consist of what are called. "Acts of husbandry," such as ploughings, manurings, &c., and for seed on clover leys, hay, straw, &c. In the *home counties* such as Surrey, Kent, &c.,they usually amount to from £3.5 to £3 10 – $16.00 to $18.00 an acre, and form a terrible charge on the incoming tenant's capital. A folding of sheep, alone, on an acre of fallow, a common practice in the above counties, is charged $18.00 an acre, but, this folding—at the rate of 4840 sheep for one night on an acre—is supposed to be sufficient dressing for 1. a wheat crop; 2. clover, cut twice for hay; 3. a wheat crop, and perhaps a crop of oats or pease as well. Still, with all these outgoings, Rigden made large profits out of his occupation; more than ever will be made out of that land again by farming, seeing that it is now all covered by houses of the most charming description But let us return to our subject: the way in which the farmer, and his pupil, spent the day.

The morning after our arrival, after a short turn round the cowhouse, &c., our horses were brought to the door, just as we had finished breackfast, we mounted, rode round the farm, visited the flock, inquired what ewes had lambed during the past night, and gave the shepherd instructions for the treatment of the ewes and their progeny during the day. The bailiff, steward,or *grieve*,as the Scotch call him, met us close by the lambing-shed, on *his* horse, and, after some conversation, we rode on to visit the plough-teams,six of which were engaged in breaking up a piece of land, after sheep-fed turnips, in preparation for barley. A *drill-presser*, consisting of two cast iron wheels, about 600 lbs. each. drawn by one horse, followed each pair of ploughs; the consol dation of this shattery land by the presser being of great importance when wheat or barley is to follow. At eleven, a glass of beer and a crust of bread and cheese refreshed us after our ride, and at 2 o'clock we dined. At 4, another turn round the farm, tea at 5 30, and supper at 9, followed, after *one* glass of brandy and water, by bed at 10.

It will be observed that neither the farmer nor his bailiff put their hands to any implement throughout the day. The farmer,or his bailiff, –a most invaluable servant — attended Brighton market twice a week; the farmer kept books of some sort, and did the business at the bank, which latter work must have been an easy job enough, but he did no work of any kind. and, I have no doubt, would not have been able to plough half an acre of land in a day, had his life depended upon it.

But this easy style of life was not universal in England in the days of which we are writing. The great grain-growing tenants of the lighter lands lived like the man whose habits we have described; but change the scene to the dairy-district, to Gloucestershire, for instance, and an entire change of scene confronts us. Up at dawn, with their wives and daughters, the cows are milked and the laborious work of cheese,making carried on by the tenant farmer and his family, in most cases without hired assistants. The farmer or his sons plough the trifling extent of arable land on their holding—about 4% of the whole— ; they cart out and spread the dung; knock about the droppings of the cows in the pastures; mow, make and carry the hay and grain; do the odd jobs about the buildings, and, in fact, execute every operation required on the farm. The wages paid by these men is certainly not more than ten shillings an acre per annum. They live pretty much the same as our Township farmers live.

And what is the consequence of these two so very different ways of conducting a business? We have all heard the cries of "ruined agriculture" that are now resounding throughout England. From what class of farmers do these complaints come? From the hardworking dairymen? By no means. Only last week, the writer received a letter from a Gloucestershire land owner stating that his rents had *been paid in full on the day appointed*, which rents, by the bye, are just the same as they were in the year 1852, when the present proprietor succeeded to the estate.

No; the cry comes from the grain-growers, the graziers, the flock-masters, who have been so long accustomed *to do* nothing but superintend, that, now the real crash has come,they can do no earthly thing to help themselves, but run bawling to government to implore its aid at no matter what detriment to their industrious fellow-countrymen, the working men and women of England Landlords in the above districts have lowered rents until what remains to them barely represents, in many cases, the interest of the money expended by them on their predecessors in the erection of buildings and in other permanent improvements; tithes, as a Bishop of the Anglican communion wrote to us the other day, have fallen at least 25%. No help can be looked for from these sources. What, then, can the grain-grower and the others do? Well, they can go to work as the dairy-farmers, and as I believe their Northumberland, Westmoreland, and Cumberland brethren. do. There is no other salvation for them, unless, and may Heaven forbid it, another war, like the Crimean war, disturb the peace of Europe, and, once more, runs the price of wheat and meat up the starvation level of 185 . Curiously enough, just as we had written so far, the Montreal Star was dropped at our door by the boy, and in it we found the annexed extract from a speech by Mr Goldwin Smith. Mr. Rigden was a great deal more than "half a gentleman," and Madame was as well bred a woman as one often meets. They kept a governess for the education of their children, and if a labourer had sat down to dinner with them, we do not think *he* would have felt very comfortable, though they would have been quite at their ease

"Mr Goldwin Smith tells us that "the English farmer, as a rule, is not a man who works much with his own hands. He superintends the work of hired laborers, he is half a gentleman and his wife is half a lady. They do not eat with the laborers. No farmer could live here who did not work hard with his own hands." It is just as well to bear these facts in mind when reading the "blue ruin' articles in the Ministerial press on the sad condition of the English farmer, who, alas! has no high tariff to comfort him.'

	Unmanured		Manured.		Difference
	Dry soil	Water	Dry soil	Water	
	lbs	lbs	lbs.	lbs	lbs
Surface to 2 ft	116.59	19 1	116.59	18.16	0 91
2 feet to 4 feet	185.85	33.6	185.85	31 6	1.95
4 feet to 7 feet	106 00	18 7	106 00	17.74	0 96
Sums.....	.....	71.3	.....	67 55	3.85

The "water-table" represents that part of the subsoil that lies at a depth unaffected by evaporation. To lower this as far as possible is the great object of deep as distinguished from shallow drainage of heavy land.

