earth to a very considerable depth absorbs much of the farmer's wealth in the shape of soluble manure, and so we need not wonder at the preference for the sheep fold, where the soil gets every portion of the manure.

Manure is so costly to produce that we should certainly take as much care of it as we do of bird's dung (guano) for I presume that no farmer would see with indifference the latter washed away with the rains. Where is the difference? I cannot distinguish it.

I am always sorry to hear a farmer complain of having too much straw, or, as this last winter, complaining that for want of rain he could not make manure. It is evident that such a man does not keep enough stock: for although I grow an immense quantity of straw, and have all my manure made under cover, and a portion of my stock on sparred floors, I never have quite straw enough, and generally purchase an extra stack or two.

I venture to predict that the time is coming when an open farm-yard and a dung heap will be an event of other days.

I am sorry to see so little summer made beef. The consumption of green food with cake under shelter should go on during summer. Why not continue making good manure all the year round?—J. J. MECHI. *May*, 1864.

The Benefit of Thin Sowing.

THE subject of thin sowing, especially as regards the wheat crop, has been so often and so fully discussed that it may, perhaps, be looked upon as superfluous to say a single word more in its favour. Knowing, however, that not a few are still somewhat sceptical as to the benefits resulting from the practice, we have the less hesitation in recurring to the matter. We do so the more readily, also, that our attention has been directed this season to two contiguous fields, in which the effects of the different sowings, thick and thin, are better illustrated than we have seen them on any former occasion. We have watched the progress of the fields throughout the whole of the season up to the present time, and, consequently, we can speak with some authority on the subject. In doing so, we may premise that our field of observation includes one of the finest wheat-growing localities in the Lothians, and therefore we are the better able to judge of the appearance of any particular merits or demerits in the crop.

The result of our observation as a whole may be summed by saying that the wheat crop is light and the head small. A heavy field is an exception to the rule, and where it is found, there have been particularly favourable circumstances for its development. In too many instances, indeed, the head does not seem much more than half its usual size, and, as remarked by a farming naturalist, it looks in some cases like a "bumbee" on the top of the stalk. The field which shows the largest head and the best crop that we have seen is one which may be taken as a very good example of the benefit of thin sowing. It must be mentioned, however, that the field had lain for four years in pasture, a circumstance of itself sufficient to ensure a heavier return than when the rotation is confined to wheat and potatoes, potatoes and wheat. After the field was sown, the braird came away very thinly and also somewhat irregularly, and had a most unpromising appearance. Matters did not mend much for some time; and so unsatisfactory was its aspect, even when pretty well on in the season, that one-half of it was ploughed up and planted with potatoes. The other half was allowed to stand, not without some misgivings as to the result. As the season advanced, however, the field began to assume a much better appearance. By-and-by, the strong healthy-looking plant showed that a good ear might be expected; and when at last the head appeared out of its sheath it proved to be one of the largest and best developed to be met with this season. Since that time the stalk has gone on increasing in length and strength, and the half-field shows the finest crop in the district. Of course, it is now regretted that the other half is not standing, but the crop of potatoes upon it promises to be as excellent as the crop of wheat on the other half of the field. The lesson however is one which will not be lost upon the cultivator and the hint may perhaps be of use to others.

In the contiguous field there is a very good example of the effects of thick sowing. The small patch of ground is farmed by a gentleman who is a strong advocate for thin sowing, and who has practised it for a number of years with the best results. This season, however, at the sowing of his field, the machine had been set for thick sowing, and as soon as he observed the work which it was making he endeavoured to rectify the mistake. From some cause or another, he was unable to do so, and the whole of his field was sown by the machine in the same way. He was quite aware of the circumstance at the time, and he foreboded an indifferent crop. The result has justified his expectations. The crop is one of the smallest he has had in the same field for many years, and it is quite in contrast with the heavy yield of his neighbour. To show that this is not altogether the result of the season, it may be stated that the thinnest portions of the field are the heaviest and the best. In the thickest places the head is small and ill-formed, and the stalk itself is "spirly" and poor.

A remarkable circumstance in connection with it, and one which the farmer attributes to the thickness of the sowing, is, that the stalk is actually "kneed" and twisted, besides being light and small in the head. As a whole, he does not expect to take much more than half of his usual quantity off the ground this season, and this he confidently asserts is solely to be traced to the fact of the machine having sown the crop too thick. It is seldom that an opportunity is afforded of comparing the two systems so closely or of seeing so accurately on which side the balance preponderates as has been given to us this year. With all other things equal, there is much—very much—to be said in favour of thin sowing, especially of the wheat crop.

As a whole, the size of the wheat ear in the thin sown field is almost double that of the wheat in the other. With wheat growers the size of the ear must always be a great desideratum. This, taken into consideration with the quality of the crop, will ultimately influence growers in their selection of varieties, and induce them to practise thin sowing for the sake of cultivating to the highest degree of of excellence the best varieties of the cereal crops. That this is to be attained by an intelligent culture of the best specimens has been already acknowledged, and the foregoing account may, perhaps, conduce to the further carrying out of the same system.—*Scottish Farmer.*

Oats Transmuted into Barley.

To the Editor of THE CANADA FARMER:

SIR,—The following I have found in the *Banffshire Journal*. In sending it to you for publication, I hope it may call forth remarks from yourself, or some of your readers who know more of the wonders of nature than your correspondent, J. DOUGLAS.

"SIR,—Elihu Burrit in his 'Walk from London to John O'Groat's,' relates a curious natural phenomenon, which he saw at a farm at Woodhurst. "I saw also a curious phenomenon in the natural world, on this farm, which, perhaps, might be regarded as a fiction of fancy by many a reader. It was a large field of barley grown from *oats*. We have recently dwelt on the co-workings of nature and art in the development of flowers and of some useful plants. But here is something stranger still, that seems to diverge from the line of any law hitherto known in the vegetable world. Still, for aught one can know at this stage of its action, it may be the same general law of development which we have noticed, only carried forward to a more advanced point of progress. I would commend it to the deep and serious study of naturalists, botanists, or to those philosophers who would preside over the department of investigation to which the subject legitimately belongs. I will only say what I saw with my own eyes, and heard with my own ears. Here, I repeat, was a large field of heavy grain ready for harvest; the head and berry were *barley*, and the stock and leaves were *oats*. Here certainly is the mystery. The barley sown on this field was the first-born offspring of oats, and the whole process by which this wonderful transformative is wrought, is simply this, and nothing more: The oats are sown about the last week in June, and before coming into ear, they are cut down within one inch and a half of the ground; this operation is repeated a second time. They are then allowed to stand through the winter, and the following season the produce is *barley*. This is the plain statement of the case, in the words of the originator of the process, and of this strange transmutation. The only practical result of it, which he claims, is this: That the straw of the barley thus produced is stouter, and stands more erect, and is therefore less liable to be beaten down by heavy wind or rain. Then perhaps it may be added, this oat straw headed with barley is more valuable for fodder for live stock, than the natural barley straw. But the value of this result is nothing compared with the issue of the experiment, as proving the existence of a principle of law hitherto undiscovered, which may be applied to all kinds of plants for the use of man and beast."

NOTE BY ED. C. F.—We confess that we have but little faith in these transmutation stories. Every now and then one finds its way into the public prints. Generally, however, they are poorly authenticated, and we must see far stronger evidence for their truth than we have yet met with, before we disbelieve the principle, "*whatsoever* a man soweth *that* shall he also reap."

Flax versus Wheat.

To the Editor of THE CANADA FARMER:

SIR,—While harvest is progressing and reports coming from all parts of the country on the prospects of the crops, I have looked in vain for a word on flax, and therefore take it for granted there is not the same cause for complaint, or the farmers who get credit for being grumblers would have been making it known ere this. Now, sir, for the benefit of those who have not been fortunate enough to raise more than fifteen bushels of wheat to an acre, I would beg leave respectfully to call attention to the following calculation, which may not be uninteresting to the agriculturists of Canada generally.

We are told there are some ten thousand acres of land under crop this year in Upper Canada. We will take this for our base, to use a military expression, and see the comparative value produced from the land, if sown with fall wheat or a crop of flax. Taking for granted the cultivation and preparation for market to be equal (if in error on this point I will be glad to be set right in some future number of your valuable paper), with the concurrence of a majority of our farmers, I will venture to put the average quantity of fall wheat to the acre at fifteen bushels, and allow the outside current price *one dollar per bushel of 60 lbs.*, amounting to the sum of fifteen dollars per acre, or for the whole ten thousand acres the sum of one hundred and fifty thousand dollars.

We will take the seed of the flax plant first, the average produce to the acre being ten bushels of 56 lbs. to the bushel, the price, $1½ per bushel, will net just the same as wheat, fifteen dollars per acre. It must be remembered at the same time there are four pounds to each bushel in favour of flax, so that to every hundred bushels you will have seven bushels more than on wheat, or in simple figures it will amount to one dollar an acre in the seed alone more than wheat.

We now come to the fibre, and from the most reliable information we can collect, and which has neither been disputed nor contradicted, 300 lbs. is put down as the average quantity of clean-scutched fibre, when ready for market. At $10 per 100 lbs., this would value $30 per acre, a net profit of itself over wheat, consequently on ten thousand acres there would be the handsome difference of three hundred thousand dollars. Let us divide this last sum by two, which will put any doubt about the quantity of fibre quite beyond dispute, then we will still have one hundred and fifty thousand dollars, just the amount the crop of wheat comes to altogether, showing in plain figures a balance in favour of flax to this amount.

It has been stated that we are likely to have fifty thousand acres next year in flax, but that quantity, large as it may appear to some, would not amount to more than the arable land in one township, which we are told contains in many cases sixty thousand acres. This would leave ten thousand acres still for bush.

The great complaint we hear is that the land has been growing wheat too long; but where this is the case, it will be found on trial that there are properties in the land that has refused wheat which will produce as fine flax as there is in the world. I am credibly informed that numbers of farmers have made up their minds to leave a portion of their fallows they are now preparing for fall wheat for sowing flax in the spring. This is a wise resolution, as they will then be able to judge when they have the two crops side by side. It is not to be expected a farmer is going to give up growing wheat and turn his attention to flax exclusively; but let each farmer try five acres the first year, or even less, until he be-