BLACKLEG IN CATTLE AND ITS CURE.

"Blackleg: Its Nature, Cause, and Prevention", is the title of a circular recently issued by the Department of Agriculture at Washington, D C. As this disease is one of immense importance to the stockmen of this state, we print the following abstract from the circular mentioned for the benefit of our readers:

GENERAL NATURE OF DISEASE AND ANIMALS AFFECTED.

Blackleg, also known as "black quarter" "quarter ill," and "symptomatic anthrax," is an accute infectious disease caused by a specific germ, the blackleg bacillus. It is characterized by extensive alterations in parts affected, accompanied by a distension of the tissues due to the formation of gas.

SPECIES OF ANIMAL AFFECTED.

Cattle contract the disease on pastures, and this is also stated to be the case with sheep and goats. All three species of animals can be artifically inoculated with blackleg, though cattle and sheep are more readily inoculated than goats. Guinea pigs are very susceptible. When horses, asses, and white rats, enjoy a natural immunity from the disease, and attempts to inoculate them are therefore unsuccessful. Man also is unaffected by the blackleg bacillus.

AGES OF CATTLE AFFECTED.

Bladkleg is more common in cattle from 1 to 2 years old than in cattle of other ages; occasionally animals from 6 months to 1 year old or from 2 to 2½ years old may be attacked, and in rare cases calves under 6 months or cattle over 2½ years may be affected. The The comparative freedom of calves from the disease is to be explained in two ways: First, calves are naturally less susceptible to blackleg than are older animals, as has been shown by experimental inoculation; second, animals feeding on milk are less exposed to infection than are grazing animals.

MANNER OF INFECTION.

Blackleg is not a contagious disease, that is, one animal will not contract it simply coming in contact with another. As a rule the germ is introduced into the system through some wound or abrasion of the skin or mucuous membrancs, such as may be received on the skin from a barded wire fence or from stubbles or briars in the pasture, or from any hard, sharp substance which punctures the lining of the mouth or intestinal tract.

CHARACTERISTIC OF THE BACILLI.

The blackleg bacilli are not able to multiply in the presence of oxygen; in technical language, they are anaerobe. This explains the fact that while they do not develop on parts of the body exposed to free air, such as the skin and mucous membranes, the germs find the conditions necessary to their growth in the parts underneath the skin, as the underlying connective tissue, to which the air does not have access. The second point to be noticed in connection with the bacilli is that one of the ends of each bacillus is enlarged. This enlargement is due to the formation of the so-called „spore," which is a small portion of the germ surrounded by a sharp shell like substance; a structure of this kind is naturally very resistant to external influences, being able to withstand heat, cold, light, and other unfavorable conditions, and even decomposition in a dead body, which would more quickly result in the destruction of unprotected bacilli. With such a spore stage to protect it, the blackleg germ may exist for a long time outside of the body, and it is very difficult to eradicate the disease from a pasture which has once become infected. Experience shows that the spores may exist almost indefinitely in the ground, and that animals may become infected on the same pasture years after years. It is claimed that cultivating the soil for several years will effectually eradicate the disease, but with large areas which are unfit for anything except pasturage this method is of course impractible.

SYMPTOMS.

The symptoms of blackleg are so characteristic that the disease is easily recognized. The first symptoms may be either of a general or of a local nature, though more frequently the latter is the case. The general symptoms are high fever, loss of appetite, and suspension of rumination, followed by great depression. Respiration becomes accelerated; the animal moves around with difficulty, frequently lies down, and, when water is near at hand, drinks at short intervals and but little at a time. The visible mucous membranes are at first dark red and congested, but they change in the course of twelve hours to a dirty leaden or purplish color.

The most important diagnostic feature is the development of a tumor or swelling under the skin. This swelling may appear on any part of the body and limbs, except below the knee or hock-joint. It is frequently seen on the thigh or shoulder, and, owing to the extensive discoloration of the swollen parts, as observed after the animal has been skinned, the disease has been popularly named "blackleg" or "black quarter." Tumors may also appear on the neck, the chest, the flank, or the rump At first they are small and very painful. They increase rapidly in size and may in a few hours cover a large portion of the body. One or more of these tumors may form simultaneously, and when in close proximity to each other may become confluent. The neighboring lymph glands become considerably swollen.

