



This disease is known as caked udder or inflammation of the mammary glands. It frequently occurs at the time of calving or just after, but it may appear at any time during the lactation period. The disease is very prevalent among dairy cows throughout the United States. The Southwest seems to be especially troubled with it. As a rule the better milkers seem to be most affected. Thus thirteen cases of garget, two of them of a serious nature, were reported among the cows held in quarantine after the National Dairy Show at Chicago in 1914.

Garget injures cows by causing inflammation and increase of temperature. A severe attack is almost certain to destroy a portion of the secreting structure of the udder. This may result in a complete loss of a quarter or more of the cow's udder. Frequently, however, the disease assumes the chronic form, when there are periodic spells that the milk is unfit for use. Cows seldom recover the complete functions of the affected parts and many of them are rendered unprofitable. The effect of mammitis depends upon its severity, the resistance of the animal and the treatment given. As a rule the disease is in a mild form and no especial effects can be traced to it except that the milk flow is decreased. On the other hand the whole udder may become affected and the animal may die or be ruined for milk. Where the inflammation is great there is probability of a portion of the udder being ruined permanently although a cow may regain almost normal condition at the next lactation period. Sometimes the poison is so virulent that a quarter is broken down into pus. Such a quarter will turn dark blue or black and most of it will slough out, leaving a deep hollow in the wider which will rapidly heal. A cow will not give as much milk from three quarters as she will from four and such animals should be discarded unless they are especially heavy producers or it is desired to keep them for breeding purposes.

There is no ready means of telling whether the lump in the udder and the inflammation are due to mammitis or to tuberculosis, and on this account mammitis frequently serves as a cloak to hide cows which are dangerous. Where doubt exists regarding the nature of the disease the tuberculin test should be made to ascertain whether the trouble is tuberculosis or not.

Milking cows by means of milking machines has proved to be favorable to the spread of contagious garget. This is due to the fact that one is not always able to identify the disease and separate the infected animals. Periodical outbreaks occur in almost every district and it seems wise to study the disease carefully in an effort to keep it under control. Fortunately garget has not been observed to spread among range cows.

SYMPTOMS

Garget makes an appearance intermittently in almost every herd of cows. Its symptoms may be divided into general and local.

General symptoms: The general symptoms of garget or mammitis in a cow are indicated by weakness and dullness; the pulse quickens, breathing is augmented and the temperature increases from two to four degrees. Usually the appetite is impaired and sometimes rumination is suspended. Cows rapidly become thin due to the intense suffering and high fever. The characteristic pose is that of placing the hind leg on the affected side back of the ordinary position. These general symptoms may appear before much enlargement or derangement of the udder or the milk is noticed. Usually the cow is somewhat constipated and a stiffening of the rear quarters is noticed. Cows often walk with a straddling gait when affected in the hind quarters.

Local symptoms: Mammitis usually affects one quarter of the udder at a time. The affected part becomes enlarged, hard, heated, red and tender. The milk is yellowish blue in the early stages and becomes curdled, stringy and dense as the case advances. The curdling is accompanied with an increase of acid in the milk. The amount of milk given by the affected quarter is decreased very materially on account of the general debility of the animal and because of the local inflammation. In advanced stages the udder increases in size and hardness, developing areas with a soft doughy feeling which are converted finally into running sores. Sometimes the infection spreads to other quarters, but seldom affects more than half of the udder. In less pronounced cases there may be little change in the milk, but this may have a salty flavor and upon examination would reveal a large number of germs. The teat is tense, swollen, very tender and reddish in color.

KINDS OF MAMMITIS.

There are two forms of this disease, namely, the infectious and the (apparently) non-infectious forms. In the early stages it is a difficult matter to diagnose the form present, but prompt treatment should be given in either case.

Infectious mammitis • This form is due to bacteria of the streptococcus group which have found their way into the udder, and which may

be transmitted to other animals through contact afforded by the milk-er's hands, switching of the cow's tail, or infected bedding places. Dust, and adobe drinking places may also carry such infection. The disease usually gains entry through the sphincter muscles of the teat, causing the quarter to swell, with final suppuration and breaking down of the glandular tissue. These septic organisms may produce intense disorders depending upon their number and activity, as well as the resistant qualities of the cow. Some cows seem to be especially susceptible, while others may contract the disease but get well in a short time. One will usually find that several cows in a herd are troubled with this disease at one time and this indicates that the infection is carried from one cow to another. On this account affected cows should either be discarded or properly treated so as to avoid carrying the infection to others.

Chronic garget. The common symptoms of this form are the periodical swelling and caked appearance of the udder so often noticed in cows. At one milking the symptoms may be very pronounced, the cow giving stringy milk, and the next milking the affected quarter may seem normal. There is seldom as much inflammation as in the other form of the disease, and other cows in the herd do not seem to be susceptible to this form. The udder is not as swollen or as painful and the cow may not have any of the signs of the disease except stringy milk and reduction in the amount.

Whether this form of the disease is caused by germs or not is uncertain. It is admitted, however, that the disease is more common when cows are in a run-down condition or kept in filthy barns and yards, especially during cold periods. It has also been noticed that the disease is especially prevalent in animals just at the time of freshening. This suggests that the trouble is probably due to derangement of the system, and the inflammation of the udder is caused either by lack of functioning, or else by overfunctioning resulting from excessive demands made on the fresh cow.

Infection is probably not due to invasion of septic organisms through the teat in the fresh cow at or before calving. This suggests that there may be a third form of the disease of an inflammatory nature not caused by germs, which would appear at the time of calving or later, resulting from general derangement or from injury to the udder. No doubt the common form of chronic garget results from the invasion of the udder with germs which gain entrance to the teat through the orifice, which is relaxed after milking. This can easily occur when cows are obliged to lie down in dirty places or drink water from adobe holes,

CONDITIONS PREDISPOSING COWS TO GARGET.

