

THE FARMER'S ADVOCATE.

"PERSEVERE AND SUCCEED."

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The Sweet Chestnut.

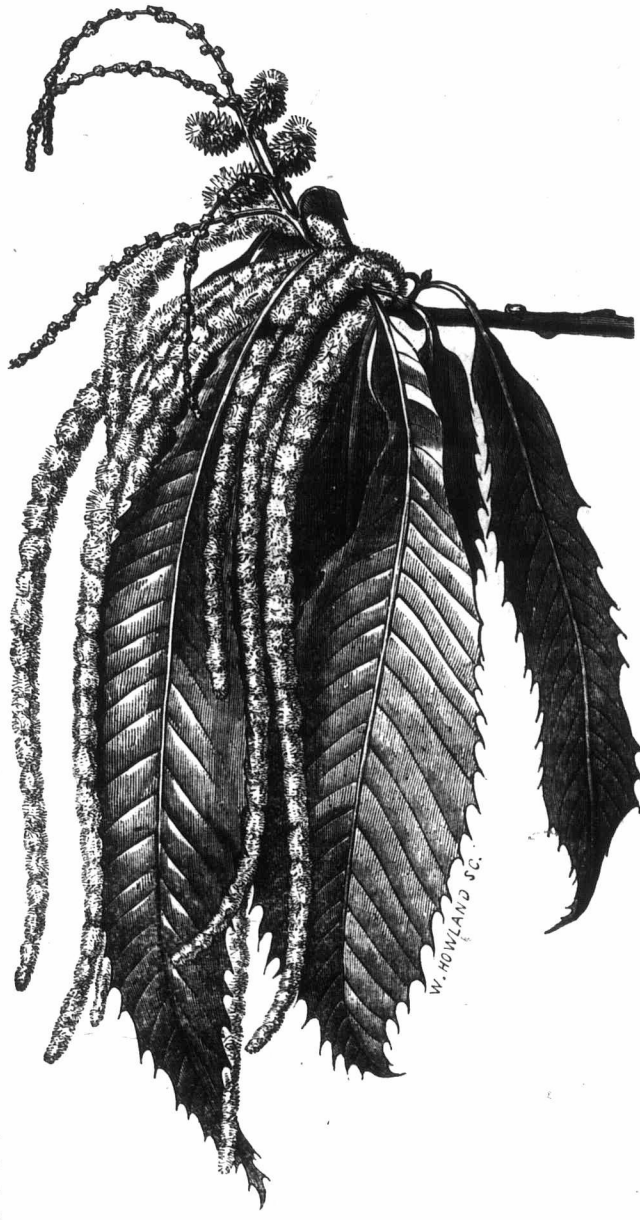
We would call the attention of our readers to the chestnut tree. Many of us have, no doubt, seen the chestnut growing in the wood, as in some parts of the country it is very plentiful; but, taking the country in general, little is known of this very valuable tree; even in the sections where it may be found growing wild, not one farmer in a thousand knows the real value of it. It is very hardy; may be grown in all old settled parts of the country; is of rapid growth; makes a handsome ornamental tree, bearing a fruit pleasing to young and old, and improving in size and flavor by cultivation. One great advantage of this tree is that it is less liable to be killed than most others. If cut down, young suckers spring up from the stumps and in a few years grow up to be valuable trees. They only require to be protected from cattle and thinned out sufficiently. The cutting down should always be in winter. The timber is of a good quality, and for many purposes very durable. It is very handsome when wrought by the cabinet maker. Chestnuts, when gathered for planting, must not be allowed to become dry. The germination of nuts in general is prevented by their being dried. They must not be so heaped together as to cause heating. The best way to preserve them for planting is to mix them with sand in a cool place—the sand damp but not wet. If sown in a seed bed, to be transplanted, sow them in rows a few inches apart. The young trees should be mulched the first winter, after that, mulching will be unnecessary. If planted for timber they may be placed eight feet apart; if for fruit they will require a space of fifteen to twenty feet.

Chestnut trees grow to a very great size. Some of them, in the forests of Carolina, were measured and found to be fifteen or sixteen feet in circumference at six feet from the ground, and in height not surpassed by any other trees. The Great Chestnut of Mount Etna is in circumference 160 feet, and others there are of immense size. There is a chestnut tree near Sancerre, within 120 miles of Paris, said to be 1,000 years old, with its trunk still sound and annually laden with fruit. Its trunk, at six feet from the ground, is thirty feet in circumference. The chestnut trees of Old England are some of the most ornamental objects of the beautiful demesnes. In such grounds it is seen to the best advantage with its beautiful foliage and graceful form.

If old trees are transplanted they are apt to die. They should be planted when young, never more than five or six feet high. In England they plant the nuts where they want the trees to grow in the forest or plantation. Young plants may be successfully moved, and even sent by mail, when quite small.

They bear nuts about seven years after planting, but at fourteen years they will yield about a peck. Chestnuts vary in value. Sometimes they may be had at five dollars per bushel, and again they have brought as high as twenty dollars per bushel.

If some of our farmers who are hoarding their cash away in some society, or purchasing more land, would invest a part of it in planting groves or belts of chestnut trees on their farms, they would find their crops improved, their farms beautified, their fencing and building timber replenished, their families pleased, and their neighborhood and the country generally improved. The chestnut grows well in poor but dry soil where no other crop can be raised with profit. Messrs. Starr & Co., of Painsville, Ohio, U. S., can supply the seeds.



THE SWEET CHESTNUT.

The Cultivation of Barley.

A soil dry, warm and fertile is best suited for the growth of barley. No water should be allowed to lie stagnant in it, and where not naturally dry it should be drained; for the successful cultivation of barley this is absolutely necessary.

Though a soil warm and dry, and not too heavy, is especially a barley soil, a clay soil by being drained and enriched will, with proper tillage, produce a remunerative crop of barley. I have had good barley crops on light, gravelly soil, and on a heavy clay, such as is generally called a wheat soil. On the latter I harvested over 70 bushels per acre

of good malting barley, on a field of 14 acres. The previous year the field had been cropped with potatoes. As it was a heavy soil, I then had it plowed in the fall rough and strong, with a clean, well-cut furrow, and water-cuts opened where necessary. It was re-plowed in spring, turning up the fertile surface that the fall plowing had turned down. Before sowing it was tilled, rolled, and still further loosened with the cultivator, so that the seed bed was in excellent tilth. It was sown on the 5th and 6th of May, and seeded down with clover and grass seed.

What is the most profitable variety of barley? The field I have just spoken of was sown with Chevalier barley. This variety has been tried here and has not met with general favor—an indication, this, that it is not the kind best suited to the climate.

Barley is generally known as two-rowed and four-rowed. The two-rowed is preferred in England as malting barley, and as such commands a higher price; the six-rowed we have always heard there to be reckoned as feeding barley. The classification in America is different, the six-rowed selling higher, and in rich soil it gives a heavier produce, and it ripens the earlier of the two by some days.

Not only is much of the soil of Canada well adapted to the growth of barley, but the climate also is such as to enable us to produce it of a superior quality. In other countries the frequent rains sometimes make it difficult to harvest it in good condition, so as to have the brightness of color and feel, when taken in the hand, that are required to place it in the first class as malting barley. Here the dry sunny harvest is very favorable in this respect. Our suitable climate and our better cultivation of the soil enable us always to produce a better quality of barley than they can in the States, and consequently they are willing to pay us the better price. From the Report of 1874 we learn that in Canada the yield was large, from 25 to 45 bushels to the acre, average over 30; quality very fine, weighing from 46 to 50 pounds per bushel, and was secured in splendid condition.

Of all the cereals barley is the best with which to seed down the land. One reason of this is that it does not impoverish the soil as much as other cereals; another reason is that the ground prepared for barley is in so good tilth, affording to the grass seeds an excellent seed bed. Grass seeds are now much sown without cereals, but when it is thought better to have a grain crop with the seeding, none is equal to barley. Barley, also, while affording to the young grasses a desirable shade, is not so apt to smother them as some other crops are, and the short time between its being sown and harvested is also favorable to their growth. —S.

Spring Wheat or Barley.

What grain are we to sow this spring? Are we to rely on wheat as our spring crop, or shall we sow more of the other varieties of grain, that are less value as breadstuffs? This is a question for our serious consideration, as Canadian farmers. It is

likely that in England, at least, there will be less wheat sown than in previous years. In reference to this, the English agriculturists reason in this wise:—"The addition of so large an importation, as nearly 45 millions cwt., to our very large crop has hardly been fully appreciated as yet." With the competition of the whole world against the English growth, it is a question if the cultivation of wheat is likely to be overborne by the foreign producers, and whether an alteration is not necessary in the course of cropping so as to direct the attention of practical men to the cultivation of some other produce that is more required in the consumption and less available to the foreign growers. If the English act in accordance with this reasoning, they will raise fewer acres of wheat, and hence there may be a greater demand for this, the most important of bread stuffs. But the demands of English purchasers depend less on the area of the wheat than on the favorable or unfavorable weather for its growth, and the prospects of the crop for 1875, as far as yet known, are very favorable. The seed bed was well prepared; the seed sown in the best condition, and the early growth gave great promise. If the season, be anything resembling that of 1874, England will again depend less on continental and American supplies than is generally the case. Looking at the coming season in the light of the one we have passed through, we cannot, we think, wisely make wheat our great spring crop as we have been in the habit of doing, but rather direct attention to the cultivation of some other grain.

Barley next to wheat, first demands our consideration; and there is much to be said in favor of our growing it, instead of spring wheat, more at least than we have been in the habit of doing. There is always a ready market for it, with remunerative prices. Throughout the past year, the prices, especially if compared with those of wheat, have been exceptionally high. The proportion of price between the two years was formerly as two to three, that is, barley brought two-thirds the price of wheat; this year the price is about the same for 100 lbs. The latest quotations from the English markets are, wheat, 41s. 6d. per quarter, barley, 43s. 3d. The prices in this market at present are; spring wheat \$1.45 per 100 lbs. to \$1.53, barley \$1.50 to \$1.75. This may be in part owing to deficiency in the barley crop in England. But this is not the only cause of high price, it is still owing to the inadequacy of the supply from other sources. It is the opinion of the best authorities in England, that the importation of malting barley cannot be sufficiently increased, because such a quality, with few exceptions, cannot be grown elsewhere. Of wheat, they can at any time import what will be wanted to meet a deficiency. The supplies from the Continent of Europe and from America are sufficient to supply the demands for breadstuffs; but the United States, the principal wheat and corn exporter, cannot grow enough malting barley for their own consumption. The area for the growth of good malting barley is limited—it is so in Great Britain—it is so in North America. In the United States the barley is not at all equal to that of Canada; so that in America the Canadian barley always brings the highest remuneration with American malsters; and of the barley grown in Nova Scotia, Prince Edwards Island and British Columbia we have most favorable reports.

In our consideration of this subject we have ourselves come to the conclusion, that barley sown in spring would in all probability be more profitable than wheat. We see there is a good demand for it, with remunerative prices, and that this is a prospect of the continuance of the demand, and that Canada produces barley of better quality the more southern part of North America, so that it

will always command good prices. There is besides another source of profit in grain, instead of spring wheat; it is a less scouring crop, less exhaustive of the fertility of the soil; it does not drain from it, in the same degree, those elements that other cereals do. Its roots do not strike so deep into the soil, but seem to need more of the nutriment derived from the immediate surface and through it from the atmosphere. It also arrives earlier at maturity. —S.

Plant Food.

THE PLOW AND THE CULTIVATOR.

We have in an American paper an article headed "The Cultivator vs. the Plow." The writer says:

"The conflict between the advocates of deep and shallow plowing is now joined by a third party, those who think that no plowing at all is best. The new theory that the surface should only be scratched is a formidable rival to both theories of plowing, and is supported by plausible arguments."

What are these arguments?

"All the produce from the soil, the food that supplies the myriads of men and animals on the surface of the earth is grown upon a crust of a few inches—usually three or four inches in depth."

"Manure on the surface, or barely covered in, is much more advantageous for plant life than the same manure buried deeper, and in like manner the fertilized soil of the surface, if turned down a few inches, will not be half as available for plant life as if left where it is. The shallowest plowing, therefore, is likely to do harm in this respect, unless it be the kind practised in the East with a crooked-stick."

In examining these plausible arguments, we must bear in mind that for the sustenance of plant life there must be an adequate supply of plant food, and that supply given with no niggard hand, if we are to obtain a good yield from our fields.—Whence plants obtain that food is a question of first consideration. A portion of it is derived immediately from the atmosphere, but the great storehouse of plant food is the soil. Its constituent parts are the elements of that food. All farmers know that if there be not a good depth of soil to give an adequate supply of plant food for our crops, whether cereals or roots, they must be light. We might, with as good reason, expect our horses to do well if we only put a handful of provender in their mangers, or cows on a bare pasture to make a good return to the dairy. The fertility of the three or four inches on the surface is, it is true, advantageous for plant life, and more so than if that fertility were buried deeper. But this applies merely to the germination and early growth of the plant. Where fertility as the result of cultivation is limited to a few inches, the plants soon exchange their dark green color for a sickly yellow, the promise given in their first growth is never realized. The good seed bed had given them a good start, but cannot give the needed sustenance to the roots now passed beyond its depth, and they soon seem sere and wilted.

It is true that a farmer in some instances cannot, unless after years of labor, have a deep soil, but he can in all cases make it deeper than the few inches—deepen gradually and continuously, knowing that there is a store of wealth in the greater depth of soil, only requiring cultivation to make it as available for the plant food as the mere surface. The plow and the cultivator have each their place and work—not the cultivator vs. the plow. On fallowed land, when the surface at seed time had become too compact to be a good seed bed, and yet was more fertile than that beneath, we have had

the cultivator used; and, after a manuring the previous year, we would, if we were to sow the seed broadcast, and cover it by harrowing, cultivate the land in preference to plowing. In such instances the cultivator is used as supplementary to the plow, and would make the requisite preparations for a good crop—a rich, mellow seed bed and a deep, well-plowed soil, into which the roots would easily penetrate and from which they could absorb the nutriment needed in every state of their growing and maturing. There was consequently no premature fading of the leaf in a time of excessive drought or moisture, no return of only twelve or fifteen bushels of grain as the yield. The more thorough cultivation, the deeper plowing and heavier manuring in England account, at least in part, for the fact that while the average returns of wheat in England are almost thirty bushels, the average in America is under half that number. —S.

Prize Essay on Manuring.

The question, When is the most suitable time for the application of manure, naturally resolves itself into the two following questions:—First, what season of the year can manure be applied with the least waste, and greatest benefit to the following crop. Second, what season of the year can it be cheapest and most conveniently hauled out, and spread on the land. To unite these two desiderata, would be an answer to the question.

Before proceeding any further, I shall take a cursory glance at the different modes, and times of applying manure, as I have practised and observed, embracing an experience of thirty years, two-thirds of which, was spent in the old County of York. The fact is well known, that, until twenty years ago, raising wheat was the *summum bonum* of Canadian farming. With few exceptions, not more than one or two acres of turnips, and perhaps an acre of potatoes, half a dozen drills of carrots and mangolds, a few hills of corn, constituted the green crop on a hundred acre farm. The principal part of the summer tillage was therefore devoted to the fallow, which was (by good farmers,) ploughed in the fall, twice cross ploughed, and then ridged up previous to sowing. The manure was applied as soon as convenient after spring seeding, and before the first cross ploughing. The repeated ploughing and harrowing thoroughly incorporated the manure with the soil, and its soluble parts made immediately available for plant food. Seeds of noxious weeds already in the soil, or contained in the manure, germinated and were killed by the working of the land. If the growth of fall wheat in summer fallow be the principal object to be obtained, I am convinced from practical experience, this is at once the cheapest, most convenient time, and most beneficial method of applying manure. I had known farmers, whose greed overcame their judgment, take a crop of peas or barley, then apply the manure as soon as possible after the crop was removed, plow it down and sow wheat. I have seen a paying crop follow this, but seldom saw the land left in good order for the ensuing crops. This plan of applying manure to fall wheat is not to be recommended. The wheat crop does not receive the full benefit of the manure, the land is not properly cleaned, and if the harvest be somewhat late, it causes an excess of labor at seeding time, often retarding the sowing for a week or ten days. Another way of applying manure to fall wheat, and practised largely some years ago north of Toronto, was to spread the manure evenly on the surface of the land immediately after sowing. When the manure was well composted, in so far as its utility to the soil, benefit to the crop, and its acting as a mulch to the young wheat, was concerned, no objections can be raised, but if there were seeds of

weeds in the manure, they would flourish in the thunder shower, and be a practical impossibility.

As the mode of manuring governed to a great extent the rotation of crops, many years ago, in lieu thereof, a green crop, tall, leafy, after mowing, was sown. When I come to crowded with manure, seed to accomplish the same purposes I manure for corn in the stubble, round furrows, tended for turnips, manured in the opening the closing time, more than fifty. From this mode the land well corn and tur and clover. ploughed do the fall, lay face, its soil the bottom tent washed therefore, it quired. The manuring in if the manure the plant is but its benefit. I growing in ing so much distributed.

For the field light manure, so of the crop to assist in marked it into square heap of manure, which immediately to prepare and plan connection brother farmer system of advantages early after the seeds and the accelerators have seen considerable harvest matter retained food. does not farm operation enough used for weeds, hoeing the manure

weeds in the manure, as a matter of course, they flourish in the wheat crop. And again, a heavy thunder shower at the time rendered this plan a practical impossibility.

As the mode of applying manure must be governed to a more or less extent by the system or rotation pursued, I may just mention here, that, many years ago I did away with bare fallow, and in lieu thereof, I clean a field every year with green crop, taking a crop of fall wheat from clover lea, after mowing or pasturing, as the case may be. When I commenced this system, I was often crowded with work in the fall, and behind with manure, seldom having more than half enough to accomplish my purpose. Under these circumstances I manured the part of the field intended for corn in the fall, simply spreading the manure on the stubble, and ploughing under with a good round furrow. The other part of the field intended for turnips, I ploughed in the fall also, but manured in the drills in the ordinary manner, first opening the drills spreading in the manure, then closing them, observing, in dry weather, not to get more than fifteen or twenty drills before the sower. From this mode of applying manure, I have cleaned the land well, and raised most excellent crops of corn and turnips, followed by large crops of barley and clover. Objections to this plan are: "Manure ploughed down with a heavy furrow, even early in the fall, lays inert until brought again to the surface, its soluble parts (especially what rests in the bottom of the furrow) is to a more or less extent washed into the subsoil, and in consequence therefore, its full benefits are not obtained when required. The same objections may be urged against manuring in the drills for turnips. Undoubtedly if the manure be highly concentrated, the food for the plant is advantageously placed for assimilation, but its benefits to the after crops, are not fully obtained. I have observed my barley and clover growing in drills, on the turnip land, not producing so much as if the manure had been equally distributed on the surface of the land.

For the past two years, I have ploughed the field lightly (early after harvest): I intended to manure, sometimes just as soon as it was cleaned of the crop, harrowed it thoroughly, and rolled it, to assist in the germinating of small seeds. Then marked it with the plow, both ways, thus dividing it into squares eighteen or twenty feet apart. A heap of manure is dropped where the furrows cross, securing as much as possible uniformity in spreading, which is done at the time of drawing, or immediately after, and left untouched until it is time to prepare for corn in the spring. I think this time and plan of applying manure utilizes everything in connection with fall manuring. To those of my brother farmers who have not already adopted this system of manuring, I will just mention a few advantages gained by it. The working of the land early after harvest stimulates the germination of the seeds of weeds before the cold weather sets in, and the application of manure at the same time, accelerates their growth, especially if a few warm showers should fall after the manure is spread. I have seen the fox-tail seeds sprout, and make considerable growth, which is rarely to be seen after harvest. Every shower washes so much soluble matter from the manure into the soil, where it is retained (and not too deep) until required for plant food. The ploughing of the land at this season does not necessarily interfere much with the other farm operations. Should rain stop harvest work hitch on the gang plough, which ploughs deep enough for this purpose. The part of the field used for turnips can be almost thoroughly cleaned of weeds, previous to sowing, saving a vast labor in hoeing; labor to assist in hauling, and spreading the manure, can be obtained at this season easier

and cheaper, than a month later. If the manure be properly piled in the yard, or in the shade, no loss will be sustained by leaching. This plan does away with the necessity of a bare fallow, and it is just as beneficial, if cultivating and hoeing be properly attended to, in the green crop. Perhaps I have encroached too far already on your space, and will end by recommending this method of manuring to those who pursue a rotation requiring a fifth, sixth, or seventh of their arable land in green crop.

A. A. BRIDIE,
Gladstone, March 15th, 1875.

An Essay Read Before the Members of the Forest City Grange, by the Master.

Contributed to the Farmer's Advocate.

THE POTATO AND ITS ORIGIN.

This very valuable root is a native of the Southern part of N. America—We first hear of its cultivation in Ireland in the year 1584, on the estate of Sir Walter Raleigh, who brought it to that country.

Now it is universally cultivated within the tropics and to lat. 64° w. in Sweden.

The potato has rendered unknown those famines which formerly were so frequent, and so distressing in Europe, and has added millions to the population.

There are a great many varieties of this tuber in existence at the present time. Of the many sorts now grown in this country, I will mention the two best, the Early Rose, and the Peach Blow, the only drawback in planting, the latter, is, that it is late in coming to maturity. The Early Rose I consider the best, as it matures at least six weeks sooner, which enables the farmer to grow a crop of flat turnips, or soft fall wheat on the same ground the same season.

One of the first things to look to in the cultivation of this crop is the quality of the seed. Whole sets of the middling size are the best for planting. At the time of planting the potatoes should be firm and slightly sprouted. If you are compelled to use large potatoes cut them in fair sized pieces, leaving two or three eyes in each. After cutting, lay them out, and dust them with lime or land-plaster, allowing them to be well dried before planting.

[Note.—Ashes are as good for the purpose as lime or plaster.]

CULTURE OF THE POTATO AS REGARDS SETS.

Weight for weight, cut sets produce, as nearly as possible, the same weight per acre as whole potatoes, and smaller sets give a larger return, in proportion to their weight, than large sets.

In planting early potatoes any sets over six oz, decrease in their produce at least one-half.

In Ireland, where the potato is grown in greater quantities than in any part of the world, the people were forced to use (owing to the loss of two-thirds of their crop by rot) the peels of potatoes as seed, and succeeded in producing as large a return as they had heretofore done by using whole or cut sets.

The only difference I have found in the use of whole sets, in comparison with cut sets, is, that in regard to early kinds, the whole potato germinates sooner and of course ripens its tubers at least a week in advance of the cut sets.

But in no case have I ever found that large whole potatoes, ever produce a larger return than the smaller potatoes; and the only persons I ever heard advocate the use of very large potatoes are seedsmen, who have their own interest to look to in making sales, as the larger the set the more you need to the acre.

I should strongly advise all growers of this tuber, to either exchange seed every year with their neighbors who have different soil, or buy from some responsible seedsmen, as exchange of seed is in many cases as good as a coat of manure to the coming crop.

THE POTATO AND ITS CULTIVATION.

The soil best adapted for the growth of this crop is a sandy loam, but almost any soil if well drained will produce a paying crop. The ground should be well and deeply ploughed, if possible, followed with a subsoil. The soil above, below, and around the sets when planted cannot be too loose and friable.

The ground should have been manured for a previous crop, as it has been proved by many growers that new rank manure does not tend to increase the weight or quality of the crop; but land plaster, lime, or ashes may be used to advantage, either together or separately at the time of planting.

