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[OLD SERIES]

*Nec araneorum sane textus ideo melior, quia ex se fila gignunt, nec noster vilior quia ex alienis libamus ut apes.*

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### THE POTATOE DISEASE.

MR HORSMAN rose to put a question to the right hon. baronet, (Sir R. Peel) on a subject of great public importance. In his speech the right hon. Baronet had spoken not only of the present evil to be feared from the failure of the potatoe crop, but also of his fear that there might also be a deficiency in future crops, in consequence of the seed being affected also. Since the right hon. baronet had made that observation, a statement had been published, which was signed by names of high authority, which gave the result of an experiment made by the Horticultural Society, rendering the prospect more alarming, and to which he desired to call the attention of the right hon. baronet. The statement was as follows:—"At the ordinary meeting of the Horticultural Society, held on Tuesday, Dr. Lindley exhibited some specimens of new potatoes grown in the gardens of the Society, and Lady Rolle at Bicton. In many the disease of last autumn was very apparent, and in some cases it was very extensive. They had been produced from sets of potatoes which had been but slightly affected, but showed that wherever the vitality had been influenced the disease would be perpetuated—a fact which could not too generally be made known amongst growers. In many the brown and blighted haulm and the decayed tuber were quite as perceptible as in any of the old specimens. In the specimens fresh dug up no appearance of fungus could be detected by the most minute microscopical examination, but this was very apparent in those from the country, showing that it was a consequence and not the cause of the disease." Perhaps this statement might have come under the notice of the right hon. baronet, and he therefore wished to ask him whether he had received any information which would lead him to suppose that those farther apprehensions were well founded? (Hear.)

Sir R. PEEL.—When I spoke in the debate on Monday night I did not state generally that I feared there was great reason to apprehend that the evil arising from the failure of the potatoe crop might not stop with the present season. At that time, however, I had had no direct personal communication with Dr. Lindley, but I spoke from communications of a general nature from different parts of the country, which led me to expect that danger was to be apprehended next season as well as this. On the next day I received a communication from Dr. Lindley, who said he felt it necessary to make an immediate report of circumstances which led him to feel that there was great reason to apprehend a failure in the succeeding crop, arising from a diseased state of the seed derived from a part of the existing crop. He said that experiments had also been made with potatoes considered to be sound. The result was a discovery that they contained the germs of the disease, and Dr. Lindley did impress on the Government the necessity of giving notice of these facts, and of urging on the public the utmost caution, as there was every reason to apprehend that plants produced from seed derived from diseased potatoes would also be diseased. (Hear.)

From the Scottish Guardian.

### THE POTATOE DISEASE—DANGER OF CROP, 1846.

In the House of Commons on Friday night, Mr Horsman inquired whether the Government, which is forced, by meddling with the people's food, to attend to very minute and strange matters, had taken into its consideration the fact mentioned in the papers on Thursday, of the potatoes used for seed having propagated the disease, occasioning the most alarming fears for next year's crop. Sir Robert Peel answered that "he had received a communication from Dr Lindley, that there was great reason to apprehend that

the plant proceeding from the diseased seed might be similarly affected. We find this opinion confirmed by an article which appears in the *Gardeners' Chronicle* of Saturday. After referring to experiments at Lady Rolle's, and at the Horticultural Society, it proceeds to say—

"But this is not all. Upon examining more carefully the young potatoes formed by the diseased sets, we found still farther evidence of latent mischief. Some of Mr Earnes's potatoes had formed tubers and roots without haulm and foliage; they were what are called in Cornwall 'Bobbin joans.' In one of these the brown colour on the walls of the cells, the earliest symptom of disease was already appearing in the various minute places, in the very centre of the young potatoe [this potatoe became black after 24 hours' exposure to the air]; others were decaying on the surface, and one of them had already rotted away. We now, therefore, warn the public that DISEASED SETS WILL PRODUCE A DISEASED CROP. Not a shadow of doubt remains upon that point.

