change necessary in our system of agriculture; but as they were an expensive crop, the actual loss to the farmer may not be so severely felt as we might first imagine; and if the working classes are able to obtain a better description of food, it will be a fortunate change for them. We have given several articles respecting the potato disease in this Number, but they show very little more than the existence of the disease, and have no pretensions to explain the cause, or propose a sure remedy.

We never have seen the country appear more promising the last day of April, than at present. The grass and trees of all species and varieties are in a forward state, and the latter will soon be in full leaf, if not checked by cold or sudden change. The crops coming up look very healthy, and if the season goes on as favourably as it has commenced, we shall have abundant crops. The wheat sowing is not yet accomplished, and we trust the time for this work may be as suitable for it, as this spring, up to the present, has been for putting in other crops. Though we have had some night frosts in April, the fruit trees do not appear to have suffered any injury.

Cote St. Paul, *April* 30, 1846.

THE POTATO DISEASE.

(*From the Gardener's Chronicle.*)

During the past week, Lord George Bentinck has been lecturing to the House of Commons on the potato disease. He has discovered that kiln-dried potatoes will not grow, and that either lime or charcoal will make diseased potatoes keep. His lordship might have gained the first piece of erudition from the nearest maltster; the latter we should have thought he had picked out of the reports of the Irish Commissioners, if the assertions he has been so obliging as to make respecting these gentlemen did not show that he had never read their recommendations. But, said Lord George, the very worst potatoes, if you spread them out on the floor of a peach-house, and dust them with quick-lime every day *until the rotten part is converted into starch* (!) (*O magnis posthac inimicis risus!*) will form fine healthy shoots; and all at the small expense of 6d. per sack for the lime. It is a pity that we have not peach-houses all over the country, and that people employed in turning over rotten potatoes, and dusting them until the marvellous conversion of rottenness into starch, is effected, should be so unreasonable as to demand wages for their trouble.

This exhibition in St. Stephen's forces us back to the question of what was the cause of the disease. It may by some be assumed that the unvarying success which has attended our earliest recommendation (August 23 and 30, 1845) of keeping the potato dry, in which manner only do either lime or charred materials appear to act, is a proof of the truth of our original hypothesis (August 23, 1845), that the peculiar atmospheric causes of 1845 produced the mischief. For ourselves, we are wedded to one opinion only in regard to this matter, and that is, that the evil was *not* caused by fungi. Atmospheric conditions seemed to explain the difficulty best, and, in the absence of a more rational solution, we have looked to them; but we are bound to say that circumstances have by degrees come to our knowledge which weaken this hypothesis materially, if they do not entirely destroy its value. So long since as the autumn of last year we were made aware of the singular fact, that potatoes of 1844, in the possession of Sir John Lubbock, upon being placed in dry sand under a shed, where they were guarded from the weather, produced diseased tubers; but their malady was somewhat different in its aspect from that of the open fields, and as the case at that time stood alone, we could not attach much importance to it. At a later period similar intelligence reached us; but not having seen the potatoes alluded to by our informant, that too was not calculated to shake our first opinion. Two other facts have, however, come to our knowledge, which, in connection with those above mentioned, are calculated to give rise to a very different speculation. The British consul at Lisbon states, in his despatch dated December 29, 1845, that the *few potatoes diseased near that city, were grown from seed received from England.* We have now before us, young potatoes raised in the garden at Bodorgan, from sets ripened in 1844, and kept in reserve till August, 1845, when they were planted in the open ground, *a large proportion of which, were very much diseased;* and those the most so which were o'dest. In another column a similar fact is mentioned by Mr. Swan, of Garnston.

This looks as if the murrain was engendered in 1844 and only showed itself in 1845. The facts may, perhaps, be otherwise intrepreted, but they seem to point to that conclusion. They are scarcely reconcilable with the action of unfavourable seasons, or of an epidemic, which was first contended for, we believe, by Mr. Moore, of Glasnevin, and has since been recognized by others of undoubted authority, among whom Dr. Greville and Mr. Goodsir, must more especially be mentioned. If, however, they do nothing more, they certainly complicate the question, and render the fate of the succeeding crop more doubtful than ever, for if they lead us to assume that the murrain was engendered in 1844, and only manifested itself in a formidable degree in 1845, we must look out for the worst consequences in 1846, as the experience of the United States indicates, and as the gathering evidence already brought forward by us, seems strongly to point out.

The question for providing, for poor people at least, a sure substitute for the potato crop, becomes then of the highest importance. It will not do for them to try experiments, and fail; such expenses must be incurred by the wealthy, or by speculators. We now, therefore, produce the following table, showing the quantity of produce, of thirteen different crops, that may be obtained in an English acre, under ordinary circumstances. This will enable everybody to judge for himself what is most worth his growing. If it should appear that the produce per acre is in any case taken too low or too high, a little calculation will serve to correct it. No doubt it is generally much too low where high cultivation is employed. If potatoes are averaged at only eight tons an acre, although plenty growers obtain twelve or even fourteen tons, so also are parsnips taken at only twelve tons instead of twenty, carrots at fifteen tons instead of twenty-five, and so on.

A Table of the average weight per acre of thirteen crops of corn or vegetables; and also of their organic or inorganic constituents, calculated by Edward Solly, Esq., F.R.S.

Average Produce per Acre.	Water.	Unazotised Organic Matter.	Protein Compounds.	Inorganic Matter.
	lbs.	lbs.	lbs.	lbs.
1. Turnips 25 tons, or 60000	51800.0	3309.6	442.4	448.0
2. Carrots 15 tons, or 33600	29433.6	3128.2	655.2	333.0
3. Parsnips 12 tons, or 26880	21542.7	4642.2	661.8	333.3
4. Potatoes 8 tons, or 17920	14228.5	3055.6	433.7	204.2
5. Barley 35 bsh., or 1800	237.0	1314.2	205.9	42.3
6. Oats 40 bsh., or 1700	238.0	1215.7	187.8	58.5
7. Peas 25 bsh., or 1600	137.6	1017.7	399.4	45.3
8. Beans 27½ bsh., or 1750	138.2	979.0	581.2	51.6
9. Wheat 28 bsh., or 1680	243.6	1181.4	248.4	33.6
10. Cabbage, 10000 plants or 80000	73340.0	4181	1456.0	524.0
11. Jerusalem Artichokes, 500 bsh., or 28000	22176.0	4388.8	599.0	336.0
12. Beet 75000	65350.0	7312.5	1020.0	817.5
13. Buckwheat, 30 bsh. or 1300	162.5	94.52	177.5	17.5

In this table it will be observed that the largest amount of waste is in cabbages, and the smallest in peas. But, to ascertain the real importance of these crops, it is neces-