The manner of planting is either in hills, drills, or flat culture; some plow them in thinking to save time. It is better to plow first, and plant afterwards, either with hoe or dibble. In sandy soil the flat system is best, that is, covering the sets at least six inches and keeping them from thirty to thirty-six inches apart each way. After planting, keep the harrow going over the ground every three or four days until the tops are at least three or four inches above the surface, afterwards using the scuffle hoe or cultivator along the rows until you find the young potatoes have formed. If you continue to use the hoe or cultivator after this stage of the potato growth, it will tend to lessen the crop. All work after this should be done by hand, pulling any weed you may find along the rows and pinching off the flower stems. The reason given by growers for the latter process, is, that as long as the flowers remain the tubers will not grow to any extent, owing to the fact that all plants throw their whole strength towards ripening their seed to the detriment of the root. I scarcely think it applies to the Early Rose, as I have not as yet ever seen a seed ball formed on this sort.

In harvesting this crop, I should always sort the potatoes in the field, as it saves much time and trouble afterwards, viz:—The large for eating, or sale; the middling sized for seed and the small for the cattle.

Never finally pit or put into cellar for winter until you have had the tubers in sweating pits for at least two weeks, as they will heat and sprout, especially the early sorts. The middling sized for seed should be exposed for a time to the sun, as they are considered better for seed when slightly greened, afterwards putting them in barrels or boxes in cellar, and dusting each pair with lime to prevent them sprouting during the winter season.

The average yield per acre of this root should be 150 bushels, but owing to the ravages of the potato beetle this last year or so, it has in some cases diminished the crop one-half. There is only one way to deal with the potato beetles if you wish to save your crop, and that is to kill them. If you have only an acre of potatoes you can manage them without the use of poison, by catching and burning them. There is only one way in which they can be destroyed on a large scale, and that is by the use of Paris Green. This is a deadly poison, and must be used with great care. Secure the best there is no saving by buying the cheapest in this case. I have used it to great advantage by mixing one pound of Paris Green with forty pounds land plaster, and applying it either in early morning when the dew is on the tops, or after rain; some use flour, but by the use of plaster a stimulant is applied of great value to the crop. After the beetles have been killed, it is better to continue the application of the plaster until the crop is ripe. In the latter part of last season I used water in applying the poison at the rate of two tea spoonsful, to three gallons of water, applying it with a long hair brush or garden syringe. It is the least dangerous method of using the poison.

THE POTATO AND ITS USES.

The uses to which the potato may be put besides those of food, starch, sugar and spirits, are much more various than most people are aware of. In Saxony it is made into a kind of cheese, which will last for years if kept in close vessels. It is prepared by boiling the potatoes and reducing them when cold to a pulp, rejecting the skins. Sour milk is added, or else sweet curd with a whey, in proportion to a pint to four pounds of pulp. It is kneaded several times, drained in small baskets and dried in the shade.

In France they use it in making coffee, by mixing some of the best olive oil with a certain quantity of dried potato flour, and then adding a small quantity of coffee powder, producing a liquor more agreeable than coffee used alone. Chemical ingenuity has likewise converted this useful tuber into substitutes for many other articles, such as chocolate, tapioca, and vermicelli.

From the flowers of this plant a beautiful yellow color may be obtained, which is solid and durable as a dye; by plunging this color into blue it will become a perfect green. The juices contained by the potato itself will produce a grey color of great

beauty, the liquor drawn off in the process of making potato starch, will clean silks woollens or cottons without damage to the texture or color. This root is also used as a cure and preventative of scurvy. Roasted potatoes have been administered with perfect success to sailors afflicted with this disorder, after other approved medicines have been given in vain.

Note.—We cannot agree with the essayist in his estimate of the *Peach Blow*. It is, we admit, when fully matured an excellent potato for table use, and it as well as the *Early Rose*, always brings a higher price in the market. It also sometimes is a good crop-bearer but the fact that it is so late in coming to maturity is an insuperable objection to its being placed in the first class. There is another objection to it:—The roots and tubers extend so far in every direction from the stalk, that the taking up of the crop costs much additional labor.

To the application of *new rank manure* for the potato, the objection of greatest weight is its causing the crop to be liable to disease. If manure be well prepared we have always found it to tend to increase. As a means of guarding against its tendency to increase the disease, we have manured the ground in the fall; a top dressing of ashes also means of increasing the yield.

Pinching off the flower stems has been long advocated for the reason given above; and, on the other hand, it is said that the increased yield would not pay for the additional labor.

The average yield per acre of this root we would, from our own experience, place much higher than that estimated; 150 bushels, though the members of the Grange were agreed that the estimate was a fair one. If the ravages of the potato bug have in many cases increased, as their feeding ground has become a very extensive one, the yield of 75 bushels is so low that the crop can no longer be considered one of the best paying to the farmer. We should so improve our cultivation that the average yield would not be less than 200 bushels—a light crop, according to our experience. Judging from the average yield given above, many crops cannot yield more than 50 bushels to the acre.

An Essay on the Planting and Care of Apple Orchards.

Written by R. Stevens, Westminster, for the *F. Advocate*.

As I think it is the duty of every member of the Society to do the best he can for the general benefit, I have prepared the following brief essay on the cultivation of fruit. This being the subject chosen for me, I shall speak most of the cultivation of apples, as I consider them the staple of our fruit crop.

The apple will thrive well on most descriptions of good, dry loam; any land that will produce good crops of grain I consider good for an orchard.—After selecting a suitable piece of land, it then should be thoroughly fenced, not including more land than is intended to be planted, thus removing to some extent the temptation of putting in stock to consume the pasture. Stock running at large in young orchards are the cause of more trees being destroyed than all other causes put together. If the land is not rich and in good condition, I would prefer to wait a year and give it a good summer fallowing, and manure well. I think a good plan would be, if a person intends planting a large orchard and cannot prepare the whole of the land at once, to open a narrow band, say eight feet wide, in a direct line where the trees are to be set, by plowing and subsoiling, or otherwise plowing two furrows deep; then manure well with good rotten manure, leached ashes, and unleached, if they can be got. Afterwards plow back with a deep furrow. Now, gather it once more, and then you will have a good, deep soil, two water furrows, a ridge to plant your trees on sufficiently high and rounding to carry off all surplus water, thus preventing the land after heavy rains from becoming hard and baked, but remaining friable and loose.

Where the roots are likely to extend (which would not be for several years) beyond the prepared land, it would be easy to manure and add a few more furrows to each row of trees; by this means one could keep, at the least, a mound of land in the highest state of cultivation. I would put no crops of any kind on this ridge of land, but keep it clean and loose with a two-horse cultivator and a little hoeing immediately around the trees.

Now, in respect to the kinds of fruit. If for market, I think it is far better to limit our selection to a few kinds, say two, three or four of the leading sorts of marketable winter fruit. I would mention for this section, Rhode Island Greening, Baldwin and Golden Russett. It is a great mistake to have a great number of kinds, even if they are all good; dealers would be satisfied with even one good variety in one orchard.

Now, I believe that the production of a large supply of good fruit in this country would turn the attention of dealers to us, and increase the number of purchasers so that there would be a competition among the buyers that would secure to the grower good prices. It is very certain the best buyers will go where they can find the best and largest supply. I believe the London district is nearly, if not quite equal to any part of the Dominion for the production of most kinds of fruit, particularly apples, pears, plums and cherries, and even peaches can be grown to considerable extent by a little judicious management, such as protection from the north and west winds; when practicable, planting on high or hilly land, where, though it is somewhat strange, it appears the frost is not so severe by a number of degrees as on low land, and also much benefit can be derived by shortening in the limbs about the 15th or 20th of September; cut off about one-third of the present year's growth; by so doing the growth is checked, and the wood ripens and becomes hard before cold weather, and is not so likely to be killed by the severe frost in winter. Also, give the tree a close and compact head, preventing that straggling appearance of the branches which is often seen.

I have grown good peaches for several years in succession from trees growing among apple trees. At the great International Exhibition of fruit, held at Boston in 1873, Ontario took the second prize for peaches and for open-air grapes; Ontario took the first prize for the largest collection, and in plums Ontario distanced all competition and carried off the first prize, a silver medal; and in pears, although beat in numbers, still the judges were so well pleased that they awarded her a silver medal. Her total collection of fruit was so large and fine as to astonish every one, and the judges expressed their admiration of its beauty and excellency by bestowing another silver medal upon Ontario for her entire collection.

To show what is already done in apples in the single county of Lincoln, I extract the following from the *Monetary Times*, by Mr. J. B. Osborn, of Beamsville:

“On enquiry, I find there have been shipped from Grimsby Station about 6,000 barrels; Beamsville, 1,000; Jordan, 1,500; Niagara, probably 2,000; in all, 30,000, valued at say \$2 per barrel, amounts to \$60,000.”

Besides apples, a large amount of other fruits were grown.

Mr. S., to illustrate the importance of fruit raising in America as a profitable branch of husbandry, read the following extract:

CHICAGO AS A FRUIT MARKET.

A correspondent writes from Chicago:—“The importance of this city as a fruit market and of the extent of territory levied upon to supply the ever-increasing demand is not generally known. The season has been an unusually excellent one, and a few statistics showing the enormous extent of the trade in fruit will not prove uninteresting. The quantity of fruit received each day is enormous. During the month of September the following receipts were registered:—By lake, 374,672 baskets of peaches, each basket averaging fifteen pounds; by rail, 6,062,299 pounds of green fruits, making a total for September of 10,682,283 pounds, or enough to fill 534 freight cars, which would make a train of over four miles in length. But this was not all. In addition to the quantity mentioned, over 46,850 barrels of apples, and upward of 1,000,000 pounds of dried fruit were received during the same time. In one day during

the same month, over 50,000 packages were received in Chicago. The magnitude of the trade is best shown by the statement that there were at least 250 dealers, and that one of these, in one day during the second week in October, received eighty-two full car-loads, or 12,270 barrels of green fruits, while his sales on Saturday of the same week were forty-six car-loads, or 6,900 barrels. The most of these fruit dealers are located in South Water street. This business thoroughfare is the great marketing street of the city. It is built up solidly and substantially, and for a distance of half a dozen blocks or squares, on both sides of the way, there are, with but two or three exceptions, no houses not handling fruit to a greater or less extent. The street is jammed with teams, and the sidewalk crowded with foot passengers, barrels and boxes from early in the morning till late in the afternoon. Indeed, I cannot call to mind any one street in New York city which equals it in busy appearance. Rents in this locality are higher than in any other portion of Chicago, each foot front, it is estimated, bringing an annual rental of not less than \$160. Besides the many fruit dealers on South Water Street, there are a number of dealers on West Lake and on Kenzie streets.—Outside of the regular dealers there are nearly 100 sidewalk men, as they are termed in the parlance of the street. That is to say, there are that many persons who, with but little capital, buy of the regulars in small lots, rent so many feet front of sidewalk, and then resell to consumers. The capital of these sidewalk men varies from \$5 to \$100. Some of them pay as high as \$365 per annum for a space of sidewalk ten feet long and four in width. It has been estimated by competent dealers that the average sales will amount to \$61,000, or a total for a season of six months of a little more than \$11,000,000. The sale of peaches alone, in one day during the present season, footed up over \$27,500.”

The reading of the essay led to much interesting and useful discussion on the subject.

Mr. Weld agreed with the advice to plant an orchard with but few varieties of apples. They could, he believed, be disposed of to greater advantage. He agreed also with him in the selection he had. He considered the R. I. Greenings, the Baldwins and the Golden Russetts very superior apples, and varieties that keep well. He differed from Mr. S. in his plan of growing no crops in the orchards, even when young, except the apples.—He considered that root crops and small fruits might be grown with advantageous results. Their cultivation would keep the land free from weeds, and the profit from them would pay a rent for the ground.

In a reply to a query from one of the members, Mr. T. said he prefers planting apple trees thirty feet apart. He thinks they grow better than if planted closer.

Clover as a Shade to the Soil.

Of all the grasses permissible in an orchard, clover is the least objectionable and most beneficial, particularly as a shade. An enthusiastic agricultural writer argues that there is no other plant of so much value to farmers as this. “It furnishes the most perfect protection to the soil during the fierce dry heats of summer. Being a constantly deciduous plant, its leaves are perpetually falling, and soon form a delicate covering for shade, and easily penetrated at all points by the air, which is the great carrier to the worn-out soil of those atmospheric elements that are to enrich it. In this way the clover plant not only contributes directly to the fertilizing of the soil by giving its own substance to it, but it furnishes a protective covering to the entire ground, which encourages and stimulates those chemical processes by which the hungry and exhausted soil is recuperated from the vast supplies of nutriment that are held in the atmosphere. It becomes to the farmer the most valuable fertilizer in the world, as it imparts fertility to the entire soil.” It should be added, by way of caution, that every two or three years it should be ploughed under and left for a year to rot in the soil; otherwise the ground may get too sod-bound, which is almost invariably injurious to fruit trees.

Sub-soiling—A Pro

BY W. DUMBLE

Written for the Farmer

As the agricultural interest cede all others, any subject that promote that interest, deserve attention. Several great revolutions now engaging the minds of all, is, as the conviction is forcing that a better system of farming is the greatest public interest to prosper.

Among these may be men implying more abundant manure of all inside fences, under-drainage now before us, viz., Sub-soiling the greatest importance to all, prosecute their ennobling professional success.

Naturally the most fertile is at the surface, where the have become mixed with the humus. By constant cultivation extracted; and the mineral deficient.

Mr. Mechi, an eminent that they have at home, what a pie crust, which is on an five to six inches deep. In thinner, not being more than This fact is a startling one, a The first layer of soil is worn hence the necessity of the man vocating. We must dive beneath.

This thin crust has, in the constant cropping, become those grains that were on such abundance.

Canadian farmers look back when their lands were just of nature, and call to mind grain and potatoes, they the fact, as if it were only the with the plow to produce all could it be otherwise, when rich condition. It had been for ages.

The want of manure, however; and to-day the fact stands before us, we must either abandon our must pursue a different method.

The fact is, we must delve into the contents of the ground.

We will find, it no doubt but nevertheless it contains vegetable wealth; just as sick crops need to thrive up.

The sub-soil only requires ameliorating and modifying to be brought into a condition that gladdened our hearts anew. In fact, instead of having more land to the acre, and there is wealth beneath yield a rich return for a safely be said, than that of mines in the world combined.

There are three methods of mention, that may be pursued and character of soil.

1st. Very deep ploughing; 2nd. Plow gradually of plowing; thereby turning subsoil to the surface.

3rd. Following the subsoil plow; (one of which FARMER'S ADVOCATE,) pulverizes the hard subsoil furrow. The two last yield the most immediate most satisfaction. Extra required, but what gain? To receive the full benefit ought to be at least deep soil is full of water, no benefit will result, again after a few rain slation.

Sub-soiling, then, or draining, either off the the country is naturally

Sub-soiling—A Prize Essay.

BY W. DUMBLE.

Written for the Farmer's Advocate.

As the agricultural interests in Canada supercede all others, any subject that is calculated to promote that interest, deserves our closest attention. Several great revolutionary principles are now engaging the minds of all scientific agriculturists, as the conviction is forcing itself upon them; that a better system of farming must be pursued, if the greatest public interest of the Dominion is to prosper.

Among these may be mentioned stall feeding, implying more abundant manure, and the abolition of all inside fences, under-draining, and the question now before us, viz., Sub-soiling—a question of the greatest importance to all farmers who would prosecute their ennobling profession with the greatest success.

Naturally the most fertile portion of the soil is at the surface, where the clay, sand and lime have become mixed with the vegetable mould or humus. By constant cultivation, the plant food is extracted; and the mineral elements become deficient.

Mr. Mechi, an eminent English writer, says: That they have at home, what he calls, an "agricultural pie crust," which is on an average only from five to six inches deep. In this country, it is even thinner, not being more than four or five inches. This fact is a startling one, and tells its own story. The first layer of soil is worked out, robbed; and hence the necessity of the measure we are now advocating. We must dive into the treasures beneath.

This thin crust has, in the process of time, by constant cropping, become unfit for the growth of those grains that were once produced by it in such abundance.

Canadian farmers look back to the good old days, when their lands were just reclaimed from a state of nature, and call to mind the immense crops of grain and potatoes, they then raised. It was, in fact, as if it were only necessary to tickle the soil with the plow to produce abundant returns. How could it be otherwise, when the soil was in such a rich condition. It had been manured by nature for ages.

The want of manure, however, has changed all this; and to-day the fact stares us in the face, that we must either abandon our farms altogether, or we must pursue a different mode of working.

The fact is, we must leave the pie crust, and delve into the contents of the pie.

We will find, it no doubt, raw and uncooked; but nevertheless it contains stores of mineral and vegetable wealth; just what our famishing and sick crops need to thrive upon.

The sub-soil only requires to be exposed to the ameliorating and modifying action of the atmosphere to be brought into a condition to produce the crops that gladden our hearts when our farms were new.

In fact, instead of having one farm, we have several; one beneath the other, in layers! We have more land to the acre than we ever suspected; and there is wealth beneath the sod, that will yield a rich return for working; richer it may safely be said, than that of all the gold and silver mines in the world combined.

There are three methods of sub-soiling that we may mention, that may be pursued according to means and character of soil.

1st. Very deep ploughing with ordinary plow.

2nd. Plow gradually deep at each succeeding plowing; thereby turning up gradually the cold subsoil to the surface.

3rd. Following the plow in the furrow, by a subsoil plow; (one of which was figured in a late FARMER'S ADVOCATE,) which simply breaks up and pulverizes the hard sub-soil, and does not turn a furrow. The two last are the methods that will yield the most immediate returns; and give the most satisfaction. Extra time and trouble will be required, but what "gains" are there without pains. To receive the full benefits of this treatment, lands ought to be at least moderately dry. If the deep soil is full of water, saturated in fact, little benefit will result, as the soil settles down again after a few rain showers into its old condition.

Sub-soiling, then, ought to be accompanied by *draining*, either of the surface, or by tiles, when the country is naturally level. On rolling lands,

surface-draining is sufficient; and sub-soiling may take the place of tile draining, with every prospect of an immense improvement in returns. A new set of changes are immediately brought about which cannot fail to bring large benefits to the cultivator.

1st. Light, heat, air and moisture are admitted; this is one immediate effect of breaking up the sub-soil; it is in a great measure a preventative of drouth, as the roots can penetrate deeply in search of the bottom moisture.

In our Canadian climate, we suffer very often from the absence of rain; in fact it is a chronic complaint with us, and any means that will enable our grasses and grains to thrive, independent of rain, ought to be hailed with the greatest delight. The air, even on the driest and hottest day, is more or less charged with moisture, as is proved every day on the dining table, by streams of water condensing and running down the sides of the water pitcher. The colder, lower strata of soil, act in the same way in condensing the watery vapor of the air that penetrates into the loosened sub-soil.

The air also is enabled to impart its heat, thus warming, as well as moisturing, the deep growing roots. The mineral elements will have their disintegration materially hastened, thus rendering them available as plant food.

2nd. The fertility of the soil is largely increased by the deep-rooted plants being enabled to push their way down deeply beneath the soil, and feed upon the deeper mineral and vegetable elements, but chiefly mineral, which are deposited again on the surface by the decay of the plant. A barren soil may, in this way, be greatly fertilized by the cultivation of clover and roots.

It is quite astonishing to know what a great depth most roots will penetrate. The clover plant, in a porous, well drained soil, will push its roots down to a depth of two to three feet.

Sub-soiling on hard clay soils opens the way for the adoption of the soiling system of feeding cattle, as this cannot be done properly unless carrots, mangolds and turnips are more or less cultivated, and these roots will not come to perfection unless the soil be deepened sufficiently, as they love a deep, loose sub-soil. On this question of soiling, we are assured, depends in a great degree, the future success of agriculture, in this as well as in all other countries. As soils are at present cultivated, it is impossible to get the full benefit of crops that are grown, and, in some localities, it is impossible to grow at all others that are essential to success. We feel confident that if subsoiling were to be adopted universally, as it should be, and followed up by the soiling system, in an incredibly short time an immense revolution would be effected in agricultural affairs. And not only would farmers themselves be benefited, but the community at large would feel the quickening influence.

The fertility of our upper crust is exhausted by an ill-advised system of robbery that has been going on for years. We have, in fact, been selling the cream of our lands by the bushel, ever since they were cleared; and now they have refused to yield a paying return.

What remains now to be done, is to go down to the sub-soil, and fall back on our reserve wealth that nature has so graciously hidden there, and render available, and learn a lesson by the past, taking care not to rob it as the upper soil has been. By a judicious system of manuring and rotation of crops, we may bring our properly cultivated lands to a high state of tilth, and have the satisfaction of seeing them year by year growing richer and richer. Let sub-soiling be a part of the new departure in agriculture which every wide-awake farmer will sooner or later adopt, and follow it up by under-draining of the soil. The removal of all inside fences, protecting the cattle from the crops, instead of the crops from the cattle, will follow the adoption of stall feeding; and then will be solved the question, which has so sorely tried the inventive faculties of all aspiring agriculturists, where to get manure.

Enough stock will be kept to manufacture the produce into beef, wool, cheese and butter, and our crops sold not by the bushel, but on the hoof. Our ideal of a farm, farmed up to its capacity, we hope soon to see realized everywhere around us as we drive through our beautiful country. Those unsightly, crooked inside fences will then not be seen; the line fences will be straight; large feeding sheds will be seen surrounded by small enclosures for driving blooded cattle; immense heaps of manure will be seen composting, and all the year round

loads of it will be seen on their way to the growing crops and to the fields. Corn and the various roots will monopolize the soil. The steam engine will be seen in the barn yard, cutting fodder, pulping and slicing roots, and furnishing steam for the large vats where will be found steaming and cooking the food for all the stock. On the face of the proprietor himself will be seen a genial, self-satisfied smile, a sermon without words—With me all is well!

WM. DUMBLE.

[We publish the above essay on sub-soiling from the pen of Mr. Dumble. It does not meet the requirements we proposed in offering the prize, nor do the others on the same subject, as they were to be based on the writer's own actual experience of sub-soiling by himself in Canada.—ED.]

Prize Essay—For Effectually Destroying the Codling Moth.

[WRITTEN FOR THE FARMERS' ADVOCATE.]

Every grower of the apple knows how liable that fruit is to be worm-eaten. He finds basket-fuls of windfall in the calmest weather. The destroyer is a small grub which feeds upon the pulp of the fruit, but of how or when these grubs get there the grower has not the slightest notion. The grub in question is the larva of the Codling Moth. As before stated, it is upon the pulpy parts of the apple that the grub chiefly feeds; when, however, it has nearly attained its full size, it feeds upon the pips of the apple, which, when thus attacked in its most vital part, soon falls to the ground.

No sooner is the apple fallen than the grub quits it by the passage previously gnawed; the orifice by which they escape being open and not concealed by a little mass of brown grains, which is the case with those apples from which the larva has not made its escape. The grub is of a dirty white color, with brown head varied with darkish brown marks; the body is slightly hairy. The caterpillar wanders about on the ground till it finds the stem of a tree, up which it climbs and hides itself in some little crack in the bark; it wanders to this place of safety usually in the night time, gnaws a little of the bark away, and makes a smooth chamber; it spins a white case, and in a few weeks forms a chrysalis, and in this state it remains through the winter, until the following May or June.