"But, unfortunately, this intricate question is not settled by such an announcement. On the contrary, a far more serious consideration remains behind. Can we regard the sound (?) potatoes saved from the diseased fields of last year as fit for seed? It may be rash to venture upon any prediction concerning so wholly unknown a subject; but nevertheless the interests involved in this question are so mighty, that we must be content to bear the reproaches which may be poured upon us if we hazard an opinion which the result may not confirm. We venture, then, to declare thus early that *great doubts exist as to the fitness for seed of apparently sound Potatoes from diseased districts.* That the remaining potatoes of last year's crop are in an unusual condition is certain; they are more excitable; they will sprout much quicker than is customary; at this early period potatoes are found in a state of advanced growth when the pits are opened; and this has taken place much beyond what can be ascribed to the peculiar mildness of the season. In fact, the old tubers of last autumn began to grow in a few weeks after they became ripe, or what seemed so; an event unknown in previous potatoe culture. Why this is we know not; nor shall we embarrass ourselves with inquiring whether it is owing to this or that chemical peculiarity. It may be very true that the potatoes have formed unstable *casein* instead of stable *albumen*; or some other explanation may be more correct. For us it is enough to know, that the vitality of the potatoe is affected. The living principle is changed; of that no doubt can exist; and such being the case, it is much to be feared that the disease of last year will continue to appear until, or except where, the original constitution of the potatoe is recovered.

"But we would not sound a note of alarm upon mere speculations. We grieve to announce that we have now before us evidence that confirms the view we have ventured to take. Among the Bicton potatoes above alluded to was one which the most practised eye would, we think, have pronounced sound; its skin was clear, its texture uniformly pale yellow, with no tendency to change colour when exposed to the air, and its surface had not a blemish, with the exception of a very small narrow short streak on one side, which seemed to have been the scratch of a fork. This potatoe pushed vigorously; its main stem is half an inch in diameter; it must have shown all the symptoms of the most robust health; and yet gangrene has attacked the haulm just above the tuber, and the usual blotchings have appeared upon the leaves. This potatoe will be unequivocally diseased.

"We will suppose that some trace of disease could have been found in this potatoe, by cutting it into thin slices, tho' we have failed to discover them by that process. Admitting this, yet it is perfectly clear that if healthy potatoes can only be discovered by such a process, the crop of next season is doomed, wherever sets from diseased fields are employed.

"We, therefore, warn the country, in

the most emphatic language that words are capable of conveying, to think well of what is coming; to plant no potatoes to which suspicion attaches; and, if sets from uninfected districts cannot be procured, to crop their land with something else. There can now be no doubt that in the absence of such precautions *there is no security for the potatoe crop of 1846.*"

[Since writing the above we have received confirmation of our worst fears. Mr Errington, gardener to Sir P. Egerston, at Oulton, in Cheshire, writes that in a garden near him "the early kidney potatoes in frames are totally destroyed." He adds that he "saw the frames last week, and the stems have mortified from the leaves downwards, exactly as they did in the open fields last September.

Mr James Cuthill, of Camberwell, informs us that Mr Hale, a market gardener at Ware, in Hertfordshire, has had his early potatoes attacked with last year's disease; that "half his crop, amounting to about sixty lights, is gone;" that the plants "were looking well, and about eight inches high, and all at once they were attacked." Mr Hale, florist, Stockwell, saw these potatoes, and authorises Mr Cuthill to say so; the owner was dusting them with lime.

We have received a sample of potatoes from Mr Miiburn of Thorpfield, near Thirsk, just taken out of the pits, and "quite sound as far as he can judge," in which indeed there is not the smallest outward sign of decay, and yet we find every one marked with the disease upon cutting into them. We are also informed that the forced potatoes at Colonel Wyndham's, at Petworth, have proved to be diseased, although great care was taken in picking out what appeared to be sound sets.

From the Journal of the Royal Agricultural Society of England.

### ON THE DISEASE IN POTATOES.

By Lord Portman, President of the Royal Agricultural Society of England.

To Mr. PUSEY.

My Dear Pusey,—I send you the observations which I have made upon the crops of potatoes grown in my garden and in my fields this season, which you asked me to send you for publication in our Journal. As soon as I had observed that the potatoes in my garden were diseased, I had the whole crop dug up, and found a great quantity so much affected as to appear to me to be useless. Of the worst tubers I selected a dozen from each plot of ground and placed them on the earth under two hand-lights, and constantly observed the progress of the disease. For three weeks it advanced rapidly, and the stench was dreadfully offensive, but at the end of a month no smell remained; and in six weeks I found that they were in the following state under each glass:—Some were quite dry, and crumbled to dust; some were extremely wet, and had the appearance of an ulcer in a state of viscous matter; and the rest had put forth shoots more or less healthy. Of these last a few eyes had shot a length of half an inch and died, and the whole tuber had become wet—ulcered. The others were so vigorous that I cut away the sound parts with the eyes and planted them in pots, placing them in my hot house. Parts of each of the potatoes that grew were in the wet-ulcer state.

