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THE
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AND

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OF UPPER CANADA.

VOL. XII.

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No. 10.

SPRING WORK ON THE FARM.

The weather is now very favorable for the progress of early sown spring crops; the recent welcome and copious rains have moistened the dry soil, and the temperature is such as to cause vegetation to advance rapidly. Oats, barley, peas, &c., are all mostly sown before this. There never was a finer spring than the present or getting along with all kinds of work, the ground having been since the breaking up of winter, in a sound, dry state. Till the recent showers, vegetation had made but little progress, and the pastures were remarkably bare. A great change has now taken place, and a good bite of grass will be ready for the cattle in the course of a few days, if the present favorable conditions of heat and moisture continue. Stock have got through the winter better than as anticipated at the commencement; the great falling off of hay last season in this section of the Province, has, to a great extent, been met by an increased amount of turnips, mangels, carrots, &c., raised last summer; and large quantities of hay have been brought from Lower Canada, where that crop was comparatively abundant. Winter wheat unfortunately has been much injured on old exposed land by

the severe frosts that followed the departure of the snow; and in some situations we learn the destruction has been complete. Spring wheat has every where been increasing for the last few years, in consequence of the uncertainty attending the winter kind, and a very large breadth has been got in this season, under favorable circumstances. Indeed some farmers have deferred sowing the *Fife* variety until the present, (the middle of May) with a view of escaping the ravages of the midge. We knew of several instances last year of that kind of wheat being sowed, on suitable and well prepared land, as late as the 18th and 23rd of May, producing good crops, from 25 to 30 bushels an acre. As a general rule, however, the earlier sown will yield a larger and plumper grain.

The main crop of Potatoes should now be got in as soon as possible. The soil requires to be deeply tilled, and when the manure is applied broadcast, it should be finely divided, and well incorporated with the earth. Potatoes are this season unprecedentedly cheap, and a large amount must have been fed to cattle. There can be now no excuse for setting small and inferior tubers; select good sound seed of the ordinary size, so cut as to leave three, certainly

not less than two, eyes, indicating vigour; and if other conditions are favorable, they will at once commence a healthy growth, and yield a large return. Much will depend upon the after culture that potatoes receive. Cultivating between the rows by the horse-hoe, so as not only to keep down the weeds, but also to admit freely air and moisture to the roots, with carefully earthing up twice, at the proper times, are well known to be among the most important points in the management of this crop.

Every effort should now be made towards completing the preparation of land for mang-el wurzel and swede turnips; two of the most important crops the farmer cultivates. The former should be sown without delay, if not already done; but the latter may be deferred to the end of the month or the beginning of next, according to the state of the ground and the character of the weather. If swedes are sown too early, especially on rich, moist land, they will be very liable to mildew, and the bulbs will become hard and woody, and consequently much less nutritious. September and October are the months in this climate, when swedish turnips, to be sound and nutritious, should uninterruptedly increase in size and weight.

Both these crops should be cultivated in drills; a practice that may now be considered an essential feature of improved husbandry. The distance between the rows should be varied to suit the strength of the soil, and the size of the variety cultivated. On good land, and proper preparation, mangels should not be nearer in the rows than two feet and a half; and three feet will often be found better. Turnips will require from two feet up to thirty inches; and plenty of room for both should be allowed the plants in the row to attain perfect maturity without crowding. While in this climate it is an advantage to get these crops to shade the ground by the end of July, great care is necessary that the plants be properly set out; as most people allow

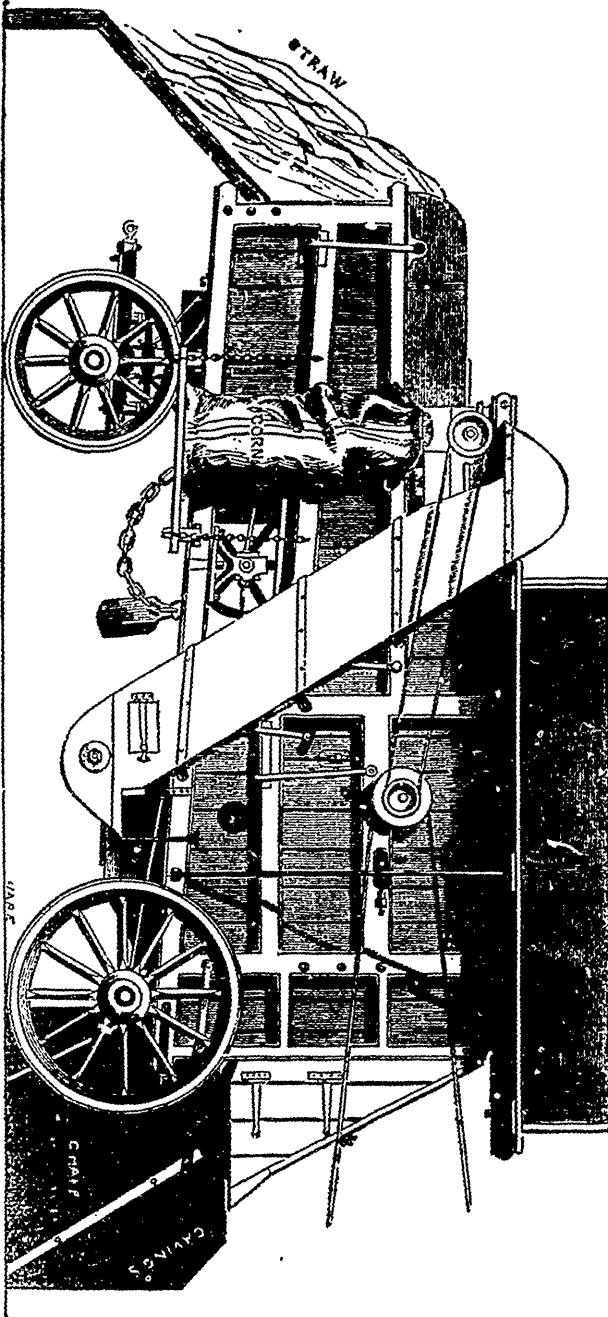
them to remain too close together, thereby diminishing the amount of produce.

The variety, perhaps, which produces the heaviest crop of Mangels is the long red, which is admirably adapted to deep and rich soils; upon such as are shallow the orange globe is more suitable. Of swedish turnips there are many varieties, but the Improved Purple top, introduced by Mr. Skirving, of Liverpool, may, perhaps, be considered as yielding the largest weight. This is a matter, however, that will vary in particular instances according to the nature of the soil, mode of manuring, and character of the season. Laing's Improved Turnip Top Swede produces very pretty bulbs, and better adapted, perhaps, than any other sort of Swedes for table use, but is not the most bulky grower, especially in late districts. No farmer can go wrong in attempting to grow any of the approved varieties of Swedes, the seed of which can now be readily procured of any respectable seedsman in our larger towns; and we would strongly recommend our readers to use every exertion this spring for procuring a good supply of roots, being persuaded that they will find them of the greatest value in carrying their stock through the succeeding winter.

THRASHING MACHINES.

It would be interesting and instructive to trace the origin and progressive development of machinery for the purposes of agriculture; and we should find in, perhaps every instance, improved and efficient implements and machines to belong to the present century, more particularly to the latter part of it. Thrashing by machinery is a practice that has been introduced for a considerable number of years among the larger and more enterprising farmers, yet till within a comparatively recent period, the operation was performed in a rude and imperfect manner; the machines being frequently inefficient in working, requiring great force in order to keep them in

CLAYTON, SHUTTLEWORTH & Co.'s THRASHING MACHINE. (English.)



proper motion, and too commonly leaving more or less grain in the straw unthrashed. As a general thing, however, the machine thrashed cleaner than the flail, and the amount of work done by each bore no kind of comparison. Within the last few years the substitution of steam for horse power in this operation was considered, and very properly so, a great stride in advancement; but now the farmer is not content with thrashing out his grain merely, he must have it dressed, sacked, weighed and thoroughly prepared for market, by one and the same operation. Hence mechanical skill has recently been prolific in so modifying the threshing mill as to render it capable of effecting these various purposes at the same time, impelled by the agency of steam.

The accompanying engraving represents one of CLAYTON, SHUTTLEWORTH & Co.'s Portable Thrashing and Single Blast Machines for finishing the grain for market. It has consequently combined, a single blast, bolting, straw shaking, riddling, barley horning, and winnowing machine, all which operations it performs with accuracy and dispatch.

This well known firm have been distinguished for their superior manufacture of the combined Thrashing Machine, of which they may be said to have been the inventors, inasmuch as they were the first who produced a combined machine that proved of any real or practical use to the farmer. Their straw shaker has undergone great improvement, as it not only shakes the straw much cleaner than any other kind yet brought out, but the improvement has also diminished the wear and consequent expense in repairs, so justly complained of in straw shakers generally. Their new and improved Drum Beater thrashes all kinds of grain, and, from its peculiar construction, renders it much less liable to split the grain than those of ordinary kinds. It also accomplishes what has from the first been the great desideratum in thrashing grain by steam power: thoroughly extracting

the grain from the ear, whatever may be its condition, without splitting the kernel, thereby effecting a great saving.

The machine here engraved has one blower only, and is fitted with Barley Horner, (which can be used or otherwise at pleasure) and well constructed elevators for delivering the grain into sacks as thrashed, and makes four complete separations, viz: the corn, straw, chaff, and pulse or cavings, delivering each in the respective places assigned, and, in most cases, the grain requires only once passing through the ordinary dressing machine to render it fit for market. The price of this machine mounted on wood wheels, and the drum fitted with patent drum beaters, is £30 sterling. The illustration we gave in our last number of a portable steam engine manufactured by this firm is adapted to the working of the thrashing mill, and general agricultural purposes.

THE PROVINCIAL EXHIBITION.

The By-law for raising the money to build a Crystal Palace for the Exhibition has been confirmed by the citizens of Hamilton, the contract let, and the erection of the building, with the pens, fences, &c. energetically commenced, so as to be completed at an early day. The ground plan of the building has been extended from the original design, so that it will afford somewhat more floor space than the Toronto Exhibition Building, and will doubtless be sufficiently commodious for the purpose. There is now considerable probability of its being practicable to arrange for the exhibition to take place during the approaching visit of the Prince of Wales and suite, and in that case we had some reason to anticipate that the Government would be willing to afford additional aid, in the shape of money grant, towards it, by which means the Board of Agriculture would be enabled so to extend the Prize List, or offer such other advantages to exhibitors as to make the occasion a more than usually imposing

display of the industrial products of this section of the Province. As there is still, however, some uncertainty in regard to these events, that is both as to the time of the Prince's visit, and the additional Government aid, the preparation of the Prize List for the Exhibition has been delayed till some more definite information should be obtained, so that the amounts of the premiums and the days for holding the show could be fixed to meet the circumstances. The Prize List therefore will not appear this season quite so early as usual—about the first of June, but as soon as possible afterwards. In any event the amount offered in prizes will not be less than it has been for the two years past, viz: the very handsome sum of nearly \$12,000; and with this ample encouragement before them, farmers and mechanics cannot commence too early to take every pains in bringing the products of their skill to perfection, and doing all in their power to contribute to render the Upper Canada Provincial Exhibition of 1860 a worthy representation of the resources of the country.

WHEAT CULTURE AND DRAINAGE.

We find an article in the London (England) "Gardeners' Chronicle and Agricultural Gazette," for a copy of which we have to thank Mr. Hutton, Secretary of the Bureau of Agriculture, upon "The limit of Wheat Culture in Scotland," accompanied with a table, showing the mean temperature for the months of June, July, and August, during the years 1857, 1858, and 1859, with the height above the sea level, at places in Scotland within, on the borders of, and beyond the wheat region. The table shows that an elevation of two or three degrees of mean summer temperature is sufficient to constitute the difference between a region that will not produce wheat and one where it can be grown profitably. We need not insert the table, however, but the article itself has a practical value, as illustrating the effect of

thorough drainage in elevating the temperature of the soil, and even of the climate itself. We have no lack of warmth in the air in any part of Upper Canada during the three summer months, for the maturing of wheat, the mean temperature ranging probably from 5 to 10 degrees above the averages given in the table; but in many places, owing to an excess of moisture, it is late in the season before the soil has attained its proportionate degree of heat. Could we therefore, by draining, increase the heat of the soil in the months of April and May, so that spring crops could be safely sown early, and fall wheat commence to make root vigorously, so as to get quickly beyond the danger of heaving out by the night frosts, and come into ear too early for the operations of the midge, we should be greatly the gainers. The following is an abridgement of the article referred to; it is written by James Stark, M. D., F.R.S.E., &c.:

The object of all scientific investigations is to reduce them to some practical end; and as we know the influence which temperature exerts on the flowering of plants and in the ripening of their seeds, the extensive meteorological observations made in different parts of the country, if turned to their proper use, ought to throw much light on the subject. At present I purpose to offer a few remarks on the bearing of some of these observations on the limits of Wheat culture in Scotland.

In the cultivation of the cereal crops it is of little or no consequence what the temperature or severity of the weather may be during six months of the year, whether the ground during that period be bound up with hard frosts and covered with ice and snow, or whether it be saturated with rain and enjoy a moderate temperature rarely below the freezing point. Hence it happens that though many parts of the United States and all Canada have their soils bound up with hard frosts, ice, and snow for five or six months every year, as good or better Wheat is raised there as in Britain, where the winter is usually so open that the plough is rarely interrupted above a week or two continuously. For a country like Scotland, situated just on the very verge or limit of the Wheat region, it is of very great importance to ascertain what that degree of temperature is which will

render it profitable to cultivate Wheat, as it is a known fact that thorough drainage and improved shelter have so improved the climate of many districts that Wheat can now be regularly and profitably raised where a few years ago it would not ripen, or only do so in favourable seasons.

The table, which might have been greatly extended, shows some valuable facts relative to Wheat culture. It will be observed, from the observations made on the temperature of the soil, that in the best Wheat districts of Scotland the temperature of the soil itself 1 foot below the surface was, generally speaking, nearly one degree higher than the temperature of the air 4 feet above the surface. This is a fact most important to note, inasmuch as it shows that if the soil be in a thorough drained and porous state, as in the best Wheat districts, the heat absorbed from the sun's rays raises its mean temperature above that of the air over it, and also keeps the temperature of the soil much more uniform from year to year than that of the air, which last is of course more under the influence of all atmospheric agencies, as winds, rains, &c. These facts are especially notable during the year 1859. Thus though the mean temperature of the air during these three months was about $1\frac{1}{2}$ degree lower than during the previous year, the mean temperature of the soil itself was only about half a degree lower, and was in every instance from $1\frac{1}{2}$ to nearly 3 degrees of temperature higher than the mean temperature of the air over it. This greater heat of the soil must have compensated to a great extent for the lower temperature of the air during these months in 1859, and must have contributed powerfully to bring the crop of that year to early perfection.

