Paratyphoid Dysentery
In Feeder Lambs

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THE GREATER the distance lambs have to be transported from their home range to the pens where they are to be fed, the more chance they have of developing paratyphoid dysentery. This disease is classified as a shipping disease and its occurrence is influenced and enhanced by long journeys on the cars or delays in transit with poor feeding accommodations.

The common practice of fasting lambs for 12 hours or more before they are received by the shipper should be discouraged. When they are thus fasted and then loaded immediately onto the cars for a period of 36 hours before feeding, they are subject to paratyphoid dysentery.

The organisms responsible for this disease are recognized as those of the Salmonella group. *Salmonella typhimurium* or *Salmonella aertrycke* being commonly isolated from lambs dead of the disease. Their activity is predisposed by fasting and in fact it has been proved that the 2 factors, namely presence of the organism and fasting for several hours, must occur at the same time before clinical evidence of the disease is manifested. Experiments have been conducted to show that lambs fasted for as little as 24 hours and given 30 cc. of a bouillon culture have sickened and died, while lambs on full feed of alfalfa hay when given a like amount of the culture showed no evidence of the disease. It was also shown that the longer the fasting period was continued, the less amount of culture it took to produce clinical evidence of the disease. Therefore, it is evident that lambs should be fed just prior to loading and that they should be unloaded and fed at frequent intervals enroute.

During the war when our railroads were taxed to the utmost to move the vast amount of material necessary in the conduct of military operations serious delay often occurred in the movement of livestock from the range to the feed pens. As a result of this interrupted railroad service paratyphoid dysentery was recognized much more frequently during wartime.

Paratyphoid dysentery may often be recognized as the lambs are unloaded from the cars. A distinct and characteristic splashing sound may be heard when the lambs are moved which would indicate that their stomachs contain an abnormal amount of liquid. If scouring is not present in the flock at this time it will usually be evident within a few hours. In any event, the disease is usually observed within 24 to 48 hours after the lambs are received. Scouring may be severe and copious. However, some flocks may show a large per cent of affected animals most of which present only a mild diarrhea. The degree of scouring is not an indication of the severity of the disease as many lambs with severe scouring may recover while some with only a mild scour will die.

Individually the animals appear dull or depressed and not inclined to move unless disturbed. There is usually complete anorexia and where death is delayed for a few days the animals show a rapid dehydration. The evacuated liquid is nearly clear and light green in color except when

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occasionally it is blood stained. There is usually a rise of 2 to 4 degrees in temperature. The course of the disease is usually about 10 days to 2 weeks but a few may linger on for 30 days or more before they die. The affected lambs that recover are usually slow in gaining weight and many slip their wool. Later in the feeding period one can observe many broken fleeces in a pen of lambs which have been affected with paratyphoid dysentery.

Differential Diagnosis

Coccidial dysentery is about the only disease necessary to consider under this heading. Paratyphoid dysentery appears within a few hours after the lambs are received while coccidiosis does not appear in range lambs until 18 to 21 days have passed. The evacuated scour in paratyphoid dysentery is watery, copious and seldom blood stained, while in coccidiosis the passage is not so watery and usually is blood stained. In coccidiosis the lamb holds the docked tail rigidly elevated and tenesmus is commonly observed which is not characteristic in paratyphoid dysentery.

Autopsy reveals a catarrhal gastro-enteritis. Severe inflammation of the gall bladder has been observed. All lymphoid tissue of the intestinal tract shows acute inflammation, especially Peyer's patches and the mesenteric lymph nodes. The serous coat of the intestine is not involved in the inflammatory process. The liver is often enlarged, dark in color and characterized by areas of inflammation. The amount of dehydration of the body tissues generally will depend upon the duration of the illness.

No specific medication has been produced as treatment for this disease. Segregation of the sick animals is recommended. New cases will not develop in the unaffected lambs after they are on a full feed of hay. Treatment of the sick animals should be directed toward preventing excessive dehydration. Sulfa drugs have not proven to be beneficial in limited experiments conducted by the author.

Blade grass hay is preferred to alfalfa in the diet for the sick animals. The grain ration should consist of bran and oats.

The following case report is submitted as being typical of this disease and also to show the financial loss suffered by the feeder. This report was compiled 8 days after the arrival of these lambs and therefore does not show the final death loss.

1,903 lambs loaded at Artesia, N. Mex., 6 p.m., Oct. 27, 1945.

Fed at Junior, Tex. Date unknown.

3 loads fed at Pueblo, Colo., Nov. 1, 1945.

4 loads fed at Denver, Colo., Nov. 1, 1945.

Arrived at Eaton, Colo., Nov. 2, 1945 at 11 a.m.

178 hours from weighing-in time in New Mexico to arrival in pens at Eaton, Colorado. Only fed twice enroute.

Average weight at receiving point 71.9 pounds.

716 lambs fed at Junior, Tex. and Pueblo, Colo. averaged at Eaton, 59.07 pounds.

1,136 lambs fed at Junior, Tex., and Denver, Colo. averaged at Eaton, 60.01 pounds.

1,852 lambs of the original 1,903 lambs purchased at 71.9 pounds, arrived alive at Eaton, Colo., weighing 60.9 pounds showing an 11-pound shrink. This was 15.2 per cent shrink as compared to 8 per cent normal.

51 lambs dead enroute.

47 lambs died in pens (first 8 days).

272 lambs in hospital pen (many more expected to die).

Estimated loss through death Nov. 10, 1945	$1,187.13
Estimated loss through excessive shrink	1,188.00
Estimated extra expense for care and treatment	100.00
Total loss	$2,475.13

This sum represents the financial loss suffered by the feeder during the first 8 days of the feeding period.

Since it has been proven that long fast periods are necessary for the development and growth of the organism and that animals fed regularly withstand heavy doses of the culture, prevention seems to be only a matter of frequent rest and feed periods during transportation.