The Farmer's Advocate!

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the FARMER'S ADVOCATE.

PERSEVERE AND SUCCEED.

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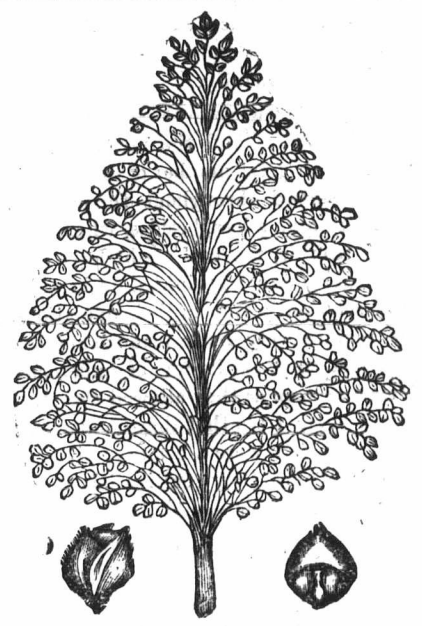
Rotation of Crops.

In compliance with the request of our Oakwood correspondent, we take up the subject of Rotation of Crops. We treated of it in the May number of the ADVOCATE in 1873, but very many have been added to the list of our subscribers, and the advantage of pursuing a regular system of rotation of crops in farming has been forced upon our attention even in our new country. The virgin soil of Canada might bear an uninterrupted succession of crops of wheat for years. It had been enriched for ages by the annual supply of plant food from the fallen leaves, and by the mineral supplies set free by the descending deep into the earth from the old trees; but these stores of fertility have in many parts of the country been wholly exhausted; successive crops of wheat have deprived the soil of the accumulated wealth of centuries, and the fields that at first, after the clearing produced heavy crops of grain, have been so impoverished as to return little more than weeds to the farmer for his labor.

Every plant takes its food, in greater or less degree, from the elements of plant food in the soil; it is therefore evident that successive cropping must exhaust it of those elements, hence the necessity for repeated applications of manure; and though, as a general rule, every plant, of whatever kind, feeds on the same kinds of food, they consume them in very different proportions. Some take from the soil a great quantity of one kind of food, some others a quantity of another; some, for instance, require less lime and more potash; others require more potash and less lime. Some crops even give to the soil some of those elements needed by others for food. Clover obtains its food partly from the atmosphere and partly from the depth of the subsoil, and it leaves in the soil no little of the elements so obtained, available for the sustenance of succeeding crops.

The course of rotation adopted varies according to circumstances. It may extend over six or eight years, or a longer or shorter period. The Norfolk, or four years' course, has been found very profitable on light soil, and especially on small farms. In it there is no pasture. All the grass is fed to the cattle in the house or yard. By this means a large stock is kept. One-fourth of the land is every year under manured crops. Two grain crops are never taken in succession. The course for each division of the farm (one-fourth of the whole), is as follows:—First year, manured root crops—turnips, mangolds, &c.; second year, grain, seeded down with clover and grasses; third year, clover, &c., cut for soiling; fourth year, grain, to be followed by the manured crop of the succeeding course.

This rotation requires more labor and greater quantities of manure than any other, and the soiling in summer and the feeding of so much roots in winter afford greater means of providing the manure required. Soiling, though not an essential



REGULAR SORGO.

part of a system of rotation, is considered in connexion with it, on account of the great quantity both of food for cattle, which it supplies, and of manure required for the crops in the rotation. A four course system especially is closely connected with soiling, and is dependent upon it, unless some other sufficient supplies of manure are available. After the first year the farmer will have from the course pursued sufficient soiling and manure on the farm for carrying it out successfully. Rye sown in fall will be ready for cutting in May. After the rye, oats and peas mixed, for a short time till the clover is ready for the scythe. Corn sown in drills, Hungarian grass and millet will come in in good time, late in the season.

The five course system differs from that of four years by having one-fifth instead of one-fourth of the farm annually under each crop. This system we followed for years, having one-fifth of the land under root crops, two-fifths grain, one fifth clover and other soiling crops, and one-fifth pasture; preferring to have them feed partly on the pasture, instead of confining them wholly to the house and yard. The soil was rather light, better adapted for clover peas and root crops than wheat; but being always in *good heart* from the regular cropping with roots and clover, it gave very large returns of grain. On the quality of soil as much as anything else must depend the system of rotation most suitable for a farm, but some regular system must be observed in farming as well as in any other pursuit, to obtain the most profitable results in agriculture. Mr. M. can, from this general outline, decide for himself what course of rotation is most suitable for him from the quality of his soil, the crops he finds best paying and other circumstances.

Regular Sorgo.

The annexed illustration represents the regular sorgo, or Chinese sugar cane. There are three varieties of cane, each claiming merit. The Liberian has not as handsome a head as the regular sorgo, but some prefer it for making syrup. Syrup has been made in Canada from it. Many have made enquiries of us in regard to this plant, and the profit to be derived from it. We do not think it would be more profitable than other crops, as sugar is at a low price now; but it is our impression that it may be profitable as a soiling crop, as we hear that seventeen tons of it are raised to the acre. It grows to a great height. For feed it must be cut before it gets tough in the stalk. We think it would be well for farmers to try a little of it; we intend to try it this year. We give the following account of the mode of cultivation, &c.:

"Light, sandy soil, in the North, with Southern exposure, is best. New land and that which is freshly manured, gives poor syrup. Clay land yields a better syrup, but not so much of it. Have ground prepared as for corn—deep and mellow. Plant in check rows so as to plow both ways. On very rich ground it may be drilled, but in the North the rows should be run so as to admit the most sun between them. Plant shallow—half an inch is deep enough if ground is moist and warm. Put in plenty of seed, and then thin out, so as to leave in the hill seven to ten stalks of the Sorgo, or five to seven of the other varieties. As the shoots are easily transplanted and do well, an even stand can be obtained by thus supplying hills that fail to come up. Where crops are exposed to frosts in the Fall, the seed should be put in the ground early—before corn. In the south, early planting will give two crops from the same stand.

"When the plant comes up keep the weeds out till large enough for the plow. It is a slow grower at first, and if left to itself will be choked by the weeds. This is the time to 'make the crop.' When large enough, plow and cultivate as corn, till about thirty inches high, it will then take care of itself. Later plowing would then cut the roots and damage the stock."

The above is the mode of cultivation for syrup. For feed it may be sown broad-cast. From two to three pounds of seed is sown per acre.

Orchard and Garden.—No. 3.

HINTS FOR MAY,—BY H. ORTI.

The cultivation of the orchard and garden, the ornamental planting of our grounds, and the general use of flowers, the circulation and success of books, periodicals, &c., relating to and treating of these various subjects, are striking proofs of the state of civilization which marks the progress of the age we live in; and a very gratifying proof it is, this love of fruit and flowers, of progress and refinement. To a great extent they are luxuries; "but man cannot live by bread alone," and ones that are very desirable and beneficial. The labo and care bestowed on them in their cultivation are amply rewarded by the luscious fruit, the beautiful flowers, the refreshing shade in the noonday heat, and the lovely effects on the landscape by the judicious planting of trees and shrubs.

To those who have orchards without a belt of trees for shelter and windbreaks we earnestly urge upon them the great necessity of planting one without any further delay. To a great extent the severity of our winters, the prevalence of windstorms, and the excessive drouths in summer, alike owe their rise and continuance to the dimunition of our forests. To counteract these increasing evils the necessity of planting trees, evergreens and deciduous becomes apparent. The sides of lanes, the borders of the farm and on the highways might be planted with one or two rows—all that is necessary is merely to make a start. A couple of days for tree planting might well be spared from the farm operations. Trees, the younger the better, can be procured from the nurseries or the woods. Those from the nursery would have an advantage in being transplanted and carefully grown over those brought from the woods, and can be procured in quantities low enough to well warrant the expenditure. Everyone who is a cultivator of the soil should set apart and fence in a good piece of land as a nursery. Here he could transplant articles from nurserymen, or wherever he may procure them, and, by careful cultivation, will have trees in perfect order to plant out, either for shelter, fruit or ornament, as each returning season gives the opportunity. However, whatever may be done in planting about the farm, make it a point to plant a belt of evergreens about your orchard, if you have one, and, if not, plant your shelter-belt and the orchard afterwards. We prefer to plant evergreens alone, that is, not to mix them with deciduous trees, who would, if planted amongst evergreens, soon choke them out on account of their more rapid growth, &c. The month of May we consider to be the best time of the whole year to transplant evergreens of all classes. Any of our native spruces, pines or cedars will make perfect screens and windbreaks, but, taking into consideration the adaptability of the Norway spruce to thrive in most soils, its extreme hardiness and vigor of growth makes it, in our opinion, the evergreen of the period, and the one that satisfies all requirements. It makes the finest of ornamental hedges, planted two or three feet apart, and a useful screen about ten feet apart. Plants eighteen inches to two feet are a good size to plant. The ground about them should be kept clean of weeds till they are well established. We see it is considered a good plan to put evergreens through the orchard, but we would be afraid, unless the trees were a good distance apart, that there would be a danger of overcrowding. It is a bad system to put grain in a newly-planted orchard. Root crops, beans or any low-growing plant would do very well, but generally a well-established orchard can make use of all the ground it is growing on. In planting any kind of trees, it is essential that your ground, if not naturally dry, should be well drained. People, as a rule, plant too large trees; whereas they should plant them as small as they can procure them—these are easily handled, do not lose many roots, and recover the effects of transplanting readier than larger ones. When planting, dig the holes large enough to receive the roots without bending, fill in some surface soil, spreading the fibres out so as to prevent crowding together, and gently shake the tree; when the hole is three parts filled in, it should be well tramped, and in the spring, if the ground is very dry, a pail of water should be poured in the hole; then fill in, leaving the surface light and loose. Avoid planting deeper than the tree stood before it was removed. When planting dwarf trees, see that the stock they are worked on is under the ground and no more. Trees should be staked after planting, so as to prevent skaking, as this retards the growth and endangers the life of the tree. In exposed and very dry situations it will be necessary to mulch, after planting, with well-rotted manure, sawdust, tanbark or any medium that will retain moisture.

SELECTION OF VARIETIES.—In growing fruit for market purposes, a great many people make the mistake of planting too many varieties. To supply the kinds that thrive best in the different parts of our country, nurserymen have to keep up a long list of varieties; and many people getting their catalogues will often, in an order of fifty trees, order fifty varieties. This is perfect nonsense, for when all these come to bear it would take a man with a large experience to handle such an assortment of fruit profitably. And then there is no use for any kind of apple in an orchard under five trees of the sort, excepting some dessert kind for your own use. Confine yourself to three or four varieties that are well known, and which will live and thrive in your vicinity.

CHERRY CULTURE.—Owing to the ravages of the pear slug on the leaves, and the neglect of the owners of the trees, a great number of dead cherry trees may be observed throughout the country. This is a great pity and a loss, besides, when, with but very little trouble, the evil might have been averted. Hellebore, either sprinkled on in water or dry, would soon put a stop to their operations. Cherry trees require very little manure and less cultivation; in fact some cultivators of experience have found that as soon as they allowed the grass to grow around their trees that they commenced bearing heavily, and soon wore a healthy, vigorous appearance, while, where they cultivated them, the bark would burst, gum would ooze out, and present a miserable appearance, if not die altogether.

A GOOD RASPBERRY.—We desire to say a word in favor of the Franconia Raspberry: This variety, we find after a long test, to be one of if not the best raspberry grown for market or domestic purposes; canes harder, vigorous grower, fruit large, bright red, firm, seeds small, and altogether hard to beat.

RHUBARB.—This is one of the most useful plants in the early spring, and no well-appointed garden or otherwise should be without some of them to yield their juicy stalks for the manifold uses on the table. It is a very indispensible article, coming in when our stock of fruits and preserves are exhausted, and before any more are fit to pick. It can be transplanted at any time during summer, and, though it thrives well, no matter how neglected, still the proper division of the roots every four or five years, and liberal manuring, will keep up a constant supply of large and juicy stalks.

PLANTING FOR EFFECT IN WINTER.—In planting large ornamental grounds, a great deal may be done to enliven the scene in winter by the proper contrasting of such trees as White Birch, Golden Willows, Red-barked Willows and Evergreens. Mountain Ash, covered with its scarlet berries, especially after a snow fall, presents a charming picture, besides being attractive to the birds.

This is the most important month of the year for the final planting of trees, shrubs and flowers, as the beauty or otherwise of the arrangement for the summer and autumn depends on the time and manner of planting.

LAWNS should have a light top-dressing of guano, or some other finely pulverized stimulant, to increase the growth of grass and prolong its greenness in the drouth of summer.

WEEPING TREES.—No lawn or grounds is complete with an assortment of trees without one or more weeping trees, such as Weeping Elm, Ash or Willow. The Cut-leaved Weeping Birch requires special mention; embracing the several beauties of graceful habit, fine, delicate foliage, &c., makes it worthy of a prominent place in any collection of trees or for country decoration.

FLOWERING SHRUBS. — Every rural home or city one either, where they have space at all, should have a few shrubs; especially those that are hardy, distinct in color and possess an adaptability to thrive in any soil. We mention the following as useful either to plant singly or for grouping: Lilacs, Syringas, Snowballs, Wiegelias, Deutzias, Spireas, Berberry, purple and common, Purple Fringe and Pyrus Japonica.

HERBACEOUS PLANTS are perfectly hardy and do not receive that attention that their merit deserves. By a judicious selection of varieties, you may have a succession of flowers from May till October. Pæonias, Phloxes, Delphinnus, Hemorocallis, Lilies, Chelone, Barbara, Spireas and Hollyhocks are all strong-growing plants, mostly with large leaves and tall spikes of flowers, which makes them suitable for planting at backs of borders; or, mixed through shrubs and trees, present a charming appearance, while, for edges of walks or beds, such low-growing plants as Lily of the Valley, Achilleas, Phox Verna, Sedums, Campanulas, &c., will prove very useful. In mixed beds of flowers, the addition of a few Gladioli bulbs, with their showy spikes of flowers, will form a striking contrast.

We believe that the investment of a few dollars in the above-mentioned classes of plants, with some Geraniums, Verbenas, Petunias, Asters and Zinnias, will be productive of more happiness, especially to the woman folks, than anything we know of.

Tulips.—No. 2.

Written for the Farmer's Advocate by Dr. J. H. G.

Tulips are divided into early, double, violet byblooms, rose byblooms, bizarres, breeders or selfs, and parrots, which have all descended from the gesneria tulip and its hybrids and other ramifications and crosses.

The earliest of all these beautiful gems is the Duc Van Thol, which comes after the crocus and snowdrop. It is a small bloomer in proportion, seldom higher than from four to six inches, and a bed of them in early spring, is a joyful sight to all eyes. They are not dear, about six or eight cents each, and a few can be obtained, by every one so disposed, from any florist, in proper season. They are colored red, white, yellow, rose, and feathered and flamed, red and yellow. There is also a number of double varieties worthy of culture.

The next section is the early tulip; it follows the Van Thol, and is composed of about three hundred kinds, more or less distinct. In tulips, nothing is gained by promiscuous planting, but the beauty of the whole is much enhanced by having them in lines of separate colors in the beds,

and they are thus kept in contrast, the point aimed at by every amateur.

Most of these tulips are cheap, few being over 25 cents and the most showy about 5 cents each. They are of all imaginable shadings, tints and colors; pure red, crimson, yellow and white; and these again striped with all contrasts, down to the most delicate shades of rose and lemon.

The double tulips are a noble class, and as double as a rose. A bed in full bloom, in distinctly colored lines, is a gorgeous sight. As we have some experience in the matter, we will give a list of a few of each class, which we consider good, for the word "best" can scarcely apply when all are "most beautiful."

