

Interesting Facts in Agricultural Improvements.

Joseph Harris, in the *American Agriculturist*, writes as follows:—

It is twenty-five years ago this month since I wrote my last article for the *Genesee Farmer*, and I have been writing every month since. I have just looked over that old article. I was fresh from the great experimental farm of Lawes & Gilbert, and the article embodied some of their most important results. The burden of it was: raise more clover, peas and beans, keep more stock and make more manure. I say the same thing to-day, only I should put first "cultivate the land more thoroughly and kill the weeds." I thought then that wheat, barley, oats corn and other cereals, during their growth, gave off nitrogen into the atmosphere, while clover, peas, beans, vetches and turnips retained all the nitrogen they got from the soil and from dews and rains. The theory was simple and plausible, and the practical deduction safe and sound. But more recent investigations failed to sustain this view. The advantage of growing more clover, peas and other legitimate plants, however, is as certain as ever. And I could say nothing more to-day than I said then in regard to the advantages of feeding food rich in nitrogen to stock, and saving the manure. But it is well to forget the things that are behind, and press forward. There is more to be done, and more improvements to be made during the next twenty-five years than were made in the past twenty-five.

We have better implements, better roads, better stock and better prices. I sold barley from this farm twenty-five years ago for 37½ cents per bushel. Now I can get \$1.10. Combining wool was not worth over 25 cents a pound. Now it is worth 50 to 60 cents. I sold a lot of splendid butter to go round the Cape in a sailing vessel to California for 12½ cents a pound, and it got there safe and in good condition. I will not say it was as good as gilt-edged Jersey butter, which now brings a dollar a pound, but, at any rate, such butter would sell for three or four times as much as it brought then. Pork and good beef, and choice mutton, have doubled in price, and so have eggs, poultry and fruit. Let us be thankful. The indications point all in one direction, and I see clearly written out on the years to come,—“cash for good farmers,”—“good farming will pay better in the future than in the past.” Marvellous have been the improvements in our cities and villages. We are a great and mighty nation. But the increase of wealth and population has been greater in the manufacturing districts, and in villages and cities, than in purely agricultural districts. Farmers are now to reap great advantage from this state of things, especially those who furnish better beef, mutton, pork, butter, cheese and wool. And this means better farming, fewer weeds, richer land, larger crops, better stock, and more liberal feeding, and more intelligent and prosperous farmers.

Too Much Land.

I have been convinced for a long time that a large majority of our farmers are laboring under a great mistake in endeavoring to cultivate too much land; and the past season has fully confirmed that opinion, so that now I am ready to speak out my thoughts in regard to it.

I know that farmers look decidedly too much to quantity, instead of quality, through the mistaken idea that if they can only get over a large amount of land they are going to do a big thing and make a big show. They will plow up acre after acre, and plant and sow without dressing—are consequently driven to death throughout the season to work over and harvest so many acres, and in the fall they find that they are woefully deficient in the amount realized. Their big figures have dwindled to small proportions. I hold to the principle that one should cultivate just as much land as he has the capital and ability to cultivate well, and not an acre more. It is far better to get two tons of hay from one acre than from two. Better to harvest sixty bushels of corn from an acre than to go over three after that amount, as many do. So with grain and potatoes. So with everything raised. We have farmers here who will plant ten acres of potatoes and get five hundred bushels, and others that will harvest the same amount from two acres. Here is an evidence of the vast amount of labor entirely thrown away, to say nothing of seed wasted and feelings hurt, all on account of this insatiable thirst for accumulating and running over so much land.

“Oh! well,” says one, “my land is poor and I must plant over a good deal of land to get much of

a crop.” That is precisely what has made your land poor, my dear sir, and it will continue to grow poorer with such treatment. By going over so much you don't half cultivate it, and weeds are allowed to grow, taking a good share of plant food to themselves, and your crops literally starve for want of nourishment and care. You have no time to collect weeds, leaves and muck for the manure heap. You are running too many different ways at the same time. Running over too much land, running in debt, and running down hill in the agricultural line. You had better run away from your farm and give some one else a chance to run it in a different way. A few weeks since, while in a pasture with the owner, I remarked that the grass and weeds and brakes which burdened the ground would be valuable if cut and used for bedding under horses and cows, and to work up into manure. “Worth twenty dollars,” he replied, “but it is impossible for me to cut it; I am so pressed with other work.”

This is but an example of thousands of farms and farmers in this State. Having so much land under cultivation they cannot seem to find time to cultivate, otherwise than in a slipshod way; have no time to attend to minor details so necessary for successful farming, and every succeeding year finds their farms poorer, themselves weaker and more discouraged, and the traces of decay gradually mark the family possessions.

Our main object should be to reverse this picture; cultivate less land and cultivate it well; beautify our homes; educate our immortal minds, and progress instead of retrograding.—*German-town Telegraph*.

What Plants Feed On—Animal Excretions.