At the *Maine station*, oats were sown after barley and after pease: the crop was no better in the latter than in the former case.

Happy *Minnesota* farmers! Their land is so rich, even after from ten to twenty successive crops of wheat without manure, that "neither nitrogen, potash, nor phosphoric acid will pay for grain-crops." In 1890, experiments were instituted to find out the cause of the falling off of the yield of grain in that State, and now the decision is that the diminished returns are due to climatic conditions, such as hot winds, hot sun, insects, foulness of land, and, as we should have expected the neglect of our favourite panacea the ROLLER: in other words, as the report puts it, "to the too loose mechanical condition of the soil" We have no doubt that one of the chief causes of the inferior yields of the whole of this continent is, that people *will* not use the roller.

Here is a passage from the Minnesota report that gladdens the heart of the writer of this review:

Rape was successfully grown at the station. Shropshire sheep pastured on rape for thirty two days in the fall made a gain in live weight of 34 pounds, while the same number of sheep fed on timothy hay during the same period gained only 16 pounds.

People, then are really beginning to attend to those who, like ourselves, have been trying to show the farmers of the Northern part of this continent how valuable a crop the rape or colza-seed is for sheep. We hope the managers of this institution will publish an account of the crops that follow the sheep-fed rape. As an experiment, it was as well to try the relative effects of timothy and rape; but, if there is anything grown on the farm that should never be given to sheep, when any leguminous provision exists, it is timothy hay. Valuable it no doubt is for horses, but for cows and sheep it is an extravagant food, and the above experiment proves it.

Potato-sets, at the *Louisiana station*, were found to yield the greatest crop when the largest were planted, "but the economical results were different": in other words, planting large whole potatoes did not pay. The suggestion is, that when planting on a large scale, not less than two and not more than four eyes should be cut to a set.

The cost of growing *sugar-beets* at the Minnesota station, on weedy land, (!) was $3.25 a ton; on clean land, $2.09. About 20 lbs. of seed to the acre is recommended. Why 5 lbs. of mangel seed is sufficient and 20 lbs of the beet seed is required, does not appear. If the land is properly prepared and the seed deposited at a regular depth—which cannot be done on rough land—there can be no reason for using the above enormous quantity, even supposing that there are to be ⅔ more plants of sugar-beets than of mangels on an acre.

Great loss seems to have been incurred in fodder corn exposed to the weather all the winter as compared with that ensiled. This, however, is not to be wondered at, seeing that "the fall was very wet and damp" at the *Wisconsin station* The annexed table represents the average of the four years' experimenting on this point, and is conclusive in favour of the silo.

Average losses in ensiling and field-curing Indian corn, results of four years' work.

	In original fodder	As fed out and sampled.	Difference	Loss
A.—*Ensiling.*	Pounds	Pounds	Pounds	Per cent
Total quantity of—				
Dry matter.....	68,034.3	57,410.7	10,623.6	15 6
Protein	5,490 8	4,569.5	921.3	16 8
B.—*Field-curing.*				
Total quantity of—				
Dry matter	72,163.6	54,937 6	17,225 6	24 8
Protein	5,706.4	4,317.5	1,388.9	24 3

Soja beans, a few which we grew in 1882, and which we mentioned at the time as being promising novelties, have been tried at the *Kansas station* and succeeded admirably. The only trouble *here* would be that they would not ripen their seed every year; but neither will *sweet* corn, and the quantity of seed required for one acre is so trifling, that, if the crop answers, it would pay to import the seed.

Like corn, the soja-bean should not be sown before the ground is warm, about the 24th to the 31st May in the Montreal district. The rows should be wide enough to admit the horse-hoe—say, 24 inches—and the beans may be dropped 2 inches apart in the rows. Our impression was they would shed their seed if it were allowed to ripen thoroughly before cutting; but, as the haulm is as good as pease-straw, the crop appears to be one peculiarly adopted to ensilement. Care should be taken in selecting the seed, as some kinds ripen much earlier than others.

At the *Massachusett station*, under the superintendence of Prof. Goessmance, a comparison was instituted between fodder-corn and silage corn, the grain ration being the same in both cases. The fodder-corn proved to be the cheaper food. The gross cost of the daily ration was 19 15 and 20.32 cents with the silage, and 14.42 and 15.04 with the fodder-corn; the higher price in each case being where sweet corn was used.

Professor Woll, of the *Wisconsin station*, shows that whereas, in an experiment on *corn silage* and *field cured fodder corn*, pound for pound of dry matter,the corn-fodder was slightly more effective, the calculated yield of milk per acre of land was in favour of silage.

The relative values of *potatoes* and *sugar-beets* as producers of butter formed an experiment of the Iowa station. The deductions made were, that the butter from the lot of cows receiving sugar beets was of better flavour and colour and kept better than the butter from the lot receiving potatoes; but the higher grades of butter cannot be made from heavy feeding of either raw sugar beets or raw potatoes.

Corn-silage beat *sugar-beets* at the *Wisconsin station*, as succulent food for in-lambed ewes. May we be allowed to say that, in our opinion clover-silage, for that purpose, would beat both? The effect of the food of breeding ewes cannot be fairly tested till the condition of the lamb and dam after the parturition of the ewe is

Reviews.

U S Ex Station Records

We have all practically known for many years that land well manured with farmyard dung was more retentive of moisture than land undressed with that material. It is always agreeable to find that theory confirms practice. At the *California Station*, samples of soil, extending to the water-table, were taken on 2 manured plots and on the intervening unmanured plot immediately after the corn-crop had been severed. The following was the result: