

of carrying it on. Consequently I did not expect to do much more this year than pay expenses. The ponds have been established eight years, and therefore it was more favorable than it would otherwise have been. Notwithstanding the dull times, I have taken in just about enough to cover expenses, and had I dropped in prices, could have done a larger business. My experience warrants me in saying that in any ordinary business year it will pay well. Of course such extravagant figures as we find in Mr. Stone's book are calculated to mislead, but a man can do a good business, and make a reasonable profit yearly, with no very hard work, if he gives a proper amount of attention to it.

Gardening and Farming.

Do they not mean one and the same thing—namely, abundant crops produced by ample manuring and by very deep and frequent cultivation? I can detect no difference; the object is to gain the most perfect and profitable development of the plant, whether in flowering or seeding, and this brings me to the consideration of deep cultivation. What should we say to our gardener who allowed his flower-pot, without a hole in the bottom of it, to be half filled with dense undisturbed stiff clay, and then to put into the upper half a few inches deep of friable, unmanured, and cultivated earth? When the rain from the clouds or his watering pot had saturated and passed through the friable surface soil, where would it then be found? Why, certainly, in or on the dense, unmanured, unmoved subsoil its only mode of escape being upwards, as vapor through the surface soil, carrying with it to the air, as latent heat, the warmth that should invigorate and perfect the growing plant—the great British agricultural unmanured flower-pot and its contents are thus clearly and undisputably described. There is no idealogy or guess-work about the matter; the naked facts stand out in bold and unmistakable relief. The 15,000,000 or more of acres of unmanured agricultural flower-pots (for all farmer's crops bloom or flower) exist as a great national mistake and disgrace, and equally blameable is the miserable 5-inch agricultural pavement, for every one may learn by digging, and every farmer ought to know, that the roots of cereal and other farm crops, and especially autumn sown wheat, descend deeply, and much beyond the ploughed soil, in search of moisture and food; and it is because this subsoil is neither aerated and manured that the wheats "go off" in May. This is also often caused by too thick sowing and the confused competition of roots. Does not thin sowing and plant room form an essential principle in the gardener's practice? If he desires a full, modern perfect fruit, how carefully he thins out his fruit in its early stage to prevent undue competition and diminutive results. So does the farmer with his turnips—but why not with his corn, for wheat plants require space? The 20 rods of laborers' cottage garden, deeply cultivated and highly manured by one pig, or 500 lbs. of meat made per acre, is an example that may be safely followed on the largest farming scale, provided, of course the necessary capital can be found. Our country is still not half farmed. It is the maximum crop that diminishes, *pro rata*, the fixed charges of the farm, including manual labor, and, of course, thus increases the farmer's profit. "Where there's a will there's a way," so that when landlord and tenant believe that their capital will pay a larger return upon a diminished area, a re-culture will present a more agreeable and more fruitful appearance.—J. J. MATH, in the *Farmer*.

Large Potatoes from Small Seed

Mr. C. C. Holton, of Brighton, to satisfy himself whether large potatoes could be grown from the smallest seed possible, planted in his hot-bed potatoes the size of a pea, and when the plant was well started, transplanted into partially shaded ground where they received ordinary care until ripe. They were of the Early Goodrich variety, and produced tubers rather above the medium size of that kind.

The experiment demonstrates the possibility, with proper nursing, of raising good sized tubers from very small seed, but it hardly settles the mooted question whether it is the true policy for the farmer to practice planting his small potatoes year after year, or whether he should practice selecting good sized potatoes for seed, on the same principle that he selects the best ears of corn, and the best pumpkins, squashes, melons, cucumbers, &c., for seed.

Mr. Holton admits that when planting is followed by a severe drought, the nourishment contained in a large tuber will give the young plant a more vigorous start than it would receive from a small one, but

thinks that when the soil is moist enough, there will be but little difference in the result. Now, if this is true, can the farmer afford to risk a great deal on the probability of the weather's being sufficiently moist just after planting? We have not the statistics before us, but we have no doubt that of the last ten years at least three were too dry in May for potatoes to germinate to the best advantage; if then, the planting of large seed would have increased the yield of the crop to any considerable extent would it not have more than repaid the cost of seed?

The farmer is subject to too many unavoidable losses in the crops from the effects of droughts to hazard the loss of those that may be saved by proper precautionary measures. Those farmers who cultivate their soil, and their crops the best, and use the best seed, suffer the smallest losses from droughts, and certainly frequently recurring droughts are becoming the most potent of causes of short crops.

We have discussed, in former volumes, this question of large or small potatoes for seed, and while we are always ready to admit that in favorable seasons and under favorable conditions the yield from large may not greatly exceed that from small seed, the only principle upon which the farmer can rely to improve his vegetables, or to improve his animals, is to imitate nature, and select the best from which to propagate.—*Am. Rural Home*.

Taking a Hint from Nature.

Even what are called poor lands are comparatively productive when fresh. The forest growth has drawn up from the depths of the subsoil the fertilizing element assimilated them, and finally, given them back largely to the land in the decayed leaves, branches, and trunks which have strewn the earth for centuries. Much that was originally buried in the subsoil now enriches the surface soil, where we also find a good supply of humus. Now what have we been accustomed to do with such fresh land? We have been wont to take from it a succession of crops, returning little or nothing to the soil, till it has become what we call "worn out," the available plant-food becoming so far exhausted that it no longer pays to cultivate it. What happens then? Another "old field" is added to the vast area of artificial barrenness which disgraces our country. Patient nature takes possession again, and by the same process by which she originally made it fertile, proceeds to restore its lost virtues. But "the mill of the gods grinds slow." It takes a long time for a new forest to grow up and decay. Nature needs not to take account of months and years, or even of centuries; but can we not take a hint from her, and gain the same end by a similar, but more rapid process? In other words, can we not make the land manure itself by a succession of quick growing crops, turned under—that is by green sowing? And is not this one of the essential processes of rational agriculture?—*Rural Carolinian for December*.

Flax Management.

Flax culture is a subject which has excited at times considerable attention. It has been pronounced a "scourging crop," and in consequence in many places is prohibited. It was largely grown in Fife and Forfarshire at one time, but there is not now much acreage under cultivation in these counties. Probably the farmers who had the privilege of growing were not so well acquainted with the manipulation after it was cut or pulled as they are now, or might be. In a paper read before the British Association, Mr. Charley gave an interesting account of flax culture in Ireland. According to his statement the crop in Ireland was one of the largest in 1807, when it reached 213,922 acres. It was lowest in 1848 (the year it will be remembered, when unprecedented emigration took place, owing to the potato famine), viz., 53,863 acres. Ulster grows about twenty-five times more than any other county. Very little is grown in England, although we think there is plenty of land very suitable for producing it, which is now lying almost waste. Many of those who are leaving our shores might be profitably occupied in its cultivation. They would find it more easy work than that which they must perforce perform in Canadian wilds or in Queen-land plains.

The preparation of flax requires considerable care. It cannot be satisfactorily prepared by what is called "dew-rotting." Nothing but the coarsest kind of flax can be so treated, and even that not with impunity, for the prices in consequence will be low (this is Mr. Charley's idea, and we quite concur with him). There is something in the process of steeping flax, or "rotting," which is necessary to

insure the attainment of high color when the prepared fibre is manufactured into cloth, and arrives at the bleaching department. "The fermentation," Mr. Charley says, "which seems of a putrefactive character, acts on the juices and gummy matters which cement the woody stem to the pure fibre of the plant, and also not only assists the after separation of these, which is the object of the subsequent scutching operation, but has such a powerful effect on the coloring matter of the fibre as to render the change required in bleaching much more safe and successful. But, though grassing alone is not sufficient to make a proper preparation of good flax, it is, after the steeping is over, a most useful and necessary addition." The best flax, unless properly watered and grassed will not be likely to prove remunerative to any one. Dew-rotting should never be applied to fine flax.

Brackish water is a dangerous element in the steeping process, and should be carefully avoided, as it injures the texture of the fibre and gives it a dull leaden hue. There have been recently few improvements in flax steeping. So long ago as 1803 Mr. O'Reilly, of Belfast, suggested the boiling of flax in hot water. More recently, observes Mr. Charley, Mr. Schack "patented a system of fermenting in large vats, in a covered building, with water heated to about 80 deg. or 90 deg.; and, no doubt, this plan worked pretty well. I think if this system could be extended, and grassing in the ordinary way added to it, some good might result; though I should not like to say positively it would be a financial success. The system proposed by Mr. Watt, and in operation for several years, is slightly different. The flax is placed in an iron steam-tight chamber, with a condenser on the top. The steam introduced at the bottom heats and softens the flax, and, being condensed in contact with the roof of the chamber, falls down in water through the flax, washing and cleansing it on its way. The flax is afterwards heavily rolled and dried. This plan may suit for coarse and strong flax intended for making strong threads and lines used in the brown condition, but I think for the fine fabrics that the old method will be more successful in every respect. Mr. Andrews, the Secretary of the Flax Supply Association, informs me that he has successfully tested a plan of fermenting in covered vats, the temperature of the air in the building being increased by steam heat to the required point. If the agriculturist had no other cost and difficulty than the simple cultivation of the flax plant, the extension of the growth of flax would be comparatively easy to carry out. The trouble of steeping and after management renders the crop less popular than it should be. The advantage of producing on the farm a large quantity of flax seed, so well known for the nutritive qualities it contains, would of itself be an attraction to many intelligent farmers, for there is no doubt by a little skill and care the greater portion of the flax seeds can be taken off and preserved for feeding purposes without any injury to the fibre. The time may arrive when a regular and extensive business may be taken up in all flax-growing districts by enterprising individuals, with the object of buying the flax from the farmers in the green state, and treating it in an improved way on a large scale, combining probably the steeping of the flax and scutching operations in the same establishment. Meantime, let the farmers who wish to make profit in growing flax, attend as carefully to the water process as to the tick cultivation, and avoid as a general rule the imperfect dew-rotting system, or the use of brackish water in any of the pools intended for steeping this valuable plant."—*The Farmer*.

How I Used Sawdust.

About six years ago I had a saw-mill set on my farm. At first they washed the dust, as the sawyers called it, by letting a stream of water run underneath the saw. As the water got low it would not work; then they had to wheel it out in a pile, and when they went away I had a big pile of sawdust on my lawn. As it was on a good piece of bottom land that I desired to plough, I wanted it out of the way. I tried to burn it, but it would not burn. I concluded at last to turn it to some account; so when I put my hogs up to fatten I hauled a load every few days and threw it in the pen. They mixed it up with their manure and the cobs, and in the spring I had about twenty wagon loads of the very best manure, besides keeping the hogs clean and dry. I used the sawdust for bedding the horses and cows; I put it around my grape vines to keep down grass and weeds, and the ground moist. The vines improved wonderfully. So my pile of sawdust is used up, and I have paid. It was to have a mill again I would make the bargain to have the sawdust left on the ground.—*Cor. Ohio Farmer*.