my heavy land wheat in 1865 averaged something over 7 qrs. per acre.

I don't believe that farmers know how much they often lose by thick-sowing. They would do so if they tested, as I have done for years, comparative qualities on a small scale. Every man should thus judge for himself according to his soil, climate, and other circumstances of condition, &c.

The frothy straw and light kernels of a thick-sown and early-laid grain crop are a losing affair.

If ever we heard of an extraordinary yield, it is usually from a crop so thin in the spring that its owner thought of ploughing it up; but after well harrowing, &c., it branched amazingly, and became the best crop on the farm.

It is clear that there is some gross error in sowing when our average increase is only nine kernels for one. Mine is at least 40 to 58 for one.

The Sowing of Barley.

If it be true that the seed time for barley may be regulated according to the season as indicated by the leafing or estivation of the elm-tree, we may hope that, notwithstanding all the checks and hindrances to barley sowing during the present wet and cold spring, we are not, after all, so much behind.

Those learned in old saws will remember that the leafing of the "elmen" tree was made to regulate operations both in the field and in the garden, as thus:—

When the elmen leaf is as big as a mouse's ear,
Then to sow barley never fear.
When the elmen leaf is as big as an ox's eye,
Then says I, "Ho, boys! hie!"

This year we past the middle of April, and the first size of the elm leaf had been scarcely attained; indeed, except in some low bushes, these trees scarcely showed any signs of leafing, their tops being as bare as in winter; and it would appear that, if there be no great reason for any extraordinary pressure as regards barley sowing until the elmen leaf reaches the size of an ox's eye, the farmer may be content who finishes this important farm operation before May.

Now that there may be exceptional seasons when the behaviour of a wild plant might indicate how we should act as regards a cultivated one is just possible; at the same time we cannot help thinking that, as a general rule, the earlier barley sowing be completed the better; and our own observations upon this crop lead us to infer that the lateness at which much barley must be sown this year will have a highly unfavourable impression upon this crop at harvest time. Our own barley sowing and its results for last year led to the following conclusions—that barley sown after the middle of March becomes, according to time, less in quantity, depreciated in quality, and, of course, will command a less price, points upon which the following results will afford good evidence.

RESULTS OF BARLEY CROP, 1865.

No. of field.	When sown.	Yield in bushels.	Price per qr
1	March 16	40	39s.
2	March 28	40	39s.
3	April 3	32	34s
4	April 12	28	32s
5	April 13	26	32s
6	May 2	22	30s

These results were obtained from a hundred acres of barley sown at different times, and for the most part after roots, being indeed sown as the land could be got ready after the sheep; and though it is true that the variation of soil has had something to do with the matter, yet we cannot help thinking that other matters being equal the same amount of variation will be observable. As a proof of the correctness of this opinion, it may be stated that as a general rule the earlier this grain is sown the less seed is necessary to ensure a crop, clearly showing that for vigorous growth, barley wants as much time within certain limits as can be given to it.

It is quite true that in practice the farmer waits for the feeding off of his roots to sow this grain usually, because when his roots are finished he will have no green food crop sufficiently forward to take them to. Hence, then, some earlier clover than we now possess would be a desideratum, or our practice in farming should be modified. We propose to meet this by growing alternate stetches, say of ten rows each, of Swedes and mangolds, with liberal manuring; the mangolds to be stored. Thus the crop of Swedes could be consumed on the whole field, and when these were gone the mangolds might be made subservient to the improvement of the poorer pastures by throwing them to the sheep thereon, by which means these would be bettered, and the sheep and lambs (if a breeding flock) would be in a warmer position and on more solid ground in the meadow than they have been in the mud of arable fields, as in the present wet spring.—*The Field.*

Artificial Irrigation of Grass Crops.

A recent issue of our able cotemporary—*The Farmer* (Scottish)—contains an interesting editorial account of the plan adopted by Mr. Isaac Brown for the production of successive crops of grass on a small field adjoining his residence near Edinburgh.

"On Wednesday last," says the Editor of *The Farmer*, "Mr. Brown brought specimens of his first crop for this season under our notice, one of which consisted of grass measuring from 20 inches to 24 inches in length; the other of grass not over 9 or 10 inches in length. In the former case the stems were strong, but in the latter the grass was weak and stunted.

Artificial manure had been applied last year to all parts of the ground, and the difference in the growth was entirely owing to the circumstance that water had been applied where the grass was luxuriant, while that important promoter of vegetation had been witheld where the growth was stunted.

We shall recapitulate the leading features of Mr. Brown's plan, for the information of those of our readers who may not have seen the former account given in our columns.

The field to which the water has been applied is about an imperial acre in extent. It was sown with Italian rye-grass at the middle of last May—7 bushels per acre—and the first crop was cut at the end of June. The water used is perfectly pure, being derived, in fact, from the ordinary supply of the city. It is distributed by a series of lead pipes placed 14 yards apart, and communicating with a main pipe which runs across the upper part of the field. The small or parallel pipes are perforated with small holes, and when the water is turned on it is thrown out in innumerable small jets all over the ground. The artificial manures which have been applied as a top-dressing are thus washed into the roots of the grasses, and are therefore more effective than would otherwise be the case. The quantity of water applied per acre to produce a crop varied from 1,000 to 1,500 gallons, according to the temperature, natural supply of moisture, &c. Mr. Brown had five cuttings last year, and as the plants are now stronger, a greater amount of produce might have been expected this year; but as the ground is about to be taken up for other purposes, he will shortly be under the necessity of abandoning his plan for watering grass, at least for the present. However, any one desirous of seeing the system at work may still have an opportunity of doing so.

