

horses, is hereditary, and when a colt is found possessed of a very slow gait, the result of bad breeding, the greatest success cannot be expected from careful training. In the same manner too the colt that has been bred to walk may be injured by being broken to harness alongside a slow walker.

## STOCK.

### More About Pictou Disease.

ITS CAUSE INVESTIGATED IN NEW ZEALAND.

Recently, we called the attention of our readers to a serious disease of cattle prevalent in the Pictou district of Nova Scotia, and gave the opinion of Dr. Pethick that the causative agent was ragwort (*Senecio jacobæa*). In America, little is known of the disease, but in certain districts of New Zealand it has been known and studied for the past ten years, with results that are quite interesting and suggestive to stockmen. In New Zealand, the disease first made its appearance in the township of Winton, in horses, and was, hence, called Winton disease, but it was not long confined to one district, and so great was the mortality of horses, cattle and sheep, all showing similar symptoms, that careful research was instituted to determine the cause of the disease, and, if possible, suggest a cure.

At the outset of the investigation, observant cattlemen expressed the opinion that ragwort was the cause of the disease, and enquiry and examination disclosed the fact that in such districts, namely Southland and Auckland, N. Z., and Nova Scotia, Canada, where Winton disease prevailed, there ragwort was a most common weed, and this fact pointed to ragwort as being the cause, directly or indirectly, of the diseased condition of the liver, which ultimately caused the death of animals affected with Winton disease, or, as it is called in Canada, Pictou disease. In this one respect alone is there any similarity between the conditions prevailing in Canada and those in New Zealand.

Following up this clue, the veterinary authorities in New Zealand experimented with the feeding of ragwort to different kinds of stock, and in a sufficient number of cases to make the trials conclusive, death was produced as the result of eating the weed. The symptoms of the disease in horses, as given by J. A. Gilruth, M. R. C. V. S., Chief Veterinarian and Bacteriologist for New Zealand, and from whose report we quote the following, are a weak, staggering, swaying gait; when standing, a tendency to stamp with one or both hind feet; twitching of the muscles, an amaurotic condition of the pupils, yellowness of the visible mucous membranes (which may be very pronounced), a clammy condition of the mouth, constipation, irregular and generally weak, intermittent pulse, a depraved appetite, and a normal temperature. The earliest noticeable symptom is drowsiness and general dullness.

There is nearly always a depraved appetite exhibited from the earliest stages, manifested by the eating of any rubbish such as leaves, stable-soiled straw, weeds, etc., which may be convenient. Gradually inability to completely co-ordinate the muscles asserts itself, and, even when standing still, in advanced stages there seems to be a continuous endeavor to keep from falling, and a patient may be frequently discovered leaning with the head against the end of the stall or wall of a loose box. Soon afterwards the animal exhibits symptoms of what can only be likened to drunkenness. With eyes staring, and staggering, swaying gait, the patient lurches forward, with no evident consciousness of direction. As a rule, he wanders in a more or less direct line, which he will adhere to, unless forcibly turned. Dr. Gilruth says: "I personally observed a case in which the animal burst open the end of the not very stable loose-box in which he had been confined, entered a paddock by breaking down the fence, and finally reached the river, into which he floundered and swam to the other bank, where he was found, the bank being too steep for him to climb."

A frenzied condition may ensue, when the animal exhibits all the symptoms of madness, rushing hither and thither, head held high, and bruising the body heedlessly against any obstacle.

Soon, however, the patient falls, and is unable to rise. Later, unconsciousness occurs, and beyond a spasmodic movement of the head and limbs, no attempt is made to improve the condition. Complete coma results, and death rapidly supervenes.

An almost constant and characteristic symptom is the dark color of the urine and its offensive smell. Constipation, or, at least, an extreme sluggishness of the bowels, is also characteristic, as is the impotency or ordinary purgatives, even in large doses, to procure relief.