Bybloom tulips are divided into roses and violets. They are considered the finest section of the family, and in beds are a gorgeous sight, delighting everybody. They have a pure white ground, and are each divided into flamed and feathered, and from 18 to 36 inches, or more, in height. They are by far the most expensive of tulips, and have the greatest care bestowed on them by amateurs. Every means is used to retain them long in perfection, and a very simple and excellent plan is to stretch an awning of calico over the beds to protect them from the noonday sun. This costs a mere trifle, and adds a week at least to the season of bloom. The roses, as the name implies, have all shades of red, from the lightest to the deepest, in all sorts of markings; and the violets in every tint, from the softest to nearly black, and the deeper the color, the more it is considered worthy of admiration.

The next section is the bizarre, sometimes written bizzaire, or bizard. They have a yellow ground, with reds and violets, to almost a black. They are very lovely and showy, and not quite so expensive as byblooms. They increase much more rapidly, and a collection of one hundred bulbs in twenty-five varieties is generally trebled the first year. Such a collection is enough for two good beds of 12 or 13 rows, four bulbs in a row. They are generally from twenty inches to three feet high.

We now come to the breeders, or plain colored. These have only one color and are generally purple, or a dark buff or leather color. We have not often met them in gardens. They are of most stately growth and very handsome. One in my garden, last year, was nearly five feet, and they are generally from 30 to 40 inches high. They are well worthy of a bed in the flower garden, and keep long when gathered for bouquets.

The last group we shall note is the parrot tulip. It is a fine and lovely flower, nevertheless, grotesque. The petals are curiously notched and serrated at the edges, and the colorings are stripes of red, yellow and green, fantastically mixed with each other or brown. There are also some pure yellow, brilliant and scarlet with rich reflections, or a gentler red. A bed of monstra rubra major parrots, in full beauty, is a sight worthy of many a mile of travel, and not likely to be forgotten when once seen.

This section is very cheap and prolific. We got from Holland, some years ago, a dozen bulbs, and now have a couple of well filled beds. The monstra rubra is, however, by no means so rapid an increaser, but one of the most glorious of tulips. The petals are often five inches long and of the most dazzling crimson imaginable. Parrot tulips are a hybrid between the cornata stenopetala and tulipa gesneriana sylvestris. It is a cheap section and can be obtained from Holland for $1.20 per hundred, mixed bulbs, good enough for any one.

The monstra rubra is 15 cents each and very cheap at that.

The following dozen sorts of early tulips are very excellent:—1. Belle Alliance, fine red. 2. Chrysolora, yellow. 3. Bizarre Verdict, red stripes on yellow about six inches. 4. Duc D'Autriche, large red, yellow border. 5. Grand master of Malta, white and red streaked, splendid. 6. Rose a Platis, rose-shaded. 7. Pigeon, white. 8. Tom Moore, orange. 9. La Precieuse, rose, very fine. 10. Arms of Leyden. 11. Sterne. 12. Sampson, red and yellow stripes. One hundred bulbs in twenty-five sorts can be got for $3.50.

Of double tulips we shall mention four splendid: 1. Blue Celeste. 2. Hercules. 3. La Belle Alliance. 4. Yellow Rose, very sweet scented and large.

Bizards, bybloom violets, and roses, are termed late or show varieties, and are the pets of florists and amateurs. Of fine bizarres a few names will suffice:—Polyphemus, Czar Nicholas, Duke of Macklenberg, Mr. F. Perkins, Royal Soverign, and Vulcaine, are all fine.

The violet byblooms are majestic in appearance and seem to rivet the attention of a stranger.

Violet St. Antoinne, Bellissma, David, Belle Actrici, Salamandra, Brunette Armable, Chœf D'Ouvre, Milton, and Louis XVI., are all fine; but Louis XVI. is pre-eminent. In my opinion roses are the most gorgeous, as the coloring is more in contrast and from a red or pink to the deepest black of crimson.

The following can be well recommended as extra: Rose Perleschaap, Mignonne, Michael Angelo, Sila's Grand Vase, Ma fille de Holland, Heeber, Cameuse de Craix, Pretiosa, Cerise 'a Belle Forme, Primo bein du Noire, very dark, and Thalestrus. All these named in the various classes have been grown in our garden year after year, and, have not in the least degenerated, have multiplied many fold, and will soon be a blaze of beauty. We can, therefore, state decidedly that no one need be disappointed in them, with common culture. The house, or pot culture of tulips, will not be considered at present.

It will now be most naturally asked, what are the characteristics of a fine show tulip? and we shall end the paper by stating them.

The bloom is composed of six petals, three inside, overlapped by three others. The ground color of all must be clear and distinct, without an atom of shading, as a tinge renders the tulip comparatively worthless. The markings must be all cut sharply and with precision, and not approach the base of the petal, at the same time every petal must have these markings alike. The petals must all be round at the edge, quite even, and expand so as to form half a ball or make a cup. The edges must lie overlapped, and be even and close, and not exhibit any space between them on their fullest expansion, which is technically termed "quartering." What is termed "feathered," consists in the markings being around the edges, and uniform, so as to make a continuous circle of the bloom; and "flamed" means having a line down the centre of the petal, which, however, must by no means come near the base of the cup, and the markings must not be on the edge of the blossom, nor break through to it. Many of the feathered varieties have a line, or "beam," running down the centre of the petal.

The colors must be persistant, or remain intact, even after the petals fall off, and, whether light or dark, the purity and brightness of the white or yellow ground must be clear and unflushed and unbroken.

Of late years the English florists have succeeded in far surpassing the Dutch in tulips, but the expences of cultivation are very great and the prices consequently enormous. A "fine" collection is considered worth £1,000, or about $5,000. Even at present, larger sums are paid for extra good and choice tulips than for any other bulb.

Fourteen Millions of Dollars in Silver Coin.

It it thought that money will in a short time be very abundant in the markets of Canada, and it is well that we should bear in mind its real value. It is not sterling bullion, nor Canadian bank-notes, that will be pressed upon us in exchange for the productions of our industry. There are, we are told, in bankers vaults in the United States fourteen millions of dollars in silver, and this, it is said, will soon be put in circulation. American silver coin, not worth the amount it represented when some time since it was abundant in Canada, has since depreciated greatly in value. Silver mines throughout the world have been wrought extensively, and the yield of the rich metal has been such as to depreciated the value of silver and, consequently, of silver coin. American half-dollars are only worth at present forty cents in this market. It is said on authority that after this they will be worth much less. Since that time in which the people of Canada by a united effort got rid of the U. S. currency, a few years ago, the price of silver has fallen sixteen cents an ounce. When the American coin is worth twenty per cent. less than its assumed value, what may we expect it to be when that great hoard of depreciated money is put into circulation. The better course for Canadians to follow would be to prevent its circulation in the country by refusing to take it in payment. This would save all parties from losses much greater than were incurred from this currency at a former period, when its value was higher than it is at present, and it was not so extensively circulated as it it to be feared it would be now if we accept it in exchange or payment. The greenbacks we know are worth much less than they promise to pay, and it is said by those best versed in "exchange" that the value of the silver will be lower than that of the greenback.

Importation of Crude Material—Fostering Home Industry.

At a public meeting held in the Victoria Hall, Cobourg, a resolution was moved and carried to support the grant of a bonus of $5,000 to a new matting factory in the town of Cobourg. The *Sentinel* argues very forcibly in favor of the undertaking, and as we are earnest supporters of every industrial pursuit tendering to promote the prosperity of the country, we heartily say, in ploughman's phrase, "God-speed."

This enterprise has led us to consider it in two aspects. The material used principally by the company, in the manufacture of their goods, is brought to the factory after a carriage of thousands of miles by land and sea. This material is the fibre of the cocoanut, grown in Hindostan, and prepared there by the natives for manufacture. This may be called the first expense incurred—it implies labor and wages. Having been so far prepared, it is then carried by rude ox-carts to the railway station--another item of expense. The iron horse then bears it to the seaport, and from that it is borne from the Eastern to the far Western Continent by sea. Finally it arrives at the factory in Coburg to be manufactured by Longmore, Clarke & Co. What a long transportation for the husk of the cocoanut! and what expenses must have been incurred. There is, however, every reason to hope that the enterprise will be successful. A little fostering protection till it be well established may make its success a matter of greater certainty from its beginning, and in the hands of good business men we may, we hope, safely predict its prosperity.

And, as a second consideration, let us look at this question of giving bonuses. We are told that is entirely opposed to the true principles of

political economy to foster any branch of industry. This giving of bonuses, it is argued, is a gross fallacy, taking its place with protective or fostering tariffs with the other delusions of old times. "If an industrial pursuit cannot prosper by itself from the first, without adventitious aid, let it sink." A different opinion, however, is entertained by some people at Cobourg. The manufacturing company will give employment. They intend to employ one hundred hands constantly, and, when the works are in full running order, one hundred and fifty. The people—they who are to pay the bonus—say the employment of so many hands, implies the purchasing of food and fuel and clothing by so many families, and the paying by them of house-rent and taxes, and they say the price paid for the necessaries of life will find the way to their pockets. And this is but one instance of many. The opinion is general, and is becoming *epidemic*, that it is the true policy to encourage and foster industrial pursuits throughout the country; that the prosperous state of each branch of business, implies the prosperity of the community at large, and that a depression of manufacturing, mercantile or agricultural interest cannot exist without affecting more than that one interest; that we must give our shoulders to the bearing of one another's burdens.

The fibre of the cocoanut is imported from Hindostan to Canada—from India, the Empire of the Queen of Great Britain, to the remote semi-continent, that also rejoices in being part of the dominions of Britain's Queen. On every continent—in every sea—the Union Cross is borne by the hands of Britons, and its presence assures the protection of British industry and commerce, and her mission for the welfare of the world.

May on the Farm.

A right busy month, as well as a pleasant one, is this on the farm; in English country life there is no season more pleasant. Vegetable and animal life are all full of promise. The bursting buds, the springing verdure, and the early flowers of the fields and lanes of Old England, make every scene bright and cheerful. The old English songster of Robin Hood said truly, "There is no month in all the year like the sweet month of May." But we must pass over the primroses and cowslips, the buttercups and daisies, for the cultivator and harrow. Business first!

First in order and importance is the closing of our seeding operations. Already, as the weather permits, the last of the spring grain is to be committed to the well-prepared soil. Whether sown broadcast or in drills, we have found great benefit from completing the work by the use of the roller. While it pulverizes every particle of the surface, and makes it more available for the nutriment of the tender germ, it places them so clooe together that the drought, now to be guarded against, has less power to retard the vegetation.. An old farmer has said, The difference to the crops, of using and not using the roller, is, in a good year, having a good crop or a half one; in a bad year, having half a crop or none. There can be no doubt that a considerable portion of the seed sown perishes from want of care in the preparation of the seed bed, and in not protecting it in its germination. Moisture is necessary for vegetation.

Grass and clover seeds may still be sown, though the experience of many farmers is in favor of earlier sowing in consequence of our generally dry summers. We ourselves never had clover and grass do better than when sown, with the barley crop, in the first week of May. The soil was then in the best tilth, such as is most suited as a seed bed for such seeds, and, being fresh from the last cultivation, the germination took place in a very short time. The seeding may still be done, but let the seed bed be well prepared and the ground rolled after the seed is sown and harrowed lightly with a seed harrow, or, if that be not at hand, with a brush harrow. Let oats and peas mixed be sown for June soiling—such varieties as produce the most hanlon and stalk are best for the purpose. This crop will be found very beneficial, even where cows are fed on the pastures. It will come in as a good additional food, when needed. This is the month for potato planting. The last week of the month is preferred by many, but we agree with those who think it better to plant earlier in the month, even at the risk of the June frost. Planted late, the quality is seldom so good. The low price received for the crop of 1875, should not be a means of preventing our planting this usually profitable crop. Such low prices are of rare occurrence, and even if the market price be low, potatoes are very valuable as food for cattle, We always found that raising potatoes for stock feeding was a very profitable branch of farming. The low prices will make us bring smaller quantities to market, and feed more to our cattle.

Mangolds, carrots, and parsnips should now be sown with as little delay as possible. We pay too little attention to the growing of these valuable roots. In the reports of agriculture from almost every part of the country, we meet the remark—Little or none of those crops grown in this section. Where turnips are sown, it is thought that sufficient provision has been made for the winter. But something more is needed. Turnips have their value for stock-feeding, but, owing to turnip fly, drought, and other causes, the growth of turnips has been found so uncertain, that we should not rely on them altogether. Mangolds and beets may succeed when turnips miss, and they are excellent feed for cattle, especially for milch cows. The yield, too, is very large. Every farmer should sow carrots. There is no more valuable addition to the ordinary food of horses. The white Belgian carrot is the variety most sown for cattle; but the long Orange and other varieties are more nutritive, though their yield may not be quite so heavy. Above all other roots parsnips are rich in nutritive properties. In the Channel Islands, where every foot of land is of high value, and turned to the best account, the parsnip crop is the great reliance for feeding their very valuable cattle. Let every preparation be continued for the turnip crop to be sown next month.

Keep your cattle off the pastures as much as possible till the middle of the month. If the crown of the young grass be eaten close in its early growth, it will not be nearly so productive as if allowed to gain strength before being cut down. And the *poaching* of pastures and meadows is of the greatest injury to them. The provident farmer will have roots and dry fodder to last for the first fortnight in May. Beans should be planted this month, and and peas sown. In our very short spring, much of our seeding must be done in May.

Trees may still be planted. The ground is indeed seldom in a fit state to plant them earlier, but fruit trees, and trees planted for shade, and to make amends for the thoughtless destruction of all our native trees, will do well if planted carefully in this month, the earlier the better. May is said by some to be the best month for planting evergreen trees, though we have found them to succeed fully as well when planted in Autumn. From the woods we can easily obtain, besides, hemlocks, pines and balsams, and they bear transplanting well, if taken up carefully, though those bought from a reliable nursery are more profitable.

What Shall be our Root Crop for 1876.

"Turnips, carrots and mangolds but little cultivated; labor scarce and wages high, a great obstacle to the cultivation of food crops."—Analysis of Crop Report for 1875.

The report copied above led us to enquire if the farmers in the other Divisions of Ontario were detered, by the labor being scarce and wages dear, from the cultivation of root crops, and we are pleased to see by the reports this dread of high wages has not had that effect. The culture of root crops, on the contrary, is becoming more general, though not to such an extent as we hope to see it; and, though in some places the yield has been light, it has, in other places, and not a few, been heavy. In one report the yield is given:—Turnips, 700 bushels; carrots, 600; Mangolds, 750 to 1,400. In another report: carrots, 600 bushels; mangolds, 700; turnips, 700; and in one there is a return of 600 bushels of parsnips, and in another of one thousand.

The largest yield in the majority of the returns we find to be of mangolds; but in reply to the query, What Shall be our Root Crop, we would say, sow that one which has given the heaviest yield, nor any one to the exclusion of others; but let there be a variety in our root crops, and then, if one be light or a partial failure from any cause, we may expect, by its well doing, it will at least make good the loss, after defraying all expenses. Are the "scarcity of labor and the high wages" such obstacles as to prevent the cultivation of root crops? We think not. It has been proved repeatedly that the cost of raising roots is, under favorable circumstances, but a few cents per bushel. Let us take, for instance, an acre of mangolds. The expenses we will set down as follows:—Plowing and drilling one acre, $4.00; drawing out and spreading manure, $5.00; seed, $2.00; sowing seed, $1.00; cultivating by horses, $4.00; by manual labor, $6.00; pulling, topping and saving, $6.00. Total expenses of one acre of mangolds, $28.00. For this outlay the farmer has a crop of from 600 to 1,000 bushels of roots, or even a yet larger yield, as seen by the reports given above.

The yield of sugar beets is often equal to that of mangolds, and both have a very beneficial effect upon the live stock of the farm. Mangolds and sugar beets, being especially rich in saccharine juice, are excellent winter food for stock. If fed entirely an dry food, as straw or hay, they will fall away in condition in the winter; but feeding them on roots in addition to the dry food they will, when the spring has come, be better in condition than when housed, and the healthy state they are in when the early grass is ready for them will show itself during the summer, whether they be intended for the dairy or for beef.

The Culture of Beans.

To every farmer the same system of farming will not ensure an equally profitable result. Some are very successful in devoting their entire energy to some specialty in field culture or in stock raising and feeding; and others derive more pleasure and greater pecuniary gains from a system of farming that is greatly diversified.

Diversity of farming, of tillage, of grasses, of manures, of crops—such is the system we would pursue as far as circumstances would warrant us. As the crop of one course in a rotation, or instead of a scourging crop, the bean is not sufficiently appreciated in Canada. The bean and pea are much alike in their effects upon the soil; if they do not add to its fertility, as is said, it is at least certain that they do not take from its productiveness of succeeding crops. And they will succeed better on poor soil than any other variety of crop.

Ground may be too poor even for navy beans, but, if manured with rank, fresh manure, it is worse than if poor. A sharp, dry soil of medium fertility is most suitable for the bean—one on which its growth will be quick and its ripening early.

The rule for the time of planting corn holds good for bean planting. Early planting is best, but not so early as to run the risk of being killed by June frost, nor so late as to be in danger of injury from an early autumn frost. The ground being in good tilth at the time of planting, as it may be then without much unusual labor, the growth will be rapid.

There are several varieties of the white bean, such as is generally grown in garden and field. The small white bean, known to many as the navy bean, is considered the hardiest and earliest in ripening. It is a good bearer, and in good demand for soup and for baking. The larger variety, so well known as the Marrowfat, is preferred by many for all cooking purposes. With us it is an especial favorite. It bears well. Its handsome appearance, when well saved, ensures a ready sale at good prices, and it is very tender and well-flavored. There are different varieties of small white, as well as of the larger white beans. Among the latter another favorite is the large white Kidney. Of the smaller beans the Cockstone is preferred in some localities; it is one of the smallest white dwarf varieties. It is said to be the best for cooking with pork. We omit colored beans of every variety from any list of those suited for field culture. Some of them we find excellent for garden crops, and for use when green, but, when ripe, not at all comparable to the white.

The quantity of seed for an acre is from four to eight pecks—four of the small, and six or eight of the larger varieties; the produce—30 to 40 bushels, in some instances more. They may be planted by hand, but if the quantity be large, it is better to use the hand-drill, which will open the drills, drop, cover and roll very expeditiously. When the beans are four or five inches high, earth them up carefully with a narrow-breasted plow, and when the buds appear, earth a second time. Keep the ground free from weeds. Harvest them when they have assumed a light yellow color; pull them up and throw in heaps till dried. Guard against rain.

It is well that a first experiment in bean culture be on a small scale. If properly conducted, it will be found profitable, paying better on a light soil than many other crops, and leaving the ground in good tilth for succeeding crops.

UTILIZATION OF THE SUDS FROM THE WASHING OF WOOL.—In nothing has the advance of practical science been more clearly evinced than in the extent to which substances formerly wasted and lost are now reclaimed and made to constitute an important element in the profits of the manufacturer. One of these applications consists in the recovery of the soap-suds from the washings of wool in woollen factories. These were formerly allowed to run down the sewers and into the streams, to the great pollution of the latter; but in Bradford, in England, they are now run from the washing-bowls into vats, and there treated with sulphuric acid. The fats rise to the surface in a mass of grease a foot or more in thickness, which is carefully collected and treated in various ways, mostly by distillation. The products are grease, used for lubricating the cogs of driving-wheels in the mills; oleic acid, which is worth about $100 per ton, and used at a substitute for olive oil; stearin, worth $400 per ton, etc. It is said that some large mill-owners are now paid from $2,500 to $5,000 a year for these suds, which a few years ago were allowed to run to waste.

THE importation of butter into England last year in quantity was 1,467,183 cwt., and in value 8,468,-299*l.*, and in the preceding year, 1,620,676 cwt., and 9,053,157*l.* In the same period the importation of poultry and game, alive and dead, was 328,034*l.*, which was an increase on 1874, when the amount was 171,137*l.*

NOTES ON THE GARDEN AND FARM.

THE *Journal of Horticulture*, London (Eng.), contains an excellent paper on grape growing, as exemplified by Mr. Dickson, of Arkleton. England, one of the prize-takers for grapes at the recent great show in Edinburgh. It will be remembered that his best bunch was one of the largest ever seen, so that any information relating to his methods of culture cannot be devoid of interest. One of the main elements of success with this particular fruit is certainly the formation of the borders, and Mr. D. has shown such excellent judgment in selecting the ingredients for his that we feel assured vine-growers in this country need not fear to follow his example. The border rests upon a natural bed of gravel, which is a great point gained, namely, perfect drainage. The soil was excavated 3½ feet deep at the back, sloping to 2½ feet at the front. The compost for filling in was composed as follows: To every 12 cart loads of fibrous loam add 2 cart loads of old lime rubbish, 1 of horse droppings, 1 of charcoal and 5 cwt. of inch bones. These ingredients were thrown in fresh, without previously rotting in a compost heap, and the border has been annually enriched by three doses of liquid manure before the fruit begins to color. In addition to this, the border is annually dressed with about three inches of turfy loam and inch bones, which tend to keep the roots near the surface—one of the greatest secrets of success.

FINE YOUNG CATTLE.—We had much pleasure in weighing some well bred steers lately:—First, a pair of three year old Devons owned by Mr. Thos. Dunlap, of Lower Village. They are after the famous Devon Bull, Captain Jinks, lately owned by the Onslow Agricultural Society. One of these splendid animals weighed 1,580 pounds and the other 60 pounds less; making the pair 3,100 pounds, the weight of a good pair of fat oxen this time of year. We doubt very much whether the Dominion can turn out six pair of grade Devons, of the same age, heavier and better matched. Then a pair of grade Durhams, same age, property of Mr. Richard Christie, Salmon River. They are after the Onslow Society's grade Durham Bull, Sir Henry. One of these fine animals weighed 1,400 pounds, and the other 1,300 pounds. They are a very neat pair of cattle. The next pair—also three years old—after Captain Jinks, belonging to Mr. Israel Longworth, Truro. One weighed 1,366 pounds and the other 1,314 pounds. They are thrifty looking animals. We also weighed for Mr. Longworth a pair of yearling steers after the Onslow Society's thorough bred Durham bull, Oliver Twist. These likely animals turned the scales at 1,536 pounds. They bid fair to make a pair of cattle some day. We would here call the attention of farmers to the sale of imported stock which took place in Halifax on Tuesday, November 10th; and, to show how much good does and will accrue to the province from the importing of good stock, it is only necessary to refer to the foregoing article and other statistics which we have from time to time given in reference to stock in this country itself.—*Sun, Truro, Ort*

HUNGARIAN GRASS FOR COWS.—The following is the testimony of Dr. Loring respecting Hungarian grass: I believe I can make more milk with this grass, cut and mixed with cornmeal and shorts, than I can with the best timothy hay, cut and mixed in the same manner. And when you remember that you can raise on ordinary land, by sowing the seed of Hungarian grass late in June, from two and a half to three and a half tons of good fodder to the acre, and that this crop can be sown after we have ascertained whether we are to have a good crop of hay or not, you will see the value of this grass. I have such a high opinion of it that, on my own farm this year and last, I raised from seventy-five to one hundred tons of it for the purpose of feeding to my milch cows during the winter.

BARLEY.—The *Western Farm Journal*, in a leading article on the culture of barley, says: There is perhaps no grain cultivated in the United States that pays better for care bestowed upon it, nor one that pays more indifferently for common culture than barley. It may also be said with perfect truth—there are none of our cereals the true condition of culture of which so little is known by the average farmer. In the West we have comparatively little soil capable of producing the finest qualities of barley, even if our seasons were just suited to it, which they are not.

ORCHARD GRASS.—Mr. Harvey Smith, of Montgomery county, has been treating a piece of ground of two acres for the last three years with eminent success. On the first of May he sowed two bushels of the grass seed and eight quarts of clover per acre. The land was in the finest possible condition, and black—I may say jet black—composed largely of muck or vegetable matter. The season was dry, and it was feared there would be a failure; but the grass appeared, grew at once, and by the middle of July was cut, the crop not yet in blossom. The two acres cut three tons of the finest possible (dried) feed. The clover had merely obtained a footing, and contributed nothing to the crop, the grass taking the lead of the clover. The growth that followed was very rapid, and in a short time fit to cut again; but it was desirable to see what effect it would have as pasture, so the stock was turned in and luxuriated and thrived upon it. To-day, the last of October, it still affords good feed, the clover during the season being kept back, yet showing between the small tufts of grass.—*Cor. Co. Gent.*

The warm weather in December and January swelled the fruit buds in Lake county, Ohio, so that the subsequent cold has killed the peaches generally throughout the State, and in many parts the sweet cherry also. Pears and plumbs are also hurt in some localities, but I think not seriously. Apples will be likely to yield a heavy crop, owing to the trees having a rest last year. Grapes and small fruits generally promise well, at least in this northern section of the State. Wheat looks well, and our farm stock came through the winter in good order. The hay and grain are not used up as close as usual, owing to the large amount of potatoes used as feed.

SUPERPHOSPHATE.—From a contribution to the *Farmer*, Baltimore, Md., we take the following: There are two kinds of phosphates, the one called mineral and the other bone phosphate. Chemists say they are similar in value and properties, but the bone phosphate is generally preferred. About 40 years ago the average yield in wheat of the soils of England had been run down to about 12 bushels per acre. They found that the soils had become in a great measure exhausted of the phosphates. Since that time they have ransacked the world for bones, and they have restored the fertility of their soils, and run up their average yield of wheat from 12 to 28½ bushels per acre.

HEREFORDS FOR BEEF.—A writer in the *Ohio Farmer* says: As a beef producing breed, the Herefords are second to no other. They produce more beef, and of a better quality for the food consumed, than any other breed. To those who are breeding native cattle or grades of any breed, I would say—use a thoroughbred Hereford bull, if the object is beef. They also excel all other breeds for early maturity, often selling at one year old for choice Christmas beef.

PRINCE EDWARD ISLAND.—We are glad to hear of the progress this island—the garden of the St. Lawrence—is making in industrial pursuits. Agriculture is greatly benefited by extensive improvements in process in the water channels. Mud-diggers are at work in all directions, and the rich deposit taken from the channels is utilized by supplying the drain made by farming upon the fine soil of the island.

THE AVERAGE OF CEREALS IN THE WEST.—The *Prairie Farmer* says: The average of all the cereals will far exceed that of any previous year in the history of the West; and with careful tillage and good seed, the farmer may safely trust to nature to bring forth a harvest that shall render the Centennial year a memorable one in the history of the agriculture of America.

EXERCISE FOR HORSES.—With colts and valuable horses, exercise is necessary, for without exercise, they are not improving, but really deteriorating. Horses should not be kept in stalls two days at a time. Turn them out where there is pure air and sunlight, and the natural soil for their hoofs to stand upon.

It is reported that in the township of Knoxville, Iowa, four thousand hogs, having an average weight of one hundred pounds, have died this season of the epidemic known as hog cholera. The entire loss in Marion county is estimated at current prices to be $128,000. What is true of Marion is true of nearly every county in the State.

Agriculture.

Cost of Starting Ten Acres of Hops.

A subscriber asks for information in regard to the cost of raising hops. They are not raised to any great extent in this part of Canada. Prices have been unremunerative lately. We give the following article on the subject:—

A correspondent of the Syracuse, N.Y., *Standard*, says:—

"It may be interesting as well as useful to know something of the expense of hop-growing, and I will endeavor to give the cost, very nearly, for I have been in the habit of keeping some account of these and other farming items, and I think I can come very close to the mark, which, of course, will vary with different men and localities. The labor is on the basis of $1.50 per day.

To six days laying out yard, 12s.	$ 9 00
To 40 bushels (15 pounds per bushel) roots, say 3s. per bushel, we have paid 6s.	120 00
To eight days cutting same, 12s.	12 00
To 15 days setting out roots	22 50
To hophouse, covered with hemlock and bottomed, spruce floor, sawed cedar shingles	550 00
To stove and pipe	80 00
To kiln cloth, 41½ yards, 16 cents and making	8 00
To hop press	55 00
To 75 hop sacks, three yards burlap, 1s., making and thread, 7½ cents, each, 45 cents	33 75
8 boxes for 32 pickers, 12x25x27 inches	40 00
To hop bars with springs for common lumber wagon	38 00
To 15,556 poles, cedar, 12½ cents, sharpening, 2½ cent, 15 cents	2,333 40
To cartage to yard, 1 cent	155 56
To 2 hop boxes, 20 pounds each, 15 cents.	6 00
To 2 grubbing hoes, $1.50	3 00
To 2 self-sustaining ladders for tying	2 00
Total	$3,468 21

To put it in round numbers, for ten acres, it will cost $350 per acre. In addition to all this, a house is needed, with beds, a stove, cooking and table ware for a family of from twenty-five to forty, for use only from fifteen to twenty days in picking time.

I believe these are about what will be needed, and the prices, on an average, nearly correct. I have said nothing about the use of the land for the first year, or the cultivating, as the corn crop will pay this; nor have I said anything of such tools and implements as are needed in usual farming, for these are on hand if no hops are raised. A two horse cultivator will be desirable, on the score of economy.

The labor, cost of harvesting, use of land, fifteen per cent. on cost of poles to make them good when worn out, ten per cent. on other capital, etc., for each year, with good fair crops, will be about fifteen cents per pound.

The Agricultural Resources of Canada.

England, the great mart of the world, is daily increasing in population and wealth, and with these is growing the demand for larger supplies of breadstuffs and animal food. Meantime, the agricultural resources of Canada are assuming dimensions commensurate with the demand. In connection with the momentous question of supply and demand, the subjoined report of the agricultural capabilities of the Peace River Country in our great North-West will be read with interest:

The Committee on Immigration and Colonization met on the 24th inst. Prof. Macoun, Government Botanist, who travelled across the continent with Mr. Sandford Fleming in 1872, gave particulars of a visit to the Peace River country in October, 1872, to report on the flora. Barley ripened at Edmonton on 27th August, 1872. At Little Slave Lake barley ripened fifteen days sooner. Spent latter part of July and August in the Peace River country, and as far as Lake Arthabaska. On the 21st July got new potatoes. Barley at Fort Vermilion ripened on the 6th August. At Arthabaska wheat ripened on 25th August, 68 pounds to the bushel, and barley, grown at the same place, 58 pounds to the bushel. He described ears of this wheat at from 6 to 8 inches in length, and containing 5 or 6 grains in each cluster. From the Rocky Mountains to the mouth of Peace River is 760 miles, with only one rapid. About one hundred miles on each side of the river is a country suited to wheat growing, with scarcely a swamp. The country was most beautiful. He took lists of plants by sections of country as he went northward and eastward, and when he came to tabulate his collections he found they indicated, much to his astonishment, that the climate grew warmer as he went north, and his experience was that the climate of Peac-River was warmer than the Laurentian country back of Belleville. Vegetation was most luxurie ant. Grasses were five to six feet high; a species of larkspur was seven feet high. The soil must be very rich to continue this growth year after year. Peace River opened for navigation about the middle of April, giving six months open water. Snow falls were light in the upper waters, but increased as the river approached Lake Arthabaska. The whole of the Peace country is fit to raise wheat. There were 250,000,000 of acres of land, almost all of which was arable and capable of supporting untold millions of people. Any European at present going into the Peace country to make money he would consider insane; a railway might pay ultimately. He believed as water communication was good, settlements could be pushed by it. Grasshoppers can never reach Peace River. If a belt of forest were planted along the American frontier, there would be no grasshopper plague. He showed that the average summer temprature in Peace River country was only two degrees below that of Halifax. Found lignite coal similar to that of Wyoming territory. Coal was found all along the east side of the Rocky Mountains, 100 miles from its base. Seams of pure gypsum from ten to fifteen feet thick, extended along the banks of Peace River for 20 miles. At Salt River the Hudson Bay Company's employes shoveled from the ground salt, which is used by the people of the country. Coal and hematite iron interstratified, were to be found. Tar springs were found through a district of 100 miles. Edmonton is 1,200 miles by water from Fort Garry. The climate in the interior was never wet in the fall. The country was settled by mission settlements, the half breeds being called freemen. He would not advise a policy of forcing immigration into the Peace River country. The Saskatchewan was a ditch compared with the Peace River. The samples of products raised there, which were being sent to the Centennial, would astonish visitors. The population, half-breed and Indians, were very much afflicted with goitre. The Indians were being decimated by scrofula, which would probably exterminate them in ten years. The people eat principally animal food, buffalo, moose, and prairie chicken. A railway could be built from Edmonton to Peace River country, and the grades from Fort Garry west to a considerable distance in British Columbia were less than those on the Grand Trunk.

