-third of the cases of paratyphoid infection would have been missed if the intestinal cultures had not been made. Of the 21 lots of

poults in which paratyphoid infection was found, eight of these yielded paratyphoid organisms solely from the intestine. In four lots only the routine cultures were positive, and in nine additional lots both routine and intestinal cultures were positive. Whether the cases in which the organisms were isolated solely from the intestine, constitutes an infection is questionable. However, in four of the eight lots no other cause for the mortality could be found.

Therefore, to accurately diagnose salmonellosis in turkeys, the author recommended that intestinal cultures should be added to the routine bacteriological examination of the turkeys.

(Posell, J. J. 1942. Intestinal cultures for detecting Salmonellosis in young turkeys. Amer. Jr. of Vet. Research. 3(8):257-259.)

A CAUSE OF PNEUMONIA AND DIARRHEA IN CALVES. There occurs an infectious disease of calves that is recognized clinically by fever, diarrhea, and pneumonia.

From such infected calves, an agent was secured which after serial passage by intranasal inoculation produced a pneumonia in white mice. No significant bacteria could be cultivated from the affected lungs, and the agent proved capable of passing through a Berkefeld N filter. The agent obtained in mice regularly produced disease when inoculated intranasally into calves. On two experiments, the disease was transmitted from calves inoculated with the passed material to normal calves by pen contact. The experimentally produced disease was similar in every respect to the natural infection.

Calves which have recovered from the experimental disease are resistant to subsequent infection and show the presence of neutralizing antibodies. Sera from calves that have recovered from the natural disease also neutralize the virus.

It is therefore concluded that this particular infectious pneumonia and diarrhea of calves is caused by a filterable virus.

(Baker, J. A. 1942. A filterable virus from pneumonia and diarrhea of calves. Cornell Veterinarian. 32 (2):202-204)

SWINE BRUCELLOSIS CONTROL. Swine brucellosis, porcine infectious abortion, or Traum's disease, is an infectious disease in swine that has been encountered in many localities. No remedy has proved of value in the treatment of infected animals. Vaccines likewise are of unproved value. However, the disease may be successfully prevented by a plan of swine management. The plan, which is a cooperative procedure between the herd owner and the veterinarian, is outlined as follows:

1. Testing. The agglutination test is a reliable means of diagnosing swine brucellosis.

2. Reactors. Reacting animals are potential spreaders of swine brucellosis. Reactors may be handled in one of three ways: (1) They may be sold for immediate slaughter which is the safest procedure. (2) They may be sold as reactors into other reacting herds, and remain there under quarantine. (3) They may be maintained in temporary isolation under the supervision of the local veterinarian. This method is but a temporary expedient and not without danger. The ultimate aim should be the elimination of the infected animals. Reacting boars should not be used for breeding purposes. Non-reacting boars should not be permitted to serve reacting sows.

3. Aborters. Any sow which aborts should be isolated and not returned to the herd until proved negative to the agglutination test.

4. Disinfection. The hog houses should be cleaned and disinfected following abortions and removal of reactors.

5. Annual herd test. Breeding animals in negative herds should be tested annually. Additions to negative herds should be negative to the agglutination test and remain so during a quarantine period of two months after reaching the farm.

(Graham, R. 1942. Swine brucellosis, porcine infectious abortion, or Traum's disease control. Chester White Journal, Oct. '42:17-18)

(Concluded on page 88)

ABSTRACTS

(Continued from page 86)

STUDIES ON THE NATURE OF ANAPLASMA. The purpose of these studies was to determine the developmental cycle of *Anaplasma marginale*, the etiological agent of bovine anaplasmosis.

Sixteen bovine animals of mixed breed, ranging in age from four months to five years were used in the experiment. Blood smears were made at appropriate intervals so that all stages and progress in the developmental cycle of the disease could be detected. Various stains and hemolyzing agents were used in preparing blood smears for study.

Two types of anaplasms were recognized; one type was spherical in outline with a smooth contour measuring from 0.2 to 0.5 microns, while the other type was roughly spherical or ovoid, though occasionally cuboidal, and measured from 0.6 to 0.9 microns in diameter. Careful study of slides in which the stain had faded from the erythrocytes revealed that each smooth anaplasm was composed of a single mass of homogenous material while the rough anaplasms consisted of a number of small spherical bodies of equal size, which were designated as sporoid bodies. Red blood cells from acute cases revealed many small (0.2 microns in diameter) spherical bodies similar in size and shape to the sporoid bodies of the rough anaplasms. These bodies were scattered throughout the stroma while the two types of anaplasms maintained more peripheral locations in the erythrocytes.

Treating blood smears with 0.5 percent acetic acid caused a swelling of the anaplasms and a separation of component parts without destroying the parasitized cells. By careful study of these slides and comparing them with control smears of untreated blood, it was found that the large rough anaplasms were composed of eight spherical sporoid bodies while the small smooth anaplasms were single units of material.

At the onset and during the entire course of the disease, small, frail, rodlike structures were found attached to the mature erythrocytes. Each structure was about one micron in length and contained at one end a deep staining knob-like body. According to the authors, these bodies invade the red blood cells and develop into anaplasms of the smooth type.

By making daily blood smears during the incubation period and during the course of the disease, the authors found that the small smooth anaplasms increase in size and develop into large irregular anaplasms which are composed of eight sporoid bodies as mentioned above.

Considering the preceding observations, the developmental cycle may be summarized in the following manner: The extraerythrocytic elongated bodies invade the red cells and develop into smooth anaplasms. These small anaplasms undergo a period of growth and become large rough anaplasms which, by multiple division, divide into eight small spherical sporoid bodies. Because of the rapid disappearance of the large irregular anaplasms from the blood stream, they suggested that this stage is particularly destructive to the red blood cells. By destroying the red cells at this stage there is provided a means of dissemintaing the sporoid bodies throughout the blood stream so that other healthy erythrocytes can be attacked.

(Lotz, J. C., and Yiengst. 1942. Studies on the nature of anaplasms. Am. Jr. of Vet. Research. 3(8):312-320.)

SWINE ERYSIPELAS

(Continued from page 82)

ran from 3 to 60 percent and in chronic cases from 0 to 5 percent.

The treatment in over 80 percent of the acute cases consisted of the administration of anti-erysipelas serum in therapeutic doses. The results of such therapy were evidently most satisfactory. Two veterinarians administered anti-hog cholera serum with apparently gratifying results. Several reported no biological treatment was used, the practitioner resorting to correction of the diet and improvement of sanitation.

—E. A. Schweim, '43