

the tail, hips, and udder, washed thoroughly with an antiseptic solution such as a two per cent. solution of lysol or creolin.

Cattle, after aborting, should preferably be kept by themselves for a period of at least one month, and they should not during this period of time be pastured in the same fields as healthy pregnant cattle, nor allowed in the pasture fields so long as discharges continue to come from the vulva. This is important, because the discharges may infect the grass and water, and which, when thus contaminated, may remain virulent and a possible source of infection for some time. At the end of the isolation period, before allowing aborting cattle to mingle with the other members of the herd, it is advisable again to thoroughly wash off their hind parts and disinfect the stable in which they have been kept. Cows which have aborted should not be bred again until a period of one or two months has elapsed, and not even then if they show any signs of discharges coming from the genitals.

The bull, each time after serving aborting cows, and before serving healthy cows, should have the end and inside of the sheath washed with a mild antiseptic solution, such as a one per cent. solution of lysol or a three per cent. borax solution. In treating the inside of the sheath the antiseptic solution can be injected with an ordinary metal or rubber syringe.

THE USE OF DRUGS.

The internal use of drugs alone appears to be of little real benefit in abortion disease of cattle. From time to time certain agents have been used and were highly praised for a time as a likely cure.

The carbolic acid treatment, which was particularly popular for a time, consisted in administering it daily, in dram doses, or at intervals of several days throughout pregnancy.

Another drug, known as methylene blue, has been advocated as a likely cure. It is given in doses of one or two teaspoonfuls daily in the feed for a period of five or six weeks.

While no serious objection to the use of carbolic acid and methylene blue need be taken, nevertheless their curative value has been over-stated. In fact, the use of these remedies in the hands of those most capable of judging as to their merits has shown them to be of no lasting benefit, and their popularity has greatly diminished.

VACCINE TREATMENT.

More recently the treatment of cows and heifers for abortion is being undertaken by means of special abortion bacterins and vaccines to confer immunity or protection against the infection. The bacterins are composed of killed abortion bacilli in suspension, and are advocated for the treatment of doubtful cases and for infected cows during the first half of the term of pregnancy. The bacterin treatment has unfortunately not as yet proved altogether as satisfactory or successful in conferring immunity or protection as expected. The abortion vaccines are products containing living cultures of the bacilli, and on that account are only recommended for use in herds already infected, and to be administered to heifers and non-pregnant cows from one to two months before breeding. It is not advisable