If slight pressure is exerted on the tumor a crackling sound is heard, and percussion gives a clear, resonant tone, due to the collection of gas in the affected tissue. The tumor is cool to the touch and painless in the center; the skin over it is dry and parchment like. When the tumor is lanced a frothy, dark-red fluid is discharged. If the incision is made while the animal is alive or immediately after death, there is no offensive odor to the discharge, but decomposition takes place very soon after death. No pain is manifested when the center of the tumor is lanced, but as soon as the knife reaches the warm, inflamed part the animal will bellow loudly and flinch.

The swellings usually appear before the general symtoms, and they may even reach such an extent as to cause complete paralysis of the affected part while the animal still looks bright and has a good appetite. This condition is, however, of short duration. As the swellings increase in size the general symtoms become more intense. The temperature may reach 107 degrees F., while the respiration may exceed 140 per minute. The animal is unable to rise; the extremities become cold, and sometime before death the temperature falls and may become subnormal. There is trembling of the muscles, which, as death approaches, may develop into violent convulsions.

APPEARANCE AFTER DEATH.

The skin over the swelling is affected with dry gangrene. The connective tissue beneath the skin is infiltrated with blood and bloody serum, and is distended with gas. The affected muscles are dark brown or black, are easily torn, and the spaces surrounding them are filled with bloody liquid and gas.

It is sometimes desirable to determine whether an animal is affected with black quarter or with anthrax tumor, or with a swelling caused by the bacillus of malignant œdema. The anthrax tumor may be distinguished by the hardness and solidity of the tumor, and by the fact that it contains no gas The spleen is enlarged in anthrax and is unaffected in black quarter. It is difficult to distinguish between the swellings of black quarter and malignant œdema, since they resemble each other very closely, and both are distended with gas. Malignant œdema, however, generally starts from a wound of considerable size; it often follows surgical operations, and does not usually result from the small abrascions and pricks to which animals are subjected in pastures.

TREATMENT.

Owing to the rapid and violent course of the disease, treatment is of little or no value. Numerous remedies have been proposed and tried, but the cases of recovery on record are exceedingly rare. It has been suggested to make a number of deep incisions into the affected part and to apply some strong disinfectant to the wounds, but even such radical measures have proved to be of very little value, and only tend to cause the animal unnecessary suffering. Furthermore, when his treatment is undertaken in a pasture, the animal is liable to scatter the discharge from the wounds over large areas, and thus spread the infection. It is, therefore, strongly recommended never to attempt this treatment except when the animal is confined in a place which can be thoroughly disinfected.

DISPOSITION OF BLACKLEG CARCASSES.

All animals which die from blackleg should be immediately burned before they are attacked by vermin or birds of prey, as these may scatter the infection. In order thoroughly to destroy a carcass, it should be placed upon two logs and a cord of dry wood heaped over and around it. If one fire does not destroy it completely, another should be built over the parts remaining. In a pasture where wood is scarce, the carcass may be buried; in this case the hole in the ground should be at least 6 feet deep and the carcass should be well covered with lime before the earth is filled in. Lime should also be scattered freely over the grave and also over the space where the animal was lying before being buried. No effort should be spared to make sure that infection from the dead animal is impossible. It is due to neglect of these important precautions that blackleg has gained such a foothold in certain parts of this country as almost to make cattle raising unprofitable.

PREVENTIVE VACCINATION.

For several years frequent reports have come to this Bureau concerning the great mortality from blackleg among young stock in many widely separated districts of the United States. In some of the southern and western states especially, the annual losses from this fatal disease have been so great as easily to exceed the losses of cattle from all other causes combined. These losses have been particularly felt by the progressive stock growers, as by far the largest percentage of the calves which became affected were either full-blood or highly graded animals, which appear to be more susceptible to blackleg than the ordinary common-bred stock. As the continued existence of blackleg has a very detrimental effect upon the cattle industry in general, and especially upon those stock owners who, through untiring efforts and great expense, have endeavored to improve their herds, an investigation has been made by this Bureau with a view to devising some measure through which the steadily increasing losses might be arrested or reduced as much as possible