The principal fact, however, which the table elicits is that in all the good Wheat districts of Scotland the mean temperature of the air during the months of June, July, and August amounted to, and exceeded 57° Fahr.; that in the districts which are on the borders of the Wheat region (that is, districts where Wheat may be, and often is, raised successfully, but cannot be trusted to as a regular crop, and is almost always of inferior quality,) the mean temperature of the air during these months ranges from 56° to 57° ; while in all the districts where the mean temperature of the air during these months falls so low as 55° Fahr. Wheat cannot be raised as a crop. Speaking in a general way therefore the table seems to show that the limits of the Wheat region in Scotland may be defined to con-

sist of a line drawn through all districts where the mean temperature of the air during the months of June, July, and August amounts to 56° Fahr.; all those districts where the mean temperature of these months is greater being within the Wheat region, and those where the temperature is lower beyond it.

Now some useful practical conclusions may be drawn from the facts just recorded. It is seen from the above table that nearly all the low-lying lands on the mainland of Scotland are within the Wheat region, those in the northern counties however being rather on the borders of that region than within it. It is next apparent that where the land is thorough drained and in good cultivation, the mean temperature of the soil during the Wheat months exceeds that of the air over it, so that the Wheat crop is brought to perfection even though the air temperature be from 1° to 3° below the average. This is a truly important fact for the agriculturist who is situated on lands bordering the Wheat region, for it indicates to him that if he can so improve his land as to cause it to absorb and retain a greater amount of heat, he may bring his land within the Wheat region, even though the temperature of the air rather indicates him to be beyond it.

All are aware that thorough drainage and shelter improve the climate, as it is termed; and numerous spots could be pointed out where Wheat now forms one of the staple crops, where formerly its growth was quite precarious, and it only ripened in favourable seasons. What has been done in one place may be done in nearly all the districts of Scotland where the ground is arable; for there are few level or gently undulating spots of good soil in Scotland under 600 or 700 feet of elevation above the sea in the southern and midland counties, gradually sinking to 200 feet in the northern counties, where Wheat may not be grown as a regular crop, provided the ground be thorough drained and sufficiently sheltered. Few seem to be aware of the effect of drainage in improving the temperature. So long as land is in an undrained and damp state much evaporation of water goes on from it, and the first and immediate effect of this evaporation is the production of cold, cold to the amount of from 1° to 3° Fahr. according to the dampness of the land. Any one may convince himself of this simple fact by looking at Mason's Hygrometer. This instrument consists simply of two ordinary thermometers, one of which has its bulb covered with muslin, which is kept con-

stantly wet, while the other is in its natural state and is dry. During the months of June, July, and August, the wet bulb thermometer indicates a temperature from 3° to 4° colder than the dry bulb thermometer, and this is just the difference of temperature between wet and dry land. Though drain and thus dry the wet land, and it once the land, from having a low temperature similar to the wet bulb thermometer, assumes a warmer temperature similar to that of the dry bulb thermometer; and the natural consequence is, that as it only required to gain 1° or 2° of additional temperature to bring it within the Wheat region; the additional dryness being attended with an increased temperature enables it to bring a crop of Wheat to perfection, which formerly it was unable to do. This then is the boon held out to proprietors and tenants to thorough drain their lands, and a few striking examples might be cited where good crops of Wheat have been raised on land naturally beyond the Wheat region, but which, from thorough draining and the nature of the soil, has the soil temperature so raised as to enable it to ripen Wheat perfectly. From the table above given it will be seen that Banchory is naturally beyond the Wheat region, and it is a fact that on the heavy damp clayey soils where Wheat cannot be raised as a regular crop. When mentioning the above facts, however, some time ago to Alexander Thomson, Esq., of Banchory, he mentioned that having thorough drained a field of back peaty soil and broken it up, he found that it produced an excellent crop of wheat; and theory shows that such was likely to be the case, inasmuch as the dark and porous and now dry peaty soil would absorb and retain a much larger amount of heat than the damp clays around, and thus furnish the degree of heat requisite to bring a crop to perfection. Several exactly similar instances in different parts of the country are known to me, one indeed in Wiltshire, where on a similar drained and dark moorland almost peaty soil a crop of Wheat ripened at a height of 900 feet above the level of the sea, though in the district Wheat cannot be grown profitably on 400 feet lower.

From all this it is apparent that Wheat culture may be much and profitably extended in Scotland, but that the first step to take towards this consummation is to thorough drain the land. So long, however, as great tracts of undrained land exist, it is next to hopeless to expect even the drained farm in the immediate vicinity will raise as fine crops of Wheat as it otherwise

would. The evaporation from the great extent of undrained land will lower the temperature of the air all around, and counteract to a considerable extent the higher temperature on the drained farm. In proportion however as the land around is drained, the general climate will so improve that Wheat crops will be enabled to be raised regularly; and the difference between the value of land capable of raising Wheat, and that only capable of raising Oats or Barley, is so great that it is worth every one's while to thorough drain his land, and thus bring it within the limits of the Wheat region. That Wheat was formerly raised in many localities in Scotland where it will not now ripen is well known, as the charters of several of the old families record the quantities of Wheat which certain lands were to pay over annually to monasteries and religious houses; whereas at the present day not a grain of Wheat is raised on the same properties.

It is no degeneration of climate which has led to this result, for the meteorological observations of the last century have proved beyond a doubt that the general climate of Britain is improving. But the result has been produced by the woods which gave shelter to the country having been cut down or otherwise destroyed, and to the land having been allowed to get into a marshy undrained condition; and as all the lands of Scotland a few hundred feet above the level of the sea are just on the borders of the Wheat region, the fall of mean temperature to the extent of either 1° or 2° Fahr. which would follow as a natural result of the land getting again damp, would throw it at once beyond the Wheat region.

Even the lands of Orkney, though naturally beyond the Wheat region, lie so closely upon it that the lowly and more sheltered localities might, by proper drainage and cultivation, yield a considerable amount of Wheat. It is known that within the last 10 years Wheat culture has extended there, and this is evidently due to the improvement in the temperature of the soil produced by drainage alone, as trees cannot be reared for shelter. Here however the extreme limit of the possible Wheat region is so close on the sea level, that an elevation of 100 to 150 feet above the sea level raises it beyond the Wheat region, and destroys all prospect of a Wheat crop.

AMERICAN APPLES.

The following remarks of the *Gardeners' Chronicle*, (English) will be read with in-

terest on this side the Atlantic :

There is, perhaps, no quarter of the world where the apple is cultivated that produces such fine and perfect fruit as a portion of the United States. It is strange that such a very old inhabitant of the Old World should have been perfectly acclimated in the New, and to have such a tendency to "make itself good;" for, from our European sorts—many, doubtless of inferior quality when introduced about 200 years ago—have sprung members of the finest sorts of apples in the known world. The great peculiarity in American apples is their tender, juicy, delicate, half-melting flesh, rich, sugary, and most agreeable, without however, any decided aroma, at least, as far as I have tasted, like our Ribstone Pippin when grown in Kent or Sussex, and some other English varieties. These have, perhaps, more piquancy, but their flesh is hard and breaking, requiring, like the Cornish Gilliflower, iron teeth and a stomach of leather. American apples are, on the contrary, "old men's fruit," and a large Newton Pippin can be eaten with as much comfort as a melting pear. I can imagine no apple more agreeable than the Mother, the Northern Spy, the Melon, and the Reinette de Canada. The American kitchen apples are remarkable for their crisp, juicy flesh, neither too sweet nor too sour, but of the exact quality for pies and puddings. The Rhode Island Greening and the Baldwin are two excellent examples of this class of apples.

There is, also, a class of apples quite peculiar to the States, namely:—*Sweet apples* or pig-feeding apples. These have scarcely any trace of acid, even when grown in England, but are of a luscious, rather dull, sugary flavor. Pigs thrive upon them, and they are grown largely by farmers for autumn feeding. The Jersey Sweeting, Tolman Sweeting, Ramsdell's Sweeting and hundreds of seedling sweet apples are planted to "please the pigs."

But few of the American apples can be grown to advantage in England. Cobbett, when he imported his American Locust and apple trees, used to obtain some specimens to sell his trees by from trees trained to a south-west wall at Kensington, and most magnificent apples they were, quite enough to make his admirers American Appletree mad as they then were. This, however, is sufficient to remind us that American apples should be cultivated in a warm English climate like the neighbourhood of London, and be grown, either trained to walls or in some very warm

situation. The peculiarity of the American climate in bringing apples to such high perfection, is very remarkable. The neighbourhood of Rochester, in the western part of the State of New York, is a great fruit-growing district. • • Rochester is just about in the latitude of Toulouse, in France, the most favorable fruit-growing district in Europe. But how inferior are the apples of France to those of America; and yet the summer heat, of most seasons, at Toulouse, would not exceed that of Rochester. We can go further north in Europe; take Belgium and Holland—the latter, we would think, approaches to the American shores of Lake Ontario, in a moist and warm summer temperature. How dry and poor are nearly all their apples! America must, therefore, take rank as a first-rate apple country.

There cannot, perhaps, be found in any other part of the world so trying a climate for the gardener and nurseryman as in the United States, with the exception of the south. The severe winters often commencing in November and continuing till the end of March, the thermometer descending to 20° below zero, freezing the earth deep as to heave up and destroy trees well established, with the scorching heat and drought of summer, are enough to try the nurserymen and gardeners to their wits' end, and ought to make us "Britishers" well contented with our comparatively mild climate.

LUCERNE, ITS USES AND CULTURE

[We take the following article from the *Valley Farmer*. The writer, Mr. Stearns, of Missouri, has had a long experience in raising Lucerne, which it would be expedient to try in Canada. In Europe it is profitably raised on dry, calcareous soil and makes excellent food for cattle either in a green state or as hay. It requires deep and perfectly clean cultivation, and will come to cut twice and sometimes more in one season.—Eds.]

"Lucerne is a native of France, from whence most of the seed is imported, and is called French clover. It thrives best in a deep, rich, rather sandy soil; but the best known heavy crops taken from soils of different character, where the soil was sufficiently dry and rich. In fact, I have never seen a piece of ground too rich; as

more luxuriant it grows the oftener it is ready to cut down. Its greatest value is for soiling, by cutting it as it is wanted for feeding green to horses, cattle or hogs. When fed to horses or cows, in the early part of spring, it is better to cut a few hours before feeding. Like clover it produce hoven or swelling in cattle and colic in horses, if fed in a wet state. Too great caution cannot be preserved in feeding green clover or lucerne or other grasses to cattle in early spring, more especially when wet with dew or rain.

Every animal eats it with the greatest avidity; but I prefer it to all other grasses for soiling, because it never salivates the horse, and can be cut from the 29th of May to October, and is always healthy for horses when judiciously fed. All other grasses, within my knowledge, will salivate the horse in wet seasons; but I have never known a single instance where lucerne has produced the same effect on the horse. When the milch cow leaves the pasture, a feed at night with lucerne is always relished, and richly pays for the little trouble of cutting and feeding as it is wanted. It is better to have the field or lot of lucerne, located near the barn or place of feeding. Boys twelve years old, ought to learn to cut or mow all grasses. It is best to provide a short strong scythe for common use, as the slender grass scythe is liable to be broken by inexperienced hands. A good broad scythe, two feet or two and a half feet long, I always found the most serviceable. Make it a rule to keep the scythe sharp, and frequently wash the gum off the blade, which accumulates every day or two. The closer the lucerne is cut, not to injure the crown of the plant, and the sharper the scythe, the quicker will be the after-growth. When the lucerne is from twelve to fifteen inches high, it will do to commence feeding; and in five or six weeks where it was first cut, it will do to cut again; and if seasonable it will do to cut from three to five times during the season, according as the summer is warm and seasonable. When the supply is greater than the consumption, and the lucerne is full of blossoms, it ought all to be cut down and cured for hay like clover. It does not require so much spreading as clover, the stem and leaves being smaller than clover, do not contain so much moisture. One acre of lucerne will feed from four to six cows or horses, from May to October. I would advise every owner of a horse and cow, if he has but one acre of land, to put one eighth or one-fourth of an acre in lucerne. In the absence of flowers and shrubbery in the

garden, I have known the borders and vacant spots to be filled with lucerne, so that the noble horse or the docile cow, could occasionally receive from the master's hand a delicious bite of that most valuable grass. Lucerne is as hardy as red clover, the seed resembles clover seed, but is nearly twice the size. It is a deep rooted perennial plant, the roots often penetrating the soil to the depth of two and three feet. It grows rapidly, sending up slender shoots from two to three feet in height, and bears a purple blossom, with the seed in spiral pods, several seeds in one pod. Under favorable circumstances it will stand from ten to fifteen years without re-seeding. It may become foul with weeds or grass, so as to retard its growth; in such a case, it is better to commence in time, and prepare another suitable piece of ground by heavy manuring and deep plowing, and cultivate some hoed crop where no weeds are permitted to ripen its seed. The preparing of the ground is, perhaps, the greatest trouble; but the benefits derived for several years afterwards, will richly remunerate the farmer for all of his extra labor.

In preparing the ground, my practice was to plow as deep as possible with a double horse plough, and follow with the small single horse plough in the same furrow, which would break the ground from twelve to fourteen inches deep. With a sub-soil plow a greater depth can be obtained; but I always succeeded with my manner of deepening the soil, and would recommend others to try the same plan, when the sub-soil plow cannot be had.

