

wheat three or four inches from the tender plant. That was the bond. Cut more or less, in the estimation of a single inch,—cut closer or further off, and the forfeiture and penalty is this: in the one case the object is defeated; in the other, the plant is rooted up, and dies.

Again, it was required at an early spring, when the plant was yet weak, that this slice should be thrown back against the rows: plough with a heavy hand, clumsily, and the wheat is buried. If Tull's ploughman succeeded in avoiding the evil and attaining the good, I question whether, out of the thousands and ten thousands of hard-handed laborers within the realm, there could be found five hundred as good as he.

Here, then, was a difficulty sufficient in itself to be fatal to the scheme.

But, there was a more palpable cause of its failure still. I have spoken of Tull's success in comparison with that of his contemporaries. And, looking at the state of agriculture in his time, seeing that the farmers' outgoings were so much greater than his, with their bare fallows, their heavy manures, their extravagant seeding, and their frequent and necessary ploughings, doubtless he had greatly the advantage; and had it not been for the difficulties of his plan, it might have made considerable progress at the time and for many years afterwards. The crowning result, however,—his actual produce per acre,—this, after all, has been the real stumbling-block in later times in the way of even a trial.

It is unfortunate that we have no *bona fide* balance sheet of Tull's average yield of wheat, from his own account book. For, calculations from ounces of grain and yards of land are of no account. We look for the measured crop stated and authenticated by his own hand, and we look in vain. Still, from a few scattered intimations here and there, and from the early editions of his work published in and about his time, we may gather that his general produce per acre was about *two quarters*. If any doubt existed on that point it would be removed by the statements of M. de Chateaufieux. He was an excellent farmer and one of the best and most energetic followers of the great master. His experiments extended over a large estate and even with his improved implements, his more enlarged experience, with all appliances and means to boot, he can shew but an average of less than six *en bushels*. If, indeed, we consider the extent of ground occupied by the fallow interval—a space which Tull found necessary for the perfect development of his scheme—the amount of produce in reality was so great that, as an average, it could scarcely be more, fully bearing out the truth and goodness of his principles. For, the two quarters were taken from only a fifth part of the land, being at the rate of ten quarters per acre.

Still, in an island, with a limited surface and a population like ours, a yield of wheat like sixteen bushels over the whole acreage of the country would never be borne, nor, I suppose, would the worst farmer in England look at it for a moment.

Was the scheme, then, to come to nothing? I thought it ought not. Well worked out, with a change of practice, I felt assured it might become a mine worth the wealthiest diggings in the world.

*Were there no means, then, of making the process easier and safer?*—

Such, again, was the vigorous and healthy condition to which it brought the wheat plant, that, besides the closer growth of the stems in tillering, each ear on an average contained double the amount of grain, as compared with ears on the common plan; and the half portion of each acre in wheat would therefore yield double the amount of half an acre on the common plan. In other words—half an acre in this way would become equal in productive power to a whole acre in that. *Were there no means of effecting this?*

These two questions I boldly answer in the affirmative. And if in taking upon myself the responsibility of doing so, the answer be found to contain a great deal about me, I can only suppose it must be—as the gentle Esther supposed in her case—"because I have really something to do with it, and can't be left out."

There *are* means, then; I have tried them; have succeeded; and seen others succeed. Since the details of the scheme I practise and recommend have been matured, I have had years of trial upon wheat, and have given the result. I have succeeded, and seen others under my own immediate observation succeed, in gaining an average produce from half an acre, equal to a high average produce from a whole acre.

It would be a very useless and unworthy thing to make a statement such as this, if I did not believe that, with few exceptions, farmers generally could do the same. But, I most fully believe they might, to any extent. One little demand I must make, however. I must, with permission, presuppose an ordinary knowledge, on their part, of the duties and the details of ordinary good farming. For, the scheme is no wild offshoot from the brain of the theorist. It is a graft on the stock of acknowledged truths. It is essentially practical—a matter of the plainest common sense. I submit to certain rules, and so gain certain ends. It is owing wholly to my obedience to the one, that I accomplish the other. It cannot be otherwise. No one can evade the conditions with impunity. I have known the scheme tried upon wheat; and, in one case, it was thick sown in September; in another sown thin in November. I have known the great principle, pulverization, wholly disregarded, and the seed plastered in raw unmitigated clay; or committed to the untried mercy of the fresh-uplifted, unneutralized subsoil. I have heard of fat-fed thistles in the intervals overtopping the wheat at harvest. Yet more wonderful—I have seen a season of blight, and premature ripening, and almost universal mildew, amounting to a visitation; and, while warnings were heard on every side, that field of miraculous triple rows and yard-wide intervals was expected to be Goshen.