In Europe, where the disease has long prevailed, the annual losses in cert in badly infected districts became so disastrous that cattle raising had to be abandoned. About fifteen years ago three French scientists, Arloing, Cornevin, and Thomas, succeeded in producing a blackleg vaccine, which is now extensively used in many countries where the disease prevails to a serious extent. The method of its use consists in injecting into each calf two doses of highly attenuated blackleg virus, with an interval of ten days between the innoculations. This method, which is very inconvenient, especially where a large number of animals are to be treated, was later modified by a German scientist, Kitt, who reduced the process to a single injection with less attenuated virus, and who chose the loose skin on the side of the chest, just behind the shoulder, for the point of inoculation. Kitt's method has been adopted to a very large extent in eastern Europe and western Africa with very satisfactory results, and it has, for that reason and on account of its simplicity, been taken as the basis for the investigations made by his Bureau.

A "single vaccine" has been prepared in the pathological laboratory of the Bureau, and subsequently tested on a large number of calves in Texas, both common and highgrade stock, and the results warrant the conclusion that vaccine is in every way satisfactory. It is desired, however, before distributing the vaccine to stock owners in general, to obtain records of several thousand successful vaccinations. For this purpose a quantity vaccine will be distributed to such parties as may desire to make preliminary vaccinations and report the results to the Bureau. Explicit instructions will be sent with the vaccine to secure uniformity of operation and to assist persons who are without previous experience in the the vaccinations.

All applications for blackleg vaccine should be addressed to Dr. D. E. Salmon, chief of Bureau of Animal Industry, U. S. Department of Agriculture, Washington, D. C. A regular application blank will be mailed to any stock owner who so requests, and in accepting the vaccine he pledges himself to report the results.

Attention is called to the rule that under no circumstances will blackleg vaccine be sent to any one person for distribution to others, except in the case of state officials or sanitary officers. Each stock owner must apply directly to this office for the amount of vaccine required for his own cattle, and this will be sent to him direct free of any charges.

U. S.---"What can I do with this rickety old thing now I've got it? I guess I'll have to throw it on the Fourth of July bonfire."

Natural Enough.

"How did this happen?" asked the surgeon, as he dressed a wound in the cheek and applied a soothing poultice to the damaged eye.

"Got hit with a stone,' replied the patient.

"Who threw it?"

"My wife," was the reluctant answer.

"Hum: its the first time I knew a woman to hit anything she aimed at," muttered the surgeon.

"She was throwing at the neighbors' hens." explained the sufferer. "I was behind her."—Detroit Free Press.

VALUABLE INFORMATION.

Dr. Brunner Presents it to the Washington Officials.

A dispatch from Savannah says: Dr. W. F. Brunner, formerly United States sanitary inspector at Havana, has just returned from Washington, where he went to place valuable information in the hands of the surgeon general, General Miles, and the war department.

General Brunner while in Havana, for the sum of $5.40 a month, had the original reports from all the Spanish military hospitals. These reports are now in the possession of Surgeon General Wyman. They show, Dr. Brunner states, that there were in the Spanish hospitals daily, out of an army of 110,000 men, from 30,000 to 32,000 soldiers. The unsanitary conditions surrounding the men and the insufficient attention given them, together with a lack of good food, are resposible for these facts, he states. Dr. Brunner also secured in the same way information about all of the coast fortifications around Havana and personally saw planted eight of the submarine mines now in the harbor there. These plans have been placed in the possession of the war department. He also had data showing the number, size and description of all the guns, and a full description of all their ammunition and high explosives.

Dr. Brunner does not think an army of invasion should be sent to Cuba on account of the likelihood of great mortality from yellow fever and other fevers. He says with the volunteers and regulars the Spaniards will soon assemble an army of about 80,000 men in Havana.

How to Cure Alkali Soil.

The following is reprinted from bulletin 43 of the Texas agricultural experiment station. just received:

The injurious effect of irrigation water is due to the presence of such alkaline bases as soda. potash, ammonia, etc. These usually appear as sulphate of soda (glaubers salt), and carbonate of soda (salsoda), though in the waters of this state common salt (sodium chloride) and alum waters are sometimes met with. Sulphate of potash, phosphate of soda, nitrate of soda, and carbonate of ammonia rarely occur in underground waters. Quantity consider, carbonate of soda is the most injurious of the mineral elements, from an irrigation standpoint, found in our water supply. This form of soda combines in many cases with vegetable mould or "humus" forming a black compound when dry, known as "black alkali." The term "gyp water" is usually given to those waters containing sulphate of soda.