There are certain conditions which render animals especially susceptible to garget. These may be given as follows: Severe injuries or bruises from blows or other violence; excessive fatness or emaciation; accumulation of milk in the udder due to careless milking; relaxed condition of the sphincter muscle in the teat* causing the milk to drop constantly, and thus allowing passage for the germs from litter

and other sources into the open teat; overstocking; driving cows with distended udders; exposure to severe weather or lying on the cold ground, especially after freshening; eating injurious foods such as weeds; chills; over heating; and injury from cactus pricks. Sudden change in the feed, such as changing from a laxative, cooling ration of a bulky nature to one of a more heating and more concentrated nature, will also predispose to the disease.

Milk from cows affected with garget should never be used for human consumption. It should be collected in a separate pail and boiled or buried so as to inhibit the spread of the germs. The practice of milking the affected quarter on the floor or ground is bad, for where this is done any bedding or substance thus contaminated may easily carry the infection to other cows. Where diseased cows have been kept it is important that the premises be treated systematically with commercial antiseptics such as carbolic acid, creolin, or corrosive sublimate.

PREVENTION.

Prevention is always of first importance. Animals should be maintained under proper sanitary conditions so that there will be no lodging place for the disease-producing germs. Special attention should be given to cleanliness and general treatment so that the cows will not be injured. Give them sufficient room in stalls, yards and pastures. Keep them in pasture during the summer, and clean the milk barn thoroughly so that germs will not accumulate there. The chief preventive measure is to avoid the introduction of the disease in the herd. This can be done by making careful inquiries of the dealers in regard to animals before purchasing, and by then isolating them over a short period to make certain that they carry no infection with them. When the disease is found in the herd the affected cows should be isolated and treated separately to prevent the spread of germs. Wash the hands carefully before and after milking such cows and leave them until the last to be milked. Milking regularly and with strict cleanliness will also help to prevent the disease. Care should be taken in drying the cows to make certain that the affected portions do not become inflamed. When a cow freshens she should not be fed all she will eat until she has become accustomed to the feed and it is certain that her system demands an increase. Begin the grain ration carefully and give small amounts of light, easily digested food such as bran, ground oats and alfalfa. Such concentrated foods as cottonseed meal, corn meal or other rich substances are dangerous and should be fed with care.

TREATMENT

Ordinarily cows infected with garget will overcome the disease in five to eight days if given good sanitary attention. After this time the symptoms may gradually disappear. For this reason several of the best stockmen in Arizona recommend leaving the cows alone. This is a poor practice as the yield of milk will remain below normal

Either form of garget will respond favorably to prompt action in the early stages. The treatment for garget may be divided into general and local.

General treatment: When a cow is noticed to be suffering from inflammation of the udder the grain ration should be reduced to one-third the normal quantity and a succulent, easily digested food given her. A purgative consisting of one to one and one-half pounds of Epsom salts should be given. One-half ounce of nitrate of potassium twice a clay in the drinking water is also recommended. Some favor giving a tablespoonful of saltpeter twice a day for two or three days, then once a day until the inflammation subsides. Others recommend half an ounce each of powdered poke root and powdered saltpeter given twice daily as a drench or in the feed, until the attack subsides. Bleeding from the jugular vein may be resorted to in extreme cases accompanied by high fever. The cow should be kept dry, clean and comfortable. Cold drafts and wet floors or yards are bad. If allowed to be out nights on cold wet ground a rapid recovery need not be expected.

Local treatment: Temporary relief may be given by bathing the udder with hot water for one-half hour at least three times a day. First milk carefully and after drying massage thoroughly with the palms of the hands using warm olive oil containing 3% gum camphor, or other lubricant, to inhibit abrasion. Be careful not to apply strong liniments to the inflamed udder.

Poultices made of bran, linseed meal, oatmeal or other substances which can be placed close to the udder and which will retain then-heat a considerable time, may be applied. An udder support for holding the hot poultices may be made by placing a bandage around the body with holes cut in it for the teats. It is more convenient to treat the udder with a lotion than by making use of poultices. For this purpose an udder support is used and the space between the udder and the bandage is packed with soft pieces of old muslin, cotton batting or woolen rags. The udder should be kept moistened with a solution of one-half ounce of acetate of lead in one quart of water, until the inflammation and swelling disappears.

Another good mixture for rubbing on the udder is one part of fluid extract of poke root, one part of belladonna leaves, and six parts of warm melted lard. The affected quarter should be kneaded with this preparation for at least ten minutes three times a day.

Another formula is six ounces of alcohol, one ounce of ammonia water, and nine ounces of distilled extract of witch hazel. These should all be mixed together thoroughly and applied with gentle friction and massage. The cow should be milked carefully three times a day and oftener if possible. Where this can be done by hand it is better than using the teat syphon.

In the advanced stages where there is a tendency to suppuration, vesicants should be used to facilitate the formation and the removal of the pus. The best for this is 33% mixture of tartar emetic ointment or a 10% mixture of biniodide of mercury and lard.

Some recommend the injection of a disinfectant that will kill the germs and do no harm to the udder. This is a very critical operation and should be attempted only by experienced operators. The udder should be carefully milked and a mild antiseptic solution, such as one dram of chinol dissolved in a gill of water and mixed with 6 drams of glycerin made lukewarm, injected into the interior of the gland. If the instruments and solution are not scrupulously clean there is danger of further infection.

Vaccines have been used to treat cows suffering from mammitis, but as yet the use of these vaccines has not become general. They are injected beneath the skin above the udder.

R. H. WILLIAMS,
Animal Husbandman.