

THE POTATO ROT.

The *Boston Courier* contains a communication from Professor Horsford of Cambridge, giving the views of Baron Liebig, the celebrated chemist, and Dr. Klotsch, an eminent vegetable physiologist, keeper of the Royal Herbarium in Berlin, on this baffling disease. The substance of Dr. Klotsch's discovery is annexed:—

In the 5th, 6th, and 7th week after setting the tubers, and in the 4th and 5th week after planting out germs furnished with roots, or at a time when the plants reach the height of six to nine inches above the soil, we pinch off the extreme points of the branches or twigs to the extent of half an inch downwards, and repeat this on every branch and twig in the 10th and 11th week, no matter what time of day.

The consequence of this check to the development of the stem and branches, is a stimulus to the nutritive matters in the plants in the direction of the increase, both of roots and of the multiplication of the branches of the stem above ground, which not only favors the power of the root, but also strengthens the leaves and stalks to such a degree, that the matters prepared by the physiological action of these parts are increased and applied to the formation of tubers. The checking of the transformation in the leaf is equivalent to the interruption of the natural change of the leaves into calyces, corolla, stamens and pistils, which is effected at the expense of the nutritive matter collected in the plant; and these, when this modification of the leaves is arrested, are turned to account in the formation of tubers.

Led by these views, I made, in 1846, experiments on single potato plants, carefully marked, by pinching off the ends of the branches.—They were so readily distinguished, in their subsequent growth, from the plants beside them, by more numerous branches, darker and larger foliage, that, in truth, no marking was necessary.

The produce from these plants of tubers was abundant, and the tubers were perfectly healthy—while the plants next them, which had not been so treated, gave uniformly a less produce, at the same time the tubers were rough on the surface, and in many instances attacked with the prevailing disease. This experiment was incomplete, and did not give a positive result, but it was not yet encouraging for me.

In the middle of April, 1847, an experiment was made on a low lying field, with the round white potatoes generally cultivated here—a variety which had not suffered much from the disease which first appeared in 1845. The potatoes were planted in the usual way by an experienced hand.

After weeding them in the end of May, I renewed my experiment, by pinching off the points of the branches of every second row, and repeated this in the end of June. The result surpassed all expectations. The stalks of the plants not treated on my plan were long, straggling, and sparingly furnished with leaves, the leaves themselves small and pale and green.

In the next field, potatoes of the same variety were planted on the same day, and left to nature. They appeared in the first six weeks healthy, even strong, but gradually acquired a poor aspect as the time of flowering and fruit approached, and finally exhibited precisely the same appearances as the rows not treated by pinching off the extremities, in the field in which my experiments were made.

The harvest began in the surrounding fields in the month of August, and was very middling. The tubers throughout were smaller than usual, very scabby, and within these fields, to a small extent, attacked by the wet rot.

In the end of August the difference between the rows treated by me and those not treated, became so striking, that it astonished all the work-people in the neighborhood, who were never tired of inquiring the cause. On the contrary, the rows treated as above, were luxuriant and in full vigor, the plants bushy, the foliage thick, the leaves large and dark green, so that most people supposed they had been later planted.

But the difference in the tubers was also very decided. The tubers in the plants in the rows treated on my plan were not indeed larger, but vastly more numerous, and they were neither scabby nor affected with any disease whatever. A few had pushed (which was ascribed to a late rain) and were apparently incompletely developed, while scab and wet rot attacked more and more the tubers of other plants which also fell off on the slightest handling.

POISONOUS PROPERTY OF BRINE.—It is not to be wondered at that your pigs should be suffering, if, as you state, "a portion of brine got mixed with their wash," and they partook of the same. We have the authority of the late celebrated veterinarian, Mr. Youatt, for stating that "the brine in which pork or bacon has been pickled is poisonous to pigs;" and that "several cases are on record in which these animals have died in consequence of a small quantity of brine having been mingled with the wash, under the mistaken impression that it would answer the same purpose and be equally as beneficial as is the admixture of a small quantity of salt."

CRUELTY IN THE MANAGEMENT OF SHEEP IN LOWER CANADA.

We find the following communication in the *Montreal Witness*. If the statements of the writer be correct, we must say that the farmers of Lower Canada are deplorably blind to their own interests, and more than semi-barbarous in their feelings. If they can grow rich by managing sheep upon such a system, we can only say that it would be an impossibility in Upper Canada:—

Virtue Roadhead, April 27.

DEAR SIR,—An earnest desire that breathes through the columns of your paper to improve the condition, and increase the comforts of our own race, induces me to hope that you will admit into the agricultural department of the *Witness* a few words in behalf of a numerous race of animals, to which we are indebted for a great many of our temporal comforts—I mean the sheep. The miserable condition to which these useful animals are annually reduced, through the ignorance or negligence of those who have the management of them, is really deplorable. One would almost need to see before believing the almost merciless torture to which they are subjected by their ignorant and merciless owners. One would think they are kept by many of the Lower Canada farmers for the very purpose of vexing themselves, and making the poor creatures miserable. Profits from them there can be none; those of them who are able to crawl about at this season are allowed a kind of lawless liberty, during which period they acquire restless habits, for which they shall severely suffer by and by. As soon as the "braird" is so long that they can crop it, they are taken and shut up along with, perhaps, some half dozen or more swine, very like what is called the land-pike breed, into a small enclosure, which is called the sheep pasture, but would be better designated the prison. If there happen to be any green thing at all upon it, it is quickly eaten off or rooted out. Hunger and previously acquired habits induce them to break their prison, and then commences a course of punishments painful to relate. The first I shall mention consists of four pieces of wood about three feet long, fixed together so as to fit tightly about the neck. A flock of sheep loaded in this way present rather a comical appearance when all are moving forward with their "gates" on their necks; but this does not always answer the purpose—if the fence is low they will sometimes crawl over, "gate" and all; then paring off the hoofs to the quick, tying two legs together, and similar tortures are resorted to. The last I shall mention is worthy of the Inquisition—in consists in doubling up one of the fore legs with the sole of the foot towards the shoulder, and tying a string firmly about the double leg, a little above the knee joint. This always proves effectual; to get a little ease they must lie down, as this posture brings the distorted limb into something nearer its natural position. Whenever I see this mode resorted to, I feel a sympathetic aching in my own hand and arm, with a strong inclination to be over the fence and cut the string; but as that would be considered meddling with other people's business, we must leave the sheep to "dree their weird" until the month of October or November, when they will get a short respite, but for which many flocks would never yield increase. But there are yet other measures awaiting them of a scarcely less revolting and painful nature than those mentioned above. As soon as winter sets in they are shut up every night in a narrow and unclean place, where their dung is allowed to accumulate for months, and if any quantity of straw has been supplied, the whole often gets into a state of strong fermentation, and not the least attention is paid to ventilation. Open the door of one of those pens on a clear frosty morning, and the gases accumulated within will blow into the atmosphere like smoke from the mouth of a cannon, the poor half-suffocated creatures run out into the cold in a state of perspiration, and in a few minutes are shivering with cold. Their food is pea straw, an article that contains but a small amount of nutriment, and more especially after a French Canadian barnman has had satisfaction at it with his fall—a search for a pea, after him, would be a fruitless one. The natural consequence of this hunger and filth is swarms of vermin, so that by the middle of winter their coat is all in tatters, and by the middle of March some of them almost entirely naked; and this is not the case only amongst the French, but even in the hands of those who ought to, and I believe do, know better, and what are reckoned some of the best flocks in the country, too. Only think of a half naked creature subjected to the alternate extremes of heat and cold, ill fed, and now to eat instead of water to drink! You might conclude they were experimenting on scientific starvation.

Now, Sir, there is no mystery at all about the management of a small flock of sheep in Canada, so that they may prove a source of both pleasure and profit to any who may choose to keep them. I shall say nothing of the merits of the different breeds, lest this turns out too long a story, and be thrown out for intrusion. Let every body please themselves in this respect, but the treatment in all should be nearly the same. Just now is the time to catch their affections, and give them a kind of moral training, which will prevent them from running into mischief through the course of the whole year. Keep them close confined, but as much in the open air as possible, feed them regularly three times a day with clean, nourishing food, say tur-