Lucerne is sometimes sown in drills from twelve to eighteen inches between rows. I would only advise this plan where the ground is foul and the lot small, as few farmers have the extra time to spare in hoeing the crop. It is much less trouble to prepare a piece of ground in the most thorough manner and sow broadcast. The quantity of seed per acre, is from sixteen to twenty pounds; I prefer the latter quantity as the lucerne is not so liable to be overrun with weeds where it is thick, and the stock is more tender. As before stated, the seed is mostly imported from France—will cost from thirty to thirty-three cents per pound by the same quantity, and can be bought by the same quantity, for 40 to 50 cents per pound. It is always the surest plan to buy seed from some responsible seed store to insure fresh seed, as disappointments in getting good, fresh, clean seed, often discourage young beginners, and retard the introduction of valuable plants to the farming community. The time for

sowing the seed is about the first of May, or as soon thereafter as the season will admit. It has been recommended by some writers, to sow a small quantity of rye, from one fourth to one half bushel per acre. I have succeeded without any admixture of seeds of any kind. I once sowed half an acre in August, and succeeded in getting a good stand; in that case, I have no doubt the rye would have been a good protection, through the winter. I again repeat the declaration, that, I prefer lucerne to any other grass for feeding in a green state, or, as it is generally termed, soiling. It is not suited for grazing—and never having tested its qualities for making hay on a large scale, I cannot speak from my own observations; all that is necessary, is to keep stock of all kinds off of it, both winter and summer, and occasionally if it should require it, give it a dressing of fine rotten manure in the fall or winter—the manure made into compost through the summer and fall. Using the precaution to destroy all weeds and grass before going to seed will prevent the lucerne from being overrun with weeds. It is recommended by some writers to harrow lucerne in the spring; but if all stock is kept off, the ground is not liable to become packed, as the frosts of winter will lighten the soil, and the constant shade from the rapid growth of the lucerne will keep the ground shaded; consequently it is not liable to become close and hard, as when exposed to the sun and wind. The harrow can be used if the ground becomes packed and the field foul with grass or weeds.

THE CLERGY AND AGRICULTURE.

[There is much in the following article, copied from the *Homestead*, an excellent Connecticut paper, that is applicable to this Province, and that corroborates the observations of our correspondent "Clericus" in a previous number of this journal. In the British Islands the Clergy have been distinguished for their exertions in promoting the extension and improvement of agriculture and horticulture, as well as education, savings' banks, friendly societies, &c. The late Rev. Mr. Berry, in Leicestershire, was not only one of the most distinguished improvers of Shorthorn cattle, but a faithful and exemplary parish

minister; and who has not heard of the celebrated Martin Doyle, in Ireland, a fictitious name for a good and zealous clergyman, whose numerous writings on rural and domestic subjects have proved a blessing to that country? The Scotch Clergy are well known for their enlightened zeal in forwarding these interests; the first reaping machine was invented by a minister of the Kirk, the Rev. Patrick Bell, and put into operation before it was thought of on this continent. The Monks of the middle ages were the great improvers of agriculture, as they were the conservators of learning. It would be a happy thing for Canada if every settled minister in the country was provided with a comfortable home and glebe, which would materially aid him in supporting his family, and afford him an opportunity of testing new varieties of plants for the farm or the garden, and of illustrating the principles and application of science generally in reference to rural pursuits. In this important work all denominations could readily co-operate.—

—ED.]—

Every good cause looks very naturally to the clergy for sympathy, and for its most efficient helpers. In this Commonwealth they have a well-established reputation for hearty labors in the promotion of all the temporal, as well as the spiritual interests of men. From the first settlement of the country, until the last generation, they were identified with the agricultural interests of the parishes in which they were settled. It was customary in the settlement of our townships, to put him not simply upon a salary, but upon a solid piece of territory, a sort of index on the part of the people of the solid character of the pastoral relation. They welcomed him to a parsonage and glebe, and expected him to identify himself with all the temporal interests of the parish, to cultivate the soil, and to get his bread in part by that primitive method, the sweat of his face.

Nothing is more common, in the settlement of our townships, than these grants of land, either directly to a minister, in his own right, or to the parish for his own use. This course was indicated probably by the necessities of a new country, where land was cheap and money dear, but it was as wise as it was ne-

cessary. It tended to make the pastoral relation permanent, and to draw forth the best efforts of the pastor in behalf of his people. He could feel at home among them, and lay his plans for the whole of life. It tended to make him a diligent student, for he had no expectation of moving to the next parish, to live upon the pulpit preparations of past years. Necessity was laid upon him to study and grow, mentally, to meet the wants of a people with whom he expected to die.

It tended to make him a diligent laborer in his fields, either in person, or in directing the labors of others, for he could expect to reap the harvests of the fields that he sowed, and to eat the fruits of the trees that he planted. He could gather around him the comforts of a permanent home in the country, and expect to enjoy it while he lived.

This policy of our fathers fostered a love of agricultural pursuits among the clergy, and some of the best farmers the state has ever produced, have been connected with this profession. Jared Elliot, of Killingworth, was a good type of the Connecticut clergyman of the last century. Says his biographer: "He published agricultural essays, and devised various ways for draining swamps in the interior, and also for reclaiming marshes from the sea. He was very industrious and methodical, and was particularly careful, that whatever he undertook should be well executed. It is difficult to conceive how one could be successful in such a variety of pursuits as those in which he was engaged; for he seldom failed in any undertaking. He possessed a very large estate in land, which consisted of farms in various sections of the State. These were generally better cultivated, and furnished more profits than those of his neighbours. Amid all his avocations, as a farmer and physician, he was distinguished for his piety and talents as a clergyman. So conscientious was he in the discharge of his duties as a Minister, that he always so contrived his journeys as to be with his people, if possible, on Sundays; and for forty successive years in the course of his ministry, he never omitted preaching either at home or abroad, on the Lord's day."

Owing to the insecurity of the pastoral relation and other causes, there has been a great change in the habits of the clergy in regard to agricultural pursuits. The parsonage lands in many of the towns have been sold, and invested in stocks paying larger dividends. The parsonage itself in many of the parishes, especially in vil-

lages and cities, has disappeared, and the pastoral relation has become a matter of convenience between the contracting parties. Ministers have been virtually thrown back into a sort of nomadic life, having about as little attachment to the soil of their parishes, as the Arabs of the desert. They form no strong attachments, and for slight causes they ask dismissal of their own prompting, or to suit the caprice of the people. This instability of the pastoral office is by no means confined to the cities and villages. Rural parishes are quite as much infested with the love of change, and statistics will show even shorter pastorates.

It is not then altogether an irrelevant question that we propose to discuss, viz: What can ministers do to promote the interests of agriculture? The leading secular interest of three-fourths of our parishes is husbandry, and the temporal prosperity of these communities must wax, or wane, with the cultivation of the soil. For want of a better method of agriculture, many of these parishes have declined in wealth and population, very steadily from 1810 to 1850, and if the decline has been arrested, it has been within the last ten years. Many other parishes have remained about stationary, within the same forty years, while the increase of our wealth and population has been mainly confined to our cities and villages. The improvement of these rural parishes, their steady increase in population, wealth, the means of education, and of religious culture, depends mainly upon the improvement of their agriculture.

Clergymen in these parishes then, have a vital interest in agriculture, and may as legitimately labour to promote it, as to labour for the cause of education, or of temperance, or for anything else, outside of their profession. But it will be said perhaps, by some pastors, and by not a few of their hearers, that a minister ought to confine himself strictly to professional labours within the bounds of his own parish. It is undoubtedly true, that the details of parochial duty are enough to absorb the sympathies, and to occupy all the energies of the best men in the ministry. No parish is so small that it does not afford ample field for the display of the best talents in our churches. But religious sympathy is not a material thing, that it can be confined to the bounds of one parish. The charity which begins at home is least likely to end there. The pastor who finds more than enough to do at home, is the man, of all others, to put his hand to the work that needs doing abroad. It is not because our whole American population is

evangelized that the churches have embarked in the enterprise of foreign mission. Whatever may be the philosophy of this mode of operation, it is generally conceded that it works well, that the churches doing most for the mission field abroad, are most likely to be prospered themselves.

True benevolence is not a hoard of treasures, that can be exhausted by any limited draft upon its resources. It is rather a fountain of living waters, fed by a thousand hidden springs, and giving forth its crystal treasures in perpetual fullness. The man who sustains a colporteur in some destitute field of christian soil, is the man most likely to consider the wants of his own master, and to foster religion in his own neighbourhood. We cannot see that a rule of benevolence acted upon by the churches at large, and by private individuals, is denied to pastors. There is neither wisdom, nor justice, in that sentiment which builds a wall around one parish, and bids him think only and toil only for the religious wants of the people that give him bread. It is not wise; for a self-denying enterprise undertaken for the public good, will often bless his own parish far more than any work aiming directly at their own improvement. It is not just; for the compensation given for his toil is not so far an equivalent that they can appropriate their minister and say he shall do nothing for others.

Pastors, like other disciples, are to do good as they find opportunity, whether within or without parish limits, whether in the cure of souls, or in the cure of the bodies and their circumstances that the souls inhabit. Discreet ministers have a great influence over the secular affairs of their parishes. The strong hold which they have upon the people, as religious teachers and guides, give them great power in other things. They generally shape the interests of education and give much of their time and sympathies to schools and seminaries of learning. They ought, if it is necessary, to teach their people how to cultivate the soil, to be themselves patterns of good husbandry in the garden and in the field. Some of course are so situated in cities, or villages, that this cannot be done. But the large majority can own or hire land enough to illustrate the principles of improved husbandry. Their mental discipline and acquaintance with the natural sciences, fit them to understand scientific agriculture much more readily than the majority of their people who live by husbandry. They can show upon a few acres of land how every farm in the parish can

add twenty-five, fifty, or one hundred per cent to its income. They can illustrate the advantages of thorough drainage, of deep tillage, of working muck mines, of saving manures, of raising improved stock, of cultivating fine varieties of fruits and vegetables.

We claim that the pastor may do this without detracting, in any case, from the value of his pulpit administrations, and in many cases the horticulture and farming will be found greatly to help the preaching and pastoral labor.

Most clergymen suffer both in physical and mental vigor, for lack of exercise in the open air. Many are habitually feeble, and lose days, weeks, or months, every year, from ill health. Those who have robust health, undisturbed digestion, and sound sleep seven nights in the week, and bring out their fall tale of brick at the close of the year, are the rare exceptions. All men need to eat their bread in the sweat of their face, and must do it or do worse. Three or four hours of active exercise in the air and sunshine are none too much for physical health and the highest mental vigor. No sacredness of calling will save a man from the consequence of violating the laws of health. Dyspepsia, vertigo, and hypochondria, will attack a minister as soon as a layman, if he eat too much and work too little. Working with the hands was sound orthodoxy for a pastor in Paul's time, and neither human nature nor the operations of God's grace, have changed, that it should cease to be true doctrine in our time.

Those who preach, then, have either to take time to preserve health by out door employments, or to lose time for want of health, by their sedentary habits. No sane man can doubt which is the better for the profession, and for the cause of religion. Sermons full of the marrow of sound doctrine, and fragrant with the aroma of a healthful piety, need air and sunshine for their growth, as much as the clusters that purple the vine.

The labors of the garden and the field are as good for the mind as they are for the body. They were the employment of man in his innocence, and are appropriate to those who seek to retrieve the ruins of the fall. There is much in a daily intercourse with flowers, fruits and vegetables, to stimulate thought, and to make us wiser and better men. The clergy can do much as cultivators of the soil, being examples to the flock of all that is lovely and of good report, both within parish limits and at the fairs. They can also do much with

the pen, in communicating to the public the facts in horticulture and husbandry, that come under their own observation. No class in the commonwealth have so much power to improve our agriculture.

HORSE TAMING.

From the Ohio Cultivator.

John S. Rarey, having performed his wonderful feats of horse taming, in France, Russia and Sweden, has returned to England, where he seems to be as much of a lion as ever. One who witnessed a recent demonstration, writes the following for an English periodical, which, according to our observation, embodies the substance of all this school of horse taming so successfully practised both here and in Europe. It is an old saw, that a man may be a very clever fellow and yet not know how to make a hat. It is just so in handling horses; if the operator have not the true horse sense, he had best not meddle with edge tools. To what is said below, we will only preface the "how" to put on the strap for holding up the left foot: Take up the foot, hold the buckle of the strap (about 18 inches in length) in the left hand, lay the inside of the strap under the pastern, make one turn around the leg between the pastern and the hoof, carry the strap up the inside, over the fore arm of the leg, and bring it down to the buckle, buckle it fast, leaving a little play between the foot and the leg, and the horse is a prisoner. The rest is only a question of time and patience.—ED :

The horse was standing in the midst of the arena, and watching, rather with the expression of curiosity than of fear and anger, the movements of the man as he strode up to his head very slowly, very gently, and ever with extended hand. At length, when Mr. Rarey was close upon him, he reached out his head, and smelt at his hand, his wrist, his sleeves. There was no precipitation. The object seemed to be to give the horse as much time as he might choose to take. The tamer's hand now caressed the horse's head and nostrils, smoothed it down, passed up to the forehead, and repeated the process. By this time, Mr. Rarey was standing by the horse's left shoulder, and had caught hold, with his other hand, of the end of his head-stall, or halter.

I have been informed that, at this stage of the operation, the horse will break away

more than once; but this is obviously a mere question of time. This I did not see. Mr. Rarey now proceeded to pass his hand down the animal's side, just as any one of us might do to a horse which he was fondling or petting. This lasted some minutes, the horse evidently pleased to be relieved from his terrors, and appearing to enjoy the tamer's caress. At length Mr. Rarey began to stroke his fore legs, more especially the left fore leg. Here was the critical moment. In an incredibly-short space of time, Mr. Rarey got the strap out of his pocket, took up the horse's left fore leg, and slipped a loop over it, so that he could not get it down. There was nothing, however, abrupt or jerking about the way this was done; it was just as though he had been continuously stroking the leg; but the thing was done. This is the real instant of victory. From the moment the horse's leg is strapped up he is conquered. Plenty, however, remains to be told.

The horse stood quiet, and suffered himself to be caressed. Mr. Rarey stroked him over his back, his shoulders, his left side, and then began to make fresh appeals to his right leg. This took some minutes more. At length, he took a long strap out of his pocket, and fastened it by a buckle around the right fore leg, just above the hoof; he then carried the other end through the circingle, holding the end firmly in his right hand.

The next step was to take a short hold of the halter, and to pull with great strength, but slowly and continuously—not by a jerk—on both, but mainly, as it seemed to me, on the halter. The horse now took alarm again, but the upward spring which he gave, to relieve himself from restraint, of course lifted the right leg from the ground, and when he came down again, it was on both his knees. Mr. Rarey had fitted the horse with knee caps before he pulled him down. A considerable time—about ten minutes—elapsed from this period of the operation until the animal was fairly rolled over; and this was one of the most remarkable parts of the exhibition.

Throughout, let him struggle as he might, Mr. Rarey never quitted his left shoulder, nor relaxed his grasp on the strap. The horse reared up into the air, making frantic beatings with his hand-cuffed fore legs, but it was all in vain. Let him fight as he would, he was invariably brought down on his knees; and in this attitude he stood, panting, snorting, foaming, until at last the fierceness of his spirit seemed to give way, and he looked around him rather in a pitiable than a ferocious

way—as much as to say, “this is really to bad!” But whether he struggled, or whether he remained quiet, the even pressure was never taken off his left shoulder.— Before he yielded to it finally, he made one struggle more determined than all that had gone before; but with this his fury was spent. At length, he suffered himself to be literally tumbled over thoroughly tamed. I noticed that, when he was fairly on his side, the poor creature gave a great sigh, which seemed to be one of relief, as though he had thought within himself, “Well! I’ve nothing to blame myself with; but that’s well over at any rate.”— When once upon his side, the horse was effectually tamed; he was as passive in the hands of his conqueror as one of the well-trained circus horses, which, at a given signal, fall upon the floor of the arena, and simulate death.

Whilst the animal lay in this condition, Mr. Rarey patted and stroked him over, or to use his own quaint phrase, “gentled,” first one side, then the other—now this leg then that. From his expressions, you would have inferred that he had magnetized the whole of the horse’s frame in detail, and that, had he neglected to make his passes over any particular section of the horse, that section would still have remained in a state of savagery. Thus you might have three tame legs, and a wild one. This, no doubt, implies an exaggeration. I only mean to convey an idea of the importance which the operator seemed to attach to familiarizing the animal with contact with the human hand over its whole frame. The straps which had confined his fore-legs were soon removed, but still the horse lay perfectly passive, and seemingly content with his situation. Mr. Rarey lay upon him, stepped over him, sat upon his head, took his fore-legs, rubbed them, and moved them backwards and forwards, as you would do if you had intended to restore checked or impeded circulation. The same process took place with the hind-legs—and here it was evident that volition and the power of independent muscular action was gone. The hind legs moved as they were pulled, and remained where they had been placed. Mr. Rarey lay down upon the ground, and, taking one of the horse’s hind feet, placed the armed hoof on his forehead. Had there been but one momentary spasm of volition, or return of ferocity, the horse-tamer was a dead man. He was like a man tied to the mouth of a gun; nothing could have saved him, had the fire been applied to the charge.

This portion of the operation may have lasted about a quarter of an hour. Mr. Rarey then made the horse get up, which he did readily enough, but now every spark of his original ferocity seemed extinct. Saddle and bridle were brought in. They were first presented to the horse, and were carefully examined by him. The examination was conducted entirely by the sense of smell.

When the process of saddling, mounting, and dismounting, had been freely accomplished, a drum was brought in by one of the attendants. This, also, was presented to the horse, who carefully smelt it all over, and soon appeared satisfied that no harm was intended. The drum was passed over his head, neck, shoulders; his sides were rubbed with it; and, finally, it was placed upon his back, and softly tapped at first. The horse merely pricked up his ears. It was sounded louder and louder by degrees, until at last the most enthusiastic drummer would have been satisfied with the disturbance and clatter. This seemed to be the crucial test, and the animal was led out, meek and entirely subdued.

Correspondence.

CARRICK, April 27th, 1866.

Messrs. EDITORS,—I am ashamed of being so late in the year without your valuable paper, but I have been waiting for our Secretary of the Township Agricultural Society to get up a large subscription list, which he has failed to do; therefore I enclose a dollar for a copy each for my neighbour and myself, and request that you will continue to send them until we order you to stop, and we will send the money, if not to the day, not far behind. I must not forget to thank you for the illustrated number of the Transactions. If you have not all the back numbers of this year, send what you have, and the rest as soon as you can reprint them.

We have had a fine time for ploughing, and the farmers of Bruce are making the best of it. There will be a great breadth of spring wheat sown in the county this year. I had 3½ acres of fall wheat last year, which, in spite of all the frost, went 26 bushels to the acre, and I have five acres this year which has stood the winter well, and bids fair for a good yield. I remain, a bushwhacker, and would be farmer.

RICHARD RIVERS.

[We insert the first part of the foregoing letter, principally for the sake of agree-

stating, in reply to it, for the information of subscribers generally, that it is our invariable practice to throw aside entirely our list of subscribers at the end of each year, commence a new book with the new year, and send no numbers of the new volume till ordered. To continue sending on the paper, as is the practice with the ordinary newspaper press, after the term of subscription had expired, would involve the making out accounts, and the outstanding of a large amount of arrearages, which, at the very low rate the *Agriculturist* is published, would be inadmissible. We may also observe for the information of our correspondent, that we could not possibly think of reprinting the back numbers of which we are deficient, unless orders for a large number of copies, say several thousands, should be received, which of course is not probable. The expense of resetting the type would be too heavy. We regret not having commenced the year with a larger edition, but we scarcely anticipated quite so extensive a circulation as we have obtained this year; we shall, however, be better prepared in future. We allude to this point elsewhere. We are glad to find that the prospects of the County of Bruce are so encouraging as stated by our correspondent in the latter part of his letter.—Eds.]

Agricultural Intelligence.

OATS—IMPORTED SEED.

EDS. CO. GENR.—Seeing recently in the Co. Genl., an enquiry whether the sowing of the heavier varieties of oats from England, was attended in this country with advantageous results, I will state that several years ago, another gentleman and myself imported from Liverpool a lot of the Potato oats, a very fine article, weighing 42 lbs. to the bushel—which we sowed. The resultant crop was also heavy, and a handsome sample; though I cannot state with certainty the weight, it was over 35 lbs., and I think it was 37. It continued to diminish in weight with each successive sowing for three years, till it reached my minimum standard for seed, twenty-nine pounds, when

I again changed for the Black oats grown on Prince Edward's Island, whence I generally renew my seed triennially. This also is over forty pounds in weight when well cleaned, and the crop of last year from it weighed thirty-six pounds when cleaned for market, and yielded on thirteen acres, six hundred and fifty bushels, not lodging. Drill sown oats are found to stand better with us than hand sown and harrowed, and the difference is sometimes striking when side by side.

[Our experience very much accords with that of the correspondent of the *Country Gentleman*, as stated above. A few years since the Board of Agriculture of Upper Canada, imported from Aberdeen, in Scotland, several varieties of oats that are much esteemed in the British Islands. The seed of all the sorts was plump and heavy, weighing from 43 to 48 lbs. a bushel. They consisted of the Potato, Hopetoun, Angus, Berlin, Poland, and the Black and White Tartarian. The seed was sown by different persons on various soils, and the result was a gradual deterioration in quality year by year. These oats, however, were generally heavier than the ordinary varieties cultivated in this country for three or four years, when they seemed to have reached their minimum of weight. The mode of preparing the land, and the character of the season, of course affect considerably the quantity and quality of the grain. In Upper Canada our summers are generally too hot and dry for the oat. In the lower section of the Province this crop appears to do better; and in Nova Scotia and Prince Edward Island, owing to the greater moisture of their climate, arising from their contiguity to the ocean, oats yield a heavy grain in large quantities. For ordinary purposes we think that the Tartarian, White or Black, is the best suited to this section of the Province. It is hardy, and will more than make up in quantity what it may be deficient of in weight by the bushel. Seed oats ought to be frequently changed; getting them from different climates and soils as far away as possible. Like pigs, oats rapidly degenerate by sowing the same kind

on the same farm for a number of years. The only remedy lies in frequently changing the seed.—Eds.]

FILTRATION vs. EVAPORATION.

That evaporation is a slow and tedious process, is a fact of which the farmer who has undrained retentive soils, which he would plant or sow in good season, is often reminded, and the thought can scarcely fail to arise, that some quicker way of getting rid of the surplus water would be both convenient and agreeable. If it can be shown that a certain remedy for this source of delay has been found, and can in most cases readily be put in operation at a slight expense compared with its beneficial results, surely none need longer suffer from this cause. That draining is such a remedy—that its application is profitable to the farmer—that in nearly every instance the expense is repaid by longer seasons and better crops, let us attempt briefly to prove.

Look at the retentive soil in spring-time, a stiff clay or hard-pan subsoil, for instance. The water then abundant on the surface and saturating the upper soil, must pass off either by drainage or evaporation. It cannot sink or filtrate away—the impervious subsoil prevents—it cannot drain off; the surface is too level and too retentive of water—hence it must remain stagnant until the warmth of the sun and passing currents of air affect its evaporation. And evaporation is not only a slow process, but a *cooling* one—the heat passing off with the vapour—and in proportion to the quantity of water thus passing, will be the loss of heat from the soil. On the same soil, when drained, filtration will dispose of a like quantity of water without any change of the temperature, save to increase that of the undersoil—equalizing it with that of the surface soil—in spring always warmer than the subsoil. It will dispose of it in a few hours—in a very short time after the frost leaves the ground in spring, or after a heavy shower. Filtration not provided for, the much longer time—weeks instead of hours—required for evaporation, shortens the season of preparation, or totally destroys the chance of a crop.

Could the water now making mortar of many an undrained clay, find an outlet or passage *through* the soil, the character of that soil would rapidly be changed. Who has not observed how soon heavy clays become friable when placed where the water freely flows from beneath them, or who can

fail to see that a like result would follow the deep and thorough draining of even the heaviest soil. And the evils of stagnant water, or water waiting evaporation, can scarcely be overrated. As said above, it shortens the season of preparation for crops, and it also prevents the proper pulverization and culture of the soil; it causes wheat and other winter grains and the grasses, to heave out and winter kill, and fills lowland meadows with wild grasses and weeds, instead of wholesome herbage.

In case and extended time of working, in the effect of manures applied, in the increase and certainty of productiveness, and in many other things which we might name, the difference between a porous or well drained clayey soil, as compared with an undrained and hence compact and retentive one, is almost marvelous. And this difference is simply “filtration vs. evaporation.” In the one, the excess of water has free course through the soil, passing away by the drains without delay; in the other, it must wait the slow process of evaporation, a process leaving the soil more compact than before, and every way less fitted for producing any crop of value.

This difference in the soil “drained, or drowned,” as it has been quaintly characterized, is not only observed in early spring, but in the heat and drouth of summer. A heavy soil becomes far dryer and harder from the effect of dry, hot weather than a light one. The porous soil takes up moisture from below, as well as absorbing it readily from the air. Thus a well drained and deeply plowed soil is little injured by drouth—its increased depth of mellow, friable earth gives greater extent to its power of supplying moisture to vegetable growth.—*Country Gentleman.*

FLAX.

We take the following remarks, upon a new system of gathering and manufacturing flax, from the *Boston Cultivator*.

We have several times alluded to the subject of flax culture in connection with the new mode of preparing it for the manufacture of fabrics. At one of the agricultural meetings at the State House, Mr. Stephen M. Allen presented a pamphlet comprising observations in regard to the cultivation of flax and its profits for the making of “fibrilia.” As the subject is now attracting some attention, we condense from Mr. A.’s paper the following, which may be found to contain useful suggestions.

It is thought that a climate where neither severe drought nor excessive moisture prevails, is best for flax. The best soil is considered to be a deep loam with a clay subsoil, properly underdrained. Undrained clays, and light sandy or gravelly soils should be avoided. Flax should not be put on weedy land, as weeds check the growth and injure the fibre. It is thought best to plough the land in autumn. In the spring, plough again, and make the soil fine by harrowing and rolling. The seed should be plump and heavy, and should be perfectly clean from any other seed. About two bushels to the acre is a fair quantity, which should be sown as early as possible, and covered with a light seed harrow, passing twice over it in opposite directions. The earlier the seed is sown, the more slow and steady the growth, and the better the quality of the fibre. Weeds should be pulled from the growing crop when it is about three inches high.

The time for cutting is when the seeds begin to change their color from green to pale brown, and the stalk becomes yellow for two-thirds of its height from the ground and loses its leaves. If cut too early the fibre is flimsy, if too late, coarse. Cutting should only be done in dry weather.

The flax may be cut with the scythe or with the mowing machine, and cured in all respects as hay. It should be placed in the barn, or formed into stacks in the field as soon as dry enough, avoiding as far as possible, exposure to rain and dew. It may be thrashed by an ordinary thrashing machine, as the tangling of the straw is no injury to the fibre for making fibrilia; and when the seed has been thus removed, the straw may be broken on the farm by Randall's brake, which needs less power than a thrashing machine; or the straw may be carted to designated depots where a brake may be permanently worked, and the tow thus cleaned and scutched, may be sent to market to be cottonized at the factories where used.

By the foregoing method the roots of the flax are left to rot in the ground. The shives or woody portions of the stalk after breaking, if the straw is unrotted, are said to make good feed for stock, if used before fermentation takes place. In unrotted straw, the shives are stated to be equal to three-quarters of the weight of the original straw. The tedious rotting process heretofore practised, is avoided by the new mode. The only value in rotted above unrotted straw for the manufacture of fibrilia, is the difference in weight, which is about one-

half. A ton of unrotted straw, when fully rotted, will only weigh about ten or twelve hundred pounds. It will be seen that the farmer can afford unrotted straw for one-half the price of rotted, besides saving the trouble and expense of rotting; therefore it is better for both the farmer and manufacturer that the straw should not be rotted. As to the effect of flax on the soil, it is thought that if the shives or woody part of the stalk and the oil-cake from the seed, shall be retained for consumption on the farm, it will not exhaust the soil more than any other crop.

The yield of flax varies, like other crops, according to soil and culture. Properly cultivated on a good soil, it should yield two tons of unrotted straw to the acre after the seed is thrashed, with twenty-five bushels of seed. Mr. Allen's estimates are as follows:

Twenty bushels of seed per acre, at \$1.50.....	\$30
Lint after breaking and scutching with Randall's brake and scutcher, should yield 1,000 lbs. at 4 cts.....	40
Value of shives for feed.....	10
	<hr/>
	\$80
The cost of raising the flax crop is estimated as the same as that of oats or wheat, save in the process of breaking and scutching, which might cost by horse-power \$5 per ton.....	\$10
	<hr/>
	\$70

Leaving \$70 as the net profit per acre, which may be increased or diminished according to soil, cultivation and management.

We give these estimates without endorsement. As we have before said, flax has been found a paying crop in some of the Western States, merely for the seed. If the straw can be turned to account by Mr. Allen's process, it is obviously so much gained. We notice that a correspondent of the *Homestead*, in a late number of that paper, says he has cultivated a little flax for several years past, solely for the seed, which he has fed, boiled, to his calves. He adds—"It is worth all it costs for this purpose. If the flax had been taken care of, it would have been worth as much as the seed. Not having any use for it, nor anything to dress it with, it was left to rot in the field. I find it easy to cultivate, and hope some market may soon be found for the fibre as well as the seed."