These plants are now growing well, and are 18 inches above the pot—healthy vigorous plants; and the pots are as full of fibrous roots as possible: some small tubers are already formed. While the potatoes were under the hand-lights, there was a good deal of sunshine and very little rain; and I think that the warmth materially hastened the progress of the disease. Of the remainder of the garden crop part were stored in very shallow heaps, and part were spread on a dry floor; and by carefully picking out all that exhibited any signs of disease, I have a good stock in a sound state. I found that in each of the first three weeks a few diseased tubers were picked out of each store, and I ordered a quantity of

slaked lime to be shaken over the tubers, and since that I have found no increase of the disease. The eyes of the tubers are springing very freely, and I have planted for the crop for 1846 all those that exhibited that tendency to premature growth; as I think it important for a crop to have the advantage of all the vegetative power of each set. The ground was dug in November for the winter fallow, and several potatoes were found in it which had not been picked up when the crop was taken off: none of those which were so found had decayed, though some were slightly diseased.

The potatoes in the field had been planted in Northumberland ridges at the usual planting, and were well dunged with farm-yard manure. They did not come up very kindly nor regularly, but soon made a great show of vigour. Nothing more than common appeared till towards the end of August, when the foliage appeared to be touched with frost or scorched, and the smell from them was somewhat offensive, though not very strong. About a week after the appearance of the decay, the stalks were all cut off close to the earth, and most of them taken off. The potatoes were taken up about Michaelmas in dry weather; they were remarkably clean and nice looking. The diseased potatoes were picked out and soon after steamed for the pigs, and given to them in the usual way without any injurious results; the sound potatoes were piled away in a long heap at the end of a barn which is dry, cool, and airy; after they had been there about a month they were turned over and the diseased potatoes were picked out and steamed as before: the sound tubers were stored back with lime in a long heap—1 bushel of lime, which was very mild and powdered, to 1 sack of potatoes; the small tubers were picked out and placed by themselves without lime. Both heaps have now been turned back, and none are diseased.

When first taken up, some of the potatoes were cooked; they were not good, but waxy and soapy; they have gradually improved, and are now mealy and fine flavored. The tops were cut off before the potatoes were ripe, which perhaps caused them to be waxy and soapy when dressed. Their recent treatment hastened to improve them; and a similar plan of treatment would probably do so in all seasons. There were two sorts of potatoes in the field—a round red potatoe, and the salmon kidney; the latter were the most affected by the disease. The land on which they were grown is light and dry, on a chalk subsoil, the aspect northwest. The crop for 1846 I commenced planting in November; the sets were small and sound, planted whole and well rolled in lime. Some were planted under the dung, others over the dung, and some without any manure at all, being intended for a top-dressing in the spring. A good many of the sets have been examined since, and all continue good as when they were first put in. It is difficult to persuade persons to plant potatoes now; their great objection is that their manure is not ready.

I have ordered that no potatoe shall be consumed in my house or on my farm until the eyes have been taken out, as advised by Dr. Lyon Playfair in his admirable lecture; and I have appointed some careful labourers to take out, week by week, the eyes of the potatoes required for a week's consumption; and I have arranged to store the eyes in wood ashes, charcoal, and other dry materials. If this plan is as successful as I anticipate, it will be good for all years, and will supply abundance of sets, and not perceptibly diminish the food of the population.

I have also heard of great success having attended the following experiment, which I am about to try. Place the tubers in a moist, dark place, at a temperature varying from 50 to 60 Fahrenheit. Here they will push out shoots which will grow from 8 to 10 inches, and then throw out fibrous roots at the lower points. These should be taken off without being bruised, and immediately planted in a hot bed, with the tops just above the ground. The parent tubers will throw out a second similar set of shoots which may be similarly treated,