We have in former numbers alluded to the able lectures of Prof. Goessman, of the Agricultural College of Massachusetts, which are undoubtedly among the most valuable additions to agricultural literature which we have had of late years. From one of these lectures, by Prof. G., we make the following extract, upon a subject which will be found of extreme interest. The conclusions at which the professor arrives in the last paragraphs, are in accordance with what we have so often endeavored to impress upon the attention of our readers. Professor Goessman takes the ground, that whilst full-grown animals return the entire amount of nitrogen consumed in their food, young animals retain some of it for their growth, cows pass part of it in their milk, and sheep secrete it in wool. That the excretions of high-fed oxen contain 2½ as much nitrogen and 3½ times as much phosphoric acid as those of cows and young stock. From these premises he argues:

“Where the practice prevails of keeping an account of the motions of the various items of plant food, it is customary to allow a loss to the manure pile of twenty-five per cent. of the nitrogen consumed in the food by its entering into the composition of milk, and various textures. Cows or oxen, for example, which require for their daily support from 6.5 to 7 ounces of nitrogen in their food, per 1,000 pounds of their live weight, consume annually from 148 to 178 pounds of nitrogen; deducting 25 per cent. for other purposes, we find that 111 to 128 pounds of nitrogen will be contained in their fresh excretions. This quantity of nitrogen is equal to that contained in from 750 to 800 pounds of the Chincha Island guano, or in 3,200 pounds of bone meal, or in 25,000 pounds of half-rotten barn-yard manure.

“The efficiency of animal manure as a nitrogenous fertilizer, depends, to a great extent, upon the preservation of the entire amount of both the liquid and solid portions. The liquid manure contains all the soluble constituents of the food, which usually represents the most valuable portion of the fertilizing substances of the whole excretions.

“The amount of nitrogen contained in the urine of domestic animals differs widely, independent of the kind of food consumed. The nitrogen of the food has been found distributed in their excretions as follows:

In the case of	cows.	oxen.	sheep.	horses.	mean.
Solid excretions,	45.5	51.9	43.7	56.1	49.1
Liquid “	18.3	28.9	51.8	27.3	34.

—*Wolf*.

“The saving of the urine of our farm stock, therefore, deserves most careful attention, not only for the nitrogen it contains but other important items as well, e. g., potash and phosphoric acid. Its presence is essential for the production of anything like a complete fertilizer for the production

of crops which served as food; its absence depreciates the value of the stable manure more than half. To suffer the liquid manure to waste means loss of nitrogen and potash in particular. Fresh animal excrement contains but little ammonia; it is soon largely evolved, however, in consequence of a peculiar process of fermentation, and the manure is thus liable to suffer seriously in nitrogen compounds. Here the value of humus, loam or turf, as absorbents in stables, is readily apparent. These substances absorb ammonia freely, hence deserve recommendation for the above purpose. Dry, fresh, vegetable refuse material, as straw, leaves, etc., quickly absorb the liquid manure; but they are little fit to take care of the ammonia before they have advanced to a certain stage of decay, i. e., partly changed to humus. An addition of loam, or better, a daily sprinkling of plaster or sulphate of magnesia, is, for this reason, of particular importance. Partly rotten manure does not evolve ammonia to any appreciable extent. The incorporation of all kinds of vegetable refuse into the stable manure is to be recommended, for such decompose more readily when mixed in this way, and tend to make the stable manure a more efficient fertilizer. Grain and straw contain the same articles of plant food, and differ in this respect merely in regard to the relative proportions.

“Numerous actual experiments made in connection with stock feeding have furnished us with a good mode to calculate, approximately, the annual production of manure for every kind of farm stock. First, the entire fresh excretions of cattle, sheep and horses, amount, on an average, to 50 per cent. of the dry substance (at 212 degrees F.) of the food consumed. Secondly, one-fourth of the weight of the dry food consumed is required in dry straw, for example, to absorb the liquid excrement; and thirdly, stable manure contains, on an average, 25 per cent. of dry substance and 72 per cent. of water. Hence, allowing for absorbents, for every 100 pounds of dry food consumed we have 300 pounds of manure.

“The commercial value of stable manure may be approximately ascertained by allowing for every ton about ten pounds of potash, eight pounds of nitrogen and four pounds of phosphoric acid; but these figures are an average of very uncertain series, for we have seen that the quality of animal excrement depends altogether upon the food consumed. The agricultural value of stable manure stands higher than any commercial fertilizer containing these substances in like proportions; for barnyard manure not only furnishes plant food, but also acts beneficially on the physical condition of the soil.

“The only serious objection which can be urged against the exclusive use of the stable manure in mixed farming, consists in the fact that it becomes an incomplete fertilizer, in consequence of the too general practice of selling crops without restoring to the soil, in some suitable form, at least their ash constituents. And this is a serious objection.

“There are two ways by which barnyard manure may be a complete fertilizer for any crop, and these are: to restore the soil constituents sold in the barn produce, either by buying and feeding rich food in addition to the fodder crops raised, or by securing a sufficient amount of plant food by using commercial fertilizers. Which of these two courses is most economical, cannot well be decided on general principles, beyond the statement that the first course deserves careful consideration on the cultivation of special crops.”—*Am. Farmer*.

We clip the following paragraph, which may be of interest to poultry fanciers, from *The Country*:—

I possess two ducks, cross-bred. This year they commenced early in March, in which month they produced 36 eggs, 20 in April, 39 in May, 11 in June, and 13 in July—a total of 119 eggs. They then ceased laying, and I certainly did not expect any more eggs this year; but on my return from a trip abroad, three weeks ago, I found that one of the ducks had recommenced laying. Since then it has deposited 9 eggs, making, with 8 laid while I was away, a grand total of 136, or an average of 60 to each bird. Is not such a large production of eggs very extraordinary? X.

Knockholt, Ken., Eng., Oct. 6.

Dr. E. Lewis Sturtevant, of South Farmingham, Mass., says he has ascertained, from actual trial in wintering 130 fowls, that it takes one quart of grain per day for every ten fowls, between Nov. 1 and April 30.