A WRINKLE FOR FARMERS.—When any of your cattle happen to get swelled with an over-feed of clover, frosty turnips, or such like, apply a dose of train oil, which, after repeated trials, has been found to prove successful. The quantity of oil must vary according to the age and size of the animal. For a grown up beast of ordinary size the quantity recommended is about an English pint, which can be administered readily enough, taking care at the same time to rub the belly well, in order to make it go down. After receiving this medicine, the beast should be made to walk about till such time as the swelling begins to subside.

TRENCHING AND SUBSOILING.—One of the members of the Eastern Pennsylvania Fruit Growers Society, stated that he had had ground trenched about two feet deep at a cost of \$60 per acre, and the crop of potatoes the following year was so heavy as to pay the whole original cost. Another said that he had found horse labor subsoiling to the depth of eighteen inches, cost him about \$25 per acre, and hand labor, twenty-four inches in depth, \$65 per acre.

Horticultural.

AMERICAN STRAWBERRIES IN ENGLAND.

The following remarks are taken from a recent number of the *Florist and Fruitist*, an ably conducted English periodical. The strawberry generally, we think, is of inferior flavor on this continent, to what it is in the British Islands, arising probably from a greater difference of climate than of soil. Our hot and dry weather is no doubt the principal unfavorable condition. In some of the higher and cooler parts of Canada, especially on calcareous soils, the strawberry, when properly selected and cultivated, often attains to a large size, with a rich and agreeable flavour. Some of the most esteemed European kinds do not sustain their high reputation, when transplanted here.

Are American Strawberries worth growing? is a question often asked of us, and doubtless it is a question likely to interest many of our readers, more especially now that the Strawberry is a fruit of especial notice, which is manifest by the number of

seedlings continually coming before the public.

There are now a great many varieties of American origin, and we may suppose that nine-tenths are worthless, judging from those we have grown, such as Hovey's Seedling, Ross's Phoenix, &c., which are considered by all American Pomologists to be among the best in their collections. Now, these varieties are quite inferior to our class of Pine Strawberries, and Mr. Rivers, who is a good authority on the subject, having imported a great many varieties of American fruit, says of the Strawberries, that they "do not seem to be adapted to our climate," and "the best of them is Hovey's Seedling, which grows most vigorously, but is a shy bearer, and of a brisk agreeable flavor, but not at all rich." And Downing, in a work on American fruit, says, "that Hovey's Seedling is, undoubtedly the finest of all varieties for this country, and is well known throughout all the States, and has everywhere proved superior for all general purposes to any other large fruited kind." Although we have not grown or heard of an extraordinary American Strawberry finding its way across the Atlantic, it is no reason why a good one should not some day come forth, that is, when they have passed through many stages of improvement like our own, for, in all probability, our original stock, from whence all our present excellent varieties sprang, were natives of America, viz. the Old Scarlet and Carolina.

The Americans admit that some of the European varieties are superior to their own in size and flavor; still they say, "it is impossible to cultivate them with success, and that every recommendation of these foreign hermaphrodites, as productive and valuable for market purposes, is a gross imposition." They are also termed *fancy* varieties, and Dr. Bayne, who is said to be a "highly intelligent cultivator," says, "all English varieties have proved with me worthless trash." Now, I think, we may return the compliment with a good grace; the only difference is, that we could grow the American varieties in this country perhaps better than they can themselves, only for this simple reason, that they are not worth growing in comparison with our own kinds.

It seems evident that the climate of the States is not well suited to the successful cultivation of the Strawberry, and that none of our European varieties thrive so well as their own inferior strain of seedlings, which are mostly of the Old Scarlet class, and which nearly every grower is

this country has ceased to cultivate, to give place to other kinds of superior merit.

Lately, we have received a descriptive catalogue of American Strawberries grown by W. R. Prince & Co. of Long Island, N. Y., which enumerates 153 varieties, among which number, 63 named kinds, and said to be *splendid*, are their own seedlings, and sent out by themselves; now if all are as good as they are represented, we may suppose them to be the most successful raisers of Strawberries in the world; and in all, their catalogue contains 109 varieties of American origin, and mostly all the European kinds are rejected, among which are all *Myatt's seedlings*; and, when we find that Nicholson's May Queen is described as of fine flavor, Omar Pacha very large and beautiful, and Sir C. Napier as a late kind, we cannot place much confidence in their display of judgment, or the correctness of the description of other kinds.

We have also before us a circular respecting a new Strawberry, named Downer's Prolific Seedling, from J. S. Downer, a nurseryman near Elkton, Todd County, Ky. This wonderful Strawberry is reported to be "ten times as productive as any of the 100 varieties cultivated in that vicinity, averaging 123 berries to each single plant, and of course, in size and flavor, equal to any other variety in cultivation, and not to be sent out till 25,000 plants are ordered;" to Mr. Downer intends, if possible, to be on the safe side, as it is coming out at a very high price, accompanied with a deal of *puff*; and all who may think fit to favor Mr. Downer with an order will have to pay about £1 for 100 plants.

We must leave our readers to judge for themselves whether it is all gospel that our American friends set forth; as for ourselves, we think no American variety would improve our present collection.

THE CURCULIO.

At a recent Show of Fruits at Albany, Dr. Fitch, the well-known Entomologist, delivered a Lecture on the *Curculio* and *Black Knot* on plum and cherry trees; from which we take the following remarks:—

"Dr. Fitch said the *curculio* had been in his thoughts, and had occupied much of his time, the past year. He considered it the most destructive insect we have in our country. The wheat midge had done more injury the few past years, but he thought

its parasite would master it. The *curculio*, unlike other injurious insects, was a native of the country. It had been known for one hundred years, and yet its ravages had not been checked. We had evidence, from BARTRAM and others, that in 1806 it destroyed the nectarines around Philadelphia, but did not injure the plums. It afterward attacked the plums, and finally cherries, apples, and pears. All the Agricultural Journals contain articles describing this insect and its habits; and yet it is not generally known where it keeps itself three-fourths of the year. It is known that the insect deposits an egg in the young fruit, which falls, and the maggot makes its way into the ground, and in three weeks it is ready to come out a perfect beetle. But what becomes of it until the next June, was a very important question. The Doctor was of opinion, from his own observations, that what was known of the *curculio* was only a small part of its history, and that if there was no young fruit it would not be discommoded, but would live on and prosper. They are found upon the plum, cherry, thorn, apple and butternut. Those upon the butternut are larger than those upon other trees, showing that this tree is congenial to them. They are plenty until autumn, at which time they may be found in great numbers upon the golden rod. They generally appear three weeks before there is any young fruit in which they can deposit their eggs. Some of them appear to be epicures, and choose the best fruit, while others, from choice or necessity, are content with the apple and other more common fruits. The non-productiveness of apple orchards was chargeable to the *curculio*.

The Doctor combated the idea of HARRIS, that the *curculio* that appears in the spring is the late crop that has remained dormant in the ground from the July previous, as he thinks the heat of August would certainly mature them. He believes they are hatched in due time, and in the absence of fruit in proper condition for their use, deposit their eggs in the under bark of the apple, pear, butternut, &c., and in the black knot excrescences on the plum and the cherry limbs. Mr. LANGWORTHY, of Rochester, sent him some apple bark, on which was plainly visible the crescent mark of the *curculio*. It was also plainly seen on the butternut bark. The thorn apple, falling from the bush in early winter, often contains the egg of the *curculio*. These remain dormant until the warm weather of spring, as doubtless do those that are laid in the bark late in the

season. Many of the matured beetles, on doubt, shelter themselves for the winter in crevices of the bark and other snug places, where they remain dormant.

The *black knot* was a disease analogous to cancer in the human system, yielding only to similar severe treatment.

The Doctor summed up the subject by stating that there were three generations of the curculio during the season. The earliest, no doubt, deposite their eggs in the tender bark of the young shoots before the fruit appeared. Many of the last crop were overtaken with the cold and sought shelter in the crevices of the bark. Some of the worms had entered the ground so late as to remain dormant until hatched by spring warmth, while others doubtless remain in the bark of trees in the larva state.

No parasite had been found to prey upon this insect until within a few months. D. W. BEADLE, of St. Catharines, sent him some flies which he supposed caused the black-knot. On examining these, he found them to be a curculio parasite—a black, ichneumon fly, with yellow legs and a bristle-like sting, with which it deposits an egg in the curculio worm.

Of the remedies for this insect, Mr. FITCH had nothing new to offer. He spoke of shaking the trees, but not with much confidence, as he said it sometimes failed, and the process bruised the bark and injured the tree. If the Doctor had more experience he would not talk so. Another remedy which he appeared to favor, was a wash of whale-oil soap and tobacco water.

The next day we heard the Doctor recommending plum growers to make troughs of water under their trees, as the cheapest and wisest way of saving their plums. If Mr. FITCH will obtain twenty-five plum trees, and take care of them for ten years, he will be able to talk much more wisely on this subject. Practice is the only balance-wheel for such men.

THE GARDEN.

The principal crops in the kitchen garden should now be got in without delay. Such as were sown early are now coming up, in consequence of the recent genial showers, luxuriantly, and the whole face of nature is rapidly assuming a rich and vernal appearance, indicating the full advent of spring. Summer cabbage should now be planted out, if not done before, but

winter varieties will do by the middle of next month. Melons, cucumbers, corn, beans, peppers, egg plants and tomatoes, should be got into the soil as soon as there is sufficient solar heat, and the absence of considerable night frosts. For cabbage, cauliflower, &c., the soil should be deeply cultivated and liberally manured; indeed this recommendation will apply to all garden crops. After the plants are fairly above ground, the free use of the hoe between the rows, especially in hot weather, will not only keep down weeds, but will promote the growth of the crop in an extraordinary degree.

The Flower Garden will now require constant attention, Hyacinths, Tulips, and other spring blooming bulbs will soon have gone out of flower, and should be succeeded by others, whose beauties will remain longer in season. Taste in arrangement and neatness in execution are essential qualities in every successful cultivator of flowers. The following directions relative to the flower garden at this delightful season of the year, a season pregnant with hope and beauty, from the *American Agriculturist*, will be found both useful and interesting to many of our readers:

In making a selection of plants we shall have reference to securing a succession of bloom throughout the season. Probably, taken all in all, no one plant is more sought after and better adapted for bedding than the Verbena. Reveling in all the tints of brilliancy which can be desired, it has sufficient hardiness, such a good, compact habit of growth, and many of them such a sun-defying rigidity of petal, that if the tribe were extinct to-morrow, we do not know which family of plants could fill the void. It will grow and bloom in almost any soil, and under almost any conditions, but for rich and profuse blooming, should be planted about five feet apart, in soil somewhat sandy, which should be kept well open. The system of pegging down should be followed, and the decaying flowers pinched off. They will soon cover the bed. For a collection of a dozen, we would select: *Robinson's Defiance*, *Brilliant de Vaise*, and *Giant of the Battles*, scarlets; *Anna Cora Mowatt* and *Odoratissima*, purples; *Mrs. Thorburn*, and *Lady Palmerston*, blues; *Mrs. Holford* and *Annie*, whites; *Uncle Tom*, maroon; *Impera-*

trice, *Elizabeth*, violet rose, white, striped, small, and delicate foliage, and *Madama Lamouiniere*, lilac striped with white. To which might be added *Le Gondolier*, carmine; *Lord Raglan*, scarlet cherry; *Fanny Fern*, brick red; *Queen of Summer*, salmon blush; *Mrs. Mildmay*, rose pink.

The Rose needs no eulogium, it gives its own, in fragrance and beauty, and will ever be a favorite. For a dozen we should select, *Giant of the Battles*, crimson; *Souvenir Malmaison*, blush; *Baronne Prevost*, bright rose; *Caroline de Sansul*, delicate flesh; *Jules Margottin*, carmine purple; *Madam Laffay*, rosy crimson; *Hermosa*, flesh; *Louis Odier*, clear rose; *Aimee Vibert*, white clustered; *Madam Rivers*, flesh; *La Reine*, lilac; *William Griffith*, rosy lilac. Tea roses are not adapted to bedding, as in this latitude they require to be housed in winter. *Comte de Paris*, creamy white; *Sufrano*, fawn; *Isabella Gray*, golden yellow; *La Plectole*, lemon yellow, are each worthy of a position in the flower border.

For the best twelve PELARGONIUMS, (Geraniums) we should take six *Tom Thumbs*, scarlet; one each of *Aurora*, cherry; *Lady Turner*, finest white; *Brilliant*, scarlet, silver edged leaf; *Consuelo*, rosy pink, white eye; *Duchess of Kent*, French white; and—*Tom Thumb* again.

FUCSIAS—commonly called “Ladies Eardrop”—Of this queenly flower, it puzzles us to limit our choice to twelve. *Florence Nightingale*, scarlet tube, white corolla; *Duchess of Lancaster*, white reflexed sepals, violet corolla; *Queen Victoria*, carmine sepals white corolla; *Venus de Medici*, white tube, violet blue corolla; *Wonderful*, scarlet reflexed sepals, violet corolla; *Prima Donna*, white sepals, violet corolla; *Macbeth*; *Mrs. Story*; *Charlemagne*; *Trentham*; *Prince Albert*; *Joan of Arc*.

Few hardy herbaceous plants exceed the PHLOXES in brilliancy and variety. **Gæthe*, *Alice*, *Allaire*, *Bella*, *Maria Lamacq*, *Eugenie*, **Gracilis*, **Venus Cambaceres*, *Lawrence*, *Sax*, *Henri Lavergne*. Those marked * are the *Suffruticosa*, or dwarf variety, growing two feet high, and should be planted on the outside; the others are the *Decussata* variety, with strong erect stems, attaining the height of three to four feet. These plants fill up a void which occurs in August and September, are perfectly hardy, and will grow in almost any soil.

We must not forget the beautiful class of plants called VERONICA. Of easy culture, they flower all the Autumn, and within the precinct of Winter. The flowers, in erect spikes of white, blue and pink, are very attractive and pleasing. If better known they would be more appreciated. PLUMBAGO *capensis*, with light blue flowers, good foliage, and blooms nearly all the season. VINCA

or periwinkle, red and white, immense bloomer, rich and glossy foliage—*CYPHEA*, commonly called Ladies' cigar, very interesting and immense bloomer. SALVA, a family of great beauty; *S. patens*, blue, and *S. fulgens* scarlet, and very desirable. BOUVARDIA, a fine plant with graceful, tubular flowers in clusters. LOBELIA, *cardinalis fulgens*, and *speciosa* the first having an erect stem two or three feet high, a mass of scarlet bloom, the latter bright blue flowers. The PÉTUNIAS are well known, and should be in every collection; they sport greatly when raised from seed sown the previous Fall. The LANTANA has a pretty flower, rank foliage with a rough stem, but is a great bloomer; the finer they grow, the more profuse they flower. They form small bushes with pink, yellow, and orange heads. The PINKS and HELIOTROPES are popular favorites, and will, all of them, be highly prized for their fragrance and beauty.