Harrowing Wheat in Spring.

The advantage of harrowing wheat lands thoroughly in the spring, as soon as the ground becomes dry enough to prevent the horses sinking into it, is known to many farmers who have practiced it, but is unknown to the majority. Wheat is usually sown in September, upon well prepared land. This land is left there, subject to all the storms of rain and snow, and the dry weather in succeeding spring, until the wheat is harvested. In consequence, the land becomes, in May and June, nearly as hard as a meadow. At a season of the year when the plants are in the greatest vigor of growth, the land is so hard as not to give one-half the nourishment it would if kept mellow by any process. Suppose, for instance, corn should be planted in the fall, under similar conditions with wheat, and that the winter did not injure it, and that it were left without cultivation of any sort until harvested; it is evident that the yield would be diminished over one-half, in fact, the yield would probably be so light and poor as to be almost worthless.

Now wheat, from many experiments in its cultivation by hand in England, shows as great sensitiveness to cultivation as corn; the yield by careful hand cultivation being increased to sixty bushels, and, in some instances, eighty bushels per acre. Now, a thorough harrowing of wheat in spring, in a very inexpensive manner, performs the cultivation nearly as well as when done by hand. If the crust formed by the winter snows and spring rains is thoroughly broken, and the ground to the depth of two or more inches well pulverized, the effect upon the wheat is like magic. It starts into the most vigorous growth, and in a few weeks has nearly or quite doubled in size the wheat not harrowed. In pieces of wheat that have come under the writer's observation, which were harrowed in strips—that is, one strip not harrowed at all, and other strips on each side thoroughly harrowed, in the early part of June—the harrowed wheat stood fully one foot higher than the unharrowed at each side, and in every way was strikingly ranker and more vigorous. Mr. Robert J. Swan, of Rose Hill Farm, Geneva, N. Y., who has heavy clay land, says he has harrowed his wheat for four years with the Thomas harrow, and finds the yield to be increased fully ten bushels per acre. Byram Moulton, of Alexander, Genesee County, N. Y., harvested from fifty acres 1600 bushels of wheat. His neighbors only obtained about ten bushels per acre. The only difference in land or treatment was that Moulton's wheat was thoroughly harrowed with this implement in the spring, and his neighbors' was not.

The effect produced by harrowing barley and oats, after they have attained a growth of four or five inches, is equally marked. I have observed many instances where fully twenty bushels per acre increase, in consequence of thorough harrowing, was obtained. These facts, and many others of similar character, show clearly the great profit which farmers may derive from a thorough cultivation, by harrowing, of wheat, oats, barley and other sown crops, with the Thomas smoothing harrow.—*Cor. Country Gentleman.*

Pastures of Great Britain.

BY PROF. W. J. BEAL.

TTe objection often made to keeping land permanently in grass is that weeds come in and crowd out the grasses. This is only true in neglected fields, as is shown by the following:—

In a report of Lawes and Gilbert, the most celebrated English experimenters, they arrive at this general result: "That those manures which much increased the produce of hay, at the same time very much increased its proportion of graminaceous herbage," often changing the relative quantity from 76 per cent. to 97 per cent. By the above they mean that the true grasses crowd out the weeds when the land is highly manured. There are a few weeds that are not diminished by manuring, but the most of them are diminished. Lawes and Gilbert made some very interesting experiments with different manures on permanent meadow land.

In addition to the above, I wish to briefly refer to another remarkable point. At great labor and expense they tried similar pieces of meadows with different fertilizers. The change in relative proportion of plants in the meadow was very striking.

By irrigation, in England, it has been found that some grasses increase, others decrease; that "large and innutritious herbs in pastures are destroyed by irrigation, their places being supplied by the best grasses." Docks and a few others are an exception to this rule.

One great cause of deterioration of meadow land the Engilsh have fully learned, that is, "By allowing grass to get too old before cutting." This not only makes the hay of poorer quality, but it weakens the plants. This fact cannot be too strongly impressed upon farmers everywhere. This principle is well understood and practised by the gardener. He knows that his plants will grow larger and last longer if he pinches the flower-buds off, or if he prevents them from going to seed. We can prolong the life of nearly every herb by preventing it from seeding. Wheat may be made to last another year beyond its usual time if the flower stalks are kept cut back. Nothing is more trying to clover than to permit it going to seed. The earlier hay is cut, the better for the strength and longevity of the plants. Among our farmers there is still a difference of opinion as to the best time to cut grass for hay. Most of them believe it is best to mow when the plants are in blossom, but many of them wait longer. I have just given a well established rule, that for the good of the plant cut before the flowers appear. In the *American Agriculturist* for 1875, page 213, Prof. W. O. Atwater gives the latest conclusions of the chemist on the proper time to cut hay: "It depends, first, upon the feeding value of the crop gathered; second, upon the value of the aftergrowth; third, upon the value of the roots and stubble left to enrich the soil for another crop" He says: "We are forced to the conclusion that, as far as the feeding value of the stock is concerned, the most profitable time for harvesting clover is a little before the period of full blossom. The experiments upon other grasses have not been as extensive, but so far as they have been made, as well as from

analogy, we may adopt the same conclusions." An he adds: "These results, obtained by positive science, agree with the experience of the most observing, intelligent, practical men." Another thing: "If we cut early, we save more time for the second growth for another mowing or feeding." The whole of the article referred to is worthy of careful study.

I am not a chemist, nor have I made careful experiments to find the best time to cut hay, but in an address, January, 1872, printed in the Report of the Michigan Board of Agriculture, on theoretical grounds, with some observation, I stated that grasses should be cut earlier than is the practice with most farmers—a little before the plants were in flower. Several reasons were there given, some of which are the same as now given by Prof. Atwater.

Again and again the best English farmers have proven that it pays to drain wet land for the grasses. We have often seen the same thing done in different parts of this State, always with good results. Such fields stand the drouth better, and yield more and better feed, The sedges die out. There is always an improvement, notwithstanding the fears and cautions expressed before ditching. I cannot hear of a pasture anywhere that has been injured by tilling. I never expect to.

Two other customs may now be added in the treatment of English pastures. The droppings of cattle are often broken up and scattered to prevent rank spots, which are not eaten off by stock. It takes less time than might be supposed. They also mow off small patches of grass at a time where it is found running to seed. The small quantity at a time is readily eaten on the ground by the stocks, as it wilts and partially cures. Thistles and many other weeds are treated in the same manner. In place of the weeds and seeding, grasses will often spring up a fresh bite, very agreeable to stock of all kinds. In pastures in this country we very often see June grass and other grasses seeding early in the season, thus weakening the roots. The dead dry tops are left all summer, where, if cut off in time, or eaten off, there would be a good supply of fresh herbage all the season.

After getting a large number of replies from some of the best farmers of England last year (1875), in a summary given by Morgan Evans, he says:

"It appears to be the general practice of those who have laid down permanent pasture to select for the purpose the loamy, retentive portions of the farm, and to cultivate the lighter, more easily worked, as arable land. At the latest date the most popular grasses are timothy, alsike, several fescues, white clover, rye grass, and a few others. More seeds are sown to the acre than was formerly thought necessary; a brushing or light harrowing follows the sowing. Some mow and some pasture the young grass the first season, being careful not to cut or feed too close. The use of artificial foods for grazing stock is very highly spoken of as a most effectual way to improve pastures. There is no difference of opinion as to the great value of a top-dressing of farmyard manure on grass land."

The most valuable manuring substances are the following: First, nitrogen; second, phosphates; third, alkalies, especially potash.

Mr. Lawes, the high authority previovsly referred to, says: "You may be sure that the production of pasture is a most costly operation, and it takes a life time to convert arable land into pasture."

Alternate grazing and pasturing are highly recommend. Seeding by "inoculation" is rarely practised, on account of the great expense.

I have thus purposely devoted considerable time to grass-lands as treated in Great Britain, although we may not be able to adopt their practices in every particular. In England labor is much cheaper, land is more valuable. This makes hay, pasture, meat and grain higher. They can afford to pay more for artificial fertilizers. Their climate is cooler and damper in summer. On this account, grasses grow thriftier, and are not so likely to burn out in warmest weather. Their autumn, winter and spring are milder and more favorable to the better sorts of grasses. They have long tried and used many sorts.

Manure for Grasses.

The Michigan Agricultural College made careful experiments with different manures as top dressing for grasses, with the following results: The plots—half an acre each—of sandy, warm soil, exhibited the following facts at the end of three years: The top dressing was applied in 1864, and the grass was cut twice each season in 1865 and 1866. The proceeds of each cutting and each lot were weighed separately, and a perfect record kept. The results for the four seasons were as follows: On the plot to which no fertilizer or manure was applied, the total weight of hay yielded per acre was 8,740 lbs. Where two bushels of plaster per acre were applied, the yield per acre was 13,335 lbs., a gain of 4,484 lbs. Where five bushels of wood ashes were applied, the yield per acre was 12,007, a gain of 4,164 lbs. Where three bushels of salt were sown per acre, the yield was 13,957 lbs., a gain per acre of 5,227 lbs. Where twenty loads of muck per acre were laid on, the yield was 14,68 6 lbs., a gain of 6,524 lbs. These are results which indicate that there are fertilizers which will produce as good results as plaster. For instance, the plaster yielded a gain of 41 per cent., while the horse manure gave an increase of 71 per cent., or nearly a ton more grass per acre in the three years.—*Rural World.*

The Yield of Wheat.

The wheat crop, as the chief food grain of the world, ought certainly to be grown with profit. If this staple crop is by universal consent admitted to be an unprofitable one, there must necessarily be something wrong in its management. No other crop can take its place under our present system of farming, for it is, in the vast majority of cases, made the vehicle for bringing in grass and clover, and its place in the usual rotation cannot well be filled by any substitute. But there is a universal complaint that there is no profit in growing wheat. This is very generally true, but it does not follow that the blame belongs to the wheat, for with some farmers wheat is by far the best money crop they raise. But these farmers raise far more than the low average of 12 or 15 bushels per acre. It may be taken as a general rule that a yield of less than 25 bushels of wheat per acre is grown at a loss, at least in those localities where it is necessary to use manure to produce this grain. When the "virgin soil" is still unexhausted, and manure is left to rot idle in the yards, or to be washed into the streams, there may still be some little profit in 20 bushels per acre. But where 10 to 20 loads of manure per acre is used every four years, and lime, superphosphate or other fertilizers are applied periodically in addition, a crop of even 25 bushels is hardly profitable. Still, a larger yield than this is the exception rather than the rule upon well cultivated farms. An elaborate effort has been made recently by Mr. Klippart, the Secretary of the Board of Agriculture of Ohio, to ascertain how frequently 40 bushels of wheat per acre has been grown by farmers in that state. A circular was issued to the secretaries of the county agricultural societies, requesting the names of those farmers who had, within their knowledge, grown 40 bushels of wheat or over per acre. From Champaign County five names were reported, three of these farmers had grown 40 bushels, one 45, and one 51 bushels per acre. In Hardin County two names were obtained. Mercer County furnished six names; Morgan County, one; Putnam County, one; Shelby County, three; and Sandusky County, three names, one of which was that of a farmer who raised 61 bushels per acre. With these few exceptions, the yields reported where a few of 30 bushels or more, many of 25 bushels, and in many cases the latter yield was mentioned as an extraordinary crop. In some cases the yield was reported as being little more than the quantity of seed that had been sown. It is largely the custom in Ohio to sow the wheat upon the corn stubble, simply harrowing in the seed or covering it with one plowing or cultivating. Where this is done, a profitable yield cannot be looked for, even upon the rich bottoms of that generally fertile state. The few large crops reported are, without doubt, raised in a different manner from this, although we have no means of knowing the methods by which they were grown. It is the same in other states. Forty years ago, forty bushels of wheat per acre was very common in Western New York and Ohio, where now a third of that quantity is an ordinary crop, and a half of it is a good one. It is doubtful if any other state in the whole country could make a better showing than Ohio, although the average yield of wheat is slowly increasing in the older states. It is on the way to a minimum in the latest settled of the western states, California included, and there will be some years yet before it will reach a turning point. The incentive to a better management of the wheat crop is a powerful one. It is the necessity for the means of living in comfort. A farmer who raises 12 bushels of wheat per acre can hardly be said to live; he exists but cannot live in comfort upon such an income, nor can he make life upon his farm desirable to his children. Necessity must force him to improve his mode of culture, and to prepare the ground very much better than he has done heretofore. A low price for wheat relieves the American farmer from much foreign competition, and it is hardly probable that we shall see the price of wheat advance much above the present rates, unless as a consequence of a light yield. But a doubled yield is equal to a doubled price, and we can safely produce such a crop, inasmuch as with the high rents paid by English farmers, and the great profit in grazing, wheat growing in that country, which is our best customer for wheat, is yearly decreasing in extent. To produce this doubled crop is not impossible; the fact that some farmers do it, proves that others may do it also.

Cereals for Fodder.

"Must we raise our oats for the seed they contain? We certainly are at liberty to cut them for fodder before they are ripe, but we are so accustomed to the other way, that it seems almost wrong to do it. Yet it is done, and it is recommended." So says a correspondent of the *Country Gentleman*. His remarks on the subject have much to commend them. We have been too apt to consider the cash received in the market as the only profit from the farm. We are becoming educated to the true science of farming—that the feeding of stock for beef and dairy products is eventually a source of greater profit than relying on the bushels of wheat and oats. But, hear the writer for himself:

Now, the oat is just as much a hay (or grass) as timothy. It may be used to the same advantage, and in some cases is preferred. Sow thick, and get a dense, fine-stemmed growth, and cut just before the milk appears, or when it is present in the upper seeds. This is plenty late enough. Cure well, as you would clover. and instead of having a harsh stock, you have a tender, pliable hay, eaten with eagerness and great benefit to health as well as to perfect digestion, which is not the case with mature stocks, as you do not even get all of the little they contain. But cut with the substance of the juices in, you will get the benefit of this substance. There will be a good flavor to your milk and the products of the dairy.

The same remarks that apply to oats apply equally well to the other grains. Rye and some other cereals are richer in nutritious substances than the oat, but the oat affords more feed to the acre, and can be raised on poorer land. A heavy crop of rye haulm can be grown on a light sandy soil, if enriched. A crop thus gathered early for hay leaves the land less exhausted than if permitted to ripen, and so gets most of its strength from the atmosphere; it also leaves the land in a more mellow condition, and hence prepares it better for wheat or rye as a seed crop.

