

discharges, the abdomen droops, the flanks fall in, the udder fills, and the first pains of parturition begin. Abortion may be followed by the same accidents as normal parturition, such as malpresentations, flooding and retention of the placenta.

Treatment should be preventive as much as possible, to the extent of avoiding all causes of constipation, diarrhoea, indigestion, unnecessary medicines, painful operations, and abuses of all kinds. When abortion is threatened, the mare should be placed by herself and given one-half ounce of fluid extract of black haw, three times daily. The best veterinarians now regard this as the most active preventive of abortion known. Carbolic acid may be given in small quantities with good results. About 20 drops given with the fluid extract of black haw twice daily would probably be better than either of them without the other. If the mare strains, leading her around for a time will sometimes stop it, but if does not, this should be checked by some sedative. One ounce of laudanum in two ounces of water may be given every three hours until straining has ceased.

If all measures fail and abortion proceeds, all that can be done is to see that both fetus and membranes are removed. After abortion, good care should be given the mare in the way of exercise, pure air and wholesome food. No mare should be bred sooner than three months after an abortion, and some mares never conceive after one abortion. If a mare is bred and conceives, she should be treated for abortion before the next abortion is imminent. This can be done best by giving the black haw and carbolic acid as suggested, about one month earlier in the gestation than at which she aborted the preceding year.

330. Contagious Abortion is not likely to be present in mares as in other domestic animals. It is only in low, undrained localities that I have found trouble of this nature among mares. It never occurs in high altitudes, and very rarely in high land localities of lower levels. No disease is more difficult of diagnosis, since we find mares in the same herd manifesting many symptoms. In most cases the mare appears sluggish, listless, even stupid. Occasionally the opposite is indicated, the mare acting restless and nervous. A temperature of one or two degrees above normal is the rule for a day or so before the fetus is expelled. The cause of the disease is a germ or bacillus shown in figure 90.

These bacilli were present in all of seventeen cases of abortion in one herd. Not a mare in this herd escaped. The microbes were found in the excrement of geldings and young mares running in this herd, yet all animals incapable of producing foals were normal in every way. They were found in the excrement and blood of all mares aborting. Every fetus expelled was found to contain them in all parts.

Blood serum cultures were injected into pregnant sows and cats with no evil results, but a five year old pregnant mare in-