

Depending, as Mr. Prout does, on artificial manures for his crops, he is very particular in his purchases. He buys his guano, nitrate of soda, and bones, of eminent manufacturers or merchants, and always subject to analysis by Dr. Voelker.

His favourite mixture, which he prepares himself and drills in with the seed, consists of ground bones wetted and then turned up with half their weight of mineral superphosphate. The heap heats, and, in three months time, the free acid of the superphosphate is found to have softened the bones.

How long will this last? A question not to be answered; but one thing is certain, there are no signs of impoverishment to be seen on this calcareous clay. Take the *Hornfield*, mentioned above: the magnificent wheat crop now standing on it has had no manure; coming after clover (mown twice for hay) which was highly manured, it could do without, as the mass of clover roots afforded the wheat plant sufficient food. This field, in the 9 years, 70-79 has grown five wheat crops, one barley crop, 3 oat crops, and two cuts of clover (£14 5 per acre) and the average money value, not computed, recollect, but actually received from sale by auction of the produce, was £10.7.

"Brook Field" again, 16 acres, has been pretty well scourged, c. g.

		£	s.
— 73	Wheat value	9	14
— 74	Wheat "	10	
— 75	Barley "	8	17
— 76	Barley "	8	13
— 77	Barley "	8	6
— 78	Wheat "	8	12
— 79	Wheat "	not yet known, but	

laid at 44 bushels by competent judges, must, at present prices, equal at least £16, including the straw at £2 a ton; making the average of the seven years just £10 an acre!

There has been no fallow on the farm for the last 10 years; if the land should seem foul after harvest, from the great rainfall of this summer, the system will not be altered, as an autumn cleaning of the stubble will do all that is necessary for the destruction of weeds.

From a general view of this statement I think the following deduction may be safely made; wherever a tract of heavy clay land is to be found suited to the growth of grain and at a distance from town manure, the most desirable plan to follow would be, first to drain and subsoil the land thoroughly, to clean it by summer fallows, or root crops and Indian-corn, and to keep it in good condition for the growth of grain by the annual expenditure of a moderate sum in artificial manures. For, observe, Mr. Prout's favourite top-dressing can be, if that is any object, entirely procured in this country. Bones, by the hundreds of tons, are exported, which might be utilised by ourselves, and we, already, are in trouble how to get rid of our abundant mineral phosphates. Of course the high duty on foreign sulphuric acid will render the manufacture of superphosphate more expensive, but there is a plentiful supply of *pyrites* to be had to convert into acid.

The deep ploughing again will be a difficulty; but, where the farms lie side by side on a level, there the steam-plough, sooner or later, must be employed, and, in the mean time, there is no reason why the teams of two or more farmers should not work together in the *Tweeddale* plough, a cut of which we gave in our last number; and, by mutual accommodation, a great number of acres may be deeply broken up, the "hard-pan" smashed, and the hitherto impervious subsoil rendered permeable to the fertilising matters of the super-ambient air.

ARTHUR R. JENNER FUST.

FALLOWS.

We left off last month, (see p. 84 of Journal for October) with the field which we intended to treat nicely laid up, the open furrows free from bits of earth, and the cross furrows both numerous and thoughtfully made. The frosts, snows, and rains of winter have worked their will with it, they have penetrated into its very heart, and now the time of the singing birds (would we had more of them) is come, and the voice of the turtle (if there were any) would be heard in our land.

The first virtue that the farmer has an opportunity of exercising at this season of the year is—patience. Let nothing tempt him to set a foot on the land till it is thoroughly dry; no time will be saved by being in a hurry, but, on the contrary more than one additional act of tillage may be rendered necessary by meddling with the fallow before it is in a state to deal with. The repetition of this advice will seem to many an old farmer a twice told tale; but every year I see the same mistake repeated, and horses poaching about the furrows when they had far better be at rest in their stables.

The first work, on the opening of spring, that should be done to the fallow, depends upon the way in which it was ploughed in the fall. If the ordinary furrow of 7 inches is all that the land has received, the ploughing now should be across the former lay of the ridges. To do this well, that is to plough the furrow steadily through all its depth, it will be found necessary to hold rather wide, and to let the plough in at least an inch below the autumn furrow. On heavy clays, and it is only on these that summer fallowing will be found necessary, I cannot recommend that the ridges should be made of the great width which is often observable. A sudden rain-storm would make quagmires of many a spot were this system of ploughing followed on our flat lands. I should prefer making the ridges not more than 12 feet wide, and, as soon as sufficient space is cleared, I should draw the water-furrows out as carefully as after a seed furrow—you cannot farm clay lands without trouble. The cross-ploughing has two objects in view—first, to bury the seed-sprung weeds; second, to subdivide the land into small pieces, thereby rendering the subsequent operations easier of execution. I fear that too many of our French-Canadian farms have never known the benefit of a cross furrow, as I see the old ridges turned back one spring, and forward the next, the open furrows never being mixed with the better land of the *crouns*, but merely covered and uncovered as their turn comes. Cross ploughing has one defect; where root weeds abound, it cuts them into smaller pieces, and as each piece of couch grass (*ichendeut*), thistle, or dock, has a tendency to grow, I confess I prefer extracting them by means of the *scarifier* or *grubber*. Coleman's *drag-harrow* I hold to be, from its simplicity and effectiveness the best of its class; and I regret I cannot present my readers with an engraving of it. Tennant's *grubber*, however, of which I subjoin a sketch, is a useful implement, but fails in as much as it does not offer so easy a mode of raising the tines as Coleman's does. The *swan-neck* tine is very useful where the land is foul with grass, as in the ordinary grubbers in use in this country the driver is everlastingly at work cleaning the weeds from the tines, the horses being at a standstill, while, with the swan-neck tine, the grass &c., rides, or is pushed, gradually up over the supporting bar and no time is lost by man or horse.

If the autumn furrow was the deep one I proposed in my last, with the *Tweeddale*, or any other deep going plough, the cross-furrow may be omitted, and the *scarifier*, or *grubber*, at once employed across the autumn ploughed ridges; and for this reason—the deep, *shattering* work of the ploughing will have sufficiently mixed and comminuted the soil, enabling the farmer to proceed at once to one of the chief objects of