The benefit realized from grain hay over that of the common artic'e is in the larger yields per acre. The few experiments I have seen in the cutting of grain for hay induce me to believe that it is preferable to the grasses in general (clover always excepted) where properly treated. Oats, in two crops per annum, may be made to yield heavily, and an article that is probably superior to all kinds of haulm. Often the farmer can bring in advantageously a piece of grain for hay when the hay crop proper is light and the grain straw is heavy. This will pay. It will do to have an extra piece of oats for baiting, sowed early, so as to be used before the corn is advanced enough. What is left may be saved for winter feed, or ripened for the grain. There is this advantage, then, whether winter rye or oats, or any other grain is grown to fill out the summer feed, what is left can be ripened as usual, and if not wanted at all, which is rare, it can be treated as a regular crop of grain. There will thus in any event be no loss. As the summers are, you can hardly find one when this course would not be beneficial, and the more such forage is provided the more the profit, unless on the wild lands of the West and the South. Here in our cultivated Eastern States land is of too much value to have its product trodden under foot, as is the case with pasture, only realizing a third or more of the crop. The less this is done, and the more cut forage is grown, the greater the profit, especially when fed to milch cows in the shade, when the heat is greatest in the day, instead of leaving them broiling in the sun. This is partly soiling, and is being more and more practised, and by-and-bye soiling in full will be the rule. Why not now, or at least to a larger extent, and thus get the benefit at once?

Stock and Dairy.

Hints to Dairymen—No. 4.

Written for the Farmer's Advocate by J. Seabury.

As the season is now upon us when the dairyman will be actively engaged in the production of milk and in sending the same to the cheese-factory; the factory man in manufacturing it into cheese, or the dairy maid in converting the same into butter, a few remarks to each will not be out of place.

I would strongly urge upon the dairy man, the factory man, and the dairy maid to spare no pains and care in the endeavor to make a first-class article, for, as I remarked in a former article, "He only will succeed and be well repaid for his labor who strives to excel in his business." Let every cheese and butter maker strive to make an article above the average—an article that will be enquired for, or that a customer who after once buying will be sure to come back. Depend upon it, there is no trouble in disposing of a nice article in either cheese or butter. The great trouble with too many of our dairy men, as well as cheese and butter makers, is, they are blind to their own faults, and cannot see anything wrong with their own goods; and then there is another class who do not wish to see them.

In the first place, use nothing but tin vessels of every description; they are much easier kept clean and sweet than wooden ones. Wooden pails should not be allowed in the milk-yard upon any consideration; they are injurious to the milk, often giving it a taint, especially new ones; and besides it is almost impossible to keep them sweet and clean. When the cans return from the factory they should be emptied at once if they contain whey, and carefully washed and then scalded with boiling water and put out in the sun. There is nothing better for sweetening tin. Do not, on any account, allow them to stand in the hot sun for hours—as is often the case—before cleaning and scalding, thereby making it almost impossible to clean and sweeten in time for the next mess of milk. If those careless and indifferent dairymen had any idea of the trouble and anxiety they give the cheesemaker, through improper attention to cleaning their cans and cooling their milk, they would be much more careful with it. If they would only remember that one small mess of tainted or impure milk getting into the vat will spoil the whole.

The cows should be driven into a clean roomy yard or airy stable for milking, and that process should be gone through with as much dispatch as is consistent with thoroughness of the work. Each milker should have his own number to milk each time, and they should always be milked in the same succession, allowing no noise, loud talking or quarrelling with the cows. Keep them as quiet and contented as possible. When the milking is done the can should be placed on the stand, which should have some covering or protection from the sun while waiting for the waggon. The stand should be placed on the road side in a convenient place for the milk wagon. Too many dairymen who send milk to the cheese-factory make this a great bone of contention between them and the drawer or the factory-man. If they would think of the delay they give, to say nothing of the trouble and annoyance, and if each of those dairymen who object so strongly to delivering their milk at the road-side, had to draw a route for a few months, I feel quite sure they would have less objection to doing so; besides they are delaying the drawer from getting to the factory in good time, whereas they should assist him in every way that they possibly can.

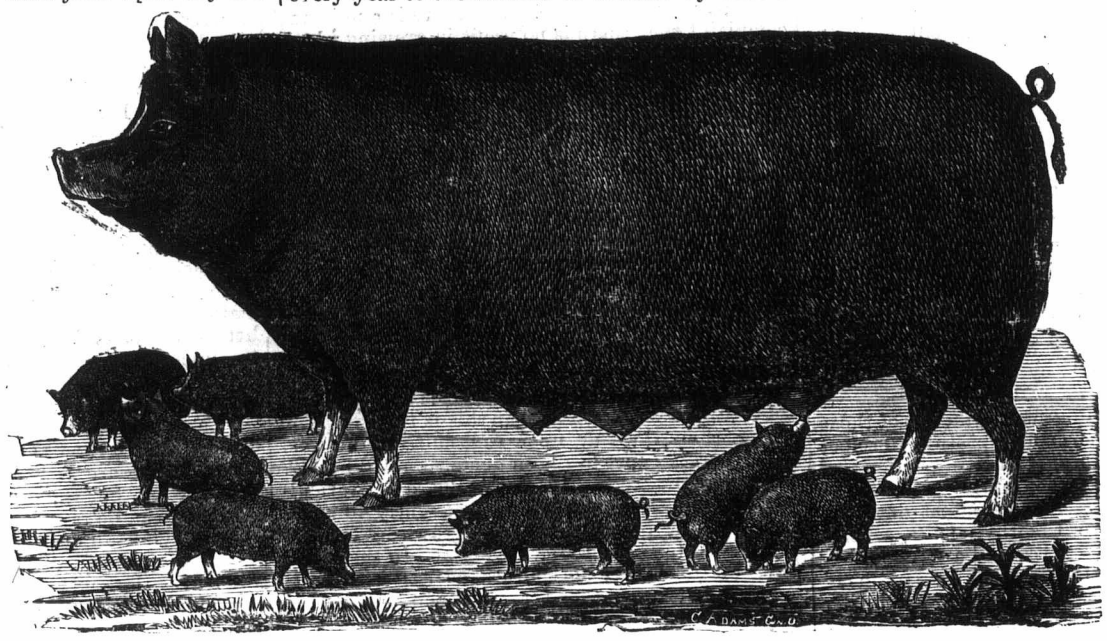
A great many dairymen run away with the idea that the factoryman is under great obligations to them by getting their milk, and allow it to go to the factory as though they were conferring a great favor on the factoryman by so doing; whereas the factoryman has conferred a favor on them by building a factory in their neighborhood. He has been at a good deal of trouble, as well as expense, and is only seeking a return for his investment and trouble, which would be mutually beneficial to all, and should therefore be sent cheerfully. Whatever you do, do it promptly and with a good will, and assist the factoryman in every way in your power. He has plenty of up-hill work without having such things to contend with. If every dairyman would go to work with a determination to do all in his power, not only to have his own milk come to the factory in good condition, but also assist the factoryman in getting all the other patrons to do the same, they would be assisting to enhance the value of their goods at least 10 per cent.

The milk that goes to the factory should be *honest* milk. No skimming, watering, or keeping back the strippings, should ever be practised or allowed. Every patron of a cheese factory expects the manufacturer to turn them out a first-class article, and yet how few, comparatively speaking, take any trouble to assist him in so doing. He is left to fight his own way against careless and indifferent patrons, who think that if they get their milk into the can, that is all they have to do.

To the dairy maid or butter maker I would say spare no pains to get up a nice sweet article. Thousands upon thousands of dollars are being lost every year to the farmers of Canada by mismanagement of their butter. Many who make good butter ruin it completely by the manner in which they handle it. I shall not go over the often repeated story of how to set the milk, skim, churn, &c., for everyone who has read an agricultural paper has seen or read "How to make good Butter," every few months. But if I thought that by going over the same ground I could induce any one to make good butter, I would feel myself well repaid for so doing. But there is one particular point on which I want to dwell, and that is the manner in which butter is handled and put up for the table or market. I would have every pound of butter that is made for sale well worked, salted, and packed down hard and solid by the one who made it in a nice new tub, firkin or crock, no matter how small the quantity might be. If only two more pounds per week were made than was wanted for the family, I would have it packed in this way. The butter in the tub or firkin which is being filled should be kept closely covered with a cloth or piece of muslin and a thin layer of salt or brine put over it. The package, after being filled, should be kept in the same way until taken to market. Butter to keep well, especially in the hot weather, must be kept from the air, and also in a sweet, cool place. There are thousands of pounds of well-made butter spoiled through negligence in this matter by the manufacturers and the country merchants, who pitch it into an old musty box or barrel in the back rooms, among fish, oil, &c., where it lies for some time—perhaps for a week—after which he packs it down in firkins and puts it into his cellar for a few weeks. When the shipper or buyer comes along to buy this butter, on examining it he finds it off in flavor, if not very rank. To the cheese-maker, I would say, look well after your milk when taking it in, discarding any lots that you have any doubts about. See that the patrons keep their cans well cleaned and sweet, and that they are sending you good honest milk. If you find any that are not so doing, keep your own counsel in the matter; but let the guilty party know that you are watching him, and that you know what he is doing. In most cases this will be sufficient, but if he still persists, give him notice that he must desist or keep his milk at home. Let this be done in a straightforward, gentlemanly way, but be decided, and also sure of your position before making any assertions. With a full set of testing instruments, the cheese maker will have little trouble in deciding who are honest and who are not. Endeavor to keep everything clean and sweet about the factory, keeping down all bad odors. Keep the curing-room at as even a temperature as possible, that is at about 70°. I would strongly recommend every factory to adopt the 14½-inch hoop, as it is much the most convenient size for handling, as well as the appearance. Make your cheese as close and clean-flavored as possible; and for the early cheese I would advise making them to cure pretty fast, so as to be fit to ship early, but for the rest of the season, I would say, make to cure slow, for in my opinion the fast curing has been overdone. All who attended the convention last winter at Ingersoll heard that subject pretty well discussed, and I need not go over the same ground. The taste of the English cheese consumer is rapidly growing in favor of a sweet, nutty-flavored cheese, and any goods that have not been in that condition have been almost unsaleable, unless at very low prices.

With regard to coloring, I would say color as you think best. There will be a market for all kinds; but I would color either a good high color — a medium, say ¾ to 1 oz., —or none at all, which is white.

A great many dairymen have the idea that they can not raise calves when sending milk to the cheese factory. Now this is a mistaken idea, and if the dairyman would set about it, they can raise nearly as good calves as if fed on new milk, and in all probability better than their neighbors who are feeding new milk. It will be some little trouble, and will require a good deal of care, but there is nothing which we undertake to excel in but what requires the same care and trouble. They should have new milk for a few weeks, until they are well started to grow and thrive, and then it may be gradually withdrawn and some other nutritious substance substituted, such as linseed meal, oil cake, hay tea, or kiln-dried corn made into porridge. They should have a nice clean sweet pasture to run in, with a comfortable shed for them to go under during cold rain storm, cold nights, and also from the sun during the heat of the day. You will see that it will be often used by them, and especially if there are no shade trees in the pasture. Give them a change of pasture as often as you can, even if only for a few days. Another very excellent thing for calves is dry bran. Place a trough near where they are fed, and into this put some bran at the time your are feeking them, which they will soon learn to lick at, and after a while they will become fond of it. As soon as they learn to lick it well commence feeding them regularly, and continue right along through the fall and winter. This, with plenty of good pasture, will be quite sufficient for them after September, until winter. As soon as the weather becomes cold and rough, bring them in and commence feeding. They should have plenty of good hay, along with some roots and thin bran. Give them plenty to eat, for calves are great eaters, if in a healthy condition, and they can not be in that state unless well fed, cared for and well housed.



THE IMPORTED SOW "GRAND DUCHESS."

The month of May is the proper time for sowing carrots and mangles, and do not fail to put in a small piece of one or the other, or both. They are most valuable for feeding in winter and spring, and no dairyman should be without them. The mangle or sugar beet is perhaps the most profitable, as being much easier raised, as they come up much quicker than carrots. One great objection to carrots being that they are so small and delicate after coming up that the weeds get the advantage.

See that your cows are regularly salted twice a week or oftener. Have set days for salting, say Monday and Friday, and see that they get it on those days. Many dairymen are careless on this point, although it is an important one, and should not be neglected. Regularity in this as in everything else will add to the thrift of the dairyman as well as his cows.

The Imported Sow "Grand Duchess."

The illustration on page 92 represents the fine imported sow "Grand Duchess." This animal was imported by John Snell's Sons, of Edmonton, and bred by Mr. Swanwick, of the Royal Agricultural Farm, Cirencester, Eng. Messrs. Snell sold her to Mr. W. L. Mallow, of Concord Farm, New Holland, Ohio. This is one of the prize taking stock of England and Canada. The pedigrees of Berkshires are now duly registered, and the demand for really first class stock is thus enhanced. Although it is opposed by some, it tends to greater care in improving and advancing the interests and prosperity of breeders and farmers in general.

Handling Live Stock.

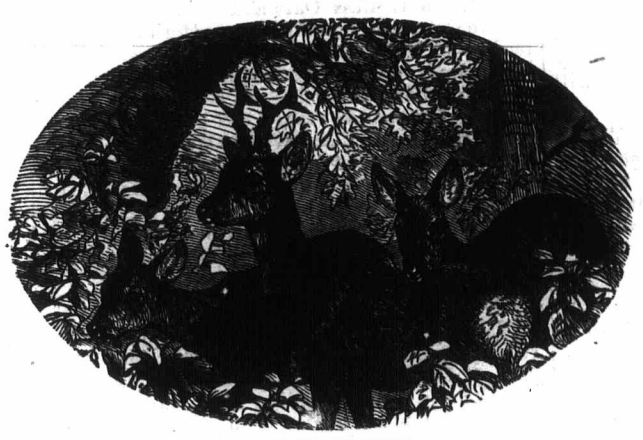
The *National Live Stock Journal* takes the position that, considering the quantity of land devoted to pasturage and forage crops, and the proportion of the produce of the farm fed to live stock, the handling of live stock is the most important business of the farm, arguing that an indifferent class of stock, poorly managed, will not only yield no profit, but will too frequently eat up all the profits of the farm. From this the Journal concludes that the live stock department should receive the farmer's earliest and latest study. He may rise early and retire late, he may labor and toil through sun and rain, and practice the most rigid economy, and yet, after all, the character of his live stock, and the manner in which he handles it, must determine whether the results of his industry and self-denial are to be realized in money or not.

A Difference of Fifty-One Dollars on Two-Year-Olds.

G. T. Sarem, Kellogg, Iowa, writes that he sold at the Union stock yards in February last 64 head of cattle. All of them were two-year-olds and had been stall-fed. A portion were natives, and the remainder half-blood Shorthorns. The natives averaged 1,236 lbs. (they were good ones for two-year-olds, evidently) and sold for $4.65 per 100 lbs, making an average of $57.47 per head. The half-blood Shorthorn grades weighed 1,666 lbs., brought $6.50 per 100 lbs., or an average of $168.29 per head. This is a difference in favor of the half-bloods of $50.82 per head. It is a noticeable fact, illustrated every day at the Union stock yards, where cattle are sold on their merits, that grades bring from one to three cents per lb. more than the best natives. This increased price, as has often been observed, is due to the fact that the offal of the improved stock is smaller in proportion to gross weight, and the carcas proportionately heavier in those parts that are less valuable; there is less shank and bone and unsaleable gristle, and more loin, tender steak and juicy roast. The grade sells for more per pound for the same reason that silver brings more per pound than iron—because it is more valuable. But even if the price had been just the same, Mr. Sarem's grades, from their additional weight, would have brought $20 per head more than his natives. The increased price is, however, a substantial and permanent feature of the market, and the figures illustrate very forcibly the advantage of using thoroughbred bulls. The man who sells his steers for $57 per head need not look very far for the source of his hard times, when the use of a thoroughbred bull would have enabled him to command $108 per head.—*Live Stock Journal.*

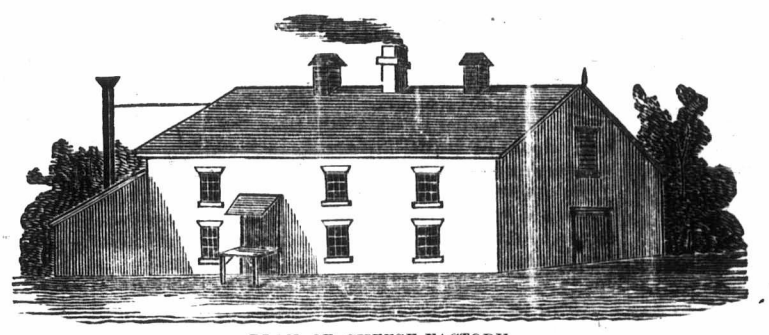
The Meat Supply of England.