J. F.

FLOWERS.—Of all the minor creations of God, flowers seem to be most completely the effusions of his love of beauty, grace and joy. Of all the minor objects which surround us, they are the least concerned with our absolute necessities. Vegetation might proceed, the earth might be clothed with a sober green; all the processes of fructification might be perfected without being attended by the glory with which the flower is crowned; but, beauty and fragrance are poured over the earth in blossoms of endless varieties, radiant evidences of the boundless benevolence of the Deity. They are made solely to gladden the heart of man, for a light to his eyes, for a living inspiration of grace to his spirit, for a perpetual admiration.

The Greeks, whose souls pre-eminently sympathized with the spirit of grace and beauty in everything, were enthusiastic in their love, and lavish in their use of flowers. They scattered them in the porticoes of their temples—they were offered on the altars of some of their deities—they were strewn in their conquerors' path—on all occasions of festivity and rejoicing they were strewn about, or worn in garlands. The guests at banquets were crowned with them—the bowl was wreathed with them; and whenever they wished to throw beauty, and to express gladness, like sunshine, they cast flowers—*H. Howitt*.

GRAFTING WAX.—A very good Grafting Wax may be made by melting together one part of bees-wax, three parts of rosin, and two parts of tallow while warm, the mixture should be mixed by the hand.

THE COLOR OF FLOWERS PROMOTED BY CHARCOAL.—A French amateur, in the *Paris Horticultural Review* states: 'About a year ago, I made a bargain for a rose-bush of magnificent growth, and full of buds. I waited for them to bloom, and I expected roses worthy of such a noble plant, and of the praise bestowed upon it by the vender. At length, when it bloomed, all my hopes were blasted. The flowers were only of a faded color, and I discovered that I had only a middling *multiflora*, stale-colored enough. I therefore, resolved to sacrifice it to some experiments which I had in view. My attention had been captivated with the effects of charcoal, as stated in some English publications. I then covered the earth (in the pot in which my rose-bush was) about half an inch deep with pulverized charcoal. Some days after, I was astonished to see the roses which bloomed, of as fine a lively rose color as I could wish. I determined to repeat the experiment; and, therefore, when the rose-bush had done flowering, I took off the charcoal and put fresh earth on the pot.—You may conceive that I waited for the next spring impatiently to see the result of this experiment. When it bloomed, the roses were at first pale and discolored; but by applying the charcoal as before, they soon resumed their rosy-red color. I tried the powdered charcoal likewise in large quantities upon my petunias, and found that both the white and the violet flowers were equally sensible to its action. It always gave great vigor to the red or violet colors of the flowers, and the white petunias became veined with red or violet tints. The violets (colors) become covered with irregular spots of a blueish or almost black tint. Many persons who admired them thought them new varieties from seed. Yellow flowers are, as I have proved, insensible to the influence of the charcoal.'—*Cottage Gardener*.

CULTURE OF ASPARAGUS.—In order to grow this vegetable well the soil should be deepened to a considerable extent and well prepared. It should be trenched in the fall and thrown up in rough ridges to be ameliorated by the frost of winter. Forking the ground at every opportunity and turning up fresh surfaces to the influence of the atmosphere, will have a tendency to prepare it for the reception of the seed or the plants in Spring. The beds should be four feet wide, well manured with the richest compost to which a considerable portion of salt should be added. Two rows of plants are sufficient in each bed, and the alleys between the beds, should be two or

two and-a-half feet wide. Many persons plant cauliflowers or brocoli in these alleys, but this practice has been discontinued in the best gardens. The plants should be set out in drills two feet apart, and twelve inches from each other in the drills. Some persons prefer to sow the seed spaced as above, and contend that they can raise stronger plants in this way. Some market gardeners pile on a heavy coat of soil from the alleys early in Spring, and the plants growing up through this, form the slender white stems which are sold in the market, but in the best private gardens the beds are protected by a covering of rich manure during the Winter and early Spring months, this is forked up and broken before the plants come up in Spring, some fresh soil added and the beds raised to a moderate height above the roots. When treated in this way the plants throw up strong and succulent stems, which are cut some inches beneath the surface before they become hard and "stickey." By this latter method of treatment the asparagus is partly of its natural green color and of superior flavor.

CAULIFLOWERS.—The *Gardener's Chronicle*, London, quotes from a German paper the following description of the method used by the Dutch to obtain their Cauliflowers, which are famous for their size and delicacy:

In the autumn they dig deep some ground that has not been manured; at the beginning of May they sow the large English Cauliflower upon a bed of manure, and cover it with straw mats at night. When the young plants are 3 or 4 inches high, they harrow the ground that had been prepared the autumn before, and with a wooden dibble, 18 inches long, they make holes about 10 inches deep, at proper distances apart, and enlarge them by working the dibble round till the hole at the top is about three inches in diameter. They immediately fill these holes with water, and repeat this three times the same day. In the evening they fill them with sheep's dung, leaving only room enough for the young plant, which they very carefully remove from the bed of manure, and place in the hole with a little earth. Directly afterwards they give them a good watering, and as soon as the sun begins to dry them, water them again. Furthermore, as the plants grow, they dig round them and earth them up in rows. When the head is forming, they pinch off some of the lower leaves of the plant, and use them to cover the young head.

HOW TO MAKE EXTRA BRANCHES GROW

ON PEAR TREES.—A writer in the Virginia *Farm Journal* states that he has succeeded in starting branches on his pear trees wherever he wishes a limb to grow. He says: "A careful examination will show plenty of dormant eyes or knarls, on this stock. To produce a shoot a slit or gash is made over the eye into the wood, with a knife or fine saw, which by checking the flow of sap, starts those dormant eyes into life, and in three cases out of four a branch shoots forth."

Veterinary.

HANDLING HORSES WHILE BEING SHOD.

[The following remarks of a Veterinary Surgeon in a recent number of the *Ohio Cultivator*, are of such great and general importance that we here insert the article for the benefit of our readers. Firm, but kind treatment, is essential to the efficient management of the Horse.—EDS.]

Many horses, both young and old, are much spoiled by shoers. Horses sometimes stand quiet and easy, at other times they refuse to stand still while one foot is up—they struggle until it is released, and frequently the shoer beats, speaks sharply, swears and frightens the horse, so that he must be held by force or abandoned. Another takes the tools and sets his shoes without any trouble. Now for a few of the reasons:

Under certain circumstances, the muscles cramp, causing severe pain. Almost at any time a horse's hind leg may be raised so high, or in such a position, as to cause severe cramping not to be endured. When a horse has had all the muscles relaxed by exercise, and stands and cools quick, an unusual position will most certainly produce cramping, and at the same time makes him irritable. A horse that has stood for some time in the cold, uneasy, and suffering with anxiety to get home, is in bad condition to stand the bangs and often painful position of shoeing, and too often fretted to that degree that he never gets over it—too often forced to stand and endure the pain of severe cramping, pricking, etc., until he will never forget it, and often refuses to enter the shop again.

Some horse shoers have a habit of raising the foot and leg so high that no common horse can stand it, and thus he will shoo horses half his lifetime before he

knows the fault is in himself. The awkwardness and ill temper of some shoers is sufficient reason to withdraw your patronage, although they may do their work well. The damage done by forcing the horse to stand in pain, and the injury to his disposition, is infinitely more injury than to go ten miles, and spend a day and pay double price to one who has some sympathy, and shoes him without pain—one who exercises some reason and judgment and patience, and seems to sympathise with the suffering animal—has little or no trouble, and does no damage.

I once knew a horse that if he was minus a shoe, would go by himself to a particular smithy, and there stand until the shoe was set. I once owned a horse that was shod three or four years without any trouble—at last he was sent to a shop to be shod, the shoer being a little intoxicated, frightened him, beat and abused him in such a manner, that he ever after feared to approach a blacksmith shop, and if forced to enter one, would tremble with fear. I think I shall be justified in saying that one-half of the horse shoers are incompetent to the task, saying nothing about their workmanship of setting shoes. I have no doubt but some fancy shoers are the cause of many splints, bogs and curbs, as well as kicking, cringing, pulling at the halter, etc., etc.

Reader, if you are the owner of a good horse, go yourself and see him shod, unless you are well acquainted with the shoer, and know him to be careful, patient, mild tempered and humane. Withdraw your patronage from all reverse characters, before you sustain a loss. Never submit to or employ a shoer, whose character or intellect is inferior to that of your horse. If you do, you may have him lamed, abused and spoiled.

THRUSH IN HORSES.—Thrush, or, as some call it, *frush*, is a disease of the horse's hoof very prevalent in the United States; it is a disease so well known among horsemen that any description of it seems superfluous. Its diagnostic symptoms are fœtid odor, and morbid exudation from the frog, accompanied with softening of the same. For a common thrush, which does not occasion lameness, the remedy is cleanliness: let the feet be washed night and morning, and occasionally immersed in salt and water; the trouble will then disappear. In inveterate cases of this kind, our object must be to prevent decomposition—in the use of antiseptics: a charcoal poultice now

and then, and the free use of pyroligneous acid and salt are the best means. A few doses of the following composition will also be needed: sassafras, sulphur, salt, and charcoal, equal parts. Dose, one ounce daily. A dressing of fir balsam may be applied to the frog and sole, which is to be confined there in the usual manner. Thrush is often the result of morbid habit in the system of the horse, giving rise to an excess of morbid products, which naturally gravitate to the feet, and there find an outlet; therefore we should not be in too much of a hurry to stop such issue, for by so doing the matter may be re-absorbed and produce sympathetic fever, swollen legs, etc. The safest way, therefore, is to treat the disease both locally and constitutionally.—*Dadd's Modern Horse Doctor.*

REMEDY FOR CRACKED HOOFS.—A correspondent in the *Cultivator* has found the following treatment effectual in cases of split hoof in horses. Care should be taken not to allow the old crack to tear its way upwards after the new hoof forms.

Make an incision at the extreme top of the horny substance, cross-wise of the crack, and parallel with the horny hoof, some two inches each side of, (across and above) the crack. The old crack, if left to its way, will continue to grow up as fast as the hoof grows down—if not checked by a crosscut. After this, with careful treatment till there is a new hoof formed, the horse will be as sound in that as any other foot he's got.

LOOK AT THE POINTS.—Most persons think that a finely bred horse must breed good colts, without ever looking over his points; and many who are desirous of breeding a race-horse, will put a fine mare to a very ordinary looking and badly shaped horse, merely because he was got by such a horse. From such breeding, weeds must come. But the finest race-horses are not those who will get the best half-bred horses for all work.—*Farmer and Planter.*

THE SUPPOSED DETERIORATION IN THE BREED OF HORSES.—“Our breed of race-horses is the finest in the world. £50 is paid to send a mare to a first class stallion. No expense is spared, and nothing is left undone to promote the breed of good useful horses. We supply Europe, America, South Africa, India and New Holland with strong and useful thorough-bred stallions. Of all notions, none are so fallacious as to suppose, because one hundred years ago

race horses carried heavy weights, and ran four, five, six and eight miles, that they were to be compared to horses of the present day. I can prove (not within the limits of this letter) that they were little better than common hacks; but because men a century ago were so barbarous, it is no reason that in a more civilized age we should commit the same excesses. If we prefer light weights and short distances, it is no argument that our horses are incompetent to carry heavy weights and to stay a long distance, or that they have declined in strength and stoutness. It has become the fashion not to ill-use a good horse, therefore 10st. 7lb. is considered an outrage, and 11st. a barbarism; but I have had a thorough-bred horse which could carry 18st. to hounds.”—*Bell's Life in London.*

HEAVES IN HORSES.—The *Farmer and Gardener* gives the following as a cure for heaves in horses:—“Take smart-weed, steep it in boiling water till the strength is all out, give one quart every day, mixed with bran or shorts, for eight or ten days. Give green or cut-up food, wet up with water, during the operation, and it will cure.

CLEANSING DRINK FOR A NEWLY CALVED COW.—Take 1 lb. Epsom Salts; 2 oz. ground Ginger, and 1 lb. of Treacle, mixed in a quart of warm ale. To be followed by warm bran mashes as much as the animal will drink. The cleansing of a cow after calving is a matter of more importance than is generally thought. A little linseed or oil cake is also excellent.

The Dairy.

MAKING OF STILTON CHEESE.

Mr. Stallard of Leicester, has communicated for Morton's Cyclopaedia the following details of the process: In general one cheese is made daily. The night's milk is set aside to cream, and in the morning it is skimmed, and the cream added to the new milk. The whole is now made of a proper temperature (84°) and the rennet then added. The curd should be fully formed in one hour and a half; if formed more quickly it will be poor and tough; and if much longer it requires to be warmed, which is also injurious. The curd is not broken up in the common way, but is carefully removed in slices by the skimming dish, and placed upon a canvas strainer or sieve. When the curd has been placed on the strainer, the ends are tied up, and the whey pressed out by gently twisting

round the whole mass—the ends being stationary, and suspended on a stick laid across the cheese tub. It is allowed to drain until next morning, unless the weather is very warm, when the curd should be removed from the strainer, and placed in a clean dish in a cool place, where it is cut into thin slices, and put into a hoop made of tin, perforated with holes, and rather larger than the intended cheese. A clean strainer or cloth is put between the hoop and curd; and, as the slices of curd are laid in, a small quantity of salt is sprinkled between every second or third layer. The hoop containing the curd rests on a clean cloth, and is covered with another, but no weight is applied to extract the whey. Next morning the curd is taken out of the hoop, clean strainers and cloths are employed; it is then inverted and placed in the hoop as before, and afterwards pricked with iron skewers in the sides, to facilitate the extraction of the whey, and drying of the curd. These processes are repeated for four or five successive mornings, until the curd becomes firm. During this consolidating process, the cheeses are kept in a warm place, and in cold weather they are set in *bins* before the fire, or in heated ovens constructed for this purpose. It is necessary for the perfect extraction of the whey, that the drying temperature be raised to about 100°. The utmost cleanliness and care are indispensable during the whole process. The whey should have a free run from the curd, and the strainers should be washed and then dried thoroughly in the open air, every time they are taken from the curd.