I may state that I have had twenty-six years of troublesome experience with this pest, but have succeeded in finding the way of destroying it. In the first place have your trees thoroughly pruned and cleaned or scraped of all the loose bark that can be taken off without injury to the tree, and gather up and burn it; then make a wash with two pounds of potash in eight quarts of water; add half a pound of tobacco to the water and a large handful of unslaked lime and a small piece of bitter aloes; wash the trees with a brush on all parts that can be got at, where there is any likely place for the larva to be hidden. I have used the above mixture, and entirely destroyed them the first season; but the trees ought to be scraped of their loose bark every year in the winter or early spring, months before the larva moves from under the loose bark, where it secures its hiding place.—Gather up and burn this refuse bark, and in that way you will rid yourself of these troublesome pests and find your trees flourishing, and you will have a choice lot of fruit that will pay for all your trouble. A little time spent in this way is never lost.

Trusting, Mr. Editor, this will be worth inserting in your valuable paper,

I remain, &c.,

THOS. FARNHAM,

Late Gardener of Model Farm.

London Township, March, 1875.

On Draining.

For the FARMER'S ADVOCATE.

In tile draining, it is very important that the bottom should be made on an even grade, whatever the fall may be. If some places are flat, with little or no fall, and other places further up the drain are steep, the sediment, or sand, will wash down and lodge in the flat places, thereby choking up the tile. Col. Waring, in his work on draining, says, "If the upper end of the drain has 6 inches to the 100 feet; no 100 feet below should have less." If the nature of the ground at the outlet requires that the bottom be very flat, say 2 or 3 inches per foot, make the grade very equal and use rather large tile; the size depending on the length of drain, and the amount of water to be carried. Then if the ground rises 30 that the grade of the bottom must become greater, say 6 inches per 100 feet, which is very frequently the case, there should be a sand basin made below the bottom of the drain, at the point where the grade changes. The size of this will depend upon the danger from sand wash. If the danger is not much, it may be made very easily by taking four bricks, and beveling the corners, so that they will, when set on edge, form a square, supporting each other when packed behind, and so on with the other four. If this is made 12 or 15 inches below the tile and 2 or 3 above, covered with a flat stone, and the place marked so that it may be examined and cleaned out occasionally, it will save a great deal of trouble. Of course the tile carrying in should be a little higher, than the one carrying out, and may be considerably smaller.

An excellent plan to make an even grade in the bottom, is to put up horizontal sights say five feet above where the bottom of the drain is intended; this is very easily done by getting a few strips of board 8 feet long and nailing them between stakes at each side of the drain at any desired intervals, keeping the upper edge level, and just five feet above the bottom. Carry the drain between the stakes and below the board, and with a measuring stick five feet long, frequently try the bottom, it being right when the top of the stick is level with the sights. In this way more work can be done with less trouble; and in draining too great care and pains cannot be taken to do good work.

F. MALCOLM.

Innerkip, March 3rd, 1875.
We would advise stretching a line over the horizontal strips which would be parallel with the line of the drain. In this case the strips should be high enough so that the line would clear the ditches head, say six and one-half feet high. Then with a rod of that length the ditch could be tried at any point.

Correspondence.**Change of Seed.**

SIR,—It is not very creditable to the intelligence of the farmers of Ontario that so few of them are aware of the great importance of a change of seed. It is well known, as a general rule, that the same wheat, the same barley, the same oats and the same peas raised on the farm are sown from year to year and for many years in succession. And, although the farmer plainly sees that his crops are getting lighter from time to time, it never seems to enter into his brain that sowing the same seed on the same ground repeatedly is one of the causes of failure.

The vegetable world, to a certain extent, is governed by the same rules as the animal one. A farmer, in this enlightened age, who would be found breeding his stock what is called in-and-in for a great many years in succession, would be reckoned a fit inmate for a lunatic asylum. In no instance should the same grain be sown for more than two or three years on a farm. It would be no great expense, for a farmer to purchase a fresh supply of seed. There are now plenty of reliable seedsmen who would furnish good seed for a small advance over what a farmer could sell his own for. There is one thing of very great importance to be observed in renewing seed, and that is, never get it from a warmer, but always from a colder climate than where it is to be sown. If proofs were necessary, the writer could quote various instances where a judicious change of seed nearly doubled the crop the first year.

EASTERN CORRESPONDENT.

Mafiland, March, 1875.

[Our Eastern Correspondent's remarks on the necessity of changing seed are important and well-timed. Were confirmation needed, we could from many instances within our experience confirm his observations. Some objections may be taken, perhaps, to remarks about in-and-in breeding, but on this, too, there are differences of opinion. We shall always be well pleased to hear from our Eastern Correspondent.—Ed.]

Growing Turnips.

SIR,—One of the best crops of Ruta Bagas (Swedish turnips) I ever raised was in 1873, in the following manner:

The ground was sandy loam, oat stubble; gang-plowed early in the fall about three inches deep, and harrowed; the same again before winter; collected all the manure from stables and other sources up to Christmas, and spread on the surface; gang-plowed again in the spring, and harrowed. About the 12th of June I threw it in drills about 30 inches apart, then manured what was not done in the fall, the manure falling mostly in the furrows. I then split the drills and sowed with a good one-horse drill, sowing two rows at once; about two-thirds of the ground was sown with probably not more than 1½ lbs. per acre. The drill, by mistake, not being regulated to sow 2 pounds, as I intended, the remainder was sown at the rate of about 2½ pounds per acre.

They came up and grew well, those that were thinly planted being much the best plants. They were thinned out to 18 inches in the drill, and the ground kept clean and well worked. There was on the average about 700 bushels per acre, the best part of the field, or that which was thinly sowed, yielding about 800 bushels per acre, with a very heavy crop of tops. The leaves on many of them, when they were pulled, would spread a distance of four feet.

From my experience with this crop, I am deeply impressed with the importance of thoroughly working the surface, especially when the crop is growing. I also think this crop would not have been as good if the land had been plowed deep in the spring. In fact, as will be seen, all the plowing it got after the oats came up was with a gang of four plows about the depth above stated.

F. MALCOLM.

Innerkip, March 1st, 1875.

[Mr. M.'s article on "Soiling Cattle" is unavoidably crowded out; it will appear in our next issue.—Ed.]

Disease in Sheep.

SIR,—In your issue of February I see an account of an infectious disorder amongst sheep, as described by a subscriber from Brailieboro, and in compliance with your wish, I will endeavor to describe an infectious disorder that has been in my flock of sheep from the 1st of October to January of the present year. About the 1st of October I was trimming before washing for the fall show; I observed three of the ewes running at the eyes, one in particular running considerable. However we trimmed and washed and paid little attention to them until show day; still their eyes kept running and getting more gummy.

After being shown in their class, I called the attention of the judges to the diseased ewes, and they were all of opinion that it was caused by a chill in washing in cold water. That, however, could not be, as their eyes were running freely before washing at all; however, next morning after the show, when let out of the pen, one of the ewes was blind as a bat, and remained so for three weeks.

The disorder by degrees went through my whole flock, although affecting my lambs and some newly imported ewes I had very little, none going blind. My breeding ewes suffered most; the majority went totally blind, others only partially so, owing to one eye getting a little better before the other was at its worst. I took in 20 ewes to my buck, and some would not be 24 hours on the premises until they showed symptoms of blindness. By taking in ewes and selling shearing and ram lambs the disorder has got well spread in this locality.

The only party I have heard of treating the disease successfully was Mr. Jas. Doble, of Brock Township, by bleeding below the eye. The first four ewes went blind, and he bled them under the eye, say below the centre of the eye and cut to

wards the nose; he bled them freely, and they soon recovered. Before the next four ewes went blind, as an experiment he bled one eye in each ewe, and the eye bled never went blind but got better, while the one not bled went blind in each instance.

I never noticed, as mentioned by "Subscriber," a speck on the left eye. They all run at the nose more or less; some will run a week at the eye before going blind. After running at the nose, and particularly at the eye a few days, the eye became glassy, then a film spread over it, and the third day a thick skin of a blue color covered it, hence total blindness.

RICHARD PIET.

Ashworth P. O., Feb'y 22nd, 1875.

[This letter from our correspondent of Brock Township is such as must prove of value to sheep feeders. The affection of his sheep's eyes seems to be different from that of Mr. Fisher's sheep, as he has not seen any white specks on any of their eyes. But his accurate description of the eye disease and of the method of treatment give a value to his communication greater than any mere theory.—Ed.]

Queries.

SIR,—Will you please answer me the following questions through your paper:

How much Hungarian Grass seed to sow per acre, and will it do well on an old sod, or what kind of preparation should the ground have for it.

How early in the spring can an old orchard be trimmed to do well?

How much corn does it require per acre, put in with a drill, for feed or soiling?

A SUBSCRIBER.

Norwich, Feb'y 18th, 1875.

REPLY.—Of Hungarian Grass we sow one peck of seed per acre. If the season be moist, it may succeed on old soil, as you say, but we would not expect as good a crop from it under such circumstances as if the ground were in a good state of cultivation. All grass seeds do better, germinate with greater certainty and grow more luxuriantly if the soil be in good tilth. On the old sod more seed also would be required—say half a bushel.

Of corn to be sown in drill for soiling, about 2½ bushels per acre is the proper quantity. A Pennsylvania farmer's letter in this number of the ADVOCATE will repay our correspondent for perusal.—Ed.

Disease in Fowls.

SIR,—My fowls lose the use of their legs, stagger about and die in about five or six weeks. I have different kinds; the Black Spanish variety are the most affected by it. Could you or any of your readers please give me a remedy?

JAS. SHERLOCK, Thamesford.

[This disease in fowl may be caused by too close confinement, dampness of the fowl house, and perhaps too rich food. We would be obliged to any of our subscribers who have had experience in such matters to write to us on the subject.—Ed.]

Cocksfoot Grass.

SIR,—I see in your March number a cut of Cocksfoot grass; I have sought in vain for three years to find that plant, as I cultivated it for 20 years in England to great advantage. Please inform me in the April number where the seed can be had, and the price; also whether Italian, English or Scotch rye grasses will answer in this climate, and if English two-rowed barley will answer.

CHAS. HONEY, Warkworth.

New Grain.

SIR,—Knowing the interest you take in all kinds of new grain, I will tell you of a kind of wheat that I found in a field of Farrow wheat. It first attracted my attention by its long beard and heavy head, which, when ripening, bends over with its own weight. The straw is perfectly clean and very yellow; the grain is of a yellowish color, but longer than any spring wheat that I ever saw.—The head yielded 18 grains, which I dibbled singly in a row between other wheat, and while the other

wheat was badly the least. They or an average of Now, can you it came from? Your papers is it.

Glenallan P. O.

[I send you a compare with you ent variety I do raising it until y it tried by other any better than good quality, yo for your pains. you could call it name you choose a few grains after —Ed.]

Ad

By

In offering ho during winter, to it on account adulterated. N pure honey is w early, and the

Honey can be by placing the heat of the wa is dissolved.

Journal, from nois. He says terated honey; in France for c of everyone.

Honey granu it candies. Su not candy, if t

Bee-keepers from candying courage fraud of this mean adulterators w numerous. W a means of educate all A tomed to buy a pure article be

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If you were honey you co per pound if y white, granu cents per pou are accustom

that it ought us write in a facts, and wit will see all th candied hone better than e done in the been put prop no doubt all brood, even below zero.

alone, and d are short, tr I cannot adv your bees ma let your first to their wa wintering on repositories them the fir

I shall be my readers o department stamp.

wheat was badly rusted, this was not affected in the least. These 18 grains yielded 3,050 grains, or an average of 169 per grain sown.

Now, can you tell me what to call it, or where it came from?

Your paper is a boon to every farmer who takes it.

Glenallan P. O.

I send you a sample of wheat which you can compare with yours. Should yours be of a different variety I don't know what it is. Continue raising it until you have some to dispose of; have it tried by other persons. Should it prove to be any better than the varieties now known, and of good quality, you may realize something handsome for your pains. If it is not known by any name, you could call it the Cartridge Wheat, or what name you choose. I should like to see a head and a few grains after you have given it another trial.

—Ed.

The Apiary.

Adulterated Honey.

By A C Attwood, Apiary Editor.

In offering honey for sale late in the fall and during winter, I have frequently had parties object to it on account of it being candied, thinking it was adulterated. Now the fact is, no better proof of pure honey is wanted, than the fact of it candying early, and the quicker it candies the better.

Honey can be brought, if required, to a liquid state by placing the jar in a pot of water, and raising the heat of the water until the candying in the honey is dissolved. I see a good article in the *Bee Journal*, from the pen of Charles Dadant, of Illinois. He says a means exists for detecting adulterated honey; it has been known and practised in France for centuries; it is infallible and in reach of everyone.

Honey granulates, as you term it in this country, it candies. Sugar syrup does not granulate, does not candy, if to think it crystallizes.

Bee-keepers ask for a means to prevent honey from candying; it is the same as to want to encourage fraud, for if bee-keepers were deprived of this means of detecting false honey, the adulterators would become more daring and more numerous. What is needed, therefore, is not to find a means of preventing honey candying, but to educate all American consumers who are accustomed to buy spurious honey and who refuse the pure article because they don't know it.

It is, consequently, of the greatest importance that all bee and farm journals inform their readers that the best test for honey is the candying, and that honey candies because it is formed of grape sugar which granulates and does not crystallize; on the other hand, sugar syrup is made from cane sugar which does not candy but crystallizes; that if we find on the market from December till June, a so-called honey in liquid condition, they can with absolute certainty declare it a sophisticated honey, or at least a honey inferior in quality or which by boiling or by mixture has lost its character as true honey.

If you were in Paris offering for sale your best honey you could not find a price for it, in 65 cents per pound if your honey was liquid; while a good, white, granulated honey would sell readily at 20 cents per pound—it is because the French people are accustomed to eat candied honey, and know that it ought to be granulated. Let every one of us write in all the papers at large these simple facts, and without waiting for the millennium we will see all the amateurs of good honey ask for candied honey, for it is really better than liquid, better than even comb honey. Very little can be done in the apiary this month. Bees that have been put properly into proper winter quarters are no doubt all right and will soon begin to raise brood, even if the thermometer outside is 20° below zero. If they have plenty of food let them alone, and do not disturb them; if you think they are short, try and feed them as best you can, for I cannot advise, not knowing the exact position your bees may be in. When the weather moderates, let your first thought be your poor bees, and attend to their wants. I fear a good many that are wintering on their summer stands, or in improper repositories will come out cold. Have an eye to them the first fine day, and save them if possible.

I shall be glad to answer any questions any of my readers desire, either privately or in the apiary department of this paper—if privately enclose a stamp.

Stock and Dairy.

Scab in Sheep.

I have a flock of sheep that has the scab among them. It is something that I never saw before, and do not know how to cure it. I would be obliged to you if you could give me a remedy through the columns of the *Country Gentleman*. D. M., Huntington, N. Y. [It is difficult to cure the scab cheaply and easily when the wool is long. Let D. M. boil up a few pounds of good strong tobacco leaves or stems, so as to make a strong liquor, and dissolve in each gallon of this liquid one ounce of white arsenic, and also stir in some flour and sulphur while the solution is still hot. Fill an old teapot with the solution, and while an attendant parts off wool along the back and on the shoulders and neck of the animal, pour the liquid upon the skin wherever there is any appearance of the starting of the wool. The skin should be well rubbed by the hand while wet, and the wool again closed over the sore spots. Tobacco alone will cure the scab, but several washings of the whole surface is required, while, if arsenic is added, only the sore spots need be washed. Pouring from the tea-pot must be persisted in as long as there are any symptoms of scratching or uneasiness. A neighbor, an Englishman, cured a large flock one winter this way. As soon as the sheep are sheared, if they are thoroughly washed in tobacco water, in which a little flour or sulphur has been stirred, they will probably be permanently cured. Cold weather and long wool preclude such washing in the winter. The addition of soap to the infusion is recommended by Randall. An application of unguentum (mercurial ointment) one part, and lard our parts, well rubbed together, to various parts, of the sheep's body, using not over 1 1/2 or 2 ounces to a sheep, will surely cure, but it is an unsafe remedy].—*The Cultivator*.

About Sick Animals.

Nearly all sick animals become so by improper feeding, in the first place. Nine cases out of ten digestion is wrong. Charcoal is the most efficient and rapid corrective. It will cure in a majority of cases if properly administered. An example of its use:—The hired man came in with the intelligence that one of the finest cows was very sick, and a kind neighbor proposed the usual source of drugs and poisons. The owner being ill and unable to examine the cow, concluded that the trouble came from over-heating, and ordered a teaspoonful of pulverized charcoal given in water. It was mixed, placed in a junk bottle, then held bottom upwards, and the water and charcoal poured downward. In five minutes improvement was visible, and in a few hours the animal was in the pasture quietly eating grass. Another instance of equal success occurred with a young heifer which had become badly bloated by eating green apples after a hard wind. The bloot was so severe that the sides of the animal were as hard as a barrel. The old remedy, saleratus, was tried for correcting the activity. But the attempt to put it down always caused coughing, and it did little good. Half a teaspoonful of fresh powdered charcoal was given. In six hours all appearance of bloot had gone and the heifer was well. —*Live Stock Journal*.

Clover Hay for Cows.

A correspondent of the *New England Farmer* writes as follows:

After having finished feeding fodder corn in connection with good hay to my cows, I commenced feeding from the mow, which consisted of good quality of mixed hay. With a hay-knife I cut a space about three feet wide from the end of the mow next to the barn floor, and there was no perceptible increase in the flow of milk, from what it was when they were fed one-half fodder corn. But when the lump of mixed hay was consumed, and I came to the clover, which was beneath it, I found there was an increased flow of milk at least one-third, and the next week's churning there was nearly the same increase of butter. But after I had used the clover hay in this space and began at the top to feed with mixed hay, the cows shrank both in quality of milk and butter and continued at the former stand, till the clover was again reached, when they increased again in their milk as at the first instance. This hay was cut the 21st of June, just as it was in bloom, received two days' sun, and was housed during the driest week of the season, and there is now a very rich aroma arising from it as it is taken in flakes and fed to my stock, for I feed not only my cows with it, but my horses and calves.

Feeding for Milk.

What can I feed my cows in addition to early cut hay that will increase the milk sufficiently to cover the cost? Milk four and a-half cents per quart.

Having selected good new milch cows, the next thing will be to see that they have warm and comfortable quarters. Comfort for the herd is a *sine qua non* for paying returns from feeding for milk. It will matter little how good or how cheap his food may be, if any considerable part of it must be used to warm the celestial spaces, or even that portion of the atmosphere floating over his premises, he will not get milk enough out of it to pay cost. But with a herd of good new milch cows kindly cared for, almost any of the extra foods in common use will, with milk at four and a-half cents, not only pay cost at current rates, but a profit. All foods, however, will not pay alike. From the explanations before given, it will be understood that those which abound in flesh-forming matter, and are at the same time easiest of digestion, will give the largest returns. There is but little difference in the milk-producing capacity and digestibility of oatmeal, wheat bran, shorts and canalle; the meal and canalle of buck-wheat and rye bran. Eastern and Western corn, meal and barley meal come next. Oil meal will produce more milk from the given weight than any other feed I have ever used; but it is costly, and only a small quantity can be used without affecting the flavor of milk. Brewers' grains, for the cost, produce more and poorer milk than any other food of the grain kind I have ever used.

In producing milk at any time, there is nothing which will tell upon the yield more than the circumstances of rapid and slow digestion. As already explained, a poorer food which will digest rapidly will make more milk than a richer one that can only be digested slowly. Young and succulent food digests more easily than those that are dry and old; cooked food easier than raw, especially where ripeness is approached. In cold weather warm food will digest sooner than cold. Tepid water and warm food in winter will add ten per cent. to the yield above the same given cold. Soaking, and even a little scouring, will increase the digestibility of food which is ripe and dry. Where there is no difference in rapidity of digestion, that food should be preferred which contains the most albuminoids, remembering that while a full supply of albuminoids is absolutely necessary to the largest quantity, a full supply of fat-forming element is necessary to perfect quality. With these general principles before him, the dairyman can regulate the food of his herd better than any outsider can do it for him.

Devonshire Cream.

From six to eight quarts of milk are strained into a thick earthenware pan or crock, which, when new, is prepared for use by being stood in clear cold water for several days, and then scalded three or four times with skimmed milk. Tin pans may be used if they are scalded in hot bran, and left to stand with the bran in them for twenty-four hours. The milk being strained into the pan is stood in a cool room from nine to fourteen hours, according to the temperature. It is then carefully moved to the top of the stove or range, or placed over a bright fire (not too near it) and slowly heated—so that at the end of a half hour the cream will have shrunk away from the sides of the pan, and gathered into large wrinkles, the milk at the sides of the pan commencing to simmer. The pan is then carefully returned to the cool room and left about ten hours, when the cream is skimmed off.—This cream is very delicious to use on fruit or preserves, and is esteemed a great luxury—selling for about the price per pound of the best butter.

Brine for Preserving Butter.

The *Duchess Farmer* says: To three gallons of brine strong enough to bear an egg add a quarter of a pound of nice white sugar and one tablespoonful of saltpetre. Boil the brine, and when it is cold strain carefully. Make your butter into rolls, and wrap each roll separately in a clean white muslin cloth, tying up with a string. Pack a large jar full, weight the butter down, and pour over the brine until all is submerged. This will keep really good butter perfectly sweet and fresh for a whole year. Be careful to not put ice upon butter; that you wish to keep for any length of time. In summer, when the heat will not admit of butter being made into rolls, pack closely in small jars, and using the same brine, allow it to cover the butter to the depth of at least four inches. This excludes the air and answers very nearly as well as the first method suggested.

Sick Animals.

Nearly all sick animals become so by improper feeding in the first place. Nine cases out of ten the digestion is wrong. Charcoal is the most effective and rapid corrective. It will cure in a majority of cases, if properly administered. An example of its use—the hired man came in with the intelligence that one of the finest cows was very sick, and a kind neighbor proposed the usual poisons. The owner being ill and unable to examine the cow, concluded that the trouble came from over-eating, and ordered a teaspoonful of pulverized charcoal given in water. It was mixed, placed in a junk bottle, the head held upward, and the water and charcoal poured downward. In five minutes improvement was visible, and in a few hours the animal was in the pasture quietly eating grass. Another instance of equal success occurred with a young heifer which had become badly bloated by eating green apples after a hard wind. The bloating was so severe that the sides were almost as hard as a barrel. The old remedy—saleratus—was tried for correcting the acidity. But putting this down always caused coughing, and it did little good. Half a teaspoonful of fresh powdered charcoal was given. In six hours, all appearance of the bloating had gone, and the heifer was well.

Rules for Cow Management.

Cows should run dry six weeks before calving; if milked closely toward calving, the calves will be poorer.

A cow newly come in should not drink cold water in cold weather, but moderately warm slop. Calves intended for raising should be taken from the cow within a few days, and they will be less liable to suck when they are old. Feed them first on new milk for awhile, then skim milk, taking care that all the changes are gradual, by adding only a portion at first.

Hearty eaters are desirable for cows, and may usually be selected while calves. A dainty calf will be a dainty cow.

Heifers dried up too early after calving will always run dry about the same time in after years—therefore be careful to milk closely the first year until about six weeks before calving.

Spring cows should come in while they are yet fed on hay, and before they are turned to grass, which will be more likely to prevent caked bag and milk fever.—*Etc.*

Trichina in Indiana Swine.

Mr. Charles G. Boerner, of Vevoy, Switzerland County, Indiana, reports the result of microscopic examinations recently made by him to determine whether pork in that locality was affected with this parasite. Out of 187 slaughtered hogs examined, 11 were found to be affected. Three of these contained encysted trichina spiralis, and eight various other forms. The parts examined were the ham, shoulder and tenderloin. A magnifying power of from 50 to 100 diameters most distinctly revealed the parasite when present; a higher power cut off the light too much. He also found in the muscles of a rat he examined, trichina identical with those in the flesh of swine.