#### SYMPTOMS IN CATTLE.

Unfortunately, cows not being so valuable as

horses, we have not had the same opportunity of studying the symptoms exhibited, our attention being only directed to the cases when in the later stages. In dairy cows, the first notable symptom is diminution of the milk supply. Mr. Paterson has called attention to the fact that one of the earliest symptoms observed in dairy cows in milk is the presence of a peculiar odor about the animal's skin, which can be rendered more definite by slight friction. If the skin be rubbed by the hand, this peculiar odor clings to it for some hours afterwards. The same odor can be detected in the milk, particularly if rubbed between the hands. The milk has a peculiar acrid flavor, which renders it absolutely useless for buttermaking. He reports that it is a common occurrence for farmers' wives to observe that this abnormal flavor was the first peculiarity they noticed with a cow sick of this disease.

There is a rapid emaciation, a voracious appetite, or a total absence of any desire for food. Jaundice is more or less pronounced. Ascites (dropsy of the abdomen) is frequently observed while the animal is alive. There is a similar want of co-ordination of the muscles, but this is not so constant as in the horse, and there is always chronic diarrhoea of a most persistent type accompanying the rapid emaciation previously noted.

Feeding cattle, and cows kept for purely breeding purposes, do not exhibit quite the same symptoms. Diarrhoea is not nearly so acute, ascites is not so evident, and whereas in the dairy cow

material, large portions may be readily removed at times by the hands.

The most marked change otherwise is in the liver, which is almost constantly in a state of chronic cirrhosis. The organ is usually smaller than normal, of a dull, mottled, slaty-blue color, frequently pitted, and almost "hobnailed," there being occasionally small dark-blue pitted areas underneath the capsule and throughout the structure. The edges of the liver have lost their sharpness, and are rounder than normal. The capsule strips with difficulty, and where forcibly removed with the forceps it leaves a very irregular surface, portions of the liver structure remaining adherent to the removed capsule, which to the naked eye can be seen to be thickened. To the touch, the resistance is much greater than normal, and the whole tissue has the feel of tough India rubber, it being impossible to break it in pieces as readily as one can normal liver. When cut, the consistence is found to be leathery, and the tissue has almost a gritty feel to the knife. The veins throughout can be seen to be very much distended. In the horse, the cut surface has a distinctly dull-orange mottled appearance, which is very characteristic.

The peritoneal cavity in the ox usually contains a large quantity of straw-colored serous effusion, varying from one to five gallons, while a quantity of similar fluid is very commonly found in the pericardial and pleural cavities. In the horse, ascites is but rarely observed.

The mucous membrane of the stomach of the horse generally shows numbers of petechiæ, and occasionally exhibits slight ulcerations, sometimes partially healed. In the sub-mucosa of the small intestines there may be a considerable collection of clear semi-gelatinous effusion, causing separation of the mucous from the other coats of the bowel for the space of half an inch. This condition of sub-mucous effusion is, however, almost constant in the ox, especially so in the abomasum, where it is not unusual to find the mucous membrane separated from the muscular wall by from one to two inches of this clear effusion, which varies from a watery to a semi-gelatinous consistency. The mucous membrane of the abomasum constantly shows pathological changes, varying from petechiæ and small inflammatory areas to shallow ulcerations.

The lymphatic glands are usually very much enlarged, and when cut exude a large quantity of clear dropsical fluid.

