

up the channels with the crusher. In spring the crusher is again employed in compressing the wheat plant, after which the hand and the hand-hoe are busy between the rows, so long as it is safe, and then comes the last scene of all, the sickle and the harvest home.

Sum up, then, the annual average outlay for the wheat crops, from first to last, always keeping in mind the digging process I have described, how it begins with one shallow spit the first two years, increasing by degrees to two good spits of pulverized soil, two or three inches of solid clay being added, and for years not even that.

The very natural question here arises, How is it that, by so simple a process, *without manure*, the same acre of land is enabled year after year to yield such a produce of wheat? There are some few favored spots in England so rich that they produce, without any dressing, a constant succession of heavy wheat crops, by the ordinary way of farming. "If my land were like that," says Mr. Smith, "it would even then be surprising that forty bushels of wheat should ever be reaped from the moiety of the acre." But his clay piece is really nothing but ordinary heavy wheat land.

Just one thing more and I have done. Mr. Smith uses no manure for his wheat crop, as he needs the use of it too enriching. "Add manure," he says, "to my deep and thorough tillage, and well-fed intervals, and the crop would be too luxuriant, and blight on the spot, or come down and mildew." He fears even the smallest remnant of by-gone dressings, and depends wholly on mineral food from below, and a frost accumulations of atmospheric ammonia deposited from time to time in the soil, and its continuous, never-ending flow from the same *lural* sources.

Using, then, no manure for *wheat*, he has a noble supply for his other crops. Manure well fixed and well-made, from well-fed animals, including night-soil, liquid and solid. I will only mention his winter bean crop. I give here the process of its cultivation in detail, because, like the wheat crop, it is grown on the same acre of land, year after year. and the plan, like that of the wheat, is now reduced to a system. I give for another reason: it meets a very serious advantage in the ordinary growth of the bean crop—viz., the apparent impossibility of keeping clean. The weeds are scattered broadcast at sowing, and the foul straw, carried to the yard, perpetuates in manure the ineradicable evil. I look at his crop grown in single rows, *five feet apart!* (I should prefer double rows.) The land is now up (November,) and in the centre the interval there is the single row of last year's stubble. He will shortly broadcast and rife, and stir the whole interval, strike a deep furrow in the line of the stubble, subsoil it, and dig into the channel a heavy dressing of urea, and leave it for the winter. In the spring, in preparation for the next planting, he sows and mixes the whole together, continuing

the cleaning process until he is shut out by the present crop, which, in June and July, will cover the land, as it were shaking hands. *There is hardly a weed to be seen, and not one in flower throughout the year.* The produce in 1858 was 42½ bushels, though dwindled by the heat. The year before it was 44. The year before that it was 50½ bushels. And most probably this year, 1860, being in double rows, (another row being introduced in spring to repair the broken plant, the unusual cold and wet winter having ruined it,) as I estimated when I saw them growing, will exceed 60 bushels—from, I repeat it, single or double rows of beans five feet apart.

I will now introduce Mr. Smith's balance-sheet, showing the actual average outlay, yield, and profit, at the *lowest* rate of produce and value for 14 years:—

Digging and cleaning the moiety of each acre	£	s.	d.
Horse-hoeing ditto three times, and plough, 4s.	0	10	0
Hoeing and weeding	0	5	0
Rolling with crusher at seed time and at spring, 1s.	0	3	0
Two pecks of seed, 2s. 6d.; dibbling, 5s.	0	7	6
Bird keeping	0	4	0
Earthing up wheat	0	3	0
Reaping, &c., to thrashing and marketing	0	13	0
Rent, £2; rates and taxes, 4s. 3d. . .	2	4	3
	£6	3	9
	£	s.	d.
34 bushels of wheat, at 5s.	8	10	0
1½ tons of straw, at 40s.	3	0	0
	£11	10	0
Deduct outlay	6	3	9
Net profit per acre	£5	6	3

The *principle* is *perfect and clean* cultivation, without manure, and without producing sterility in the soil, and cropping only half the land every year; against *imperfect* husbandry, with abundance of costly stimulants, and cropping the whole of the land only every four years with corn and WEEDS. From the moiety of each acre, in the year 1858, was upwards of forty bushels of fine red wheat, with an estimate of two tons of straw. The produce of 1859 and 1860, are not yet published, and it is probable they never will, though both these crops are likely to exceed any of the former, as Mr. Smith scorns the idea of publishing anything which savors of puffing of any of his goings, even when they are well substantiated. He calls it the *moiety* of each acre, for so it actually is; for a full acre of wheat in 10-inch rows contains, we will say, 120 10-inch divisions. Take away, then, every alternate three rows, and you have the Lois-Weedon with only sixty rows, being the exact moiety of the acre of wheat. In the year 1857 the pro-