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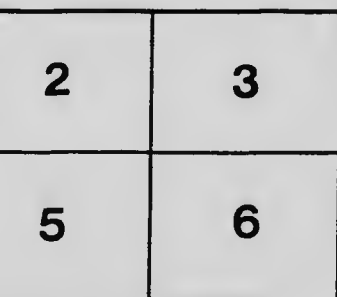
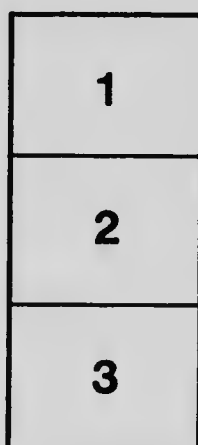
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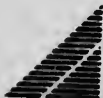
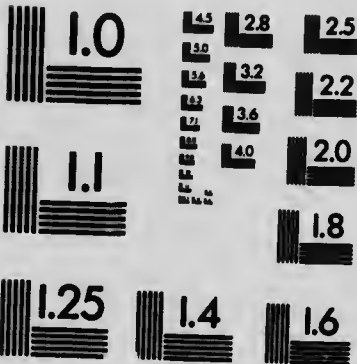
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MANITOBA AGRICULTURAL COLLEGE

# BLACKLEG

(A DISEASE OF CATTLE)

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## Leading Points

- 1—Blackleg is a disease of cattle, characterized by a high death rate causing serious annual losses.
- 2—The usually prominent symptoms are lameness and hot painful swellings, which, upon pressure, produce a crackling sound. Other disturbances may be present.
- 3—Blackleg is caused by a specific germ.
- 4—This germ exists in the soil in some localities, causing periodic outbreaks of the disease, usually among cattle on pasture.
- 5—Blackleg is not spread directly from animal to animal by contact, but infection occurs rather from a common source.
- 6—Cattle are chiefly attacked at from six months to four years old.
- 7—Successful treatment of the affected animals is not possible, as the disease is so rapidly fatal.
- 8—Cattle can, however, be protected against taking the disease by using Blackleg vaccine.
- 9—Blackleg vaccine may be obtained from the Department of Agriculture at Ottawa at five cents per dose; also from the Health of Animals Branch of the Dominion Department of Agriculture at Winnipeg. The instrument for applying the vaccine costs 75 cents.

# BLACKLEG

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Blackleg is an acute, infectious disease of cattle which is manifested in its course by lameness and the presence of hot painful swellings, especially in the region of the hind quarters, the shoulders or the neck.

It is caused by a specific germ, the *Bacillus of Blackleg*, which exists in the soil in certain regions, and to some extent appears to be indigenous in certain localities, especially where the land is inclined to be scrubby, damp and poorly drained. In some districts the disease is quite common and appears nearly every year, causing considerable losses among young cattle. Cattle are attacked chiefly at from six months to four years of age. Calves being fed on milk and not at pasture are seldom attacked. Cattle over four years of age are less frequently attacked than those under that age. Horses and human beings are virtually immune from Blackleg.

## CAUSE AND TRANSMISSION OF BLACKLEG

The essential cause of Blackleg is a rod shaped germ, termed the *Blackleg Bacillus*, which exists and infects the soil in certain localities. As a result, cattle usually become infected and attacked by the disease while at pasture. The germs gain an entrance into the animal's body by infected soil penetrating through slight wounds, or abrasions, of the skin, especially in the region of the feet and legs, and in the mucous membranes of the mouth. Infection also results from the consumption of contaminated feed or drinking water. This may take place by allowing the carcasses of cattle dying from Blackleg to remain unburied and thus infect the pasture fields, or the water in ponds and creeks to which cattle have access in feeding and drinking.

Blackleg is not, in the true sense, a contagious disease, as it is not transmitted or spread directly from animal to animal by contact. The disease is contracted chiefly from a common source, as infected soils and pastures, which explains the indigenous nature and stationary occurrence of the disease in certain localities.

It often attacks the young cattle in a herd when they are turned out to pasture in the spring and early summer, and also during the late summer and fall months, after a period of dry weather has caused the small ponds and swampy lands to dry up, thus allowing cattle to graze over them.

This disease very rarely affects cattle during the winter while they are being kept in the stable.

sharp pointed needle hook, which is forced under the skin until the vaccine cord is completely concealed. The needle is then withdrawn and leaves the vaccine cord remaining in the tissues beneath the skin to be absorbed into the system.

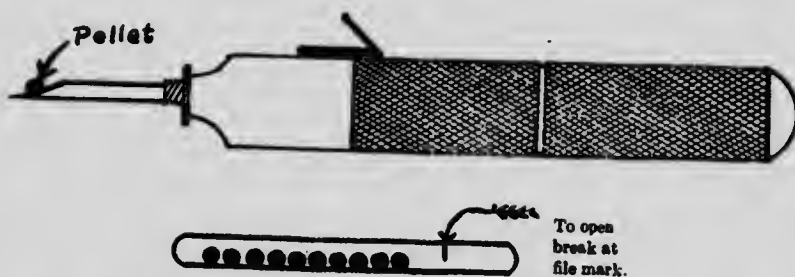
The most convenient points for introducing either the vaccine pellets or the vaccine cords are behind the shoulder, or at the root of the tail. In either case, precautions should be taken to have the skin clean, as well also as the instrument used.