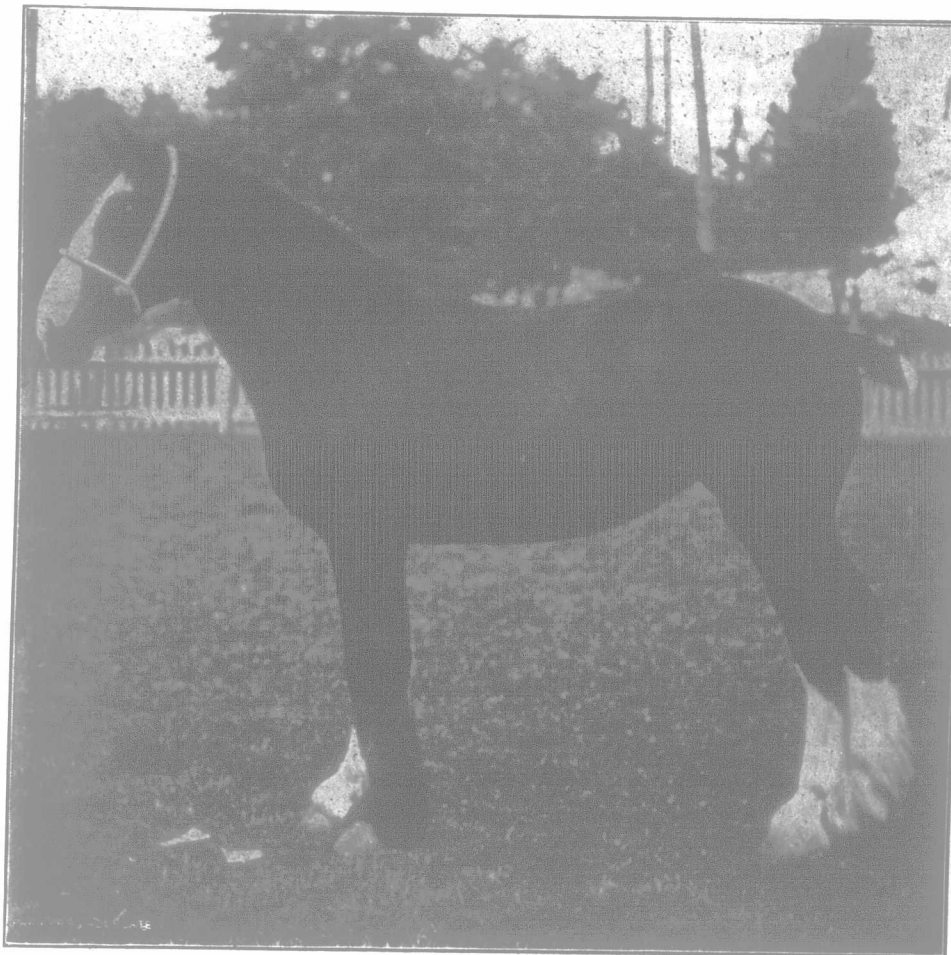
Occasionally large blood-clots are found in the ox between the peritoneal layers of the mesenteries, this phenomenon being particularly observed in the cases which occurred in the Auckland district.

The heart is generally normal, although some of the Auckland cases exhibited sub-epicardial and sub-endocardial hemorrhages. All other organs are normal, though the spleen may be slightly enlarged and the lungs congested.

The stomach of the horse is generally impacted, and the intestines filled with hard ingesta. The contents of the abomasum and intestines of the ox, on the contrary, are usually in a very fluid condition.

#### PATHOLOGICAL CHANGES IN THE LIVER AND OTHER ORGANS.

Depending upon the amount of poison absorbed daily into the system, the pathological condition of the liver consists of an inflammation varying from acute and sub-acute to chronic, of Glissons capsule chiefly. In the more chronic cases there is observed an intense increase of fibrous tissue, chiefly interlobular and capsular. This tissue may consist of bands, which, although more pronounced in the interlobular region, send processes into the lobules between the liver-cells, isolating them in groups and even singly. In all instances this is accompanied by (1) extravasa-



Dona Roma (imp.) [6169].

Winner of third prize in the two-year-old Clydesdale filly class, Toronto, 1904. Sired by Woodend Gartly (10663). Imported by Graham Bros. Now the property of Hodgkinson & Fisdale, Beaverton, Ont.

symptoms may be exhibited for even ten days or a fortnight in these cows, death occurs in from two to five days, the animal being in a visible state of excitement almost bordering on frenzy throughout, and it will frequently charge even a man on horseback. That the milk is changed seems evident from the fact that, in breeding cows with calf at foot, the first symptom noted is the cow bellowing for the calf, which pays no attention, and, indeed, is generally not to be seen—evidence that for some days previously a proper supply of milk has not been available.

In dairy cattle, Mr. Paterson has observed in many cases that the patient exhibits complete oblivion to all surroundings. The animal persists in lying, and no effort succeeds in disturbing her. "I have bawled into their ears, switched them with a cane, and even twisted their tails, but they never seemed to mind in the least. They looked as if they did not know I was there."

#### POST-MORTEM APPEARANCES.

The most striking appearance on skinning the animal is the yellow, bile-stained condition of the tissues. The peritoneum, the fat, and the general viscera all exhibit the same appearance, which may vary from a faint tinge to the proverbial "yellow as a guinea."

In cattle, there is frequently a large accumulation of a semi-gelatinous, yellowish-tinged exudate, situated subcutaneously along the inferior borders of the thorax and abdomen. Of this