A Domestic Steamer.

The subject of cooking feed for stock is one of vital interest to the farmer, and each article on that head, as it appears from time to time is carefully connoyed by me. An "Anderson Steamer" would be my joy if I could possess it, but my farm is not on a scale large enough to warrant the expense, so I cast about me to find some way in which I could utilize the free caloric from my kitchen stove, which is in constant use. For this purpose I took a large dinner pot to the village, where I got a piece of gas pipe fitted into a cover of two inch pine plank. Heavy card paper was used for packing on the under side, and the upper side was strengthened by strips of oak screwed down and crossing each other, to keep it from warping, and the whole was fastened down by two bolts, with hooks at the lower ends, to attach to the ears of the pot, passing through the wooden cover, and tightened by nuts on the top.

Fill the pot not more than three-quarters full, leaving some chamber to help drive the steam. Then placing the steamer on the stove, I attach a piece of rubber hose to the pipe in the cover, letting the other end extend out of the window, when another piece of gas pipe, some three feet long, was inserted into it, and which I inserted into my swill barrel.

By this warming and partially cooking the feed for six hogs that I shall kill, I consider I shall receive more than value for the expense and trouble, while the melodious gurgle of the steam, as it arises from the tumultuous surface of the barrel outside the window, these cold winter evenings, bespeaks comfort for the fattening swine.

Now what I claim for this is, that the steam is just as hot as that from a ten horse power engine, though not quite equal in quantity.—*Corres. of Rural Home.*

Feed Hogs in Warm Weather.

The practice of turning hogs into the woods to make their own living till cold weather, and then shutting them up and feeding them on corn alone, is a very expensive way of making pork. To be sure, the Summer feed costs nothing; but then, as a general fact, the hogs make very little growth—not half so much as they would if they were supplied with proper food.

Their growth should be made as rapid as possible during warm weather. It should be remembered by every pork raiser, that a given amount of feed will produce larger results in Summer than in Winter. In winter a large amount of vitality is expended in resisting the cold, and therefore an increase of feed is required just to sustain the system in a healthy condition.

To promote the growth of hogs in warm weather, slops made of shorts and bran should be used; also of oats and rye. Neither corn or any other carbonaceous food should be fed to hogs in large quantities in hot weather, yet if they are permitted to feed on clover, corn in moderate quantities will be as good as any other feed. But the principal point we would make is, that hogs should be fed all through the Summer, so that when the cool weather of August comes they will be found in a thriving condition. If other feed is scarce, let the farmer commence cutting up green corn for his hogs by the first of August or even earlier. It will be economy to do so, rather than to let them go without till it is ripe and then feed it to them.

By the middle of September the fattening process should be commenced in good earnest, and the work completed before the severe weather sets in. As a rule, we believe that where hogs are kept in open lots without shelter, as most are, two bushels of corn will lay on more fat in October than three bushels will in January.

Feed through the Summer and fatten early.—*St. Louis Journal on Agriculture.*

Feeding Cows in Winter.

How many times a day ought cows to be fed in winter? was the question discussed by the members of the Grange at Irasburg, Vermont, at a meeting held lately.

Virgil Bogue said he was acquainted with families that practiced eating only twice a day, and all seemed healthy and the men could do as much work as any men in general. But for cattle he would feed three times—morning, noon and night. If he had straw to work up, he would feed twice on hay and once on straw, each day, and feed all the cattle can eat. If he had turnips to feed with straw, would feed six or eight quarts of turnips to each cow just after milking, and the cows would work up the straw faster to feed hay in the morning, no objectionable flavor is given to the milk or butter. Believed it was a good plan to clean out the mangers at least once every day and would clean them perfectly the first thing in the morning, and then all the feed is fresh and new and the mangers ready for hay, meal, roots or straw. Some men leave the oats in the manger or feeding troughs all winter and they are foul all the time.

M. Connor believes that feeding twice a day is as good as more, as cattle need considerable time to chew their food. He generally feeds hay in the morning, and when the cows are turned out to drink about ten o'clock in the forenoon he feeds straw in the yard so that the cattle will not crowd around the water. The straw takes their attention and keeps them quiet. Then feeds hay at night, and turnips after milking, for the same reason as that given by Brother Bogue.

D. A. Locke said that when cows are giving milk it pays to feed them more than three times a day. He feeds no food out of doors in the yard, except the oats and the refuse from the mangers. His cows eat straw when it has been cut early and cured well, but he does not keep them on straw alone at any time. He believes that if a man keeps cattle he had better make it his principal

business to take care of them and make them comfortable. He believes they should be watered twice a day, at regular hours, and wants his cows to look round as a barrel all winter. Let them eat all they will and they will take time to chew and digest it. More cows have too little food to digest than too much. In feeding calves, wants them to be as plump and as well proportioned as though they sucked the cows.

H. Story fed his cows last winter only twice a day and never had cows do better, and believes it is the true way. It is not what is eaten but what is digested that gives strength. He said he had known large men to be small eaters, and thin, lean men to be large eaters. There are glands in the mouth and throat that secrete saliva, and glands in the stomach that secrete gastric juice, and to insure good digestion these glands should have a time to rest and be ready to aid in digestion when the regular meals are eaten. If one eats a lunch just before dinner, or eats continually, these glands are constantly exhausted and do not sufficiently aid in the digestion of the main and hearty meals of the day. The Carthaginian army was the most robust army ever led into the field of battle, and they only ate twice a day. Time is necessary for digestion. He once kept school and fed his cows only twice a day and never had them do better. Last winter fed hay in the morning and straw at night part of the time, and the cows did well. "But mind this," said the speaker, "always feed enough! All the cattle can eat!"—*N. Eng. Farmer.*

Sales of Clydesdales, &c.

We are pleased to notice that many of the heavy Clydesdale horses brought to this Province by our Canadian importers, are not bought up by American dealers, but will remain in this country, in the townships back of us. There is still room for many more well-bred animals in these back townships, and it is better for the country that the imported horses remain with us, than to sell to Americans to be taken across the line. During the last two weeks several sales of first-class Clydesdales were made—the purchasers being residents of the Province. Mr. Richard Graham, of Pickering, sold a one year old colt, imported this year, to Mr. R. Cheyne, of Toronto, for \$1,450. Mr. David Reesor, jr., of Silver Spring farm, sold Scottish Chief, a five-year old, imported this year, to Mr. Frank Elliott, of Reach, for \$2,250. Mr. Reesor sold a half interest in Strathaven Jock, a three year old, also imported this year, to Thomas Bell, for \$1,000. Jock without doubt will be the favorite horse in Orilla and vicinity, where Mr. Bell intends to take him the coming spring. The same gentleman sold a half interest in Lord Douglass, a five year old, to Mr. Michael Corcoran, for \$900. Douglass is well proportioned, good life and a thorough Clydesdale. Mr. Reesor also sold to Mr. Thomas Duff, Reach, four head of shorthorns, one male and three females, for \$700. The above were private sales.—*Abridged from Markham Economist.*

Picking Off Potato Blossoms.

We observe some discussion in the papers on the practical utility of picking the blossoms off from growing potato plants to increase the growth of the tubers. According to theory, this would be the result, the formation of seed always tending to exhaust more or less the vitality of the plant. Many years ago a statement came from Europe on this subject, and we were told that the crop would be increased one-third by carefully removing all the blossoms. We gave it a careful test in rows side by side, but ordinary measuring did not indicate the slightest difference, which must have been very small if any—probably requiring more refined weighing to distinguish it, and of no consequence whatever in common practice.—*Country Gentleman.*

For Scratches on Horses.

Take Balm of Gilead buds, say enough to fill a quart bottle, then cover the buds with alcohol and in a few days it will be fit for use. Add an equal amount of chamber-lye to the liquid, and wash the part affected twice a day. This will take the soreness out, and soon effect a cure, if the case is not a severe one. The horse can be kept in use by making the application upon putting him up, as it will prevent him from taking cold.

Every man that has a horse should secure a quantity of the buds in the spring of the year when they are large and full, as the wash is excellent for galls, wounds and bruises.

Horticultural Department.

By Alexander Pontey, Horticultural Editor to the Farmers' Advocate.

In pursuance of our promise last month, we now give a list of some of the varieties of seeds best suited for sowing in hot-beds, with a short description of each.

Among the cabbages, the best for early work are:

Early Australian—A very early and large growing variety; grows very quickly, and is consequently very tender eating; it is a great favorite among London market gardeners.

Early Jersey Wakefield—Somewhat similar to the preceding, but not quite so early.

Early Schweinfurt—A very large growing variety, and remarkably early; it is especially suitable for summer use, and should only be used for that purpose, as it will not keep.

Early Dwarf Nonpareil and Little Pixie—Two small English varieties, both very early and especially suitable for table use.

Early Golden Savoy—This variety is remarkable both for its appearance and its tenderness; when ready for use it is of a bright golden color, and when cooked it is the most tender of all the cabbage tribe.

CAULIFLOWER.

Extra Early Paris—A good market variety and generally known.

Early Dwarf Erfurt—The best variety for forcing early; very large, close and compact heads, and pure white. French or German seed of the above two varieties are said to succeed best in this country.

Early Walcheren and Early Alma—Two English varieties of great excellence, the latter not generally known, is well worthy of trial.

CELERY.

All the varieties of celery should be sown now. The best are:

Sandringham or Prince of Wales—This variety is grown to the exclusion of all others in the Prince of Wales' gardens, in England, where they raise an acre annually; it is white, very crisp and fine flavored.

Boston Market—The favorite variety among the Boston Market gardeners, and succeeds well in this section of the country.

Cole's Superb Red—A large growing variety, and one of the best red varieties.

CUCUMBER.

Governor-General of Canada is the name of a new variety (raised by one of our London, Eng., florists), pronounced by many that have seen it to be the finest and best forcing cucumber sent out of late years; it is the result of a cross between the Blue Gown and Telegraph, having the best qualities of each, and what makes it more valuable is that it is equally well adapted for growing on the open ground. Try it.

EGG PLANT, OR FRENCH AUBERGINE.

This vegetable is coming more into use every year, as it gets better known; it is cultivated the same way as early tomatoes. The fruit is cut into thin slices and fried; the taste somewhat resembles that of oysters when cooked in this way. The best varieties are:

American Giant Round Purple—Grown extensively in some parts of the States.

New Black Pekin—This variety comes from China. It grows to the height of two to three feet, and bears very ornamental foliage of a dark bronze color. The fruit is large and round, and frequently attains to the weight of 8 lbs. The flesh is white and fine grained.

LETTUCE.

The best varieties for forcing are:

Early Curled Simpson and Early Curled Silesia—They do not form a head, but make plenty of tender green leaves in a short time.

PEPPERS.

All the varieties of peppers should be sown early in a hot-bed. The best varieties are:

Long Red, Monstrous or Grossum, the Tomato-Shaped, and the Chili Peppers.

RADISHES.

The best variety of radish for forcing is the **French Breakfast**; it is olive-shaped and scarlet colored, and white tipped; very tender and nice looking for the table.

The **Rats-Tail Radish** is a new and very remarkable vegetable, and should be sown in a hot-bed; the pods of this variety are used (not the root); they frequently attain the length of two or three feet, growing very rapidly, from two to three inches in a night. There are two ways of using them; when about half grown they are cut up and eaten like salad, or boiled and served up on toast; used in this way it forms a most delicate and novel dish for the table. It also makes an excellent pickle. Being easy of cultivation, it is within the reach of all.

TOMATOES.

The best varieties for starting early are:

Canada Victor—Claimed to be the earliest in cultivation; it is round, smooth, and a heavy cropper.

New Early Dwarf Red—This is a new variety coming from France, and is said to be very early and very prolific.

MUSK MELONS.

The best for starting early are **Stillman's Early Netted and White Japan.**

FLOWER SEEDS.

The following varieties of flower seeds should be sown now in a hot-bed, in order to have good plants to plant out when the weather becomes mild and the ground warm.

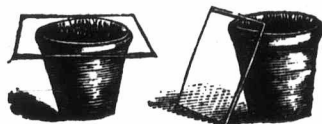
Truffant's Perfection Aster, Dwarf Chrysanthemum Aster, Victoria Aster, Ciantinus, Lobelia, Marigold, Mimulus, Pansy, Petunia, Phlox Drummondii, Double Portulacca, Salvia, Sanvitalia, Schizanthus, Verbena, Zinnia; among climbers, **Balloon Vine, Cobaea scandens, Cypress Vine and Thumbergia.**

Double Tuberoses should be started now in a hot-bed or green-house, if wanted early.

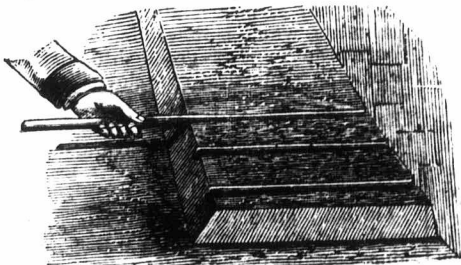
German Stock—Dahlia roots can now be started in the hot-beds, and cuttings struck from them if required; for fine blooms a plant made from a cutting is to be preferred to an old root.

[We have now nearly all the varieties mentioned by Mr. Pontey; the price of all the packages will be 5 cts., except those marked in our Price List at higher rates. The few varieties of seed we have not in our stock we have ordered, and shall have them ready as soon as your orders arrive.—Ed.]

In planting out Cauliflowers, Tomatoes, Melons or any half-hardy things, at a season when frosty nights can be expected, Bell Glasses and small frame and sash, as per following cuts, are an indispensable necessity in a well-ordered garden.



The end of this month, weather permitting, Peas, Onions, Parsnips, Carrots, etc., should be sown in the open ground. A bed thrown up some five or six inches above the level, finely raked and marked off into rows, as per cut,



is better for sowing small seeds in, which are necessarily slow of growth at that early season. The formation of the beds will shed off some of the surplus water, and by sowing in straight drills a small hoe can be run through the rows, and the young weeds kept down.

About the 20th of this month, Cauliflower seed should be sown in a cold frame, placed on the north side of a building or fence; plants so raised are later in maturing, and form their heads at a cooler season of the year than those raised in an early hot-bed, thereby ensuring a better crop and finer and more compact heads.

TOP GRAFTING.

During this month, or just as the buds are commencing to swell, is the proper season for top grafting. Scions for the purpose should have been gathered in the early part of the winter and kept in a cool cellar.

Almost everybody who has undertook to grow a collection of fruits, has found it necessary to resort to top grafting to secure an orchard to his liking; either kinds have not proved true to name, or some others planted have proved unsuitable to the soil or locality, and as the trees are there, something must be done with them. When it has been desired, from whatever cause, to top-dress a tree, the first thing to be considered is, what branches to graft. Stand off from the tree, and see what limbs are superfluous, and would be cut out if pruning. Do not touch these, but leave them to be taken out the following season, then graft such of the others as will make the most symmetrically formed head. Begin always at the top of the tree, and cut the highest branches shorter than those of the sides, or lower down the tree. Grafts in the upper portions of a tree will attract a greater proportion of sap than the lower ones, hence the necessity of pruning shorter. It is better to extend the operation over two and even three years, than to subject the tree to the severe pruning necessary to remove it all at one time.

Cleft grafting, when the limbs are more than an inch in diameter, is the system generally used, and care should be taken in making the wedge as long as possible, and to fill the split as far as opened, touching the sides at all points. In very big branches it is necessary sometimes to fit in small hard-wood wedges, to insure the scions against too severe pressure. One graft on each side of a limb can be put in, in this manner. A common cause of failure in cleft grafting, is having the cut on the scion too short, thereby leaving a vacancy below the graft in filling up. For this manner of grafting, grafting-wax made of resin, tallow and bees-wax, spread over the cut is the best, covering the tip of the graft also. A graft four inches long with good prominent buds, cut from the bud end of the scion, is the best for use.

Grafts cut with a shoulder and inserted under the bark, making two cuts as far apart as the width of the scion, raising only the tongue of bark between them, are more likely to do well in the hands of a novice than put on by the former method. Grafting paper or prepared cotton can be used for winding around the limbs thus grafted. For larger limbs saddle grafting is often resorted to, making a slanting cut on the side of the limb of 1 1/2 inches in length with a tongue in it commencing from near the top of the slanting cut, then tonguing the graft in a similar manner only in an opposite direction.

Ashes for Orchards.

The *Scientific American* says:—"The point to which we now call attention is, that our farmers and fruit-growers have ignored, or rather have been ignorant of, the importance of wood ashes as a vegetable stimulant and as the leading constituent of plants. Even coal ashes, now thrown away as useless, have been shown both by experiment and analysis to possess a fair share of alkaline value. We will relate only one experiment: Some twenty-five years ago we treated an old hollow pippin apple tree as follows: The hollow, to the height of eight feet, was filled and rammed with a compost of wood ashes, garden mold and a little waste lime (carbonate.) The filling was securely fastened in by boards. The next year the crop of sound fruit was sixteen bushels from an old shell of a tree that had borne nothing of any account for some time; and for seventeen years after filling, the old pippin tree continued to flourish and bear well."

Parties in want of plants, trees, and shrubs, will do well to deal directly with Storrs, Harrison & Co. Painesville, Ohio, whose advertisement appears in another column.

LATEST GRANGE ESTABLISHED.—Adelaide: W. Murdock, Master; C. Rapley, Secretary, Strathroy, P.O.

Agricultural.

Exhaustion of Manure.

As manuring the soil is the basis of our agriculture, it is important to have a clear idea of the length of time during which the soil retains any portion of a quantity of manure which has been applied to any crop; to know, in fact, how soon a dressing of manure is exhausted, and when crops cease to derive any benefit from it. This, of course, is a matter to be determined by experiment, for although theoretical principles may, to some extent, guide us toward a solution, yet there are so many accidental influences affecting it in so many ways, that theory is a very unsafe basis upon which to build. For instance, we may apply a certain portion of nitrogenous manure to a crop, and knowing that the harvest contains one-third as much nitrogen as the manure, we may expect to raise two more crops upon the strength of that single application. But when we endeavor to realize our hopes, we find to our surprise that the effect to the fertilizer has been exhausted in the first crop, and a large portion of the nitrogen must have disappeared or become inert. On the other hand, there are cases in which, as it is frequently said, the land "never forgets" an application of lime, ashes, or barn-yard manure, and then, again, there are cases in which the benefit from these are very evanescent. It is impossible under the ever varying conditions and character of soil and of season to establish any exact rule in scarcely any department of agriculture. Theory, therefore, is of no avail, except as a guide from which general directions may be learned; the difficulties to be surmounted are matters to be learned by experience; there may be none of any magnitude encountered, and there may be some which will render all our skill and much patience necessary to overcome them. It is from the aggregate experience of practical and skillful farmers only that we can gather materials on which to base calculations as to the exhaustion of manures. This question has been thoroughly investigated in England through a long course of years, and by reason of so many disputes between landlords and tenants as to the value of unexhausted improvements at the termination of leases, that a very fair estimate can be made as to the value of the manure remaining in the soil after any specified lapse of time. The estimate usual in these cases appear to be as follows, viz: Lime applied to arable land is held to benefit the soil for a period of ten years, and to be exhausted at the rate of ten fifty-fifths in the first year, nine fifty-fifths in the second year, and in a decreasing ratio of one fifty-fifth less each year, when there is only one fifty-fifth of the value of the lime left, which is totally exhausted in this year. In a rotation of five years then, as it is common with us, there would be left in the soil, at the end of the period, only five fifty-fifths, or one eleventh of the value of the lime applied at the commencement. When lime is applied to permanent pasture it is held to last twelve years, and to be exhausted at the rate of twelve seventy-eighths the first year, eleven seventy-eighths the second year, and in a decreasing ratio of one seventy-eighth less each year, when but one seventy-eighth part remains. For stable manure, night-soil, guano, bones and mineral phosphate of lime, the rate of exhaustion is held to be four-tenths the first year; three-tenths the second; two-tenths the third; and one-tenth the fourth year. When oil-cake, or any similar concentrated food is used upon the farm, the enrichment of the soil being chiefly in nitrogenous matters, very little is left after the first year, and a merely nominal allowance is made. In a discussion upon this subject, at a recent meeting of the Chamber of Agriculture (of England), Mr. George Hope stated, as the results of many experiments in growing crops during a rotation of four years, that the best Peruvian guano was equally lasting with barn-yard manure, and that a 100 cwt. (112 pounds) of guano was equal to three tons of manure. With fresh bone dust the first two crops were not equal to those with guano or barn-yard manure, but the last two crops were superior to them. The evidence of a number of prominent farmers given in an important trial in which this question was in dispute, went to show that a fully-manured green crop—as roots or corn with us, for instance—would exhaust from one-third to one-half of the value of yard manure, and one-half to three-fourths of guano, while the effect of bone dust would be more lasting. A great deal, of course, depends upon the climate, the season, and the manner of cultivation, and in applying these experiences to

the circumstances under which we are placed, we should take into account all these. A wet season or climate would help to exhaust manures more rapidly than a dry season or a dry climate, as the growth of the crop would be stimulated, as all its power of assimilation would be encouraged. It is held here, where lime is used regularly, that it is all exhausted in five years. Our own experience would go to support this. But this rapid exhaustion may be due to our higher summer temperature, beneath which decomposition of organic matter in the soil proceeds very rapidly. It is therefore very probable that our peculiar climate, with its intense summer heat, would tend to exhaust all kinds of manures with equal, if not greater rapidity, than the cooler but moister English climate, and that the ratios of exhaustion there agreed upon might be fairly adopted for our guidance.—*N. Y. Times.*

Timothy Injurious to Land.

The roots of timothy grass are fine and near the surface, often in the second year forming a perfect mat. Yet such a sod is not equal to a much lighter growth of clover roots to fertilize the soil by plowing under, and if the timothy is mowed a few years it is constantly and surely robbing the soil of its fertility. Only on lands which are naturally irrigated by the wash of higher soils, or when manure in some form is plenty, can timothy grass be profitably grown for years in succession. It is fully as exhaustive as wheat, and more so than any other grain excepting oats. If the hay is sold from the farm it is hard to maintain the fertility of the soil, and when fed at home it is not nearly so beneficial and profitable as clover. The reason of this impoverishing effect of timothy is easily told: It exhausts the soil without ameliorating it. Its net work of roots take only the strength of the surface soil; but they do that thoroughly, while all beneath is left hard and not permeable to air and light. In such conditions soils gain nothing if they do not absolutely tend to sterility. In two or three years the surface is exhausted, and unless annually overplowed or artificially manured the timothy begins to die out. If it is then plowed and seeded with timothy again, this exhausted soil is turned to the bottom of the furrow, and the inert soil brought up to have the process repeated. A few years of such treatment will take the virtue out of any land, provided timothy is grown alone.

The difference in this between timothy and clover is remarkable. Clover roots penetrate the subsoil; they not only draw up fertility from below, but by making the soil permeable to air, heat and moisture, they create new elements of fertility throughout the soil. Finally in their decay they leave a large mass of nitrogenous plant food from the surface to the sub-soil, which roots of wheat and corn will follow downwards, thus enabling those crops on clover sod to withstand drouth better, as I know they will do from frequent observation.

