

liament, the Government, and the country, they may rest assured; and, believe me, such is the earnest wish of your obedient servant,

LEICESTERENSIS.

25th February, 1863.

HOW FARMERS CULTIVATE WEEDS.

[The following lecture, recently delivered by Professor Buckman on the growth of weeds by the farmer in the cultivation of his crops, before the Berkeley and Thornbury Association, England, will be found of no small use to our readers. Professor Buckman has paid special attention to this subject for a number of years; and many of his suggestions will be found equally applicable to this side of the Atlantic as they are to the other.—EDS.]

Farmers, often unwittingly, cultivate weeds in one rotation. I shall attempt to point out to you that farmers grow weeds under the following circumstances:—

- 1st.—In their general tillage operations.
- 2nd.—From mature heaps.
- 3rd.—They sow weeds with their crop seeds—that is a very fertile source of weed cultivation.

4th.—They allow weeds to seed in their fields. As regards the cultivation of weeds in tillage operations I will just draw your attention to the natural history of the common thistle.

The plant crops underground, and in so doing produces long under-ground stems, which sometimes reach to a very great distance. The plough in going through the soil cuts these stems into pieces, and they are not generally picked up. Every one of these pieces contains one or more buds, each capable of producing a distinct plant. This is the creeping underground thistle. I have seen in one spot two or three of these centres from which radiate the underground stems, covering a space as large as half the circle of this room; and I have seen these continue to spread underground until the whole field has become covered with thistles, owing to the stems being cut up into little bits in the ordinary tillage operations; these little pieces not being picked up, the harrows go over them and regularly distribute them all over the field. And exactly the same thing occurs with regard to the colts-foot. I have frequently heard farmers say thistles do not grow from seeds at all, which is a fallacy. In proof of this I have performed some experiments. I obtained some thistle seed, and planted 10 of them in a place where I could watch them. They all came up; and it became a curious question how farmers ever arrive at the notion that thistles do not grow from seed. I conceive it is just this; that the thistle is at first a very little plant, which dies down entirely towards the autumn; but in the meantime it has sent out a couple of buds near

the roots, which stretch out, and put out fresh buds, so that in the next year a plant that was so small as scarcely to be seen, will spread and cover a circle of some 6 or 8 feet. The notion that thistles do not seed probably arose from the fact that the seed is frequently eaten by a little weevil, the down of the seed being alone left. This was a most fortunate thing for this country, otherwise if every seed were uninjured we should have what they have in Tasmania, namely, a plague of thistles. Our thistle has been transported to that country with our emigrants, as have been so many other weeds of the mother country to our colonies; but, fortunately, we have the weevil here, which destroys large numbers of the seeds, but which has not accompanied the plant to Tasmania, probably from the climate not being suitable, and consequently they have a plague of thistles. For their extermination laws have been instituted, which are rigidly enforced. In many parts of the island it is found impossible to grow crops on account of the extraordinary development of the thistle.

Let us look again at another case. There is the weed known as the coltsfoot, which we treat in the same way as the thistle.

It increases in the same way as the thistle by sending out lateral buds or shoots, which, on being separated from the parent stem, or broken up, will grow into a perfect plant. Thus we may see whole fields covered with coltsfoot, having spread from centres in this way. Let us look a little more closely at the natural history of the coltsfoot, and then we shall see how serious are the injuries caused by it. In the early part of the year it has little inconspicuous flowers, and no leaves, and the farmer therefore when he sees them amongst his corn thinks very little of them, and allows them to remain. By-and-by, when the usual period for wheat-hoeing arrives, the hoe is busily engaged in chopping them. The blossoms have by this time ripened their seeds, and the plant has the underground stems I have referred to in every direction. Every one of the blossoms whose seeds are scattered by the hoe plants 150 new plants, each seed having a parachute by which it flies about, and is planted somewhere or other. So that in the usual farming operations, without knowing it, the hoer takes care that every coltsfoot seed shall be very nicely and delicately planted. I am quite sure that the more you reflect on this matter, the plainer will you see the truth of what I am stating. But had these flowers been cut down before the seeds ripened, you would have prevented the possibility of the seeds it afterwards contained from being planted.

It is the same with regard to couch, which is perhaps "cultivated" to a greater extent on the Cotswolds than it is here. On one or more sides of many fields on the hills there is a wall, and under that wall there will be a piece of ground the plough cannot get at. These are the places where weeds grow, and flower better than anywhere else, and the seeds become scattered over