At the meeting of the Farmers' Club, in London, an interesting paper by Mr. James Howard, of Bedford, was read on the above subject. The interest of the question, he said, extended far beyond agricultural circles, for the price of meat came home to every household. Scientific men asserted that meat was not so nutritious, weight for weight, as some kinds of vegetable food—Scotch oatmeal for instance; but it was more tempting to the appetite and more stimulating, and so was esteemed above its mere dietetic value. Meat consumption had increased not only in the United Kingdom, but in Germany, Belgium and Holland, and as a necessary consequence its price had advanced. Within the limits of the present generation the normal price of meat had been 6d. per lb.; but during the last twenty-five years the retail price had increased by gradual steps 4d. and 5d. per pound, an advance of ½d. per pound in beef, and ¾d. in mutton, butchers' profits being relatively higher, the advantage being on the side of the retailer.



GROUP OF DEER.

The average quality of meat produced at home had been much improved since the choice breeds of cattle, sheep and pigs had been so widely extended throughout the country. The absence of reliable agricultural statistics made it difficult to state accurately the average consumption of meat by the British beef eater, but it was supposed in 1872 by the secretary of the Agricultural Society, to be ninety-six pounds per head of the population, which, taken at 8d. per lb. and the consumers at thirty-one and a half millions, gave the value of their annual meat supply at £98,000,000, and that at least twenty per cent. must be added for fish and other animal food. English farms might now be regarded quite as much meat producing as corn producing establishments, and some idea of the home production of meat might be gathered from the fact that nearly 2,600,000 head of home grown cattle, 17,000,000 of sheep, and 300,000 pigs were annually slaughtered, the estimated animal value being between £80,000,000 and £90,000,000. Notwithstanding this large production it could be enormously increased were all impediments swept away. Free importation of meat, however, must not be confounded with unchecked importation of disease. In 1874 their importations of foreign cattle, sheep and pigs amounted to 1,068,167 animals, valued at £5,250,000, while in 1875 these figures rose to 1,313,689 animals, valued at £7,330,420. Of dead meat, including bacon, hams etc., the importation amounted to 5,431,542 cwts., which, at 60s. per cwt., amounted to £16,294,626.



PLAN OF CHEESE-FACTORY.

A gentleman in Watsonville, Mich., states that he killed an Essex pig, which, after slaughtering, weighed 574 lbs., and after dressing, 540 lbs.

On Starting a Cheese Factory.

Will your correspondent, Mr. J. Seabury, kindly give me some information on the starting of a cheese factory, as there is none in our section, and we are thinking of starting one on the joint stock principle. We would like to know what are all the necessary articles required, and the cost of each, from the boiler and engine down to the smallest article, and what a first class cheese maker will cost per month or season of six months; also where is the best place to get dairy findings. We have a thriving settlement with a village and very good farming community, and we do not care to be behind our brethren in the dairy line any longer. Yours, etc.,

April 15, 1876. ADAM H. PRUNIAN

If you intend starting a factory on the joint stock principle, it will be necessary to have a thorough organization with President, Board of Directors, &c. Many of the companies have a charter from the Government. The best thing you can do is to pay a visit to a factory that is worked on that principle, and you will then have some idea of the business and what are the requirements for a factory, such as size of building, site and general arrangements. It would be impossible to give you a complete list of things, with the prices, as I do not know what size you intend building, nor how many vats, &c.; and besides prices of these goods vary in different sections and towns where they are manufactured. With regard to the cost of a cheese-maker, you can hire them all the way from $20.00 up to $75.00. A really good one can be had for $50.00 per month. Many of the factories let the manufacturing by the pound of cheese; the maker finding all the material for making, his own help and boarding himself. As to dairy findings, those advertising in the FARMER'S ADVOCATE, of which there are several; you will find all good houses. The accompanying engraving, together with the ground plan given in the March number, will give you a general idea, although the engraver has not given the proper proportions, the appearance being altogether too low and squatty. There are a number of factories in the Belleville district which are joint stock companies, any of which will give you any information you may ask for, and a visit to one of them will be your best plan.

J. SEABURY.

Action of Milk and Cereals.

Investigations appear to show that the action of milk, when taken as food, is exceedingly analogous to that of the cereals, both in extent and duration, and the combination of the two appears to be the most perfect kind of food. The casein is to milk what gluten is to bread. The oil in the milk and substances—respiratory excitants—which call it into action, act in a manner quite analogous to the common combination of bread and butter, or of a mixture of fat and lean flesh. Milk and flesh, it is believed, are the best and most natural modes of administering fat, and altogether preferable to the administering of separated oils. It is well known that in Germany skimmed milk is in frequent use as a medical agent, and in some other nations sour milk is a common article of food. The action of the former is explained by its casein and sugar as respiratory excitants; and that of the latter by the advantage of administering lactic and other acids in that combination in the summer season, and at other times when the blood, by tending to undue alkalinity, is less capable of carrying on the oxidizing process. It was long since shown that in fevers skimmed milk is preferable to new.

The Deer.

The Deer are natives of every part of North America, and many of them still exist in the woods, though the hunters have greatly reduced their numbers. The common American deer is a very graceful animal; its head is rather long, and its muzzle sharp; the eyes are large and lustrous; the legs long and slender. The color in summer is bright fulvous, in autumn the color becomes a dull leaden, and in winter dark brown. The food consists of buds of the wild rose, hawthorn brambles, berries, tender grasses, leaves, &c.

Correspondence.

THE CANADIAN HERD BOOK TO BE ACCEPTED AT THE CENTENNIAL AS AUTHORITY.—I notice in the last number of your paper a statement saying that cattle entered in the Canadian Herd Book would not be allowed to exhibit at the Centennial Exhibition at Philadelphia this year. I am glad to be able to inform you that Mr. Fraser, Secretary of the Advisory Board, says that it has been arranged that cattle entered in the Canadian Herd Book will be allowed to exhibit at said Exhibition. I am glad that the Canadian Commission have arranged the matter satisfactorily.

THE CROPS GIVE FAIR PROMISE.—I think the fall wheat in this Township looks promising so far. If the spring should be favorable from this time, we may expect pretty fair crops.

TREFOLIUM ENDURES THE WINTER. — The Trefolium seed I got from you I sowed last summer. It grew nicely and has a beautiful appearance while in blossom. I was examining it to-day and it is looking nice and green yet, I think it will stand the winter all right.

THE RED FERN WHEAT.—The Red Fern Wheat you sent me I sowed last spring. It is rather open headed, and I should not think would be a very heavy yield, but the straw was bright and free from rust, but I do uot think it will be much improvement on the Fife, but I intend trying it again, and will then be better able to judge of its merits.

THE AUSTRALIAN OATS.—The Australian oats I also sowed in the same field with the Norway oats. They did not ripen quite so early as the others, but I cut them at the same time, consequently they were cut rather green, and the oats were some of them lighter than they would have been; but I think they are a good kind of oat, and will be well worth a further trial.

ORCHARD GRASS GIVES GOOD PROMISE.—I have a piece of orchard grass of two years' standing. It seems to stand the winter well and starts early in the spring. It would be good for early grass for feeding purposes. Yours truly, L. E. SHIPLEY.

Lobo, March 13, 1876.

MARL AT PENETANGUISHENE.—Mr. Weld, you would oblige me very much by letting me know through your paper what this sample I enclose to you is. I think it is Marl, but I can find no one to tell me for sure. I would like to know if it possesses any manurial properties and how it would act upon potatoe crops. I generally plant a good bit of them (four or five acres) yearly. By doing this you will greatly oblige yours, CLEOPHAS S. DIT BLONDIN, Penetanguishene, Ont.

N. B.—If that stuff is valuable, there are thousands of tons of it here; it is found in a swamp which used to be (there is no doubt of it) the original shore of the Georgian Bay. C. S. DIT B.

[Sample enclosed had all the appearance of Marl. However, that our answer might be more definite, we had it subjected to a chemical test, and it has proved to be Marl. Marl does possess fertilizing properties of no mean order. The beneficial results of its application are such as might be predicted from a knowledge of what it really is—a clayey substance, containing a large proportion of carbonate of lime, generally as much as from 50 to 60 per cent. We have known it to be used, as taken from the pit, as a top-dressing for meadows and pasture land, and to increase the yield of grass greatly, and improve the soil. Land, to receive the full benefit of an application of lime of any kind, should be dry, either naturally or by drainage. When there is no water stagnant in the soil, a top-dressing of Marl is a means of producing a greater yield of herbage, and that of a better quality than before. Many of the worthless plants will disappear and their places be occupied by better grasses. Nor is it only for grass that Marl is a valuable fertilizer; especially when composted with other fertilizers, the compost will be found generally useful for other crops. It would be well for Mr. B. to prove the fertilizing value of the Marl by trying an experiment with it on a plot of a couple of acres. A good compost for the purpose would be such as follows: Marl, 250 to 300 pounds; agricultural salt, 80 to 100 pounds; superphosphate, 200 to 250 pounds; add a small load (a half a ton) of decomposed vegetable matter, such as is often the surface in low places, as those where the Marl is found. Mix all thoroughly, and, with them, put 4 or 5 bushels of wood ashes. After standing a few weeks, this compost might be tried on root crops, and, we think, with profit. The quantity given would be enough for two acres. It would be well also to throw up from the Marl bed a few tons in its unprepared state, that it might be exposed to atmospheric influence, and to apply some to a plot of grass land.—ED.]

THE HULLESS OATS.—According to promise, I write to you to let you know what I think of the Hulless Oats. I sowed a bushel of them last spring on a good piece of land, and I sowed the Brazilian White Oats alongside of them, which you seen growing last summer. When I harvested them, I measured the ground that the Hulless Oats grew on, and I likewise measured the same quantity of land where the Brazilian White Oats grew, and mowed both lots away carefully, and when I threshed them I had eight bags Hulless Oats, and twenty-four bags Brazilian White Oats, which is 16 bushels Hulless Oats and 48 bushels Brazilian White Oats; and, coming to a matter of weight, 16 bushels of Hulless Oats, at 48 pounds per pushel, is 768 pounds, and 48 bushels Brazilian White Oats at 34 pounds per pushel is 1,632 pounds, and deducting 768 pounds from 1,632 leaves a balance in favor of the Brazilian White Oats of 844 pounds, or 25 bushels and 14 pounds. So, Mr. Editor, you will see at a moment's glance that the Brazilian White Oats are much better Oats for the farmer to grow. And, as regard to oatmeal, I know for a fact that the Hulless Oats will not make good oatmeal. JAMES MCNAIR,

Guelph, April 11. Field Manager, Model Farm.

[Thanks to Mr. McNair for his communication. We were in hopes in having it earlier, that the results of the experiments at the Farm might have been known before seeding time. Having had a trial of the meal made from the Hulless, we thought it good, though we had our doubts of the value of the grain as a general crop. The difference may be from a difference in the grinding. The Brazilian Oats referred to by Mr. McNair we consider to be the same as the Australian.—ED.]

Our correspondent from Warburton, writing to us in advocacy of free trade, says, in concluding his letter:—This much is true: I think that we have to pay too much for every new patented invention, and think we should memorialize the Government to protect us by fixing a just price on all inventions when they grant patent for the same.

As this is my first attempt, I hope you will excuse any imperfections, and if you think the idea worth anything, you can dress it up for your readers. Yours truly, B. MCNAMEE.

Warburton, April 10, 1876.

[In reply, we remark that we are not of those who would deny to the inventor a fair reward for his labor. They who toil with body and mind, and spend money to produce something new and destined to be of great use to others, are justly entitled to a liberal remuneration. Many so-called inventions, it is true, do not deserve the name, but that should not take away from the merit of others. We look to see repositories for patent inventions in different parts of the country, where the articles could be secured by persons wanting them, instead of having to wait till they be brought to their doors by travelling agents or peddlars. The establishment of such repositories would be of great use to inventors and purchasers. In them we would see the patented inventions and improvements in operation, and form some opinion of their practicability and utility.—ED.]

SEEDING NEWLY CLEARED LAND.—I have four acres of new land which I intend for a sugar bush. I have taken all trees out except maples, which leaves it very open. I want to seed it down to grass. Will you please inform me, in the next issue of the FARMER'S ADVOCATE, what grass to seed with, how much to the acre, and the best time to sow; also if I can get any other crop at the same time of seeding down? The land is very good and free from brush. EDWIN CRANE.

Burnstown, April 14, 1876.

[We have not any wood land so well cleared that we would think it suitable for a grain crop, with grasses. We would say—Sow the grasses without grain. As native grasses have a root in the ground, less seed will be necessary—a few pounds to the acre. A little red-top, orchard grass, red clover and Alsike clover. A mixture of grasses makes always a better pasture. If there even be a difference in the expense of the seeding, the amount will be amply repaid.—ED.]

SCIENCE APPLIED, OR A FEW THOUGHTS FOR LOVERS OF PROGRESS.—Some years ago I read in a Texas paper an account of an interesting experiment in the raising of grapes under cover. The light and heat of the sun were admitted by a glass roof, in which every alternate pane was of *blue glass*. It was said that the effect of the change of shade was to greatly increase the growth and vitality of the vine, while the yield of fruit was fully double the weight and quantity obtained in any other way. Experiments had also been made on animal life, by which it was proved that increased energy and vitality was infused, and animals that were sickly and not thriving quickly regained their wonted strength and vigor, and increased rapidly in flesh and growth when confined to a place where they were subjected to the influence of the blue light. The experiment is one that could be very easily tried, and if proved successful, would possess an unfailing interest for every lover of science and progress.

The effect of the sun's rays passing through blue glass is explained in "Wells' Natural Philosophy" as follows:—"A ray of light is composed of three principles, viz.: light, heat and a chemical principle called the *actinic*. We know that these three principles exist, because we are able to separate them in a great degree from each other. Thus the luminous principle passes readily through a thin plate of alum, but nearly all the heat is absorbed. Certain dark-colored bodies, on the contrary, allow nearly all the heat to pass, but obstruct the light. A blue glass obstructs nearly all the light and heat of the solar ray, but allows the chemical principle to pass freely, while a yellow glass allows light and heat to pass, but obstructs the passage of the chemical influence. There are many reasons for supposing that each of the three principles, light, heat and actinism, included in the solar ray, exercise a distinct and peculiar influence upon vegetation. Thus the luminous principle controls the growth and coloration of plants; the colorofic principle, their repening and fructification. Another chemical principle is the germination of seeds, seeds which ordinarily require ten or twelve days for germination, will germinate under blue glass in two or three days. On the contrary, it is nearly impossible to make seeds germinate under a yellow glass, because it excludes nearly all the chemical influence of the solar ray. W. D. MITCHELL.

Elma, March 30.

LAMBS LOSING THEIR WOOL.—Your paper is improving, if possible. I wouldn't be without it at any price. Can you tell me if my lambs have scab? About a month ago they began to lose their wool slightly, and looked very ragged, so I examined them and found a yellowish substance on the skin, which I could scratch off with my finger nails. I applied mercurial ointment, with five times its weight of lard, and rubbed it well in, in one or two creases. I do not now see any wool coming off. Their feed is marsh hay, oats and turnips, every day. They are obliged to eat snow this winter, as I have no facilities for obtaining water till next year. A. J. WRIGHT, Postmaster, Maple Grange P.O., Peterboro', Ont.