When the cheese has become sufficiently firm, it is pared and smoothed. The inequalities in the sides where the slices join, are filled up by parings from the projecting parts, and the top and bottom are also smoothed by paring with the knife, and lying alternately on a flat board. A strong fillet of canvas, long enough to encircle the cheese two or three times, is then firmly bound round it, and held tightly by strong pins; a clean, dry cloth is also placed under and above it. The binder and cloths are removed every morning, and all cracks filled up. These operations are continued until the outside becomes hard and wrinkled, or *coated*, as it is termed. After this, the cheeses are removed to the drying room, where they are regularly turned and cleared from the mites. In warm weather the flies are apt to attack cracks or soft parts of the cheeses; and when this occurs, the best plan is to scoop out the affected part, fill it up again with the soft part of another cheese kept for the purpose, and cover carefully with cloths.

As the making of the common Leicestershire cheese differs little or nothing from

the mode pursued in Gloucestershire and Cheshire, it is considered unnecessary to enter into detail on the subject, as it would be in a great part, merely a repetition of what has been already stated.

The experience of the Leicestershire dairy farmers with regard to the quantity of cheese from a given quantity of milk, is much the same as in other dairy counties—*i. e.*, one gallon of full milk to one pound of marketable cheese. Mr. Stallard, from whom the above details have been obtained, states that in autumn one gallon of milk will produce eighteen ounces of cheese.

Domestic.

HOW TO SELECT FLOUR.—The following rules for forming a judgment of flour, when purchasing for use, can, doubtless, be relied upon, and may be worth recollecting by housekeepers. First, look at the color; if it is white, with a slightly yellowish or straw-colored tint, buy it. If it is very white, with a bluish cast, or with black specks in it, refuse it. Second, examine its adhesiveness; wet and knead a little of it between your fingers; if it works soft, and is sticky, it is poor. Flour from spring wheat is likely to be sticky. Third, throw a lump of flour against a dry, smooth, perpendicular surface; if it falls like powder, it is bad. Fourth, squeeze some of the flour in your hand; if it retains the shape given by the pressure, that, too, is a good sign. Flour that will stand all these tests is safe to buy. These modes are given by old flour dealers.

UNHEALTHINESS OF HOT BREAD.—When will our good housewives learn the science of preparing and setting forth only healthy food? Hot bread and saleratus cakes ought to be indicted for murder in the second degree. The *Scientific American* says that Dr. J. G. Bunting has published some very interesting and useful facts in relation to the digestion of food in the human stomach, deduced from his experiments with St. Martin, the man with an enlarged bullet hole in his side, through which can be seen all the processes of digestion. In speaking of the nutritious property of farinaceous food, and the proper state in which it is most easily digested, he gives the following excellent advice:—

Hot bread never digests. Bear this in mind, reader, if you are accustomed to eat the light and tempting biscuit at tea, or the warm loaf which looks so appetizing upon your breakfast table. Hot bread never digests. After a long season of

tumbling and working about in the stomach, it will begin to ferment, and will eventually be passed out of the stomach as an unwelcome tenant of that delicate organ, but never digests—never becomes assimilated to, or absorbed by, the organs that appropriate nutrition to the body. It is a first-rate dyspepsia-producer. The above is truth, as it has been repeatedly proved from actual observation through the side of Alexis St. Martin.

A GOOD RECIPE FOR VINEGAR.—Take 40 gallons rain water, 1 gallon molasses, and 4 lbs. ascetic acid. It will be fit for use in a few days. Ascetic acid costs twenty-five cents per pound. This is the recipe by which most of the cider vinegar is made, which is sold in the country stores.—*Scientific Artizan.*

Miscellaneous.

THE APIARY.

TRANSFERRING BEES.

As there are many who will this spring desire to try the Langstroth hive, we give all necessary directions for taking a swarm out of the common box, or any other hive, and putting into this. The change is a perfectly safe one, both for the bees and the owner, providing the directions here given are strictly followed.

The first important step is to *get ready*. Prepare a roll of old cotton cloth, of any kind, as large as your wrist and a foot or more long, winding it with twine, or a small wire, from end to end. Obtain a large table, or wide board on which to lay the combs as they are cut out of the hive, and place it where you will not be annoyed by other bees; vessels to contain the honey; a long sharp knife to cut out the combs; a large chisel or other instrument to pry the hive apart; goose quills or a wing to brush the bees from the combs; some wrapping-twine to tie the combs into the frames, and some water to wash off the honey which will adhere to the hands.

Now fire the cotton roll and blow a few whiffs of smoke into the entrance of the hive, until the bees are driven well up into the combs, first stopping all holes in the top of the hive. Gently lift the hive from its stand and carefully turn it upside down a short distance away. Place another hive or clean box on the top of this, mouth to mouth, and wrap a sheet around to prevent the bees from coming out. Then rap

smartly with flat sticks on the lower hive until the bees are mostly driven into the upper box, when this may be taken off and placed on the stand, and if the queen has been driven up, the bees will mostly go there. Take the hive to your table, or near it where you have the new hive ready. With a saw slowly sever the combs from their attachments to the sides of the hive to be pried off; cut out the combs, placing all straight thin combs by themselves to be fitted into the frames. Let every motion be gentle, as there is danger of injuring the queen, should she not have been driven from the hive. Reject all broken, irregular and clumsy combs; cut to fit closely and crowd into the frames, and when necessary tie in with twine. Should there be any projections on the combs after they are fitted in, they must be trimmed down to an even thickness with the upper parts of the frames. Proceed until all the good combs are used; placing the frames in the hive as they are filled, those containing young brood in the centre; put in the empty frames and divide the spaces equally between all through the hive; put on the honey-board and stop the passages into the upper box. Spread the sheet in front of the hive and shake out the bees from the box into which they were driven. With a spoon place a few at the entrance of the hive, and they will all soon run in. When the larger portion of them has entered the hive, it may be placed on the old stand. When the bees are all in, close the entrance so that but a single bee can pass at a time to prevent robbing. After three or four days the entrance may be enlarged.—*Michigan Farmer.*

NEW SPECIES OF HONEY BEE.—The *Apis Ligustica*, or Ligurian Bee, a distinct species from the ordinary honey bee, has been successfully introduced into England. It is regarded as of great value as an abundant honey collector.

FARMING.—Dr. Franklin said: "There seem to be but three ways for a nation to acquire wealth. The first is by war, as the Romans did, in plundering their neighbors; this is robbery. The second is by commerce, which is frequently cheating. The third by agriculture, the only honest way, wherein a man receives a real increase of the seed thrown into the ground in a kind of continued miracle wrought by the hand of God in his favor, as a reward for his innocent life and his virtuous industry."

PRESENTATION TO A TILE DRAINER.—

Many years ago, a poor young man bought a farm near Seneca Lake, New York. Much of the soil was a cold, heavy clay. As fast as he could, he drained off the water, put in the manure, and demonstrated, by example, that farming may be made profitable. In 1835 he imported patterns of drain tile, and commenced his experiments in this line of improvement with tiles made by the slow process of hand labour. Machinery was soon used in their manufacture, and in 1851 he had laid sixteen miles of tile drains. Finding that the more he drained, and the more he manured, the richer he grew, he ventured to recommend his course to other farmers, and became a frequent contributor to the agricultural journals of New York. In one of his articles, written the 17th of December last, and published in the *Rural New Yorker*, in reply to some strictures on his system of "high feeding," he says:

"I will state that I can with more certainty calculate on three tons of hay per acre, now, than I could on one, thirty-six years ago, and I can safely calculate on one acre in pasture feeding more stock, and much better, than three would have done at that time, while I can almost always make one-half more grain of any kind than I did then—of oats or corn far more than double. High feeding and high manuring did all this."

By affixing his own signature to these publications, the name of John Johnston has long been familiar to the readers of agricultural papers, and he is sometimes called the "Great Tile Drainer," of New York.

The *Tribune* gives the following description of the articles presented to Mr. Johnston:

"The testimonial consists of a massive silver pitcher and two goblets, on all of which are engraved and embossed appropriate agricultural emblems. On one shield of the pitcher is represented a reaping field as it appears in our day, on another a mowing machine at work, and the third bears the following inscription:

Presented to John Johnston, in recognition of his services to the Agriculture of New York, by his fellow-citizens.

JOHN A. KING, and 19 others.

The goblets bear the representation of men laying tiles for drains, a ditch-digging machine, tile machine, and all manner of small tools used in 'the stupid burial of crockery'—as a certain English nobleman was pleased to term tile draining a few years ago.—*New England Farmer*.

PRIZES FOR AGRICULTURAL ESSAYS.—

At a late meeting of the "Royal Agricultural Society of England," the following list of prizes for Essays was adopted.

1. Fifty sovereigns for the best report on the agriculture of Berkshire.

2. Twenty sovereigns for an approved Essay on the best period of the rotation, and the best time of year for applying the manure of the farm.

3. Ten sovereigns for the best Essay on the alterations rendered advisable in the management of land of different qualities, by low prices of grain and high prices of meat.

4. Ten sovereigns for the best Essay on recent improvements in dairy practice.

5. Ten sovereigns for the best Essay on the proper office of straw on the farm.

6. Ten sovereigns for the best Essay on the amount of capital required for the profitable occupation of a farm.

7. Ten sovereigns for the best Essay on the conditions of seed-bed best suited to the various agricultural crops.

8. Ten sovereigns for the best Essay on the adulteration of agricultural seeds.

9. Ten sovereigns for the best Essay on any other agricultural subject.

SAMPLES OF COTTON FROM DR. LIVINGSTONE, WEST AFRICA.—

The *Manchester Guardian* states that Mr. J. Aspinall Turner, M. P., has kindly forwarded to the offices of the Cotton Supply Association, Manchester, an interesting case of samples of cotton and cotton yarn, which he has just received from Dr. Livingstone. The sample of cotton is excellent; but the most surprising sample is a ball of yarn spun by the natives, weighing 16½ oz., the cost of which is one foot of calico, or one penny. The other samples of yarn are well spun and very strong. This cotton was grown in the valley of the Shire, which is one hundred miles long by twenty broad. The natives spin and weave it for their own use, and we are informed that so abundant is the cotton in this valley that a vast number of cotton trees are annually burned to the ground. The navigation of the Zambezi and the Shire is open to this cotton valley during a great portion of the year. It is evident, therefore, that a large supply of cotton may be readily obtained from this part of Africa, by the adoption of an effective agency. Dr. Livingstone deserves the utmost support, both of the Government and of his countrymen, in his most zealous efforts to develop the vast productive resources of the regions he has now opened to commercial enterprise. The samples

above referred to, are on view at the offices of the Cotton Supply Association, Manchester.

The same paper gives the following paragraph on good authority:—We learn, on authority which we consider perfectly reliable, that Government has decided upon providing Dr. Livingstone with a new steamer for the purpose of enabling him to carry out his exploration of the Zambesi. In addition to this pleasing evidence of the interest with which the present administration views the efforts for opening up Central Africa to the influences of civilization Mr. Gladstone, we are informed, has appropriated a sum of £2,500 to the further exploration of the great Nyanza chain of lakes. The command of this latter expedition will be entrusted to Captain Speke.

CANADIAN STOCK FOR MICHIGAN.—Silas Sly & Sons, of Plymouth, the well known breeders of Durham Cattle, have purchased a splendid two year old short-horn bull from F. W. Stone, Esq., of Guelph, C. W. This is one of the best animals of his age that we have seen for some time. In depth of forequarter and width of chest he is not easily matched; he is all right in the back and ribs, and the hind quarters are full and well-proportioned. The horns and muzzle are fine and well-shaped. His color is roan. This bull was sired by "John of Gaunt the 2d," an animal of great beauty, and the one that took the sweepstakes premium at the last Provincial Exhibition in Canada West. His dam was "Cherry Pie," imported in 1855; she is grand-daughter of the celebrated bull "Duke of Northumberland." We are glad to see such additions as this made to the stock of the Peninsular State.—*Detroit Tribune.*

Editorial Notices, &c.

BACK NUMBERS.—We find that we do not succeed in getting any copies of back numbers returned, and of course we cannot supply them, not even odd copies, to subscribers. We therefore only charge subscribers with the number of copies we are able to send, at an average rate per number corresponding to the price for the year. The balance will remain at their credit, and will be made good either in additional copies of this year, or copies of next year, or, where practicable, if required, by returning the amount. For instance, if

an Agent, or Secretary of a Club or Society, sends us ten dollars, with an order for twenty-two copies, from the beginning of the year, not being aware that we cannot supply the back numbers preceding 1st April, we send only the 22 copies for the present, from that date, placing the \$2½ balance overpaid to his credit, and awaiting further orders. This will entitle him to, say 7 additional copies for the same period of this year, or 11 copies from 1st July, or 5 copies of next year, as he may choose. In case of single copies, or very small orders, the parties may send us the additional amount in postage stamps required to pay for another copy or two of this year, or at the end of the year to continue the paper for next year, or, in case of not hearing from them, we will send numbers enough of next year's volume to make up for those wanting this year.

THE AGRICULTURIST SUBSCRIPTION PRIZES.—We have now the pleasure of announcing the distribution of Premiums for the twenty successive largest lists of subscriptions to the *Agriculturist* for the current year, ordered and paid on or before the 1st day of April. The list should properly have appeared in an earlier number, but an accidental accumulation of office work prevented the requisite posting up of the accounts so soon as was intended. Several other correspondents would have been entitled to premiums if they had remitted the amounts of their orders at an early enough date. Our readers will be easily able to perceive from this statement, and when they take into consideration the mass of smaller orders, that the *Agriculturist* has obtained a very handsome circulation during the present year, and we are gratified by being repeatedly informed by correspondents that it has given general satisfaction to the subscribers. It happens, somewhat curiously, that there are several cases of ties in the twenty highest numbers of copies ordered,

that is to say, two or more correspondents ordering exactly the same number. In these cases the committee have considered that the only way the premiums can be fairly apportioned, the parties being severally on precisely the same footing in regard to having complied with the conditions and the right of each to claim the highest amount, is to depart slightly from the offered scale, and divide the amounts so placed equally. For instance, no less than 5 correspondents have ordered 33 copies each, and to these orders fall the 14th, 15th, 16th, 17th and 18th premiums offered, viz: \$7, \$6, \$5, \$4, \$3. The amount of these is \$25, which being divided among five orders, is of course just \$5 each. The other cases have been apportioned on the same principle. The following is the list of premiums. If there are any errors we shall be glad to be informed of them at once.