Some, but not all these advantages of clover, are found in so ugly a customer as the Canada thistle. Its roots also strike deep, bringing up fertility from the sub-soil, also loosening and ameliorating it. A great many poor farmers are more indebted to the Canada thistle than they will ever believe for lessening the injurious effects of timothy and other crops whose roots are all near the surface. One of your correspondents some months since criticised my advice to destroy Canada thistles, saying they were the poor man's clover, and the more he could get of them the better he should like it. The name, poor man's clover, does not exactly describe them. Call thistles the poor farmer's clover and it describes them exactly. A poor man cannot afford such costly clover as this, but a poor farmer is always trying expensive experiments, which is indeed one reason why he is a poor farmer. The grand difficulty with Canada thistles as a substitute for clover is that their roots will not die easily, while those of clover will. Clover is one of the best forage plants, while thistles are worthless for that purpose. It is said that asses will eat thistles. Then surely let the asses grow them.

On land annually overplowed, timothy can be profitably grown, especially if near a good market. Some portions of the Genesee flats are wisely used for this purpose, and timothy hay always sells higher than any other in Rochester. Livery-stable keepers and owners of fancy horses always buy timothy in preference to any other hay; and for a pure timothy, such as is sometimes grown the first year after sowing, fancy prices, higher per pound than oats, are sometimes obtained. This fact has

probably stimulated many farmers to grow timothy when their lands were not at all adapted to it, and now timothy sells in Rochester at only \$14 to \$16 per ton—a price at which no one can profitably grow it except on overflow lands. The sediment brought down in the overflow is deposited on the surface next to the mat of timothy roots, which also serve to keep the soil from washing away. With an animal coating of excellent manure, spread evenly and costing nothing, a farmer on the flats can grow timothy forever and with profit. Farmers who have to buy, make and haul manure, cannot.

Though timothy should seldom if ever be sown exclusively, I think it usually better to sow a little with other grass seed. Variety of food is important for stock, both in pasture and hay; and a little timothy with clover improves its quality, especially if cut early, as it should be. It is a mistake when timothy and clover are growing together to wait for the latter grass to ripen, as it makes the clover nearly worthless. It is also much more difficult to cure green clover alone than if mixed with other grass, and this in haying-time is an important item. Besides, there may be places in the field not adapted to clover, and it is better for pasture or meadow to have these spots filled with weeds. But a very little timothy seed will suffice for the shrewdest and most practical farmers. One bushel of timothy to five of clover is a good proportion on upland—giving quite enough timothy, as its seeds are smaller than clover.

However little profit in growing, there is no grass that pays better to sell than timothy. It is less nutritious than clover, and though exhausting the soil more, has in itself less of the elements of plant food than clover. In fact I think livery stable keepers like timothy because it is less palatable than clover. Hay is the most expensive horse feed, and also the most bulky. Horses expected to travel fast do not want their stomachs disturbed with hay, especially when it is the most costly form in which nutrition can be given. The chief object is to give a horse some kind of hay that he will not eat much of, and make up the balance with more stimulating grain, and timothy is chosen, not as the best, but because it is one of the poorest of the grasses. On clover, horses, if allowed to eat at will, might fill themselves too full for fast traveling. On timothy and grain the horse will never be full, but always nervous, excited, and ready to make his mile in three minutes or less. This constant stimulation of the horse by concentrated food is not what farmers want. It shortens life, and incapacitates for steady hard work. By feeding clover moderately, without much grain, when not working, and mixing occasionally other grasses for change of feed, farmers can keep their horses in a better condition for work, than by feeding less nutritious hay, and making up the deficiency by corn and oats.

But this opens up another subject. I have merely hinted at the proper mode of feeding horses, and unless I explain more fully, I greatly fear some of your correspondents will disagree with me. But this must be reserved for another time.—*W. J. F. in Country Gentleman.*

Manurial Value of Wood Ashes.

New land is proverbially good, not that it has more largely the elements of fertility in general, as the trees take care that this is not the case, using up what nutriment is annually furnished by the leaves; but it owes its value to the potash left after the land is burned over, as is the case in breaking up the prairie. The principle will be clearly seen by giving it a single thought. The ashes furnish the mineral, or inorganic part, the atmosphere the rest, the soil containing sufficient other material, (humus, clay, sand, &c.) for a basis. But science or philosophy aside, it has been found that ashes are a superior benefit. Around an old heap of spent ashes there will always be a circle of rank growth, usually of grass and weeds of bluish color. This is found to be the case whatever the soil may be. In the strongest garden soil I have noticed it, and also in very poor land. Unleached ashes have a still more marked effect, showing the importance of potash as manure. The tests that have been made, so far as I am cognizant, always show that the growth, especially of grass, corresponds to the amount of ashes applied; and the amount may be large—seven to eighty bushels per acre, and even more. The benefit will show at once, but not all of it, as the ashes do not give up at once all they contain, being dissolved slowly, so as to supply potash for several years. This is my experience, and, I believe, the uniform experience of every

one. The reason why valued—are not valued—is that they are too on meadows, a few are used. As but a it will be readily small, less so than t is one of the ingredi

But there are not and a large propor mitted to go to was with leached ashes, unleached, and equ every particle of ou the stovepipes and special uses—to m trees, and to use lawns. Each farm wood, makes enoug extent of land on cumscribed, they m case the effect wil tory. I have use most gratifying res to the mulch, hav moist as well as to particularly excell the growth of the v fruit also, and I h the use of ashes improved. I know ough drainage thi Particularly are la efted by ashes. eighty bushels per whether the ashes hardwood ashes l once in three or vines, fruit trees, yearly or biennial Of course a less qu plication.—*Cor. C*

Sowing Grass.

The notion is p life and growth some kind of grai coming sufficient hot weather. B not essential to the less the seed be summer, and whe On moderately no crop of grain grass seed of ar much better than poor and likely small quantity of grass the benefit shade, even in dr come large enou benefited by the other plants. A overlooked is tha with the young and moisture fr ally benefit the r

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For farmers little or no val but many nee grass is cut wit fant that the s knolls, hollow Even if it be n to be smooth to the ground.

one. The reason why ashes are not more highly valued—are not valued for what they are worth—is that they are too sparingly used. When sown on meadows, a few bushels to the acre are all that are used. As but a part is dissolved the first year, it will be readily seen that the effect must be small, less so than that of plaster, though plaster is one of the ingredients of ashes.

But there are not enough ashes to sow largely, and a large proportion of what we have are permitted to go to waste; particularly in this case with leached ashes, yet they are nearly as good as unleached, and equally lasting. We ought to save every particle of our ashes, including the soot from the stovepipes and chimneys. We want them for special uses—to manure our grapevines and fruit trees, and to use in our gardens, dooryards and lawns. Each farmer or owner of land, if he burns wood, makes enough ashes for these purposes. The extent of land on which they are used being circumscribed, they may be used plentifully, in which case the effect will not fail to be highly satisfactory. I have used them on grapevines with the most gratifying results, applied mostly as a cover to the mulch, having the property to keep this moist as well as to impart fertility; hence they are particularly excellent in a drouth. Not only is the growth of the wood advanced, but that of the fruit also, and I have become convinced that by the use of ashes the flavor of fruit in general is improved. I know that in connection with thorough drainage this has proved to be the case. Particularly are lawns and dooryards in grass benefited by ashes. Apply at the rate of sixty to eighty bushels per acre, more or less, according to whether the ashes are made of hard or soft wood—hardwood ashes being the best. A coat applied once in three or four years will do. On grapevines, fruit trees, and the garden in general, I find yearly or biennial applications most satisfactory. Of course a less quantity is to be used at each application.—*Cor. Co. Gent.*

Sowing Grass Seed Where There is no Grain.

The notion is prevalent that it is essential to the life and growth of young grass to raise a crop of some kind of grain while the tender spears are becoming sufficiently rooted to endure the dry and hot weather. But the shading of the ground is not essential to the growth of clover or grass, unless the seed be sowed very late in the spring or summer, and where the soil is not rich and mellow.

On moderately fertile and mellow soils, though no crop of grain be allowed to grow, clover or grass seed of any kind will ordinarily succeed much better than otherwise. If the soil be quite poor and likely to parch during the droughts, a small quantity of rye per acre will afford the young grass the benefit of some shade. Grass needs no shade, even in dry weather, after it has itself become large enough to shade the ground, but is benefited by the sun and air quite as much as other plants. Another consideration not to be overlooked is that any crop occupying the ground with the young grass withdraws both nutriment and moisture from the soil, which might essentially benefit the more important but feeble crop.

There is probably no better grain than rye to sow where a field is to be stocked down to clover or grass. Wheat is second to rye in this respect, and superior to oats and barley, which are quite objectionable, when the usual quantity is sown per acre, on account of the very large leaves and thick bottom growth, which is liable to choke the young grass, while rye shoots upward rapidly and does not grow thickly at the bottom. Were oats and barley sown thinner on the ground than usual for a full crop of grain, grass might grow quite as well as with a crop of rye. Another point in favor of rye is, it usually keeps erect better than either oats or barley. On light soils where there is so much humus or vegetable mould as to cause a large growth of straw if the grain lodges, as it often does, almost every grain of grass will be killed. As spring rye is often a good crop to grow in four or five years rotation, many farmers will find it profitable to arrange their rotation so as to raise spring in preference to winter rye when land is to be stocked down.

For farmers the following direction will be of little or no value, and may appear quite untimely, but many need the exhortation. As most of our grass is cut with horse mowers, it is quite important that the surface should be smooth, free from knolls, hollows, dead furrows, ridges and clods. Even if it be mowed by hand, the surface ought to be smooth, so that the grass may be cut close to the ground.

Where there are knolls and hollows the most expeditious way is to level the knolls with a team and dirt scraper either after or previous to plowing. When there are ridges formed by back furrowing repeatedly in one place, turn back furrows into hollows and finish off lands with dead furrows where the ridges are. By measuring the distance from ridges to furrows, even where they are not uniform, the dead furrows may be made in the desired place.

After the ground has been sufficiently harrowed, if there be loose sods and lumps of earth, throw them into the lowest places with manure forks, and make the surface as smooth as practicable. Then roll and sow grass seed. This will form not only a smooth surface to work on when harvesting the grain, but will be smooth for the mower, horse rake and loaded wagon or cart, when cutting and gathering the crops. A few hours spent in this manner will not only improve the appearance of the surface of a field, but be a source of much profit when harvesting the grain.

Sometimes driving storms occur just before grain is fit to harvest, which prostrates a large proportion of it. Then, especially if the surface of the ground be smooth, the grain can be cut much more advantageous than if covered with dirt, lumps and sods, or to be indented with numerous small hollows. When land is stocked down, it should be so mellow and fine that there will be no difficulty in making the surface quite even and smooth.—*N. Y. Herald.*

A Farm Experiment.

The best chemists agree that a chemical analysis of the soil of a field is not a sure and reliable guide in determining the state of fertility of the soil, or its fitness to produce a crop of any specified kind, whereas the farmer, however unskilled in science, has at command, in carefully conducted experiments, a certain indication of the wants of the soil. An analysis might show the presence of an abundance of the elements of fertility in a soil which would fail to yield any crop at all, because the elements were so locked up in insoluble compounds that vegetation could receive no benefit from them. On the other hand, the farmer may readily find out for himself what the chemists cannot determine for him. If farmers would experiment, determine the results with accuracy, and give their discoveries to the public, the agriculture of the country would be greatly benefited. In this view I have made and now report the following experiment, hoping that other readers will do likewise:—

Last spring I planted potatoes in a field which bore a small crop of beans last year. The soil is gravelly loam, and has, I presume, never received a load of manure, while year after year the elements of fertility, particularly the phosphates, have been withdrawn in the shape of beef, cheese and grain. The soil was of uniform quality, and, as shown by the bean crop of last year, in a uniform condition of unproductiveness. At planting time it was in a fine condition of tilth. Through the field I took a strip wide enough for thirty-six rows for experiment. Twelve rows I planted without fertilizers, on twelve rows I put a small handful of ashes in each hill, and twelve rows I manured in the hill with superphosphate, at the rate of 200 pounds per acre. The unmanured portion yielded at the rate of 64½ bushels per acre; that treated with ashes, 77 bushels; and that treated with superphosphate, 147½ bushels. Ashes increased the yield 12½, superphosphate 82½ bushels. The cost of the superphosphate was \$5; the value of the surplus crop at market price was \$41½; net gain, \$36½. I suppose the benefit to the next year's crop will pay for the labor of applying the fertilizer and handling the increase of crop. I think this experiment shows that superphosphate may be profitably used upon the field.—*Cor. Rural Home.*

Orchard Grass.

This grass, though of comparatively recent introduction to North America, is becoming widely known and highly appreciated. We have many enquiries for it—some from parties who have grown it in Britain; and from our exchanges we find it fast winning its way to popular favor. We append two extracts, one from Indiana and one from the Province of Quebec:—

Crooked Creek, Ind., March 1, '75.
To the Editor of the Michigan Farmer.

DEAR SIR,—Noticing an inquiry in your issue of February 16, in regard to orchard grass, my experience may be of some value to your readers.

My farm lies within a mile of Michigan State line. The soil is sand and gravel, and during the past three dry summers the new seeding of clover has been killed by drouth. Two years ago I tried on a five acre lot orchard grass, four quarts per acre, and same of red clover, sowed on after my oats were drilled in, then rolled the ground smooth. The orchard grass and clover came up finely, but the very dry summer killed nearly all the clover, but the orchard grass stood the drouth very well, and last spring it came up very early and matured the same time as the clover, so that I cut a good burthen of grass from the field. It grows about the same height as timothy. When sown too thin it is rank, but when thick enough is as fine and tender as one could wish.

I am so well pleased with it that I intend seeding down twenty acres in wheat, with six quarts orchard grass and four quarts clover, mixed in 50 lbs. plaster, per acre. I shall drag the wheat as soon as the ground is dry enough, then sow the seed from a plaster sower, and finish with a roller.

When sown with clover I consider it superior to timothy, as it can be cut much earlier, and it starts immediately, so on rich land a second crop may be obtained, or more pasture than from any other grass I am acquainted with.

I cut a portion of the field and fed green to a span of work horses and milch cows. I consider it a superior soiling crop, it affording a ranker growth earlier than clover. The seed is similar to red top, and 14 lbs. is a bushel.

GUSTAVUS CROSS.

“Mr. A. P. Ball, of Stanstead county, Province of Quebec, has been experimenting with orchard grass. In 1872, a friend of his residing in North-Vermont, persuaded him to try it. He did so, and sowed four acres of barley. It took well, and after barley harvest it covered the ground as with a heavy green mat. It was cut for hay, June 30, 1873, but only yielded a ton per acre. Mr. Ball was satisfied, however, believing that he had seeded too sparsely. In the fall it was heavy enough to cut again, but was left untouched. The succeeding winter killed out patches of it, but notwithstanding this, the summer of 1874 it gave notwithstanding this, the summer of 1874 it gave a second crop of a ton and a half per acre. A seeding down per acre was taken off in the fall. A seeding down of another field of nine acres of spring wheat was made at the rate of a bushel of orchard grass, with the addition of ten pounds of it like clover per acre in 1873. This also took well, making a fine growth after the renewal of the wheat. Two cuttings were had in 1874. The first crop was principally clover; the second had a large proportion of orchard grass. After the second cutting it had made growth enough to cover the ground completely.

Mr. Ball thinks he used too little orchard grass seed in both cases. He is of opinion that two bushels per acre is none too much. It is, however, inclined to thicken with successive cuttings. He is well satisfied with the results of his trial so far. The hay is relished by stock of all kinds, quite as much as that made from timothy or clover. The autumn cutting makes the best of feed for calves; they seem to prefer it to every other sort of hay.

We are of opinion that this variety of grass is worthy of far more extensive cultivation than it gets. Whether it is more liable to winter-kill than the grasses usually grown we are unable to say. It may be that as the snow lies more steadily on the ground in the Eastern Townships than it does in Ontario. It may do better in the sister Province than here, but at any rate it is worthy of receiving as full a trial here as there.

Price of Wheat.

The Mark Lane *Express* says the price of wheat is at present too low to afford adequate remuneration to the grower. This is attributed to the large importations which for the eleven months up to November 30, amounted to 44,577,178 cwts; including both wheat and flour, this being 32,463 cwts. more than was imported during the same period a year ago. Of this large amount the United States sent more than half. The United States and British North America together sent to Great Britain in eleven months of 1874 more breadstuffs than all other countries together by five and a-half million hundred weights.

True scientific farming consists largely of the exercise of common sense. No amount of mere knowledge will enable us to dispense with system, order, judicious planning, and economical work.

The Janesville Grape.

(Originated from seed. At the Wisconsin Fall Exhibition of 1868, the premium was awarded to the Janesville as the best, and worthy of cultivation, and christened by the President the "Janesville," from the city of its origin.)

To the Editor of the Farmer's Advocate.

DEAR SIR:—Having been appointed agent for the sale of the above grape in Canada, I have much pleasure, through the medium of your valuable paper, in calling the attention of all fruit growers, and more especially of every farmer in the Dominion of Canada, to the above grape; having originated north of us, I feel assured it will be fully appreciated by those giving it a trial. It has two recommendations which cannot be claimed by any other grape at present cultivated, and which will make it so acceptable to the most northerly part of the settled portions of Canada, viz.:—1st. Its earliness, ripening about the 15th of August, thus ensuring perfect safety from the early September frosts which so frequently (to our bitter experience) destroys the hitherto promising crop. 2nd. Its perfect hardiness, ensuring it against the most severe winters, without laying down or any protection, thus giving an assurance, with its earliness, of its adaptability to the extreme limit of grape culture. And, last, its a very good quality, and even in those favored parts of Western Canada, or the lake shore region, where some of the choicest vines can be raised (although they may be a little tender), this grape will be very much prized, ripening three or four weeks before other varieties, therefore not in any way coming into competition with them, and will be invaluable as an early market grape, and, as all fruit-growers know, will command a good price. This is not a grape just brought out, without having had a fair trial, but every year is adding to its merits, and it is destined to become the only reliable grape for Canada. I have enclosed you a few very high testimonials from many others in my possession, and would observe that after 20 years' experience in fruit growing, I feel great confidence in bringing forward this grape, and I shall plant it largely this spring.

A. G. DEADMAN,
Lambeth, P. O., Ont.

See advertisement in this paper.

FROM C. H. GREENMAN, WILTON, WISCONSIN.

1st. It is perfectly hardy, and has fruited for the past ten years without winter protection, exposed to the extreme temperature of 35° below zero during the winter of 1863-4, fruiting the same season, and has not been affected by the extreme temperature of 1864 and 1873.

2nd. It colors early in August, and is usually ripe by the 15th August, comparing favorably with the Concord in quality, and is better than the Hartford in every respect, and does not drop its fruit from the branch. It bears quite young, and matures the cane as fast as it grows.

FROM A. G. TATTLE'S DESCRIPTIVE CATALOGUE, 1874.

By far the best very early grape. Keeps well; hangs to the cluster; bunches medium and very compact; berries medium; quality as good as Concord.

FROM THE WESTERN FARMER, SEPT. 3, 1870.

The article on the Janesville grape in your paper of August 27, led me to look at my vines, where I found Janesville in good eating condition; Hartford coloring but not yet eatable, fully ten days later than the Janesville; Delaware very slightly coloring; Concord perfectly green. J. S. STICKNEY.

The especial merits of the Janesville grape are its earliness, hardiness and habit of maturing its short jointed wood as fast as made, adapting it to the most northern limit of grape culture.

J. C. PLUMB, Milton, Wis.

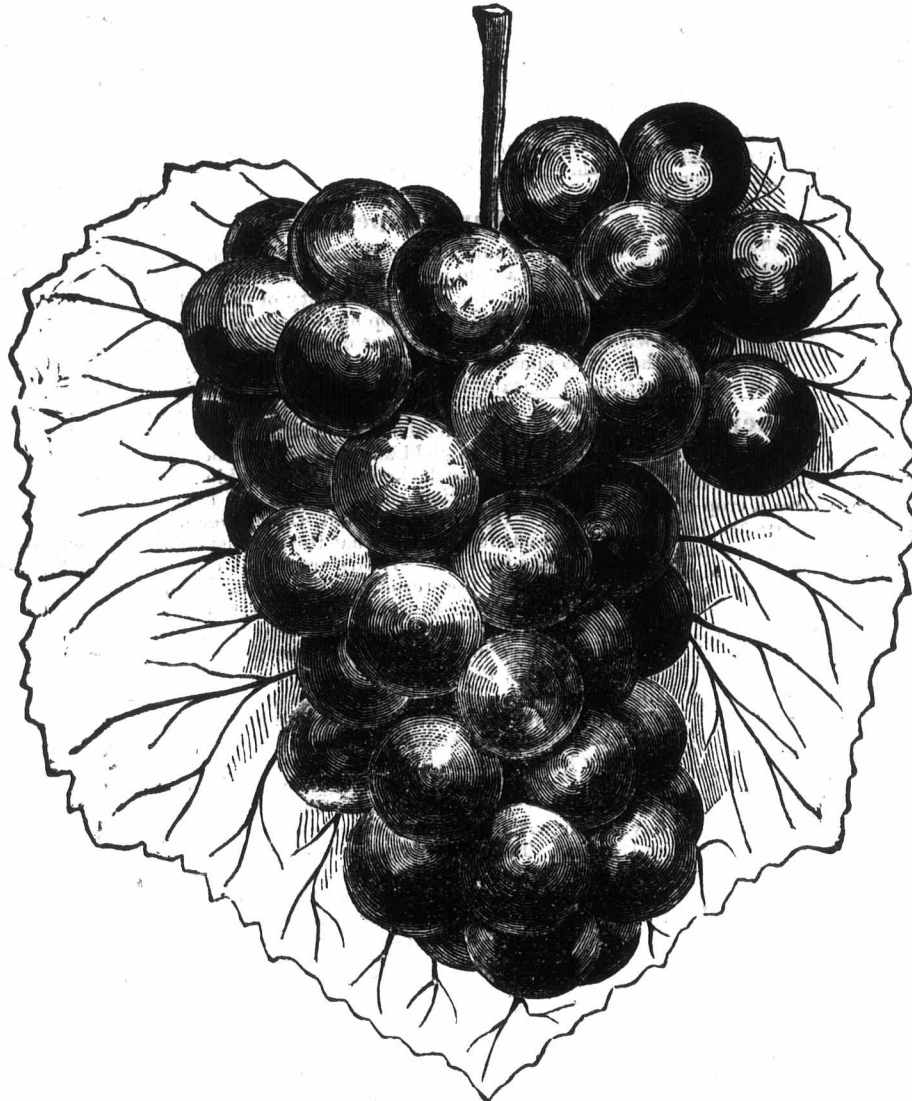
Cultivation and Profits of Root Crops.