Alkali in soils is sometimes successfully washed out by heavy rainfalls, or by flooding with pure water. Another method used is the growth of such crops as show a fondness for the alkaline plant-food elements of the soil. In this connection it must be borne in mind that soils troubled by alkali are only suffering from an excess of certain kinds of food that will not permit the utilization of other necessary food elements present in the soil. Sorghum, sugar beets and salt brush are crops that have been successfully grown upon land that tend to alkalinity, and the surplus alkali has often been safely removed in their use. Thorough cultivation or increased evaporation often causes a white deposit near the surface, which leaves the subsoil free from the harmful effects of alkali, and this gives relief to the growing crop, should the supply of alkali in the subsoil be limited and not too near the surface. Gypsum is used at the rate of 400 or 500 pounds per acre as a remedy for black alkali, and common lime is recommended for white alkali. A dry atmosphere resulting in scent vegetation is favorable to the formation of alkali, and upon many such soils irrigation water and a growth of a few crops washes out or carries off the poison in the soil, thus proving an effectual remedy,

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Sam Jones's Ideal Man.

The Rev. Sam Jones expressed some sound sense in very vigorous English in a recent sermon when he said:

"The place to take the true measure of a man is not in the market place nor amen corner, nor in the field or forum but at his own fireside. There he lays aside his mask, and you may learn whether he is an imp or an angel, king or cur, hero or humbug. I do not care a copper what the world says of him, whether it crowns him with glory or pelts him with bad eggs. I care not what his religion may be. If his babies dread his coming home and his better half swallows her heart every time she has to ask him for a five-dollar bill, he is a fraud of the last water, even though he prays night and morning until he is black in the face and shouts halleujah until he shakes the eternal hills.

But if the children run to the front gate to meet him, and love's own sunshine illuminates the face of his wife when she hears his footsteps, you can take it for granted that he is pure gold—his home is heaven and the humbug never gets that near the throne of God. He may be a rank atheist and a red flag anarchist, and a Mormon, and a mugwump; he may buy votes and bet on elections; he may deal from the bottom and drink beer until he can't tell a silver dollar from a circular saw, and still he is infinitely better than the man that is all suavity but who makes his home a hell—who vents on the head of his helpless wife and children the ill nature he would like to inflict on his fellow man, but dares not. I can forgive much in that fellow mortal who had rather make men swear than women weep, would rather have the hate of the world than the contempt of his wife; who had rather call anger to the eye of a king than fear to the face of a child."

Marriage by Lottery.

A cynic or a sage once remarked that marriage is a lottery. In the province of Smolensky, in Russia, this aphoirsm has been reduced to a quarterly fact, says the London Modern Society, for once every three months there is held the most remarkable lottery ever devised. Husbands and wives are chosen by the chance drawing of a lottery ticket. The tickets cost one rouble each. There is only one prize to be drawn, and it consists of the entire sum yielded by the sale of the tickets amounting to 5000 roubles, together with a lady described as of noble blood. The tickets are sold only to males, and the lucky winner of the prize will have to marry the damsel if he takes the 5000 roubles. If, however, he be already married, he is at liberty to turn over the money and the lady to any friend whom he may wish to put in for such a good thing. If the winner should be willing to marry, but is not found to be to the damsel's taste, then they are to be excused from matrimony and permitted to divide the roubles. If they marry each other and are not willing, their life is pretty well all troubles.

As Usual.

Mrs. Gossip (in church)—Isn't that a homely boy over there. He has such a big mouth.

Mrs Slywinks—Yes, looks like his mother, don't you think?

Mrs. Gossip—I don't know, whose boy is it?

Mrs. Slywink—Mine.—Truth.

Oration.

Chopin hall, Sunday night, May 8, 1898, 8 p. m., by the world famed traveler and lecturer "Vagabond." Subject: Church of Today" Moral: What is more painful and savage than the truth? All denominations and creeds welcome Discussion invited. Admission free. No collection.

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