Your lambs are not affected with scab, but greased, caused by high feeding, principally the oats. The scab differs very much from that described in your letter.

THOROUGH CULTURE IN THE CHANNEL ISLANDS—How different the weather and seasons of Jersey are from those of Canada, will be seen from the annexed extract: "Peach and apricot trees in full bloom on the 13th of March." One can recollect our weather at that date. But there is no more delightful climate than that of those delightful islands in the Channel. You see they are not content with half measures in agriculture. Their ploughing and sub-soiling for the parsnip is a lesson for us Canadians. The hollow-crowned Jersey parsnip mentioned is nearly as well known as the Jersey cows. If Col. Wells has been a contributor, it must have been some time since, as we have no remembrance of it. We would request him to renew his contributions.

Mr. P. F. Nicolle, Jersey, Europe, writing to a friend in this city, under date of March 15, 1876, says: "We have been very busy preparing the land and planting potatoes, and some are well up, almost fit for hilling. Apricots and peach trees are in full bloom outside. To-day we received a visit from Col. Wells, an American, who is buying Jersey cattle. He gives top prices, and buys only fancy stock. He told me he was a correspondent

of the FARMER'S ADVOCATE in your city. We have had severe rain and wind storms, with night frosts, which have done much damage to potatoes everywhere in this Island. In one day we ploughed nearly two acres of land with subsoil plough, having four teams hitched on to it, and one on the small plough, followed by 14 men, spading along the furrows. That is going to be our parsnip and mangle wurtzel patch."

PROTECTION VS. FREE TRADE.—In your April number there is an article on Free Trade vs. Protection, signed by John Granger; which is evidently written by some one who has not studied the subject, and shows entire ignorance of the bearings of the question, the *Globe*, no doubt, is his political bible.

Now, to show what Protection would do for farmers, we will take official figures. Last year we

Bought wheat to the value of.....	$6,657,652
And sold wheat to the value of.....	4,959,726
	$1,697,916
Of flour the imports were $2,462,618	
The exports amounted to 1,545,242	917,376
Proving that we bought more wheat and flour than we sold by.....	$2,615,292

Now, if we had a protection of 10 cents a bushel on wheat imported from the States, every bushel of wheat raised in Canada would be worth 10 cents more than it is to-day, as our market is ruled by the price that wheat can be laid down for from Chicago and Milwaukee; and those western markets are controlled by the European markets. Therefore, as a consequence of protection, our millers would grind up every bushel of Canadian wheat for the home market, and the deficiency, which they would import, would pay 10 cents a bushel to the Government. Now, we import about three millions of dollars worth of Indian corn, which is almost entirely used for distilling, and horse-feed in cities; if we had a duty of 10 cents a bushel on it we might be able to grow rye to take its place, which would be very desirable as we could then put in a fall crop where we cannot raise fall wheat, and it would also raise the price of coarse grain for horse feed in proportion. Thus I have proved that Protection is a direct benefit to the farmer. Of course our millers would require a protection of 75c. to $1 a barrel to enable them to shut out Yankee flour from the Lower Provinces; and in order to recompense our consumers for the enhanced price, we would protect all industries, and thus encourage manufacturers, keeping what population we have at home and bringing more into the country instead of driving away capital and skilled labor and spending over half a million of dollars, as was done last year, in bringing over emigrants, many of whom were a burden to the country rather than a benefit. But manufacturers are John Granger's particular foes; they combine, and form monopolies and put up prices of goods. Well, if they do, cannot he sell his farm and go into manufacturing and have a share of the monopoly? What absurdity to talk of monopoly when any person can go into any business out of which he thinks he can make a profit. But let us look on what ground Mr. Granger forms his theories of monopoly. Are we paying more for shovels, spades and many other articles which have a tariff that protects them, than we used to do when we imported them? Mr. Workman in Parliamentary Committee testified that they were cheaper now than then. And let us look at the Yankees, with their high protection, and see what it has done for them. They have paid off an enormous amount of their war debt; and by keeping out foreign manufacterers they have developed their own, so that now they can ship cotton goods to Britain and sell at a profit, and are now sending 30,000 pieces every week. It is a well-known fact that the larger a factory, or any kind of business, can be run, the less per centage of profit is required, and that manufacturers by running in special lines of goods can turn them out considerably cheaper than by making all sorts. Therefore it is natural to suppose that by keeping our own trade for our own manufacturers, and not allowing the Yankees to sell any goods in Canada, that goods could be made and sold cheaper than at present. It is true that the Yankees are trying to run out our manufacturers by selling at probably less than cost at present; and if they should succeed, will they continue to sell as cheap then as now? No; they will then go for profit, and we will have to pay bigger prices than ever, and be less able to pay them, as we will have lost both capital and population; and to show the effect of that on the farmer, at the Easter fair in our town I was only offered 4c. for fat cattle that last year would have sold for 5¼c. to 5½c., and this winter I sold sheep and lambs for $1 a head less than the season before, although this year's lot was better than last. What is the reason? Our mechanics and working classes are only half employed and cannot afford to buy meat.

Our annual imports amount to 75 millions; now if we by imposing a protective tariff can manufacture say between 30 and 40 millions, what an immense increase of population we could employ, which must all consume farm produce and pay taxes, and as we have a certain amount to pay every year for taxation, whatever our population may be, it follows that the greater our numbers the less each individual will pay; and thus we would have a larger demand for our butter, eggs, potatoes, beef, and everything we raise, and cheaper goods in the long run. Another great advantage to the farmer with a family grown up is, that if he is not able to buy his sons farms, or if they do not happen to be so inclined, they can be employed in our own workshops and factories, or there will be far more facilities for them going into some business, without leaving their country and breaking up all home connections.

John Granger says: Are farmers content with the home market for their crops? Do they not know that the best markets are abroad, and that foreign consumers of Canadian farm produce are the more able to buy, and pay a full price, if their goods are freely admitted into this country? In answer to him I would say that I am content with a home market, where I can sell my produce to the consumer and save commissions, freights, profits and other charges on both what I sell and buy from him; and thus we both save money.

John further says: The Grangers should remember that low duties encourage importations and facilitate the payment of good prices for their exported crops. He is right when he says low duties encourage importations; but that is not what we want, as we have to send cash out of the country to pay for those importations; but that it facilitates the payment of good prices for crops is *bosh*, utter nonsense. Come, John, prove your assertion. Will the British grain merchant or miller give us a penny a 100 more for our wheat than for Odessa, or United States wheat, considering the quality, although neither Russia nor the States are Free Traders, but the strongest of Protectionists?

The letter from "a Farmer" represents the subject in a more reliable shape, there you have figures and facts, and the case of Redpath & Co. might even have been made stronger, as by shutting up their refinery the importation of sugar from the West Indies (amounting to about 300 cargoes in a year) is entirely stopped; and we cannot export our lumber, pork and provisions to them, as vessels will have no return cargo. Thus, at one stroke, the Yankees destroy an important manufacture, cripple our shipping and export trade and make us pay for the damage done. A Farmer's letter is able, and may convince any reasonable person of the necessity and benefit of protection; but John Granger's letter, what of it? a mass of assertions without any proof; and while some might be led astray by the boldness of the style, I consider it my duty to show the erroneousness of his statements and to help to stir up brother farmers to look to their interests in a political sense.

I don't care what party gives us Protection, but let us support no party who will not do so. We must make it the question of the day, and unite and agitate until we have a national policy calculated to build up our farming and manufacturing interests. AN AGRICULTURIST.

Guelph, April 12th, 1876.

THE CANADA THISTLE.—There has been a good deal said about the Canada thistle, how it may be destroyed, I will give you and your readers my plan to destroy them—that is, let them grow until the full moon in July. The stalk is hollow then. They must be cut close to the ground. They will not grow up again from the roots. It is a sure way to destroy them. I have tried it to my satisfaction, therefore I would advise every farmer that has thistles on his farm to try it. GEO. EMBURY.

Thomasburg, April 23, 1876.

[We give Mr. E.'s method of destroying Canada thistles, as he vouches for its efficiency. Many methods are proposed for killing them, but still they live.—ED.]

PARASITES IN THE KIDNEYS OF PIGS.—I have three pigs that has taken some disease in the head, and shortly after they are affected they go reeling around, and then get so weak in the legs that they can hardly walk. Two of them have died since, and the third is so crippled in the legs that it cannot stand while it eats. Would you or any of your correspondents please inform me and your subscribers generally, what the disease is, and what would be the best way to treat it.

Blytheswood, Feb. 28. J. M. REID.

[The state of your pigs, as is described in your communication, is caused by parasites in the kidneys. Remedy: Give ley with their food, and induce them to eat it pretty freely. Soapsuds is also recommended as a remedy.—ED.]

I HAVE a two-year old sow that had a litter of twelve pigs on the 10th of March. The mother eat all but five during the first few days. I hoped to raise these five, but on the 28th of March, when the pigs were doing nicely, she eat two of them, and two days afterwards another one; this reduced my stock to two, when I took them from her and fed them by hand.

Now, what I write to you for is to know if there is any remedy for this state of things. Do any of your readers know any plan for preventing sows eating their young? Is there any use in trying to breed from the same sow again?

I consider I have lost equivalent to $20, and I wish to know how to avoid such another loss, if possible. JAMES SKENE.

Whetstone Point, Ont.

[In reply to Mr. Skene, we would observe that it is greatly owing to the confinement of sows and the kind of food on which they have been fed, that they acquire such a taste for flesh as to eat their young. Sows that are allowed to run at large, to root up the ground and to use vegetable food that they pick up abroad, never acquire such a habit. Having acquired the habit, she will retain it. The only thing to be done is to fatten and kill her. You need not expect that she will ever nurse her young.—ED.]

MAGGOTS IN SHEEP.—I had a valuable ewe in good condition, she had two fine lambs about a week ago, and seemed to be doing well until yesterday, when it showed signs of dizziness. It died to-day, and, on opening the skull, I found that the tubes of the face that run past the eye was full of matted corruption, and a little below the eye I found a maggot about a quarter of an inch long. The corner of the brain was affected. If you can send me a cure through your valuable paper, in case any more should be affected, you would much oblige an old subscriber. NEIL STEWART, Kendall, Ont.

April 13th, 1876.

[The maggot that you discovered in the face of your ewe was produced by a small winged insect that entered through the nostril as the animal was feeding. Some places are infested with them. You might observe your sheep running about with their heads close to the ground. This restlessness is owing to the annoyance from these insects. The way to protect your sheep from this is to put tar on their noses. We know no other remedy so effectual.—ED.]

SORGHUM FOR FEEDING CATTLE.—The cane of sorghum is sometimes used for stock feed. In such cases it is sown broadcast, and when the "sweet" appears in stalk it is cut and cured as hay. Must be cut thus green for this purpose: If it stands till heads form the stalk becomes too hard. It is raised and worked abundantly in Minnesota, which is at English latitude this year.

W. G. BRUGH.

[From our experience we can speak highly of the feeding quality of the sorghum or sugar-corn, having grown it ourselves. From its richness in saccharine matter it must be a superior forage plant. Besides it is very productive, yielding sources of good cattle food to the acre—good if cut green. If it be found hardy enough for our Canadian climate, it will, we think, be a valuable acquisition to our catalogue of plants for soiling. It was pretty extensively grown for the manufacture of molasses and syrup from its sap.—ED.]

REPLY TO "A FARMER."—Your correspondent, "A Farmer," has certainly made out a good case in favor of a moderate degree of protection, which is all that can be reasonably required. It was protection, not free trade, that has made England the richest country in the world. Stimulated by protection, the English manufacturers were able to give employment to many thousands of the agricultural population, which prevented them from being thrown for their support on the poor rates. And now that the English manufacturers are able to supply the markets of the world with their extensive colonial markets to rely upon, they have set up the cry of free trade, although all other countries have adopted the policy of protection to home industry. Your correspondent "John Granger" seems to be ignorant of the fact that no country ever yet became rich by agriculture alone. Perhaps he is not aware that the people of Canada send $75,000,000 out of the country annually to pay for imported goods. A great part of which might, under proper protection, be manufactured at home, and if only one-half of that amount were retained in the country, the farmers as well as every one else would be benefited by the expenditure. At present, for want of home competition, importers may charge what they please, so that in fact we have to pay more than we otherwise should, or rather we shall have to do whenever a revival of trade in the United States shall enable them to dispose with the necessity of making Canada a slaughter-house for their goods, and even then unless we are protected by a fair tariff, they will continue until the few manufactures we have left are completely broken down, when they will be able to charge their own prices, as owing to their proximity they will be able to undersell the English manufacturers, so that in fact we shall be always paying tribute to them. Protection will attract foreign capital, which is required to develope our rich mineral resources, and consequently will attract a greatly increased population, and this population will require additional houses and give employment to the different handicraftsmen who will be required to supply the wants of an increased population. As for the objection that the Americans would retaliate by increasing their duties on the produce they buy from us, such a fear is visionary. They have to pay their own duties themselves now, because they must buy our barley, fall wheat and wool; and even if their own duties on these articles were repealed, they would buy no more than they do at present. Those are mistaken who suppose that our manufacturers have of their own accord engaged in some business naturally unprofitable. Their business is not naturally unprofitable, but it has been made so by the suicidal free trade ideas of our present Dominion Government, who are to some extent at the mercy of the Americans. Free trade is not the mother of skilled labor and moderate profits, on the contrary, it tends to render profits and render skilled labor unattainable. The price of our Canadian farm produce is regulated mainly if not entirely by foreign markets, and no foreign manufacturers will buy more of our produce than they absolutely require, or give more than the regular market price for it. If by a judicious legislation, the manifold natural resources of our Dominion were fully developed, and our country dotted over with mills, factories and workshops, is it unreasonable to suppose that outlets might be found for our surplus produce amongst the markets of South America and the West India Islands and elsewhere. There are goods for which there is but a limited demand, but which could be profitably manufactured in Canada in concert with other manufacturers of a kindred nature, if a tariff which would give our would-be manufacturers a chance were adopted for such a period as would beget confidence; meanwhile we pay from 100 to 200 per cent. more for those articles than if paid for them at the place of manufacture. That a low duty will enable importers and retail dealers to obtain exorbitant prices for those goods will doubtless surprise many theoretical free traders, but it is the simple truth nevertheless. How is it that the protected American manufacturers are underselling the free trade English manufacturers in their own markets, for some articles at present? Simply because their high protective duties secure for them the command of their own home market. Whilst admitting that the Americans may have carried their protective system too far, I cannot admit that the abuse of any sound principle is any conclusive argument against the use of it. He must be a very unpatriotic Canadian who for the sake of a mess of pottage, even if he could get it, would never desire to see his country rise above the level of a timber-producing and produce-furnishing appendage to the United States. The Americans are now trying to frighten us from following their example, because they fear we shall get out of their clutches. Some advocates of free trade make a great mistake in connecting protection in the United States, with an inflated paper currency, whereas they are two different things, with no necessary connection with each other.

SARAWAK.

The Horse.

Decrease of Horses.

It is said that the number of horses is decreasing in England, and of those used there an increasing proportion are imported from the continent. The effect of high farming in England is to restrict farmers to products of quick maturity, insuring speedy returns from capital invested. The improved Shorthorn cattle have reduced the time required for growing and marketing a beef from four years to two, and in some places they are fattening beeves at eighteen to twenty months old. There is no way of making a colt fit for hard work before he is four years old—or three at farthest, and in the mean time he is a constant expense, with the liability of entire loss from accident or disease. It is probable also that in England, much more than in this country, there is decreased demand for horse labor on account of the employment of steam power in nearly all mechanical and many agricultural operations. Steam plows have been for several years in successful operation, and their economy on large and level farms is undoubted. Of course, such implements would cost more in this country, but they would also supersede dearer labor, and probably in the long run the gain from their use, especially on large Western prairie farms, will be found as great as in England.