M. O. B. Hadwin read a paper on Root Crops at the annual meeting of the Massachusetts State Board of Agriculture, from which we make the following extract:

Of the mangold wurzel, Mr. Hadwin said that the "Norbiton Giant," "Long Red," and "Yellow Globe," were prominent varieties, and the "Golden Tankard" a new and promising variety. The mangold produces more tons to the acre, and when fed to cows stimulated a larger flow of milk than any of the roots commonly grown as field crops. A sandy loam, that had been occupied by a hoed crop the previous year, was the best soil for the mangold. A liberal dressing of good manure was essential, which should be plowed under early in the spring, as the ground was then in good working condition, and then the ground should be cross-plowed with a swivel-plow, and harrowed to pulverize and level it; after which the roller should be used to break up all the lumps and make the field smooth for the seed-sower. The seed should be soaked thirty-six hours in warm water, and sowed with

land, and in this country the crop of Hon. Albert Fearing, in 1872, was reported to have weighed 62 tons and 1,280 pounds to the acre. From forty to fifty tons were often grown with good care and moderate expense in cultivation. The carrot the speaker regarded as well adapted to constitute a portion of the food for milch cows, horses and swine. They added largely to the flavor and quality of milk, with a reasonable increase in quantity. This root adapted itself to all kinds of soil, but succeeded best in a deep loam, with a slight admixture of sand. A liberal dressing of good and well decomposed manure was required, which should be well plowed in as early as possible, and as soon as the weeds make their appearance the land should be cross-plowed, harrowed and rolled, when it would be ready for the seed. The seed should be soaked in warm water twenty-four hours before planting, and then sunned a short time, to dry off the surface moisture, so that the seed would not clog in the seed-sower. Two pounds to the acre was more than enough, if judiciously planted, as too thick sowing resulted in unnecessary and expensive thinning, or, if this was neglected, in a smaller growth of roots, expensive to harvest and handle. The time for planting was from early in May to the tenth of June. His practice was to plant in straight rows twenty-two inches apart, thinning the plants to three or four inches apart in the row. The horse-hoe should be used to a considerable extent, and the cultivation was similar to that of the mangold. English turnips could be sown between the rows by the 20th of July, without injury to the carrots, and add materially to the product of the land. The "Long Orange," the "Intermed ate," and the "Short Horn" were the varieties recommended. The crop should remain in the ground as late as the latter part of October. After pulling they should be allowed to lie in the piles for a few hours, when they may be carted to the cellar. They required considerable ventilation until freezing weather came, when, fed to cows with an equal amount of mangolds, a large flow of milk of good quality would be obtained. If fed to horses once a day in the place of grain, carrots would be found most conducive to the health and strength of the animals. Among turnips the ruta-baga stood pre-eminent for the economical feeding of the animal. It was also valuable for domestic use, and for the market. It should be manured in drills, as well as by spreading the manure broadcast, and the method of cultivation was substantially the same as that of mangolds. The season for planting was from the 10th to the 15th of June, when all other crops were in. It did not require so much manure as

mangold and would do well on a lighter soil. Harvesting could be delayed as long as the ground remained open, as the roots were not liable to injury by frost. They should be stored in a dry cellar, and have good ventilators. The crops sometimes reach as high as thirty-seven tons per acre, but an average yield was about twenty tons. Four tons was considered equal to one ton of hay, and it was a profitable crop to grow, as a clean and nutritious food for growing stock. The English turnip was next referred to as a root cheaply grown, but of comparatively little value. When fed freely to young stock, however, they stimulated the animal to rapid development. It was often grown as a second crop, following peas, early potatoes, strawberries, or any crop that could be renewed previous to August, and if any crop failed, the turnip afforded another and the last chance for the season. It should be fed early in the fall, as it was not a late keeper, and a poor root to store in bulk. A good soil was required to produce a large yield, and they should be grown in drills twenty inches apart, but often succeeded well when sown broadcast.



THE JANESVILLE GRAPE.

any seed-sower adapted for the purpose, in straight rows. When the plants were up, a hand cultivator should be used between the rows to stir the surface and check the growth of weeds. When they have obtained the fourth leaf, the horse-hoe should be used in their cultivation, and its use may be continued at intervals for a few days until the leaf of the plant covers the ground, which is usually the case by the tenth of July, if the labor of tending the crop has been well kept up. The plants should be thinned when the sixth leaf appears, leaving them from eight to twelve inches apart in the rows, using the hand hoe at the same time to destroy the weeds between the plants. His practice was to strip the leaves from the plants in October, and feed them to his cows, as he had found that they stimulated the flow of milk when otherwise there would be a falling off. Mangolds were not liable to injury when stored in large quantity, and keep well until the following June, and even the year round. Some of the statements in regard to the yield of mangolds seem almost incredible. Seventy-five tons per acre was not an unusual crop in Eng-

The Colonel Cheeny Strawberry.

This plant may not be known by very many of our subscribers, but from what we have heard, and from personal observation, having seen the plants growing and partaken of the fruit, we believe it will be preferred to the Wilson Albany. We publish below an account of it from Mr. Purdy, who is one of the most extensive and reliable nursery men in the United States. Dr. Francis, who is known to be as reliable a person as any in this country, also recommends this berry. We also publish his remarks below. The American papers publish many favorable accounts of it. Persons wanting this berry can be supplied by Dr. Francis, Delaware, Ontario; or by A. M. Purdy, Palmyra, N. Y.

The following is A. M. Purdy's description:—

"This is a cross between the Triumph de Gand and Russell. It partakes of the firmness and 'meaty' character of the first, while it has the rich gloss and distinct scarlet of the latter. The fruit is very uniform in size, and enormously productive, being fully equal with us to the famous Wilson's Albany. The plant is of the most healthy character, resembling the Triumph, but being more rampant in foliage. We have grown strawberries for over 20 years, and in that time have tried no seedling that can equal it in large size and uniformity of fruit, beautiful glossy color, healthiness of plant and foliage, delicious quality, and great productiveness."

I can fully endorse the above, having grown them since 1871, and sold the fruit in the London market for the last two years, where they always command the highest prices.

Delaware, Ont., March, '75. A. FRANCIS.

Orchard Grass.

In answer to a request for information in regard to this grass, Prof. W. J. Beal, of the Agricultural College, sends the *Michigan Farmer* the following: "We have a small plot, several years old, by itself on a sand loam. It thrives well. It has been tried in field and lawn to a limited extent, with varying results when sown with other grasses. I

advise every enterprising farmer by all means to sow a patch of orchard grass, either with red clover or alone. It flowers early with clover, and soon starts again for a second crop. The seed is in chaff, and should be put in thick, two bushels to the acre if sowed alone. We need many experiments on grasses all over the State in various kinds of soil. As experiments are costly, sow only a small quantity at first, and see how it goes, then be sure to report the result to the *Farmer*. Your seed may be poor or full of foul stuff, so purchase light at first. You can generally raise the seed cheaper than to buy it if the grass flourishes on your land."

Improvement of Clayey Soils.

The *Rural Carolinian* has the following remarks upon this subject: One of the principal defects of

Smut in Wheat.

This disease, for such we must term it, is known in almost every part of the world where wheat is grown, though in wet seasons, and in undrained soils, it is more prevalent than at other seasons and places. As it is a fungus, too humid an atmosphere and soil must encourage its growth. In a dry, warm climate, such as California, it is little known. Various remedies for it are recommended, though some agriculturalists say every means to preserve the wheat from it are futile. In one of the reports of the American Department of Agriculture, farmers are advised to discard all idea of mixing ingredients with seed wheat to destroy smut. As this fungus grows as a natural result from diseased grains, whatever kills its vitality, so as to prevent its germination and growth, proves the necessity of sowing the wheat

from it. We have known strong brine to be used for this purpose with good effect. It was steeped in the brine in vats for 12 hours, then spread on the barn floor and mixed with lime to dry it for sowing. A solution of vitriol has been found effectual for the same purpose.

In regard to improvement of agriculture in New Brunswick, Mr. Pety says he has closely watched the progress made and felt satisfied that the rate was highly encouraging. In the raising of wheat alone there had been great strides made; 14 years ago there were hardly ten bushels of grain raised in that entire parish, while last season, on the farms from Mr. Stirling's to Mr. Forbes', the crop was over 1,000 bushels, and in Blissville, Lincoln and Burton the increase is proportionally large. To

prove the crop is one that pays, he cited the cases of Mr. Stirling and Mr. Johnson—the former of whom raised one hundred bushels from five and the latter twenty-eight from a single bushel.—*Colonial Farmer*.

Death of a \$25,000 Cow.

The Fourth Duchess of Onida died in January. She was purchased by Migiboen & Bedford, in Oct., 1873, at Campbell's New York Mill sales, for \$25,000. She leaves a bull calf, three months old, by the fourteenth Duke of Thorndale, said to be one of the finest dukes in the country. Thus the \$25,000 heifer has met the same fate as the \$40,000 cow. Mr. E. G. Bedford has been particularly unfortunate, having heretofore lost two costly bulls.



COLONEL CHEENY STRAWBERRY.

Gas Lime as a Manure.

Mr. N. B., London Township, sends us the following extract from an English authority:—Gas Lime is a compound of sulphate of lime which becomes sulphate of lime on exposure to the air. It has been found very beneficial to all the clovers, turnips and all the members of the cabbage family. Thirty bushels per acre is sufficient.

On the same subject, J. C. Cooley writes as follows to N. Y. Tribune:—

Experience with Gas Lime.—In answer to inquiry, I will give my experience with gas lime on potatoes. Last Spring I concluded to sow wheat on a field, and seed it down. Before doing so I spread a light coating of gas lime on the poorest part of it, to test its value as a fertilizer for wheat. After plowing the field I changed my mind and planted potatoes. The potatoes on this part of the field were large and very nice, free from all defects. I weighed one Early Rose that weighed 1½ pounds, and there were many nearly if not quite as large as this. I took the large one home and had it cooked whole, and I never ate a better potato. The portion of the field not limed did very poorly—small, worm-eaten, rough and shaggy. My garden in the city, which had not been manured for three years previous, produced very poor potatoes—being small, worm-eaten, rough and shaggy. Last Spring I gave it a coat of gas lime, and planted Early Rose. Result—Splendid potatoes, free from all defects, foliage perfect. I am so well pleased with its effects that I have taken two car-loads and several sleigh-loads to my farm, to experiment with next season.

—J. C. Cooley, Oswego Co. N. Y.

British Agricultural Returns.

The facts and figures relating to the agriculture of Great Britain for the year 1874, compiled by the statistical and commercial department of the Board of Trade, have recently been issued, and give a fair index of the production of that year. The past year compares favorably with preceding ones, and the increased acreage under cultivation affords strong grounds for the belief that a reclamation of waste lands is strongly going on. The land under cultivation in the year was 140,000 acres more than in 1873, although 9,000 acres below 1872 for the whole of the United Kingdom. Oats show considerable falling off, and chiefly in England, where 186,000 acres less were sown in 1874 than in 1873. But these fluctuations may be taken as merely indications of the variability of the season. A dry year may cause a failure in the root crops and often therefore decreased returns; land which may be entered in the end of the season as fallow, has been sown in the spring.

Very little wheat is grown in Scotland—hardly more than in Wales; but almost as large an acreage of oats is sown there as in England, and the barley crop is also large, as well as those of potatoes and turnips. Scotland, again, on account of the predominant pastoral nature of her agriculture, grows very large clover crops, but, on the other hand, the proportion of her arable land left either as fallow or in natural grass is very much less than in England.

The returns contain statistics of the yield in foreign countries, but the dates are too wide apart to permit of comparison. France, for instance, returns 17,000,000 acres as under wheat, or about 8,000,000 more than Great Britain under corn of all kinds; but that vast total is beaten by the United States, which had over 22,000,000 acres under wheat in 1873, besides 39,000,000 under maize. The wheat yield of France, however, appears to be greater than that of the States, in spite of the advantage of the later in acres, while Russia comes third in yield. Russia and Prussia, at long intervals, take the lead in the production of barley, and rye is a grain which finds favor in all European countries. Rye-bread is the staple food of the Germans, if we may judge by the fact that Prussia alone reared 150,000,000 bushels of that grain in 1871.

The wealth of the United Kingdom in live stock is steadily increasing, although the ratio is not an extraordinary one.

Management of Pastures.

No part of the operation of the farm is more important than the treatment of pasture lands, and nothing is more totally neglected as a general rule. We hope the time will come, as it certainly will sometime, when this will be different. We wish every farmer in New England could see how they do things in Holland so far as the management of pasture land is concerned.

The pastures there are what may be called natural, which in Europe means pasture stocked with natural grasses, or grasses proper instead of the artificial grasses such as clover, sainfoin, lucern, etc. The turf or sod is closely set with the finest and choicest herbage, while the soil and climate and the constant attention on the part of the dairy-men secure to them the greatest and most vigorous growth, uniform and luxuriant throughout.

The cattle and sheep are turned out as early as the 1st of May, and the pasture is divided by hurdles into two parts, one devoted to the growth of grass to cut for hay, and the other for pasture. For every five or six acres you will see five cows and sheep. By the middle of August, after the hay crop is all off the ground, the hurdles are taken away and the cattle have the run of the whole for the rest of the season. The size of the pastures and the system of small holdings which prevail in that country makes it impossible to adopt the alternative system or the plan of frequent change of pastures which is advocated by many dairymen in this country.

You see everywhere running with the cows about an equal number of sheep. The price or the profit of raising meat is such that it is for the interest of the farmer there to make the most of everything, and to adopt the motto so popular here and "push things." The sheep eat down the hard and "push things." The sheep eat down the hard wiry grasses which the cows reject and so contribute very materially to keep the turf close and fine. But they are cautious not to overstock in this way, not to stint the cows so as to lead them to fall off in milk, and the number of sheep is usually limited to the number of cows. In winter the pastures are given up wholly to the sheep at the rate of about one to two or three acres. If the surface is so deeply covered with snow that the sheep cannot dig through it so as to get a living, they are fed in racks morning and evening near the farm buildings.

By the middle of November the cows are put up, and now begins the active preparation for manuring the pastures. Our readers are probably aware that the fields and pastures of Holland are all surrounded and intersected by ditches. These are regularly cleaned out and they yield a large crop of mud, while through the summer they grow a splendid covering of green weeds and water plants. These are carefully collected and laid along the banks of the ditches in heaps, and so is the mud. You will see long heaps in the form of a rectangular prism, about thirty feet long and a yard wide at the base, and perhaps six or eight inches deep. The heaps are perhaps sixty or sixty-five feet apart. These heaps lie till the cows go into the barn at the beginning of winter and the air and frosts melt them down so to speak into a fine, mealy mass.

Now when the cows are stabled at the middle of November, every day, till the ice covers the ditches the semi-liquid manure of these animals is boated along the sluggish streams and spread over the surface of these heaps and the whole is immediately turned over and mixed with the fork and made up in the form of a triangular prism. This brings the bulk of the cow manure into the centre of the heap. After a time these heaps are again turned until the whole mass becomes light and mealy, a splendid compost, which in January or February is evenly spread over the surface of the pastures, or if the weather does not admit of it then, it lies over till spring. This takes place on the small ditches running through every farm.

But the mud dug out of the larger canals and the numerous branches of the Rhine, is piled in heaps and left exposed to the air much longer, often two or three years, when it is mixed with the semi-liquid manure. Of course the manual value of the mud of the ditches, canals, and rivers, differs considerably according to the location. That taken out near large towns and villages which receive large accessions from the waste of houses is much richer than that farther away. When the compost is completed it consists of about two parts of manure without straw to three or four parts of mud.—Mass. Ploughman.

How to Make a Farm Pay.

The following essay on the above subject was delivered by Mr. Appleton Elcoat, at a late meeting of the Tuckersmith Farmers' Club.

In order to create a starting point, we must have a farm of, say, 90 acres of clearing. To stock this, the farmer should have five cows and their offspring, which will give him five head of cattle to sell at three-years-old every year, bringing say \$30 each. He will also require two mares, and one

colt one year old, and another two year old, and by raising a colt every year he will always have one three year old for disposal, which should be worth \$100. He can also fat half a dozen hogs till they weigh about 250 pounds each, two of which it will be necessary to keep for his own use, while the other four can be sold at \$7 per cwt. In addition to this, it is also desirable to have some poultry. The butter and eggs will keep the house in groceries, and the children in clothes. To keep this stock will require 30 acres, part for hay and the rest for pasture. This will leave 60 acres for crop.

The farmer must seed 10 acres down every year, and then he will have 10 acres of sod to plough. He should put the sod in with peas, the pea stubble in with wheat, the wheat stubble with oats, which should be well manured and afterwards put in with wheat, the stubble of which will require the rest of his manure. He must also put in at least two acres of potatoes, which will be worth \$50 per acre, beside turnips, carrots and other green crops, for the use of the cattle. This field can afterwards be planted with barley and seeded down. This will give a regular rotation of crops. There will be 10 acres of peas, 20 acres of wheat, and of oats, 10 of barley, and 10 of roots, &c. I will now endeavor to give you an estimate of the yield and value of these crops. Peas, at 30 bushels to the acre, would aggregate 300 bushels, 100 to be used for seed and to fat the hogs on, leaving 200 bushels to sell at 60 cents; 20 acres of wheat at 25 bushels per acre would give 100 bushels for seed and bread, and 400 bushels to sell at \$1 per bushel; 10 acres of oats, at 40 bushels per acre, would produce 400 bushels, of which, after allowing 200 bushels for the horses and for seed, 200 could be sold at 35 cents; 300 bushels of barley, the product of 10 acres, at 30 bushels per acre, would give 20 bushels for seed, and leave 280 bushels to sell at 75 cents. Then we have two acres of potatoes worth \$50 per acre. Now let us see how much we have made from the farm:—

Five head of cattle, at \$30 per head.....	\$150
One horse at \$100.....	100
Four hogs, weight 250 lbs. each, at \$7 per cwt.	70
200 bushels of peas at 60 cents.....	120
400 bushels of wheat, at \$1 per bushel.....	400
200 bushels of oats, at 35c per bushel.....	70
280 bushels of barley, at 75c per bushel.....	200
Two acres of potatoes, at \$50 per acre.....	100
	\$1,210

I will now give you my way of cultivating the land. For peas, plow about seven inches deep in spring; for wheat, plow in the fall ten inches deep, and then cultivate in the spring. The land used for the root crop should be ploughed 12 inches deep in the fall, and after the turnips are taken up, plow ten inches deep, and again in the spring, and seed down with barley.

Common Sense in Plowing.

Teams drawing loads on the road get a breathing spell on the descending ground, while in plowing the draft is the same from morning till night.—There is a certain number of pounds that a team can draw day after day, and not worry them, but if more be added, even as little as fifteen or twenty pounds, they walk unsteadily, fret and soon tire. No amount of feeding will keep them in condition. I have many plows in use on which it has been an easy matter to decrease the draft twenty-five lbs., and if men had been drawing them instead of horses it would have been done. It must be plain to the farmer that every pound taken off from the draft of his plow is so much gained for his horses.

It may be done in this way:

For any soil except sand or gravel, use a steel plow. Their cost is but little more, and the draft enough less to pay the difference in plowing twenty acres. In plowing sod the coulter does a great deal of the work, and should be kept sharp by forging at the blacksmith's, and grinding every day if necessary. Of course it will wear out sooner, but new coulters are cheaper than new teams. Set the coulter in line with the plow, the edge square in front, with an angle of forty-five degrees from the point to which it is attached to the beam.—When the share gets worn it is poor economy to use it any longer, but replace it with a new one. Let the traces be as short as will allow the horses to walk without hitting their heels against the whittle-trees, and have just pressure enough of the wheels on the ground to make the plow run steady. If the handles crowd continually one way, the draft is not right, and if the plow is a good one it can be easily remedied at the clevis. To prevent

the horses step fasten a weight on the outside of the right end when Every observing ceptible to kind I have seen ho made reckless sharp word or do their work a ble, and be as you would the

Horses and weather from s get "calked." brocation for su rubbed in wh rheumatism if hot fire:

Oil origanum spirits of turp and alcohol, 3 bottle should 1 Gentleman.

Prof

There can b under ordinary ing and raising Good horses a tly pay for the breeder's effor horses adapted draft, it pays t the farm be p cost of raising little if any gr the same age, no greater tha

The main d fact that the good horse of cemand at a in value betw much greater kind of live mainly for w and sold by w to the price i the horse. H of the eye, the bone, the carr individual part his gait as we tics—are all the account i mal.

I should be qualities whic are inherited they be not p ped from the tention, or ou the business saleable horse with certain brood-mares, The quality a price at whic portant matte in mind the diligently for blood is like bred in the b grel can be r his own defec

Experience the best of a "nicks" well excellence, p others. It u have found t the one that the best rule you have e carefully, an right in form from an an good qualit self has den such horses sure to consi carefully che ably certain,

the horses stepping over the traces in turning, fasten a weight of about three-fourths of a pound on the outside of each single-tree—that is, on the right end when you turn to the left, and vice versa. Every observing farmer knows that horses are susceptible to kindness, and equally so to unkindness. I have seen horses that were working steadily made reckless with sweat in a short time by a sharp word or a jerk on the bit. Let your horses do their work as you do your's, as easily as possible, and be as willing to overlook their mistakes as you would the mistakes of human beings.

Horses and cattle are liable to sprains in cold weather from slipping on the ice, and horses often get "calked." The following is an excellent embrocation for such injuries. It should be well rubbed in when applied to sprains. It is good for rheumatism if well rubbed in while exposed to a hot fire:

Oil origanum, aniseed and spike, each 1 oz.; spirits of turpentine, 1 oz.; aqua ammonia, 1 oz., and alcohol, 3 oz. Shake well before using. The bottle should be kept securely corked.—*Country Gentleman.*

The Horse.

Profits of Horse-Breeding.

There can be no question as to the fact that under ordinary favourable circumstances the breeding and raising of horses is a profitable business. Good horses are always in demand, that abundantly pay for the raising. No matter whether the breeder's efforts be in the direction of producing horses adapted for the road, the turf, carriage, or draft, it pays to breed only the best of the kind. If the farm be properly arranged for the business, the cost of raising a colt until he is four years old is but little if any greater than that of raising a steer to the same age, and the cost of raising a good horse is no greater than that of raising a poor one.

The main difference, however, is found in the fact that the scrub will not sell, while the really good horse of each of the leading types is always in demand at a remunerative price. The difference in value between good and poor horses is very much greater than that which exists in any other kind of live stock. Hogs and cattle are raised mainly for the value of the carcass, and are bought and sold by weight, with only a slight variation as to the price in regard to quality; but not so with the horse. His form, style, and color; the sparkle of the eye, the cut of the head, the quality of the bone, the carriage of the tail, the shape of each individual part that goes to make up the whole—his gait as well as his size and mental characteristics—are all carefully considered and taken into the account in estimating the value of the animal.

I should be borne in mind that nearly all of the qualities which determine the value of the horses are inherited ones—are bred in the bone—and if they be not possessed by the foal when first dropped from the dam no amount of subsequent care, attention, or outlay can remedy the defect. To make the business of raising horses a profitable one saleable horses must be produced, and to do this with certainty the breeder must produce good brood-mares, and then breed to good stallions only. The quality and blood of the horse, and not the price at which he is held as service, are the important matters for consideration. Have constantly in mind the points which give value, and seek diligently for a sire that from his own form and blood is likely to transmit those points: What is bred in the bone will be transmitted, and no mongrel can be relied upon to transmit anything but his own defects.

Experience was long since demonstrated to be the best of all schools, and if you find a cross that "nicks" well, or a sire that has demonstrated his excellence, prefer that cross, or that sire to all others. It is not to be taken for granted that you have found the best stallion when you have found the one that commands the highest fee for service, the best rule is to pay no attention to the price until you have examined the horse and the pedigree carefully, and then, when you have found him all right in form and action, purely bred descending from an ancestry uniformly possessing the same good qualities, or if you find that the horse himself has demonstrated his excellence as a sire of such horses as you wish to breed, you may venture to consider the price of service. Having thus carefully chosen the sire and dam, success is reasonably certain, and the business is a profitable one.

The ordinary farmer can scarcely invest in any business that will give such sure and large returns as the purchase of one or two really good brood-mares provided always that he breed them with judgment. While raising their foals each year, the mares will with proper care, do nearly as much ordinary farm-work as geldings; and from their produce he may in a few years gain himself a competence—*Spirit of the Times.*

Watering Horses.