As a rule the vaccination protects cattle against the disease for a period of from six months to one year, but, for safety, cattle should be vaccinated at intervals not exceeding that period of time.

In addition to the protection afforded cattle by vaccination, it is also advisable, where possible, to keep them from grazing in such areas as are known to be infected and give rise to the disease.

In all cases, where an animal dies from Blackleg, the carcass should be effectively disposed of. The best method of disposal is to cremate or completely burn up the dead body. Where this may not be possible, it should be covered over with some quicklime and buried in the ground to a depth of at least six feet. The dead body should not be dragged over the ground surface, nor should it be skinned or cut open, but should be buried, or burned, intact in the hide.

Blackleg vaccine is prepared by certain private laboratories and also by the Department of Agriculture at Ottawa. It can be obtained from the Department at a nominal cost of five cents per dose, and the instrument required for its application at a cost of seventy-five cents. A herd, therefore, can be protected against losses from Blackleg at a very small cost, and the best course to follow in affected districts is to regularly vaccinate the herd each spring before turning them out to pasture.



The top figure shows the Vaccine Injector, the arrow indicating the vaccine pellet which is dropped into the hollow point of the injector until the point has been inserted under the skin of the animal. The pellet is then forced out and left in the animal. The lower figure shows the vaccine pellets inside the glass vial in which they are contained.



## TREATMENT AND PREVENTION OF BLACKLEG

When an animal becomes attacked with Blackleg, successful treatment is hardly possible. This is owing to the fact that the disease is so often rapidly fatal and may cause death within a few hours, so that no opportunity is allowed for beneficial treatment. Even in those cases that survive for a period of one or two days, any treatment so far tried has not been found sufficiently successful to warrant much approval. Fortunately, however, cattle can be protected against the disease by means of vaccination with Blackleg Vaccine. Therefore, owners of cattle in districts where



The two X marks indicate the places where it is customary to inject the vaccine into the animal, that is just behind the shoulder and in the loose skin just about the tail head.

the disease is liable to occur should protect their cattle by the use of the vaccine. Two methods of vaccination are in general use; in one the vaccine used is in the form of small pellets or pills and in the other the vaccine used is in the form of small silk cords. The method of application in either case is comparatively simple and may be done by any one accustomed to the handling of cattle. In using the vaccine pellet method the vaccine pellet is forced under the skin by means of a sharp pointed injector, which, on being withdrawn, allows the vaccine pellet to remain in the tissues beneath the skin, where it becomes absorbed into the system. In using the vaccine cord method, the vaccine cord is fastened on a suitable

## SYMPTOMS OF BLACKLEG

Once an animal becomes infected with the Blackleg germ, the disease develops very quickly, the period of incubation being generally about three days. The course and duration of the disease is also very short and may terminate fatally in from one-half to three days. In cattle, the first symptom manifested is usually sudden lameness, in which one or other of the legs is dragged stiffly. Soon thereafter a swelling appears in the region of the thighs and quarters, the neck and shoulder or other parts of the body. The swellings in cases of Blackleg are very characteristic in that they develop rapidly and are at first very hot and painful, and subsequently become less tender and the skin in the centre of the swelling feels cold and becomes dark colored and dry, like a piece of leather. Another striking peculiarity is that when the swollen parts are pressed or handled, they give a crepitant or crackling sound, due to the presence of gas or air in the affected tissues. The various lymphatic glands are also swollen and may be felt under the skin in different parts of the body, in the form of firm lumps about the size of apples. In addition to the swellings and lameness, symptoms of general disturbances become noticeable, such as high fever, labored breathing and rapid beating of the heart. Sometimes attacks of colic are observed. Finally the animal becomes prostrated and lies on the ground stretched out and soon thereafter dies. While the swellings mentioned are essentially characteristic of Blackleg, there are, however, some cases in which the swellings are either not present or may be too deeply situated in the body to be observed, and the only symptoms noticeable are the general constitutional disturbances.

## FIRST-MORTEM APPEARANCES OF BLACKLEG

When any cattle are found to have died suddenly at pasture, it is often advisable to examine the carcass to determine the cause. In cases of Blackleg the carcass usually appears to be greatly bloated and a reddish frothy liquid is often seen coming from the mouth, nose and anus. A more or less prominent crepitant, or crackling, swelling may also be noticed anywhere upon the body, but more especially on the rump or other parts of the hind quarters. If the swellings are cut into, the tissues appear a dirty brown or dark red color, and when squeezed a dirty, red colored, frothy liquid containing gas bubbles is pressed out, which has a very offensive, sickly odor.

The tissues surrounding the swellings show an extensive straw colored dropsical appearance. The lymphatic glands near the swellings are much swollen and filled with blood.