We have made these remarks because we think that Mr. Brown's plan of forcing early and successive crops of grass possesses particular features of interest at present. It seems likely that cow-keeping in large towns will henceforth be less followed than heretofore; and, in fact, one of the greatest drawbacks to a system of dairying for supplying large towns with milk from the country, has been the difficulty of getting a sufficiently early supply of grass for cutting. Now, by Mr. Brown's plan this would be obviated wherever there is a small stream from whence a regular supply of water could be obtained. It has also the advantage of being more under command than any ordinary system of irrigation by which water is allowed to flow over the ground. By the the usual mode of irrigation, artificial manures are apt to be washed away, whereas by Mr. Brown's plan those fertilizers are washed into the soil, so that nothing is lost, and their power becomes much increased. Mr. Brown, as stated in the previous account which we gave of his system, has in fact had it in operation on land adjoining a river; and he has estimated that with an original outlay of a little under £15 an acre for pipes, a rental of £2 per acre, and an expenditure of £5 to £6 an acre on artificial manures, from 40 to 50 tons of grass can be produced on an acre during the season, at a cost of 5s per ton, inclusive of rent, interest, labour, &c. To those, therefore, who contemplate establishing dairies in the country for the purpose of supplying milk to large towns, it is evident that Mr. Brown's plan presents the means of readily meeting one of the greatest obstacles in their way; and we feel sure that to such Mr. Brown will gladly communicate any additional information that may be necessary to enable them to put it in operation."

Top-dressing Oats.

Oats are seldom topdressed on account of "a general impression among farmers that an oat crop will not repay the outlay to be incurred in the purchase of manures." Such an impression is not well-founded. In 1864 I had a field of stiff undrained clay, in low manurial condition, topdressed with Peruvian guano, at the rate of 12 cwt. 3 qrs. 1 lb. per acre. The experimental plots consisted of six ridges, containing 1 ac. 0 ro. 27 poles: the produce of each plot was thrashed out on 20th September of the same year with the following results:—

	Bolls	Bushels
Yield of grain on manured plot	6	4
" " unmanured plot	3	0
Giving an increase of the former of	3	4

The yield of straw, at the rate of say 3 cwt. to the boll, was on topdressed plot 20 cwt., undressed ditto, 9 cwt., giving 11 cwt. in favour of the manured portion. Calculating the overplus of oats at 16s. per boll, and of straw at the moderate rate of 2s. per cwt., the value of the increase of produce amounts to £3 17s. The cost of guano, including carriage, &c., for (the whole plot of) 1 ac. 0 ro. 27 poles, amounted to £2 4s. 6d. thus leaving a clear profit of £1 12s. 6d. on the topdressed plot, or 27s. 1d. per acre.

In 1865 I topdressed another field of oats with the following mixture:—Peruvian guano 1½ cwt., per acre; superphosphate of lime 1 cwt per acre; bonemeal 1 cwt. per acre—which cost me, including carriage, &c., £1 16s. 4d. The produce of the experimental plots was thrashed in the middle of October, and gave the following satisfactory result:—

	Yield of Grain bo. bu.	Weight per Boll st. lbs.	Yield of Straw at 3 cwt. to the Boll. cwt.
Manured plot	7 1	18 0	21
Unmanured do.	4 1	17 6	12
Increase	3 0	0 8	9

The field first referred to was in second years grass in 1863 the crop almost a blank. The second field also at the time of breaking up was in two year old grass—the land undrained and otherwise in bad condition.

These experiments were conducted more for my own satisfaction than with the view of publication; but they were carried out with sufficient exactness to prove that a *judicious* application of auxiliary manures to oat crops will prove highly remunerative. —*A. M. in N. B. Agriculturist.*

Winter Mulch.—The past winter has been unfavourable for grass lands. During a considerable portion of the time the earth has been left bare of snow and exposed to intense cold. The ground has been frozen to a great depth, and the alternate freezing and thawing must have killed the roots of grasses to a greater extent than usual. Whatever inconveniences and discomfort there may be in deep and long continued snows in our climate, they serve as a protection, or winter mulch, for our grass lands, and the increase of crops at harvest more than balances the account of their inconveniences in winter. Every one must have observed that where the snow lies thick and long, there the grass springs up earliest and is rankest. The old adage then, "Snow is the poor man's manure," is not without foundation in fact. It costs nothing, and is very valuable. Nature teaches important lessons, if we do but heed her counsels, and we learn from the action of snows that a winter mulch is not without profit. Those farmers who left a good coat of grass upon meadows at the commencement of winter, we apprehend will find their account in it the coming season. The protection which it gives to the roots and tender blades during a season of little snow, and where the ground is laid open to the blasts of winter, will be almost equal in results to a coating of manure applied in spring to meadows that have been fed down close in fall, while the latter is much the most expensive. Manures spread in fall operate beneficially also in this way. They act as a protection against the severity of frosts and severe winds, and then there is the virtue of the manure, which, in itself, is a counteracting influence against cold, giving greater vigour to the plants late in the season, and bracing them for the winter frosts, as a well-filled stomach of nutritious food braces up the human system for endurance. Let farmers reason philosophically upon the action and agency of manures in producing crops; whether the manure spread upon the surface in fall and winter will not keep the ground warm, and draw from the atmosphere some of its well known gases, and fix them in the soil. The practice of feeding the aftermath down in the fall is very objectionable. The injury to the land is very much more than the value of the grass for feed. Our best farmers have learned this fact from experience. We like the application of all kinds of manures spread evenly and finely so that the coat becomes, as it were, a part of the soil, because this acts to get up an additional growth of grass, which serves as a winter protection or mulch, to say nothing of manurial value from the decay of the grass during the next season.—*Utica Herald.*