The *Working Farmer* has the following suggestions, which are worthy of remembrance: "Horses should be watered from a brook pond or river, and not from wells or springs, as the well water is hard and colder, while the running stream is soft and rather warm. The preference of horses is for the soft, even though it be muddy water, to that which is hard. Horses should be allowed in summer time at least, four waterings a day, and half a bucket at a time, and in winter a pail may be allowed morning and evening which is sufficient to assuage their thirst without causing them to bloat or puff up. Care, however, should be taken that the horse is not put to work immediately after drinking a full bucket of water, especially if required to go fast, because digestion and severe exertion can never go on together, and moreover purging is apt to ensue. In some cases, broken wind or heaves is thus produced. Avoid giving warm or tepid water to horses that are often driven from home, because cold or warm water will then perhaps be given them, which will be liable to produce a congestive chill follow by lung fever, and in some cases colic."

Care of Brood Mares.

As a rule, except among those who make it a specialty, enough attention is not given to feeding brood mares. The best food is chopped barley, mixed with equal portions of bran, which enables the dam to make all necessary preparation to supply the coming foal with nourishment at the time most needed, and enables her to feed the growing foal on the very best kind of feed to make the most bone and muscle. On the care and treatment of the mare depend the size and condition of the colt at birth. We often see farmers working their brood mares in a heavy team and treating and feeding them in the same manner as they do the other horses, up to within a few days of their foaling. This is a very unprofitable course to pursue, to say the least. The dam should have moderate exercise, but it should be regular. If she is used in a team she should not be driven faster than a walk, or loaded heavy, for in either case there is danger of injuring the mare and ruining the colt.—*Ec.*

Fattening Horses.

The *New England Homestead* says that if the usual food has been unground grain and hay, nothing but a change will effect any desirable alteration in the appearance of the animal. In case oil meal cannot be obtained readily, mingle a bushel of flax seed with a bushel of barley, one of oats, and another Indian corn, and let it be ground into a fine meal. Or meal of the barley, oats, and corn in equal quantities may first be produced, and one-fourth part of oil cake mingled with it when the meal is sprinkled on cut feed. Feed two or three quarts of the mixture two or three times daily, mingled with a peck of cut hay or straw. If the horse will eat that greedily, let the quantity be gradually increased until he will eat four or six quarts at every feeding, three times a day. But avoid the practice of letting the horse stand at the rack well filled with hay. In order to fatten a horse that has run down in flesh, the groom should be very particular to feed the animal no more than he will eat up clean, and then lick his manger for more.

Inflammation of the Kidneys.

In the horse inflammation of the kidneys is more common than is generally supposed, and produces great mischief, local as well as constitutional, when allowed to run its course unchecked. Fever is the invariable attendant, as upon most inflammatory diseases of vital organs, but here is a more marked degree than usual. Next may be observed a stiffness, and pain in the back, increased by turning in the stall, or by pressure on the back. The last symptom is, however, also common in strains and in rheumatism; but then there is no disorder of the urinary apparatus, and the water is natural, and in

good quantity; inflammation of the kidneys the water is scanty and high colored, occasioning pain in the passage, with great strength, caused by the irritation of the urine, which is loaded with salts; pulse is quick and hard, and generally small and wavy. The symptoms are all present in inflammation of the bladder also; but the two may be distinguished by passing the hand into the rectum, and examining the bladder itself, when, if it is the seat of the disease, its pressure will give great pain, and it will be found thickened, and the parts adjacent hot and throbbing; whilst, if these are healthy, the kidneys may be considered as the real seat of mischief. Among the causes of kidney inflammation is generally mowburnt hay or musty oats. Exposure to cold and wet is another cause, constantly occurring. By way of local treatment, a rowel may be inserted over the loins, and each side of, and along the spine, each rowel being distant four inches from the middle of the spinal column, or about eight inches between the two rowels. A gentle purge consisting of a quart of linseed oil, may be given, followed by calomel, opium and tartar emetic, of each, a half to one drachm (according to age and size) made into a pile, and one such dose given every six hours. No diuretics or salts of any kind should be given but plenty of luke warm water, bran mash, with boiled whole linseed in them. Warm clothing and flannel bandages are to be added to the other remedies; cold draughts of air should be carefully excluded from the stable, and the horse left quiet and undisturbed in his stall.—*Prairie Farmer.*

The Way to Blanket Horses.

But few people comparatively understand how to blanket a horse to protect him from contracting cold. We frequently see the blanket folded double and laid across the rump, and a part of the animal's back, leaving those parts of the body that need protection exposed to the cold storms and cutting winds. Those parts of the body of a horse which surround the lungs require the benefit of a blanket in preference to the flank or rump. When we are exposed to a current of cold air, to guard against any injury from contracting cold we shield ourselves neck, chest, and back. If these parts are protected the lower part of the body will endure a degree of cold far more intense without any injury to the body than if the lungs were not kept warm with suitable clothing. The same thing holds good in the protection of horses. The blanket should cover the neck, withers and shoulders, and be brought round the breast and buttoned or buckled together as closely as a man buttons his overcoat when shielding his bosom. Let the lungs of a horse be protected with a heavy blanket and he will seldom contract cold, even if the hindmost parts of his body are left uncovered. We refer more particularly to blanketing horses that have been unusually warm by violent exertion or hard driving, and exposing them to a current of cold air while standing still. Many of our best teamsters protect the breast of their horses by a piece of heavy cloth about two feet square, hanging from the lower end of the collar. This is an excellent practice in cold weather, as the most important part of the animal is shielded from the cold wind, especially when travelling toward a strong current. The forward end of the horse blanket should be made to fit as closely round the breast of a horse as our garments fit our bodies. Most horses will contract a violent cold almost as soon as a man, if not blanketed while they stand still after having been exercised so violently as to produce profuse perspiration. So long as a horse is kept in motion there is little danger of his suffering any inconveniences from cold winds; but allow him to stand still for a few moments while loading or unloading, without a heavy blanket to protect his shoulders and loins, and he will take cold sooner than a man.

Bruise or Gravel.

Is quickly cured by cutting away the hoof a little where the gravel went in. Then take a crooked awl and get out the dirt as much as possible, work gunpowder into the cavity with the back of the awl and touch it with a hot iron; by putting the powder in two or three times in this way it will clean all the gravel and dirt out. Then melt one part tallow and three parts rosin and pour the cavity, and the horse is fit for business.—*A., Rural New Yorker.*

A few iron nails placed in a vase with flowers will keep the water sweet, and the flowers fresh. This arises from the sulphur eliminated from the plants, combining with the iron.

Poultry Yard.

Why Don't the Hens Lay?

During the latter part of the growing season and the former part of winter the hens are molting. During this process—or disease, as some poulterers term molting—fowls seldom lay eggs. In most instances the apartments of fowls are too uncomfortably cold. After your hens have retired to their roosts for a cold night, thrust your fingers among their feathers and observe how they all shiver with the cold. Hens will not produce eggs unless they can be kept comfortably warm, especially during the long and cold nights of winter. Another reason why hens will not lay eggs in cold weather is, they are supplied with a deficiency of suitable food and drink at the proper time. For example, your fowls are fed generously with hard grain late in the afternoon. After the lapse of a few hours the dry grain has absorbed every drop of water in their crops. The birds will then be in an uneasy, restless and fretful condition. Perhaps ten or twelve hours must elapse before the suffering creatures can have access to water. When the morning does dawn their fountain of water is frozen up perhaps and they must eat snow, or their owner has failed to provide a supply of the luscious beverage. Hence derangement of the hen's egg producing functions is sure to follow such treatment, so that the abundant secretion in the ovarium will be entirely arrested. By judicious treatment hens often become so dyspeptic that they cannot macerate and digest a sufficient quantity of grain in a week to form an egg. The range of many flocks is often where they cannot find a single grain of coarse sand or fine gravel. Consequently a large portion of their food must pass through the gizzard without being crushed. Hence it will not be digested. Every domestic fowl and the birds of the air are provided with miniature grist mills in the form of gravel stones within the gizzard for the purpose of crushing the hard pieces of food. The gravel stones soon pass away and the birds must have others or they cannot macerate their rough food. Thousands of poulterers never think it necessary to provide gravel for their hens. Then, as the birds fail to produce, they administer a dose of pepper and other obnoxious condiments. When an editor is weary and hungry it would be just as sensible to supply him with a dry crust of stale bread blackened with pepper to enable him to write something spicy, witty, or useful as to feed a dispeptic hen food liberally peppered for the purpose of super-inducing a laying habit. A laying hen is a little laboratory. Eggs are composed largely of albumen and water. If all the conditions are not exactly right for extracting the albumen from their feed, an egg cannot be produced. An analytical chemist cannot perform certain experiments without just such a degree of heat and certain materials and the proper condition and quality. Neither can a hen lay eggs unless she has a generous supply of suitable feed and water at the desired moment, in addition to a proper degree of heat. In order to induce hens to lay eggs in the cold weather, the foregoing suggestions must be heeded; the wrong things should be avoided, and the right things must be done at the proper time. The winter's hens—except those that are now molting—have laid eggs every day all the fall, and they continue to roll out the eggs until the 18th of December.—*N. Y. Herald.*

Ducks.

A farmer's boy writes us from East Rindge saying that he has a pair of ducks, and asking how he shall take care of them.

About a year ago this seems to have escaped the attention of our young friend, we don't mind repeating some of it. In the first place, then, you want to remember all the time that the duck is a great feeder. He is not very particular as to what

he eats, but he wants a great deal, and, when he has it, grows very rapidly and keeps fat all the time. This winter your ducks will eat almost anything which you can give them from the table, crusts of bread, potato peelings, old turnips, bits of meat and "swill" generally besides grain. Next summer they will catch and eat an innumerable number of bugs, worms, snails and insects of all kinds, and this is one great reason that we like ducks; they also relish fish, frogs and tadpoles but are not grass eaters like geese. This winter you want to keep them where they can have a warm place to sit nights and a chance to waddle around in the sun my days. A tub of water to which they can have access will furnish them all the water they need, and some kinds will get along well without even that. We would not shut them in a small pen as it would soon become nasty and foul.

They probably will not lay next winter, but by April they should commence and lay an egg every day until fall. They are apt to drop their eggs anywhere they happen to be, but, if encouraged to go to the barn for feed, and if furnished a good place, can generally be made to lay there.

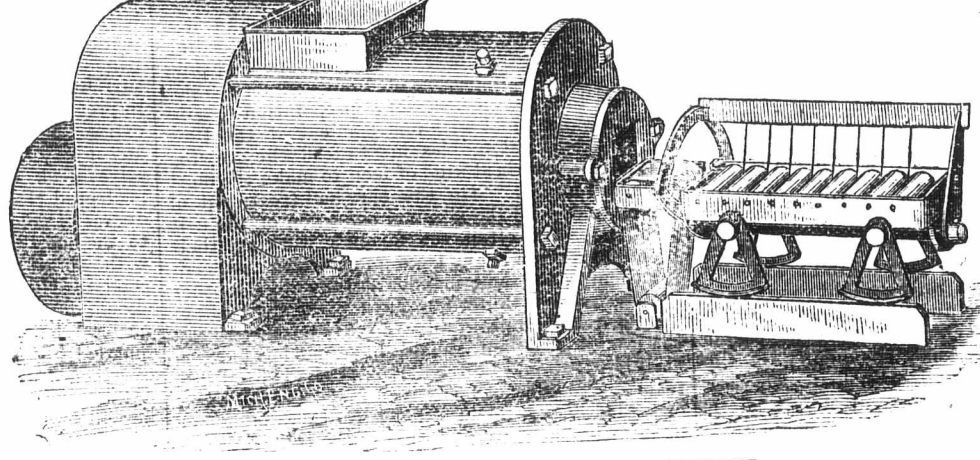
They are poor hatchers, careless of their young, when first hatched. We would, therefore, take their eggs and set them under hens. The eggs hatch in 31 days and they require no attention but what the hen will give them. When once the ducklings hatch, feed them with boiled potatoes, cooked bran and any bugs or angleworms you can find. For the first week or ten days, or longer if the weather is not fine, keep them confined in pens where they can only get at water enough to drink. If they are let loose they take to the water and get cold and die. More ducklings are killed

salted then to suit your own taste; nor so hot with pepper that you could not swallow it, were so much in your broth. Beware of too much salt, too much pepper; and besides too, where the seasoning is not too high, of feeding this dough too long at a time. Let the hens be fed one day fully with it, then let it be omitted and the ordinary feed given two days, and so on, and the result will be found satisfactory. Take notice—Hens fed this way will be a good deal less inclined to sit, than when fed in the ordinary manner.—*B. F. J., in Country Gentleman.*

Carbolic Acid for Poultry Houses.

A writer in the *London Field* strongly recommends the use of carbolic acid for destroying insects in pigeon and poultry houses, asserting that it neither injures the birds nor tends to drive them from their nests. He uses it in the form of a solution of two ounces of common carbolic acid to three quarts of water, applying this once a week with a watering pot, after the house has been carefully swept out. Besides the lice and acari that it destroys, it is also efficient in driving out fleas. For the purpose of expelling lice from the bodies of pigeons, the proposed method is said to be to mix one part of Calvert's liquid carbolic acid with a very little glycerine, adding the water, and shaking well before use. This is to be applied with a small brush to the roots of the feathers about the lower part of the belly and around the vent where the greatest number of insects will always be found. This application leaves no stains, kills the vermin instantaneously wherever it touches them, and two or three applications, at intervals of a few days, are sufficient to make the foulest specimens thoroughly clean. The writer also uses Calvert's carbolic acid disinfecting powder, dusting it often over the bodies of even the young birds, and with equally good results.

We should use one part of strong liquid carbolic acid to eight parts of water, mixed as the writer directs, since Calvert's solution is an English mixture not easily obtainable in this country.



TIFFANY'S COMBINED BRICK AND TILE MACHINE.

by going too early into the water than any other way. For this reason do not let them out when the grass is wet. After they are three weeks or a month old they should be brought home every night. Do not give them raw food except bugs and worms. Ducks need water in the summer but will do nicely without a great deal. As we have said, when well fed they grow rapidly, and are ready for market early.—*Mirror and Farmer.*

How to Make Hens Lay.

People would better understand this matter if they considered for a moment, a hen to be, as she is, a small steam engine, with an egg laying attachment, and thus there must be a constant supply of good feed and pure water, to keep the engine and its attachment up to its work. In addition to keeping hens, who have complete liberty, a constant supply of pure water, summer and winter, must be supplied them. I have found that during the cool and cold weather of fall winter and spring, a dough, compounded as follows, fed one day and then intermitted for two days, to procure excellent results. To three gallons of boiling water, and ½ an ounce common salt, a teaspoonful of Cayenne pepper and four ounces of lard. Stir the mixture until the pepper has imparted considerable of its strength to the water. Meantime the salt will have been dissolved and the lard melted. Then, while yet boiling hot, stir in a meal, made out of oats and corn, ground together in equal proportions, until a stiff mush is formed. Set away to cool down to a milk warmth. Before feeding, taste to see that you have not an over dose, of either salt or pepper, and to warrant the hens against being imposed upon with a mixture not fit to be eaten. The hen mash should not be

vincial Fair 1873, and received first prize as a brick machine at Western Fair 1874. It was "Highly Commended" at both Fairs. Read the following from Mr. J. P. Freek, of St. Thomas, Ont.

"I have been in the brick business a considerable length of time, here and elsewhere, and find the clay here more difficult to make than I ever had it before, it being almost impossible to work it by hand or by horse-power machines, both of which I have tried. But, since placing your machine in my yard, I have been able to make from ten to fourteen thousand a day of the most perfect bricks that can be made, and of clay directly from the bank. They can be hacked directly from the machine six or eight feet high and handled with the hands without being put out of shape. I can make a month longer in the year. Last year I made until the 26th day of October. And more, I can make bricks ninety-five per cent cheaper than by the other ways, as it does away with skilled labor.

J. P. FREEK.

Beautiful bricks and perfect tiles made by the same machine.

Send for circular and particulars to the Canadian Agricultural Emporium, London.

Mr. S. M. Wells, of Wethersfield, Conn., one of the leading onion growers of that famous onion raising locality, writes to the *New York Tribune* that the best fertilizers for this crop is the richest stable or hog-pen manure plowed in four inches deep. The land, he says, should be subsoiled. An application of forty bushels of wood ashes per acre after the onions have been once hoed, has an excellent effect.

Fireside

How Happy

A little one played among
In the blush and bloom
She twined the buds in
And bound them up in
"Ah me!" said she, "I
When ten years more had
And I am a maiden, with
Flushing my cheek and

A maiden mused in a p
Where the air was filled
Vases were near of anti
Resultful pictures, rare
And she, of all the lov
Was by far the loveliest
"Ah me!" sighed she
When my heart's true
Light of my life, my s
I count the days till th

A mother bent over a
Where she soothed her
"Sleep well," she mur
And she pressed her li
"Oh child, sweet child
If the good God let the
Till later on, in life's e
Thy strength shall be

An aged one sat by the
Almost ready to leave
Feeble and frail, the r
Had borne her along
"Ah me!" she sighed
"How happy I'll be w
When the world fades
And I soar away to a

'Tis thus we journey fr
Lending to turn to an
Striving to hasten the
Lighting our hearts w
Hoping on earth till th
Wishing and waiting,
Turning, when earth's
To the beautiful rest t

The Philoso

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stables. "Pay as you
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Humor a

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Fireside Selections.

How Happy I'll Be!

A little one played among the flowers, In the blush and bloom of summer hours; She twined the buds in a garland fair, And bound them up in her shining hair.

A maiden mused in a pleasant room, Where the air was filled with soft perfume; Vases were near of antique mold, Beautiful pictures, rare and old,

A mother bent over a cradle nest, Where she soothed her babe to his smiling rest, "Sleep well," she murmured, soft and low, And she pressed her lips on his brow;

An aged one sat by the glowing hearth, Almost ready to leave the earth; Feeble and frail, the race she had run Had borne her along to the setting sun.

'Tis thus we journey from youth to age, Longing to turn to another page; Striving to hasten the years away, Lighting our hearts with the future's ray,

The Philosopher's Stone.

The eccentric but brilliant John Randolph once rose suddenly in the House of Representatives and screamed out at the top of his shrill voice, "Mr. Speaker! Mr. Speaker! I have discovered the philosopher's stone. It is—pay as you go!"

Humor and Sarcasm.

It is not everybody who knows where to joke, or when, or how; and whoever is ignorant of these conditions had better not joke at all. A gentleman never attempts to be humorous at the expense of people with whom he is but slightly acquainted.

prudent to incur any one's enmity for the sake of uttering a smart double entendre or a tart repartee. Ridicule, at best, is a perilous weapon. Satire, however, when levelled at social foibles and political evils, is not only legitimate, but commendable.

Weights of Boys and Girls.

Upon the average, boys at birth weigh a little more, and girls a little less than seven pounds. For the first twelve years the two sexes continue nearly equal in weight, but beyond that age the boys acquire a decided preponderance.

Courting Among the Cossacks.

Among the Cossacks of the Ukraine leap-year is eternal. When a young woman feels a tender passion for a young man, she seeks him at the residence of his parents, and addresses him as follows:

"The goodness I see written in your countenance is a sufficient assurance to me that you are capable of ruling and loving a wife, and your excellent qualities encourage me to hope that you will make a good husband.

She then addresses the father and mother, and solicits their consent to the marriage. If she meets with a refusal, she declines to leave the house, and such conduct is usually crowned with success.

Umbrella Attachment for Plows.

A patent umbrella has been invented, to be attached to plows, for the purpose of screening the plowman from the ravages of the sun. Some of our exchanges are making themselves merry over this.

Another calls for umbrellas for the team as well as the teamster. We don't sympathize with this merriment at all. On the contrary, we hail every invention that tends to mitigate the physical hardships of farming. They are neither low nor small. To toil all day in the blistering heat of our summer sun is no joke.

Even Temper.—An attribute so precious that, in our consideration, it becomes a virtue, is a gentle and constant equality of temper. To sustain it not only exacts a pure mind, but a vigor of understanding which resists the petty vexations and fleeting contrarities which a multitude of objects and events are continually bringing.

The Nine Parts of Speech.

It has been recommended that the following rhymes be committed to memory by the neophytes in grammar, as a help to them in their early educational struggles:—

Three little words you often see, Are articles—a, or an, and the. A noun's the name of anything— As school, or garden, hoop, or swing.

Household Thoughts.

Happy are the families where the government of parents is the reign of affection, and the obedience of the children the submission of love.

Positiveness is a most absurd foible. If you are in the right, it lessens your triumph; if in the wrong, it adds shame to your defeat.

AIM NOT AT POPULARITY.—Seek not the favor of the multitude; it is seldom got by honest and lawful means. But seek the testimony of the few; and number not voices, but weigh them.

HOW TO BE RESPECTED.—It is by honest labor, manly courage, and a conscience void of offence, that we assert our true dignity and prove our honesty and respectability.

EXPERIENCE.—The best education one can obtain is the education experience gives. In passing through life learn everything you can. It will all come in play.

THE CONSCIENCE.—Keep your conscience tender—tender as the eye that closes its lids against an atom of dust, or as that sensitive plant which you have seen shrink and shut its leaf, not merely at the rude touch of the finger, but at the breath of a moth.

OUR ORDINARY LIFE.—Our habitual life is like a wall hung with pictures, which has been shone on by the suns of many years; take one of the pictures away, and it leaves a definite blank space, to which our eyes can never turn without discomfort.

SECRECY.—Talkers and fertile persons are commonly vain and credulous withal, for he that talketh what he knoweth will also talk what he knoweth not; therefore set it down that a habit of secrecy is both polite and moral.

BE ENULOUS.—Don't be content with doing what another has done—surpass it. Deserve success, and it will come. The boy was not born a man. The sun does not rise like a rocket, or go down like a bullet fired from a gun; slowly but surely it makes its rounds, and never tires.

INCONSISTENCY IN OUR EXPECTATIONS.—There is, no doubt, a different air and complexion in characters as well as in faces, though perhaps each equally beautiful; and the excellences of one cannot be transferred to the other. Thus, if one man possesses a stoical apathy of soul, acts independent of the opinion of the world, and fulfills every duty with mathematical exactness, you must not expect that man to be greatly influenced by the weakness of pity or the partialities of friendship; you must not be offended that he does not fly to meet you after a short absence; or require from him the convivial spirit and honest effusions of a warm, open, susceptible heart.

Uncle Tom's Department.

To My Young Friends.

I have received excellent letters from a number of my nephews and nieces lately, but they have again disappeared through that unfortunate hole in my pocket. A number of my nieces have kindly volunteered to fix it, but the winter has been so fearfully cold that I cannot spare it for repairs. When the weather moderates, however, I will give some of you a call. I am always glad to hear from my young friends how they are flourishing, so keep up your correspondence, though they do no receive publicity, for if I published all I would fill the ADVOCATE every month, then Mr. Weld would "go for me" for crowding out his information for the farmers, and I know you would not like to see your uncle hurt. But do not neglect to write, as nothing cheers your old uncle better than to hear of the prosperity of his young friends. Next month a prize will be given for puzzles, &c., so be on the alert, as there will be keen competition.

UNCLE TOM.

Puzzles.

21. My 1, 2, 3, 6, 8 is a country in South America. My 6, 3, 4, 5 I could not do without. My 1, 7, 4, 5 is the soldier's home. My 5, 6, 7, 8, 9 is a track of country. My whole is a noted man in the history of Canada.

CANADIAN CLIFF.

22. My 1, 17, 8, 6, 18, 3, 13, 2, obstinate. My 4, 14, 15, 16, 5, 9, 12, to prosper.

My 19, 7, 10, 11 a dignitary of a diocese. My whole is the motto of a most excellent paper.