CORRESPONDENTS.	No. of Copies Ordered.	Amount Premium \$ Cts.
St. George Scarlett, Carlton West	226	20 00
James K. Allen, Port Hope	200	19 00
R. Windatt, Bowmanville	154	18 00
E. A. McNaughton, Newcastle	135	17 00
Wm. A. Cooley, Ancaster	125	16 00
David Campbell, Almonte	110	14 50
M. D. Caulfield, Morven	110	14 50
John Shier, Whitby	66	12 50
Wm. Brough, Gananoque	66	12 50
Eric Harrington, Arnprior	51	11 00
Wm. Shirrefs, Toronto	50	10 00
James Wright, Guelph	42	9 00
John Stiles, London	37	8 00
James Young, Lanark	33	5 00
Ira Morgan, Osgoode	33	5 00
Robert Campbell, East Zorra	33	5 00
J. G. Bell, Ottawa	33	5 00
James Keefer, Strathroy	33	5 00
D. Robertson, Ottawa	27	1 50
David Ghent, Wellington Square	27	1 50
Amount		\$210 00

In reply, I am directed by the Postmaster General to say, that the "Canadian Agriculturist" being a periodical specially devoted to Agriculture, is clearly entitled by law to free transmission by post in this Province, when addressed directly from the Office of Publication; and that Postmasters have therefore no right to charge postage thereon.

If you will be good enough to inform the Department of the names of the Post Offices whereat such charges have been made, the Postmaster General, who regrets that such errors should have occurred, will specially address the respective Postmasters in correction of their misconception of instructions in this particular.

I am, Sir,
Your most obedient
Humble servant,
EDWIN KING,
Secretary.

HUGH C. THOMSON, Esq.,
Sec. Board of Agriculture, U. C.,
Toronto.

THE QUARTERLY JOURNAL OF AGRICULTURE, April, 1860. Washington, D. C.: Larcombe & English. This is the official journal of the United States Agricultural Society, and is ably edited by the Secretary of the Society, B. P. Poore, Esq. The present is No. 1 of the 8th vol., and is a well printed thick pamphlet of 176 pages. It contains the proceedings at the eighth Agricultural Congress, or meeting of the Society, at the Smithsonian Institution, in Washington, in January, 1860, besides a number of valuable addresses and other papers on important subjects connected with the practice of Agriculture.

REPORT OF THE BUREAU OF AGRICULTURE AND STATISTICS. Printed by order of the Legislative Assembly, April, 1860.

Mr. Hutton, the efficient Secretary of the Bureau of Agriculture, at Quebec, has embodied in this Report of 28 pages, a large amount of interesting and valuable information. The following is a portion of the contents: An analysis of the Agricultural Statistical returns obtained from the different parts of the Province, a de-

THE AGRICULTURIST POST FREE.—For the information of subscribers and of Post Masters, we insert again the following letter from the Post Office Department.

POST OFFICE DEPARTMENT,
QUEBEC, 30th Jan., 1860.

SIR,—

I have the honor to acknowledge your letter of the 26th inst., representing that some of your subscribers have complained that postage has been claimed from them on their copies of the "Canadian Agriculturist."

scription of information of which the importance and value are every year becoming better understood; a very interesting correspondence with Mr. Courtenay, of Bury, Eastern Townships, on the practicability of successfully introducing the Cultivation of the Grape, for the purpose of manufacturing wine, and of the profitable production of silk, in that part of the Province; Reports from the Agents as to the settlement of the Free Grant Lands on the Ottawa and Opeongo, the Addington, the Bobcaygeon, and the Hastings Roads; Immigration; Report of the Superintendent on the operations on the Roads in Canada West made from Improvement fund and Colonization Grants, &c., &c. We shall place some extracts from this Report before our readers at an early day.

Several articles in the present number have been standing in type for a considerable time, having been crowded out from time to time to make room for other matter.

THE AGRICULTURIST.—As our supply of back numbers is again exhausted, subscriptions will be received from the present number to the end of the year at 31 cents per copy, with the same bonus on large orders as previously.

Market Intelligence.

TORONTO MARKETS.

MONDAY, May 14, 1860.

To-day the entire delivery of all sorts of grain amounted to 1630 bushels. Prices without change, and the latest advices from the British markets, brought by the Canadian, report breadstuffs as dull.

FALL WHEAT.—With a supply of 750 bushels, the prices ruling were from \$1 45 to \$1 50 for prime shipping samples, the average being about \$1 48. For inferior and common, the rates were from \$1 40 to \$1 45.

SPRING WHEAT.—250 bushels sold at from \$1 15 to \$1 20½ per bushel.

PEAS.—255 bushels found ready sale at from 63c to 65c per bushel.

OATS.—300 bushels went off at from 32c to 35c per bushel.

BARLEY.—Only 75 bushels in market, which brought from 70 to 75c per bushel.

HAY.—In moderate supply, and worth from \$12 to \$19 per ton.

STRAW.—Worth from \$6 to \$9 per ton.

FLOUR.—Superfine No. 2, \$4 62 a \$4 80; do No. 1, \$5 10 a \$5 20; fancy spring, \$5

45 a \$5 50; fall, \$5 62½ a \$5 75; extra, \$6 a \$6 25; double extra, \$6 25 a \$6 50.

PORK.—\$6 per 100. Cured meats are firmer. Mr. A. McFarren made a sale last week of 300 green hams at \$9 25 per 100.

NEW YORK MARKETS.

NEW YORK, May 14.

FLOUR.—Receipts 2,074 barrels; the market is dull and 5 to 10c lower; sales 5,600 barrels at \$5 30 for superfine State; \$5 35 to \$5 40 for extra State; \$5 30 for superfine Western; \$5 35 to \$5 70 for common to medium extra Western; \$6 05 to \$6 15 for inferior to good shipping brands extra round hoop Ohio.

CANADIAN FLOUR.—Is dull and drooping; sales 400 barrels at \$5 55 to \$7 50 for extra.

RYE FLOUR.—Steady at \$3 50 to \$4 20.

WHEAT.—Receipts 20,896 bushels; market dull and heavy and nominally 1 to 2c lower; sales 1,000 bushels Racine at \$1 26; prime Milwaukee Club can be bought at \$1 23.

RYE.—Quiet at 86c.

BARLEY.—Dull and drooping; sales 3,500 bushels of Canada East on private terms.

CORN.—Receipts 135,763 bushels; market very heavy and fully 2c lower; sales 65,000 bushels at 75c to 77c for mixed Western, closing at the inside price for sound parcels; 79 to 80c for round yellow.

OATS.—Dull and heavy at 41½ to 42½c for State, Western, and Canadian.

PORK.—Market quiet and unchanged; sales 850 barrels at \$17 50 to \$17 62 for old mess; \$18 25 for new mess; \$12 75 for old prime, and \$13 87 to \$14 for new ditto.

BEEF.—Quiet; sales 375 barrels.

Lard.—Firmer; sales 350 barrels at 11½ to 11¾c.

Butter.—Is in moderate demand at 12c to 18c for new Ohio and 13c to 19c for new State.

CHEESE.—Steady at 6 to 11c.

BUFFALO MARKETS.

BUFFALO, May 14.

WHEAT.—Dull and heavy, and parties 2 to 6c apart in their views for Spring and Club; no sales reported.

OATS.—Nominal at 36 to 37c in bulk and in bags.

BARLEY.—Quiet at 65 to 68c for ordinary to choice.

RYE.—In moderate request; sales 1,900 bushels State, 60 lbs. to the bushel, at 80½c; and 350 bushels choice Western, 55 lbs. to the bushel, at 83c.

YONGE STREET SEED STORE AND FLOWER GARDEN,

Established 1836.

**Fresh Garden, Field and Flower Seeds,
for Spring sowing.**

THE Subscriber begs to inform his friends and the public, that his stock of Fresh Seeds is now complete, and very extensive, embracing almost every sort of Seed that is adapted to the country

The stock of Agricultural Seeds is large and well selected, and the vitality of each sort being fully tested, the genuineness of the seeds may be fully relied upon.

Comprising a large stock of:—Spring Wheat, Spring Tares, Tartar and Poland Oats of the most approved kinds; Field Peas, including Golden Vine, and other approved sorts, White and Black Eyed Marrow Fats; Barley, two and four-rowed; Imported Purple and Green Top Swedish Turnip, Imported White Globe do., Imported Yellow Aberdeen do., Imported Six-weeks or Stubble do., Imported Red Round, Red Globe and several other sorts of Turnips; Long Red and Yellow Globe Mangel Wurzel; Sugar Beet and Field Parsnip, Large White Belgian Carrot and Spring Rape; Long Orange, Red, Surrey, and Altringham Carrot; Timothy, Orchard, and English Bye Grasses; Red and White Dutch Clover; French Lucerne, Cow, and Hungarian Grasses, Alsike or Perennial Clover; Yellow and White Millet; Early Potatoes of the most approved sorts; Corn, 8 rowed Early Canada, King Philip, Yellow Dutch, and several other sorts.

*Horticultural Books and Garden Tools,
Draining Tools, One Horse Ploughs, and
Cultivators of all kinds.*

The Subscriber has also a full and general assortment of all kinds of Garden Seeds suitable for the country, a catalogue of which, with directions for sowing seeds, can be had gratis.

Merchants and Agricultural Societies ordering seeds in bulk will be supplied at wholesale prices.

Complete assortment of Garden Seeds neatly put up in small papers, with directions for sowing, and sold by the box, containing 150 papers, at very moderate prices.

Twenty packages of Flower Seeds, choice sorts, will be sent free by post to any part of the province, to the address of any party remitting \$1, free of postage, or 25 packages, postage unpaid.

JAMES FLEMING,

Seedsman to the Ag'l As. of U. C.

Toronto, February, 1860. 6-t

SEEDS! SEEDS! SEEDS!

TORONTO SEED STORE!

Corner of Front St. and West Market Place

THE Subscriber in returning his sincere thanks for the patronage so liberally extended to him for the past four years, since commencing the business, would now beg to direct the attention of his friends and the public, to his large and well assorted stock of

FRESH GARDEN, FIELD AND FLOWER SEEDS,

All of which have been procured with his usual well-known care and practical knowledge from parties in Europe and America, personally known to him; he would therefore venture to say that the quality of all his Seeds cannot be surpassed in this Country or anywhere else.

FARMERS and GARDENERS would do well to examine before purchasing elsewhere, for it is their interest particularly to procure the best of seed to be had, and SPURIOUS SEEDS are often offered by unscrupulous parties under pretended inducements, which, if depended on, may prove fatal to crops, on which purchasers depended for a living.

No seed is sold in his establishment without first being carefully tested.

Large supplies of all the leading varieties of the different kinds of seeds, most suitable to this climate, are constantly kept on hand.

Catalogues with full directions for sowing and raising vegetable and other seeds, may be had gratis, on application; and being a practical gardener of 19 years' experience, he will always feel happy to give all necessary information, personally, regarding the mode of cultivation, selection of varieties, &c., gratuitously to any of his customers.

For the convenience of those who wish to stock a small Garden with Vegetables and Flowers, but are unacquainted with the proper quantities for that purpose, he has collections ready put up.

Price of Collection of Garden Seeds, \$2.

" " Flower Seeds, 1.

J. A. SIMMERS,

Seedsman,

Corner of Front St. and West Market Place.

TORONTO, March 12, 1860.

6-t

Five Splendid Strawberries.

HOOKER—Very productive; large, beautiful, and of unequalled quality.

WILSON'S ALBANY,—Exceedingly productive; fine for market.

TRIOMPHE DE GAND—Immense size, splendid appearance, and high flavor.

PYRAMIDAL CHILIAN—Very handsome; productive, hardy, and good flavor.

LARGE EARLY SCARLET—The earliest; productive and excellent.

As it is impossible to secure all the excellencies of this most popular fruit in one variety, we offer the above as comprising, in five sorts, the various points desirable.

We again confidently RECOMMEND the HOOKER, as by far the best for family use, if only one sort is to be planted—combining a greater number of excellencies than any other variety.

All of the above have perfect flowers, and will produce excellent crops, if planted singly or together.

Order directly from the Nurseries, to be sure of the genuine—"The Hooker" originated on our grounds.

Money, at our risk.

PRICES—(Securely packed to be forwarded by express):

Per 100 plants of any of the above varieties.....	\$2 00
" 100 plants 20 of each variety,....	3 00
" 500 plants 100 of each variety,....	7 50
" 1000 plants of the Hooker.....	10 00

H. E. HOOKER & Co.

Commercial Nurseries,

March, 1860.

Rochester, N. Y.

HUNGARIAN GRASS.

This valuable grass was introduced into this neighborhood three years since by our County Agricultural Society, and has given very great satisfaction to all who have tried it. Its ordinary yield is FOUR TONS TO THE ACRE, and in some cases SIX TONS have been cut. Cattle and all kinds of Stock are very fond of it, preferring it to Timothy. Its fattening qualities too are believed to be superior to those of any other known grass.

The Subscriber has obtained a quantity, and will send to any person making a post-paid application, sufficient to sow one-third of an acre for One Dollar, or One Bushel for Five Dollars.

All seed will be sent free of charge.

ARCHIBALD YOUNG,

Treasurer,

Lambton County Agr. Society

Sarnia, February 10, 1860.

SPRING FAIR.

TOWNSHIP OF GORE OF TORONTO AGRICULTURAL SOCIETY will hold their Spring Fair at CLAIREVILLE, on the Third Wednesday in April, 1860, and their Fall Fair at MALTON, on the Third Wednesday in October.

By order of the Board,

J. P. DELAHAYE,

President.

Gore of Toronto, March 19, 1860. 7-21

AYRSHIRE CATTLE.

PATRICK R. WRIGHT, Esq., Cobourg, C. W., breeder of Ayrshire Cattle, Shep., &c., has several young BULLS and HEIFERS for sale. His herd is well known as the best in Canada West, and his terms of sale are liberal.

Full Pedigree of all animals—U. C. Stock Register.

April 2, 1860.

7-6m

YONGE STREET SEED STORE.

CHOICE VEGETABLE & FLOWER SEEDS
FREE BY MAIL.

THIRTY SIX VARIETIES FOR TWO DOLLARS.

THE Subscriber, wishing to give parties who reside at a distance an opportunity to test the quality of his Seeds, will, on receipt of \$2, free of postage, send free to any Post Office in Canada, 24 Full Sized Papers of VEGETABLE SEEDS, many of them containing half an ounce of seed, and 12 Papers of Choice FLOWER SEEDS, with Descriptive Catalogue and Box included—the seeds to be of my own selection. None but the most useful and desirable varieties will be sent.

JAMES FLEMING.

Seedsman to the

Agricultural Association of U. C.

TORONTO, Jan., 1860.

The Agriculturist,

OR JOURNAL AND TRANSACTIONS OF THE BOARD
OF AGRICULTURE OF UPPER CANADA

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