23. SQUARE WORDS.

1. An island of Italy; a character in Shakespeare; something soothing; a body of men. 2. A point of land running into Lake Erie; a precious stone; belongs to everything; joy, merriment, gaiety.

JNO. H. HONSER.

25. SQUARE WORD.

My first has caused the direst woe; My next has wrought some evil too; My third hauls out the finny crew.

25. I am composed of five letters: Behead me and I am mountains and river in the old world. My whole is an adjective pertaining to the country.

WILLIE PICKLE.

26. RIDDLES.

What fortune gives me I wear in state; A little thing does make me great; All admire me when I don it, Yet care attend all those who wear it.

LUCY ROBERTS.

27. I picked it up and could not find it; I put it down and went on with it.

E. L. BOWMAN.

28. Complete I on the water sail; Deprive me of my head, A portion of the human frame You then will have instead.

F. LAWSON.

29. My first's where weary travellers seek, For shelter and repose; My second, dancing ladies use, And gentle zephyr blows; My third's the echo, soft and low, Which tells of broken hearts; My whole is childhood's early dawn, Two decades, it departs. Remove my first, and then you have, What flits through every brain; Sometimes a pleasing vein of thought, Yet oft a painful strain. The poet owns my gentle sway, The lover is my slave; I rule the slumbering hero's dreams, And haunt men to the grave.

30. CHARADE.

1. Complete I am frown; behead me and I'm a cup; curtail me and I am a very useful animal. 2. Complete I am rubbish; behead me and I am hasty; behead me again and I am a tree.

HATTIE HAVILAND.

Answers to Puzzles in March No.

No. 14—Bean; pea; turnip; radish; mustard, cress. 15—7 and 1. 16—20; twice 25=50: 2x5 and 20=30. 18—Pearl. 19—Goa; Salem; Tarsus; Brest.

No. 20—6 7 2 1 5 9 8 3 4

Answers received to March puzzles: Stella Renton, Pickering; Lucy Roberts, Ingersoll; Hamilton Brown, Melancthon; Jacob Fank, Pelham; Edward Annabal, West Winchester; W. A. Rutherford, Millbank; F. Lawson, Nilestown; F. L. Richardson; Hattie Haviland; Anonymous, Monckton; Minnie A. Reed, Cornwall; Jno. H. Houser, Canboro.

Answers for February received too late for March No.:—Oscar H. Phillips, Schomberg; E. L. Bowman, Nobleton; Jas. H. Cross; Frank Lawson, Nilestown; Hattie Haviland, Ingersoll; E. Finn, Winnipeg; M. Cornish, Oregon.



A GORILLA HUNT IN AFRICA.

The Gorilla.

Those situated in their happy, contented Canadian homes can scarcely conceive of the trials and dangers that men pass through in their noble efforts to redeem the uncivilized portions of our globe. At considerable expense we have secured for our young readers one of the scenes in the travels of that great African explorer, David Livingstone. The Gorilla is the greatest terror that those wild cannibals of the interior of Africa have to contend against, and when an onslaught is made upon these beasts by the natives, with their rude warlike weapons, sometimes a number of the inhabitants lose their lives ere their enemy is subdued. Thanks to our modern firearms, they are not now such a formidable foe to contend against, but even with these—as our engraving shows—great watchfulness is required or human life is lost before the animal is conquered. One of the travellers tell us that in shooting at this creature when it was running away, he felt "like a murderer," so much did it resemble a hairy man. The Gorilla is a discontented, nomadic beast—covered with iron-gray hair—and wanders from place to place in search of food, which consists of nuts, berries and other vegetable matter. The creature generally moves along on all-fours, but the arms being very long the animal appears to be half erect. In height they vary from five to six feet. The roar of the Gorilla is the most unearthly and terrific heard in the African wilds and resembles very much that of the distant thunder, and can be heard for a great distance.

The following is from one of my esteemed nephews, and I am desirous of having my young friends' assistance in putting it to rights:

A PUZZLE.

Mr. Five-Quarter Wood:

Your who, which and that came to see me the other day, when the most extraordinary word connecting sentences of curious circumstances took place. But I must recount the facts, in order that you may see the position without magnitude of my story. They had brought with them a beautiful 21s. hen, intended as a gift for a neighbor. During the night it escaped from the public 16 oz., where had been left some poisoned thirds of an inch with which it began to 8 quarts away as fast as it could. As a matter of course, a . was soon put to its existence. They were much alarmed when they found it was gone, and even made no 20 grains to hint that a distinguished and exiled 5 1/2 yards, who was staying at my house, knew about it. Of course I was shocked at so 12 doz. an insult to my friend; it incensed me to that 360th part of a circle that I felt it would not be too 40 rods under the circumstances to order them to leave my house. Why! they might as well have accused me of being in 3 miles with a rogue! Happily, however, the keeper of the 16 oz. who is a leader of the 24 sheets of this village, found the body, brought it to my house, and explained the matter. Your who, which and that apologized to me and the 5 1/2 yards. We smoked 2 hogsheds of tobacco apiece, and happiness was once more restored.

Business is good, the 10th of a cent is running again, and every 4 inches is again employed.

Yours truly,

THREE BARLEY CORNS WITHOUT HAIR.

Hattie wishes some of her nieces and nephews to try the following experiment:

THE EYE.

There is a spot in your eye that is not sensitive to light—a part of the eye with which you don't see. Shut your left eye and with your right look steadily at the cross below, holding the paper ten or twelve inches from the eye.

X

Now move the paper slowly toward the eye, which must be fixed on the cross. At a certain distance the other figure—the letter O—will suddenly disappear, but if you bring the paper nearer it will come into view. You may not succeed in the experiment on the first trial, but with a little patience you can hardly fail.

HATTIE HAVILAND.

A New Use for Rum.

The seizure of liquor by the State constables in Massachusetts furnishes many refreshing little incidents which help to make life tolerable in that dry and thirsty land. At North Adams, the other day, a resolute officer seized a jar of something and took it before a magistrate, when the following interesting examination took place:

The attorney for the prisoner asked the constable if he knew it was liquor. He replied: "Yes, it was rum; I drank some of it." The prisoner, a woman, was called. "Did you have any liquor in your house when the State constable called there?" "Yes, I had some in a jar." "How long had you had it?" "About six months." "Did you have it for sale?" "Oh, no; I don't sell liquor." "What did you keep this rum for?" "I kept it to wash the baby." "Had you ever washed the baby in this rum?" "Oh, yes, often; I used to turn the rum out in a dish, wash the baby in it, and then turn it back into the jar." There was laughter in the court, and the State constable declared he would seize no more liquor kept in a jar.

A gentleman walking with two ladies, stepped on a hogshhead hoop, that flew up and struck him in the face. "Mercy," said he, which of you dropped that?"

Employment

A "techy" not agree, well," said

"Never p to-day," sat ma, let's eat

"Come, down, and time." "them."

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A minis one of his host diggin who was and accoste you doing sir," said it is very if you dig git 'im; ca to dinner,

HUMOROUS.

Employment begets cheerfulness.

A "techy" husband told his wife they could not agree, and must divide the house. "Very well," said she, "you take the outside."

"Never put off till to-morrow what you can do to-day," said a mother to her son. "Well, then, ma, let's eat the berry pie in the cupboard."

"Come, go to bed, Eddie; you see the sun is down, and the little chickens all go to rest at that time." "Yes, aunt; but the old hen goes with them."

An Irishman, sent to trim a young orchard, was asked if he had finished. "No," said he, "I have cut the trees down, and shall trim them to-morrow."

A young man charged with being lazy, was asked if he took it from his father. "I think not," was the reply; "father's got all the laziness he ever had."

A soldier telling his mother of the terrible fire at Chickamauga, was asked by her why he did not get behind a tree. "Tree," said he, "there wasn't enough for the officers."

An old woman, driving a four-footed troop, was accosted by a young man with, "Good morning, mother of donkeys." The dame meekly replied, "Good morning to you, my son."

A governess, in her advertisement, stated that she was complete mistress of her tongue. "If that's the case," said a caustic old bachelor, "she can't ask too much for her services."

An old woman in Yorkshire crossed a bridge that was marked as "dangerous," without seeing the sign. On being informed of the fact on the other side of the river, she turned about and immediately re-crossed.

"Patrick," said a priest to an Irishman, "how much hay did you steal?" "Well," said Pat, "I may as well confess to your reverence for the whole stack, for my wife and I are going take the rest on the first dark night."

A housemaid who was to call a gentleman to dinner, found him engaged in using a tooth-brush. "Well, is he coming?" said the lady of the house, as the servant returned. "Yes, ma'am, directly," was the reply. "He's just sharpening his teeth."

An Irishman, describing America, said:—"Ye might roll England through it, an' it wouldn't dirt the ground; ye might drown Ould Ireland in its fresh water ponds, and ye could stick Scotland in a corner an' niver know it, barrin' the smell of the whiskey."

The landlord of a hotel said to a boarder—"Look a here! I want you to pay your bill, and you must. I have asked you often enough for it, and I tell you now that you don't leave the house until you have paid it." "Good," said the lodger. "I'll stay with you as long as I live."

A Yankee riding up to a Dutchman, exclaimed—"Well, stranger, for acquaintance sake, what might your name be?" "Vy, my name ish Hans Hollenbuffenhuffenhoffengraffenringobraeghtoonisbaugh!" "Well," replied the Yankee, "I guess as that is your name, for acquaintance sake I'll cut it."

"Going to leave, Mary?" "Yes, mum; I find I am very discontented." "If there is anything I can do to make you more comfortable, let me know." "No, mum, it's impossible. You can't alter your figger, no mor'n I can. Your dresses wont fit me, and I can't appear on Sundays as I used at my last place, where missus' clothes fitted zactly."

An Irishman, addicted to telling queer stories, said he saw a man beheaded with his hands tied behind him, who directly picked up his head and put it on his shoulders in the right place. "Ha! ha! ha!" said a bystander, "How could he pick up his head when his hands were tied behind?" "An' sure what a purty fool yer are," said Pat; "couldn't he pick it up with his tathe."

A minister, going to dine after a sermon with one of his deacons, came upon the hired boy of his host digging at a woodchuck's hole. The parson, who was unknown to the boy, checked his rein and accosted him with, "Well, my son, what are you doing there?" "Digging out a woodchuck, sir," said the boy. "Why, but don't you know it is very wicked? and, besides, you won't get him if you dig for him on Sunday." "Git 'im! I must git 'im; cause the minister is coming to our house to dinner, and we ain't got any meat."

Winnie May's Department.

Household Recipes.

DEAR MINNIE MAY:

Your column is a real benefit to those who have access to it. I will send you a recipe for

MAKING JELLY WITHOUT FRUIT.

Take water, one pint; add to it pulverized alum, one oz.; boil a minute or two, then add 4 lbs. of white crushed sugar; continue the boiling a little; strain while hot; flavor with lemon, vanilla or strawberry.

TO PREVENT TINS FROM RUSTING.

When the vessels are finished with, wipe with a dry cloth and place near the fire.

TO CLEAN SPONGE.

Five cents' worth of salts of lemon; put it into two pints of hot water; then soak the sponge in it; when it is clean, rinse in a little clean water.

HONEY SOAP.

Cut thin two pounds of good home-made soap into a double sauce-pan, stirring it until it melts, which will be in a short time if the water is kept boiling around it; add quarter of a pound of palm oil, quarter of a pound of honey, five cents' worth oil of cinnamon; let all boil together six or eight minutes.

LIP SALVE.

Spermaceti ointment, half an ounce; balsam of Peru, one quarter of a drachm, mix; apply before going to bed.

TOOTH POWDER.

Burn a slice of bread in the oven until it becomes charcoal; then pound in a mortar and sift through a fine muslin cloth. MRS. S.

HOW TO LAY ON PAPER.

Two persons are required to lay on paper with rapidity, one to paste and one to apply the paper. When the paper is pasted it should be handed to the person on the ladder, who holds it about a foot from the top end, and lays it evenly against the wall at the top, allowing the upper end to hang over on the backs of the hands. By looking down the wall it may be seen when it matches the previously laid length, and after adjusting to match it should then be brought gently to the wall, the backs of the hands then pressed against the wall and passed upward toward the ceiling, spreading them out toward the corners of the length of paper. The scissors are then run along at the juncture of the wall and ceiling, making a mark which can be easily seen, when the top of the paper is removed for a little distance, and it is cut off even and replaced. Then a soft cloth is gently passed downward and the paper pressed against the wall at the bottom, where it is cut off as at the top.

COTTAGE CHEESE.

Place thick, loppered milk on the stove, and let it heat thoroughly, not to cook, or it will be hard. Pour into a coarse cloth, and let it drain until dry; season with salt and butter. Should it be rather dry, moisten with milk or cream, and make into balls.

Some prefer what is called "smear-kase." Prepare the milk as stated above, but instead of making into balls, thin with sweet cream and add a little pepper.—Country Gentleman.

INFLUENCE OF COLOR.

The *Herald of Health* is of opinion that the simple color of one's surroundings has a marked influence on his health. It says:

"Yellow on the walls of our rooms has a very depressing effect on the mind. Violet is worse. A man would go mad in a little while in a violet papered or painted room. Black rooms, or rooms heavily draped in mourning produce gloom and foreboding. Never wear mourning long, unless you wish to become sad and sorrowful beyond what nature ever intended."

To take stains out of mattresses, apply a paste of soft soap and starch over the spots, and wash it in with a damp sponge; if not clean at first, put on another paste, and repeat this until the spot disappears.

GREASE SPOTS.

One ounce of pulverized borax put into one quart of boiling water and bottled for use, will be found invaluable for removing grease spots from woollen goods.

TO CEMENT MARBLE.

The *English Mechanic* gives these three recipes for cementing marble.

1. Melt together eight parts of resin and one of wax; when melted, stir in four or five parts of plaster of Paris. The pieces to be joined should be made hot.

2. Procure a small piece of quicklime fresh from a newly-burnt kiln, slake with the white of an egg, wash the fractured parts quite clean, and apply.

3. Soak plaster of Paris in a saturated solution of alum, bake it in an oven, reduce it to powder, mix with water, and apply; it sets like granite.

INDIAN CHENEY SAUCE.

Eight ounces of sharp, sour apples, pared and cored; eight ounces of tomatoes, eight ounces of salt, eight ounces of brown sugar, eight ounces of stoned raisins, four ounces of cayenne, four ounces of powdered ginger, two ounces of garlic, two ounces of shalots, three quarts of vinegar, one quart of lemon juice. Chop the apples in very small square pieces, and add to them the other ingredients. Mix the whole well together, and put in a well-covered jar. Keep this in a warm place and stir every day for a month, taking care to put on the lid after this operation; strain, but do not squeeze it dry; store it away in clean jars or bottles for use, and the liquor will serve as an excellent sauce for meat or fish. Make this sauce before the end of October.—Mrs. Beeton.

A GOOD BREAD PUDDING.

Take five slices of dry bread, or their equivalent in broken pieces, pour over them three quarts of sweet milk, let them soak two or three hours, then add four or five eggs, beaten well with one large cup of sugar, a teaspoonful of salt, and spice or nutmeg to suit the taste. Do not crumb the bread, but just break the slices in several pieces, letting them float in the milk. Bake in a dripping pan one hour and a quarter, in moderately hot oven, by which time the pudding should be nicely browned, with a rich custard beneath the bread. To be eaten warm, with no dressing except butter. Very good cold.

RICE PUDDING.

Into a quart of sweet (new, if possible), milk pour a teacupful of rice; let it stand over night. In the morning place the vessel containing it in a saucepan of boiling water. Let it remain till thoroughly cooled. Beat the yolks of three eggs with a teacupful of sugar; add lemon or nutmeg. Take out all the rice, stir in the eggs, and set it away to cool. Beat the whites to a stiff froth; sweeten and flavor. Spread it over the pudding and place it in the oven till nicely browned.

Produce Markets.

NEW YORK.—The market is steady and buoyant for wheat, with no change in prices. The foreign markets have shown little alteration for some days. Spring wheat is rather firm in Liverpool, but winter wheat has fallen off a cent a bushel. Barley is quiet and inactive, though the same high rates when compared with the prices of wheat, have continued throughout the season, and are unchanged. Of oats, the price is steady with an advancing to an upward tendency; corn, fir. lye has remained firm with light supply.

The hop market is dull, with a decline of prices; the wool markets are dull, and there is no disposition on the part of the manufacturers to secure stock.

NEW YORK.—Wheat, \$1 14 to \$1 23 per bushel; barley, \$1 10; oats, 67c to 70c; butter, 17c to 20c per lb; cheese, 10c to 16c; corn, 84c to 85c per bushel.

DETROIT.—Wheat, \$1 08 to \$1 15; rye, 90c to 95c; barley, nominal, \$2 25 to \$2 75; potatoes, 86c to 1 00; butter, more plentiful and lower prices.

MONTREAL.—Flour markets quiet; demand limited, \$4 40 to \$4 90 per barrel.

LOXDON, ONT.—White wheat, \$1 40 to \$1 57, red do., \$1 40 to \$1 45, spring, \$1 40 to \$1 50; barley, \$1 50 to \$1 70; peas, \$1 15 to \$1 20; corn, \$1 05 to \$1 12; rye, \$1 10 to \$1 20; butter, keg, 18c to 20c, fresh do., 20c to 25c; cheese, 10c to 11c; beef, per, 100 lbs, \$4 50 to \$6 50; dressed hogs, \$7 10 to \$7 75; potatoes per bag, \$1 25 to \$1 50; oats, \$1 20 to \$1 22.

Catalogues of the Season.

We can do little more than name those beautiful illustrated catalogues that have been laid on our desk. While the snows and frosts of winter are, now at the end of April, still lingering in our fields and gardens, the beautiful illustrations of summer plants and flowers make us less mindful of the naked cold of the young year, that seems so unwilling to give place to the season of flowers and fruit.

There is Vick's Floral Guide, ever welcome to our sanctum, the frontispiece a beautiful double petunia; and here, the Floral World of Briggs, of Rochester, presenting us with a new flowering phlox drummondii. D. M. Ferry, of Detroit, in his Seed Annual, gives us the Emperor William pansy. The rose, the "Queen of Flowers," has a whole descriptive catalogue by the Dinger & Concord Co., and the catalogue of P. Henderson presents, in a double sheet, a lovely group of dianthus or pink. We have also illustrated catalogues of Schlezl, Everett & Co., Rochester, N. Y.; of Phenix, Bloomington, Ill.; Reeves & Simpson, N. York; Cosman & Co., Rochester, New York; Gregory, Marblehead, Massachusetts; Allen, New York; W. Rennie, Toronto; Simmers, Toronto; Steele Bros., Toronto; R. Evans, Hamilton; Bruce & Co., Hamilton; W. H. Marcon, Guelph; Geo. J. Child, London, Ont.

NURSERIES.—We have from Pontey & Taylor, Hyde Park, London, Ont., a full description of trees, shrubs, &c.; Ellwanger & Barry, Rochester, N. Y., who have the largest nursery in the States; Scroder, Bloomington, Ill., grape growers; Moodie & Sons, Lockport, N. Y., ornamental trees; Spooner, Boston, Mass., flowers, &c.; High Holborn, London; and Lawson & Co., of London and Edinburgh.

Illustrated Catalogue of Potatoes—B. K. Bliss & Sons.—Messrs. Bliss offer to purchasers new varieties for 1875. The Alpha, claimed to be the earliest variety in cultivation. Price, \$3 per lb. Eureka, said to be very productive and an excellent keeper. Acme, said to be most valuable for the main crop over a great extent of country. Early Nonsuch—A few days later than the Early Rose; expected to be a most valuable market potato. Of those newest varieties we have no personal knowledge.

Varieties of 1874.—The Snowflake—Early as the Early Rose, healthy, hardy, of good quality. Brownell's Beauty—Those that we sent out last season gave the greatest satisfaction. So far, they are as represented, of beautiful appearance, productive and of good quality. Extra Early Vermont—This variety is said to surpass the Early Rose in quality, hardiness, earliness and yield. All the reports we have seen of it are very favorable. Compton's Surprise—This variety is wonderful for its fine quality and productiveness. It retains its quality throughout the year. Such is the character given to it. Another season will test its value.

New English Varieties—Sutton's Red Skin Flour Balls—One of the most popular of English varieties; very free from disease and superior for cooking. Very productive, of fine flavor and an excellent keeper. Sutton's New Hundred-fold Fluke, also by Messrs. Sutton & Co.

Prize Essays.

We offer prizes this month for the best essays for and against the Government Farm, as beneficial or injurious to the agricultural interests. Not to exceed one and a half columns. To be in this office by the first of May, and to appear in the June No.

THE PRIZE ESSAY ON BARNS.

From the unavoidable delay in adjudging the prizes for essay and plan of barn, and the additional delay of having the plan cut, we are unable to have them appear in this issue of our paper. Some contributions received and other original matter are also crowded out. If Mr. Hunter wishes to have the plan earlier he has but to write to us.

CAUTION.—Beware of the vendors of the Bohemian or Hulless Oats; also of grain claimed or represented as being the same, or as clean and pure as ours. If you find travellers selling doubtful articles or wonderful patents of any kind, let us hear about them at once.

To Exterminate Lice on Swine.

A correspondent of the *Rural World* gives what he calls a mode "simple, very effective and perfectly safe," to wit: Soap and warm water, applied thoroughly with a brush. He says, "If more than one animal is washed, it will be advisable—at least I think it is more effective—to soap two or more before the washing of the first one is finished, so that the foam may remain a little longer in contact with the skin."

SPECIAL ADVERTISEMENTS.

At the Annual Meeting of the Farmers' Club, held at the Village of York, under the auspices of the Western Branch Agricultural Society (on February 8th), the members of the same who purchased your Day Rake through the Club, were so highly pleased and satisfied with the same, that they considered it their duty to send you a certificate:—

WE, the members of the Farmers' Club, held at the Village of York, hereby certify our satisfaction with the Day Rake, bought from A. Howell, Esq., Manufacturer, Bradford. The Rake is strong, easily worked, and does its work well.

Signed on behalf of the Club—

WM. D. THOMPSON, President.
N. H. WICKETT, Vice-President.
F. A. NELLE, Secretary.

York, Feb'y 8th, 1875.

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Rhubarb choice seedlings	1 50 12 50
" " free by mail	10 50
Ash, White 8. 10 ft	6 50
Black Walnut 10. 14 ft	15 120
Blm, White 10. 12 ft	7 50
Hoozy Locust 8. 10 ft	10 80
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4-1in

We very often ask which are the best to keep? To succeed in the dorking, money by selling other varieties, and general utility above named stock are preferable to

Sul

There is no cheaply obtained satisfactory in its the system of and to a small degree there is a greater utility for it than otherwise would. It can be admitted to the fowl by h it in a small box that they can themselves, or by ing it with their once a week, often as there are cations of ve Penetrating, does, to every p the system, the asites are quick surely destroyed gripes are said prevented in chi Fowls need it than most an their feathers coming between four five per cent. phur. Their egg have a small qu which is notice the discoloring silver spoon wa comes in contact a boiled egg. A externally to th when on the m the nest itself, or with the soil dusting box, equally efficaci destroying veru be used as a fun of building, it cessary to reme fowls, close the house, mix a lit petre with the in an iron vess apply a match the morning, in the afterno mixed with su plied as often the neck and very good safe Poultry World

L

GOUT, MEGRIM

To the Editor of Sir:—In asking for a his fowls are has not suff form what however, I w perience and