Horses will never go out of fashion—possibly not soon be less used than now—but the proportion of power furnished by horses is steadily decreasing, and is destined to further decrease. Engines are used for threshing, wood sawing, feed cutting and various farm operations requiring considerable power, and engines are now made cheaply and portable, to be used on all the farms in a neighborhood.

That horse breeding is less profitable at the West is indeed a matter of some surprise. Cheap lands and abundance of feed would indicate this section as the natural home of the horseman. But at the West enormous and usurious rates of interest, from ten per cent. a year to two per cent. a month, take away profits and compel farmers to invest only in products giving quick returns. Sheep and cattle are superseding the business of horse breeding. It costs less to keep a calf till it is three years old than a colt till it is two, and at three the steer will be fattened and turned into cash, while the colt must wait two years or more before finding a purchaser, and at last may very possibly be worth less than the steer. Poor stock is of course responsible for much of this loss; but there is more variation in prices of horses than of cattle. When a man grows a calf till it is three years old to be sold for beef, he can calculate pretty closely how much it will weigh and what it will sell for. Not so a colt. It may be one of the few prizes, selling for $500 to $1000; or much more likely, it may be a blank—worth less than the expense it has cost. Aiming at the fashionable and fast breed of horses has intensified this evil. If the progeny of one of the trotting stallions is not among the few that "can make their mile" inside current fashionable trotting rates, he is not wanted by the gambling fraternity, is of no use on the farm and precious little use anywhere else. A much safer business, and we suspect more generally profitable, is the breeding of good farm and work horses. They are less liable to accident, have a surer sale and at a higher average price than the majority of would-be racers. —*Rural New Yorker.*

Indigestion in Horses.

M. Pety, a French veterinary surgeon, draws attention, says the *American Farmer*, to the liability of horses and cattle suffering from indigestion from the consumption of forage in a humid or musky state. It is from over-feeding this complaint is ordinarily produced, or to the too rapid transition from dry to unlimited green food. Another very common cause is the putting of animals to work immediately after their feed. The giving of chaff and the refuse of the threshing machine is also another principle source, as well as excessively cold water, and, above all, allowing the animals to drink the water of marshes. A little salt or a handful or meal is excellent in the drinks. Old animals ought never to be given too much food at once, and it ever should be mixed with a little straw. When the horse shows symptoms of indigestion, restlessness, suddenly refusing food, resting on one leg, then on another, the head drooping and seeking the left flank, its excrements either hard or liquid, &c., and excitant, as three ounces of kitchen salt or a glass of gin in a bottle of water, will afford relief; or an infusion of camomile and sage. In case pain exists two spoonfuls of laudanum will prove excellent. Of course soap injections, friction and fumigation, are not to be overlooked. Bleeding, in case of grain indigestion, becomes mortal.

Feeding Work Horses.

The Cincinnati *Gazette* gives the following account of the way the Adams Express Company feed their horses, which are always noticeably sleek and fat:—

The number of horses kept at the stable is 54. Four hostlers attend to these. Promptly at four o'clock a. m. the watchman of the stable gives to each horse eight ears of corn. Then, about five o'clock, the hostlers commence their duties. Of those under the care of each, one by one is led to the watering trough and then to the urinary. This consists of a pit sunken 10 or 12 inches below the level of the basement ground floor and kept compactly filled with sawdust and short shavings. And it is a remarkable fact that a horse in this stable scarcely urinates excepting at this place, especially prepared for him. When horses come in from their work the harnesses are removed, and they are then led at once to the urinary. When a fresh or green horse comes to the stable, by being driven with some old "stager" that knows the rules of the stable, the new comer soon learns to conform to the habits of the older inmates.

From five to seven o'clock each horse is taken in hand and thoroughly curried, brushed and cleaned, from ten to fifteen minutes being spent by a hostler upon each horse. A damp woolen cloth is always rubbed over the coat of a horse after being curried and brushed. This serves to remove all loose dandruff and to give that fine, glossy, sleek appearance so noticeable in the animals of this stable.

The horses are fed nothing in the morning excepting the eight ears of corn. After being led back to the stalls when cleansed, they are then ready for work. The same process of currying, brushing and cleaning is also gone through with at noon and at night, at the close of their forenoon and afternoon's work. At noon each horse is fed with half a peck of oats. At night chopped feed is given. This is composed of sheaf oats or rye straw passed through a straw cutter and then, when wet, ground oats, corn and bran mixed up with it. A peck and a half of this is given to each horse. In addition to the chopped feed, the rack is supplied with eight or nine pounds of bright, sweet timothy hay, this being the total amount of hay which is fed. And perhaps of this supply the horse will not eat more than five pounds during the night, finishing up the balance during the next day.

While Mr. Barrett is particular to give nothing but clean timothy hay in summer, in cold weather he is willing to feed hay which is one-third clover. About once a week a peck of oil-cake meal is mixed up with the chopped feed, being equal to about a third of a pint to a horse. This promotes the uniform good condition of the animals. And if, at any time, the urine of a horse is cloudy and thickened, a tablespoonful of pulverized resin, mixed up with chopped feed, is given him. This acts upon his kidneys and the difficulty is once at removed.

The horses are given what water they want as they come in from their work, unless they are "green," and then care is taken not to water or feed until they are thoroughly cool. In a few weeks, after becoming habituated to the regimen of the stables, the same course is taken with the "late comers." Of course, if horses come in overheated, then they are not watered until cooled off.

A very marked feature connected with the stables is that the air is so sweet and fresh. And, probably, this is owing largely to the fact that scarcely any urinating ever takes place in the several stables.

Poultry Yard.

Green Food for Poultry.

Green food is essential to the well-being of poultry at all seasons of the year. When fowls are limited to confined quarters, this must be supplied to them, artificially, to keep them in good health.

In winter time we can give them cabbages or chopped turnips and onions from time to time; short, late dried hay (or rowen) is very good for a change; corn-stalk leaves, chopped fine, they will eat with a relish.

In early spring time, when the ground first softens from the frost, pasture sods thrown into their pens will be ravenously eaten by them; and as soon as the new grass starts (unless they can have free access to the fields or lawn) they should be supplied with this excellent succulent daily. For the young chickens, nothing is so beneficial and so grateful as a run upon the newly grown grass; and next to this indulgence they should have an ample supply of cut or pulled grass every day.

It should never be forgotten that one of the most important things to be observed towards keeping our fowls in good heart, is the regular supply we should furnish them of green food.—*Ex.*

Advice to Young Poultry Breeders.

After years of care and patient watching, I am prepared to advise all to make up their minds just what they want; to buy as near as they can, and then undertake to work up their ideal themselves. The men who do this are the successful men in poultry breeding as well as in all other branches of business. It is just the same as going to learn any other trade; if you think you are adapted to the carpenter's trade, you should put your whole energies that are not absolutely needed for some other want, into this calling, and not try to learn the blacksmith's trade at the same time. If, after a sufficient length of time, you are convinced that you cannot make a first-rate carpenter, then you may try blacksmithing. If you should find you had made a mistake in selecting from the breeds of fowls those best adapted to your wants, set them aside and try again, always being cautious about making changes.

There are two productions for which fowls are always in demand—laying eggs and for poultry, so it is well to keep the breed in the best condition possible for one or both these branches of business. And if you can at the same time have them please the fancy of the fancier, so much the better, as they make better customers usually for surplus stock than the butcher. In some localities eggs are worth more than poultry, and it is desirable to have them at a particular time of the year. For egg production the non-sitters should be chosen, and they will produce eggs when wanted, and in quantities to suit, if properly fed and otherwise cared for. If early poultry is wanted, the non-sitters of good size are the best to breed from, but if you want to raise poultry to ship in late fall or winter, choose the short-legged Asiatics.

I prefer a short, stout leg on any fowl. The bodies of such fowls may not be so stylish, but they mean business, and I keep fowls for profit. There are several biddies of my acquaintance well up to ten years of age—of various breeds, and cocks five years and more, vigorous as ever. Invariably such are low and broad, compared with what would be called fancy chickens of same breeds by fanciers.—*F. J. Kinney, in Poultry Argus.*

Black Spanish.

There is no doubt but they are among our very best layers. Their eggs are pure, white and large. The Spanish, although claimed to be non-sitters, will often, if allowed to steal away their nests, lay about a dozen eggs, sit, and fetch out a nice lot of chicks. The young Black Spanish chicks are rather tender when quite young, and therefore should not be hatched out until the weather gets warm, so that the chicks can be allowed to run at large; and if they will roost in some tree or hedge, all the better for them, as they will fledge much sooner, and do much better than when penned up with the hen. Although the Spanish fowls have been bred for a number of years, in Canada as well as the States, there are but very few really first-class birds shown at our exhibitions. We are glad to see that a few of the fanciers of the Black Spanish are improving their stock by importing fresh blood from England, and we shall expect to see them improve rapidly for a few years to come. —*Poultry Journal.*

Breed One Variety.

As a rule, we are constrained to repeat what we have hitherto advised, that if poultry fanciers would breed but one variety of fowls, and do that well, they would find it more satisfactory in the end, and quite as remunerative as trying half a dozen kinds, with indifferent results.

Large poultry keepers, located at central points, will always carry different breeds in their more extensive yards, and through careful system they succeed. But for the lesser breeder, or what is generally understood as the ordinary fowl fancier, one variety is sufficient upon a moderate-sized place, however many of that race such fancier may produce.

The inclination to reduce the number of kinds kept by most small poulterers, after a year or two's experience with them, is certain to follow; and the danger of such multiplied varieties getting crossed is too great, ordinarily, while the necessity of preventing this result entails too much trouble and care, usually.

To breed his fowls pure and clean, and to bring his chosen specimens up to the highest requirements of the standard, if he intends to be a competitive exhibitor, is a leading object with such fancier. And if taint occurs among his birds, his whole work is destroyed, his fowls are disqualified and his time and money are lost.

By adhering to the one favorite variety, and improving it constantly through careful selection and skilful mating for "points," whatever his choice may be as to the kind he prefers, he will soon come to be best content with one good breed, while his reputation for reproducing that kind may thus become sooner and more certainly established.

Yet, while we "are free to maintain" that, ordinarily, it is best to keep one variety only, we are not disposed to be dogmatic on this point. All honor to the enterprise and skill of the extensive breeder who is able to manage the breeds well; and if the fancier finds it necessary to indulge in several varieties in order to satisfy his taste, nobody should say him nay. We are merely endeavoring to point out the difficulties and drawbacks in the way of handling several breeds, so that the novice may proceed understandingly from the outset.—*Poultry World.*

Setting Hens — Breaking Eggs in the Nest.

The following very full discussion of the above subject we find in the *Prairie Farmer*, and as it contains some useful hints to poultry raisers, we give it a place :—

A novice, having trouble with setting hens breaking their eggs, wishes to know what to do about it, but she does not give particulars as to how her setting hens are arranged, or what kind of nests they have; so we can answer only in a general way.

Deep nest boxes are sometimes the cause of hens breaking their eggs. Therefore the boxes should be shallow, so that the hens need not jump down on the eggs when going on their nests. This is particularly needful in case the hens are large and heavy. A very good way with such hens is to hollow out a place for the nest on an earth floor, put one layer of bricks around it, and then fill in with a little clean straw or other suitable material. The largest and most clumsy Asiatic will slide into such a nest with as much ease and grace as can well be imagined, and unless she prove to be what some term a "close setter," there will be no danger of her breaking eggs.

By a "close setter" is meant a hen that bears her weight too firmly on the eggs, Some hens have a way of bearing on, or, as it were, closely hugging their eggs, and in this way are often broken. Such a hen cannot be used safely as a setter, for even should she nearly complete her three weeks' task without accidents, she will almost surely kill a large proportion of the chicks just as they are about to emerge from the shells by her close setting.

The setting of imperfect or thin-shelled eggs is sometimes the only cause of the troubles mentioned. Such eggs should not, of course, be used for this purpose at all.

Hens fighting over their nests is another cause, and when this is the case arrangements must be made whereby such fighting can be prevented. It will sometimes be found necessary to keep some of the more quarrelsome hens covered on their nests all the time, except for awhile each day when they are let off to feed. We cannot always have choice as to what dispositioned hens we are to employ for hatching, but it is well to know which are preferable, in order that the faulty ones may be avoided whenever possible.

In case at any time an egg is broken, the soiled eggs should be carefully washed in warm water and transferred with the hen to a clean nest, which should, of course, occupy the same place as the other. The wetting of the eggs will not injure them at all, but will be a benefit rather, especially toward the close of the period of incubation. It is even well, a day or two before the chicks are due, to dampen the eggs. This may be done by syrinkling or by placing them for a few seconds in a basin of warm water. We prefer the latter plan. The inside lining of the eggs sometimes becomes so parched and tough as to make it very difficult for the chicks to disengage themselves, even when the shell is partly chipped. The dampening of the eggs will tend to prevent this, and the chicks will come out promptly, lively and strong.

One object in setting hens on the ground is to secure the advantage of moisture; but where it is more convenient to have the nests on board floors, the dampening of the eggs as mentioned may be made to answer every purpose.

Practical Hints.

Breeders of Game fowls must consider form, size and courage of the first, and markings of feather of secondary importance.

In purchasing Buff Cochins, bear in mind that a clear, even buff, without pencilling of black in the neck or body, is essential to a first-class bird.

Remember that the present fashion demands Dark Brahma cocks with *very dark* breast and thighs, and in mating up your stock for breeding, aim to produce it.

"Vulture hocks" is the name given to stiff feathers that project below the knees of the fowl. They occur in all of the Asiatic breeds, and are unsightly and objectionable.

Aylesbury ducks with yellow bills, or bills spotted with black, are not what they should be—"a clear, pale, flesh-colored bill is the thing."

See that the main color or ground color of your Houdans is either black or white. Shades of other colors should be avoided.

The comb of a Hamburgh cock should set perfectly square on his head, and not lop to either side.

The white in the face of an adult Black Spanish fowl should extend over and around the eye.

White Leghorn fowls with black or red feathers in their plumage are faulty, as are also Leghorn cocks with dropping combs. Such should never be used for stock birds.

Look out for well developed fifth toes in your Dorkings; not little stubs pointing anywhere, but uniform-sized longish toes, pointing towards the body.

Early Chickens.

The season of the year has now fully arrived when breeders ought to have their stock mated and placed in their breeding pens; and whenever a hen shows signs of incubation, no time should be lost in placing eggs under her. The early hatched chicken has many advantages over those of later birth; it should be borne in mind that it is in early chichenhood the frame is made that will hereafter determine the rank of the large birds of its breed. And although feeding has much to do in the production of size and maturity, other things being equal, the early chicken is sure to be the best. It behooves breeders, then, who wish to excel in this respect, to produce early chickens, although at the cost of considerably more care and attention than is necessary in the raising of those of a later period in the season.—*Poultry Chronicle.*

HENS PLUCKING FEATHERS.—Mr. Penny, of London, asks for a cure for his hens plucking feathers. We give the following extract from the *Coutry Gentleman:* His hens want salt. Give them twice a day, in four parts of wheat bran to one of corn meal, by measure, a tablespoonfuls of salt in every eight quarts of this mixture, scalded and cooled. The hens are after the salt contained in the minute globule of blood at the end of the quili. Hens fed in this way, or occasionally furnished salt, will never pull feathers. The salt should be dissolved in hot water before mixing with the feed. This is a certain antidote.

Garden Orchard and Forest.

Climatic and Scenic Influence of Evergreens.

Our greatest regret regarding pines is, that we cannot get enough of them, or set them fast enough. We would have a line of them on the northerly side of every orchard we cared to cultivate, and on every barren or unsightly knoll, and in every spot on the farm where they would protect the fields from the fierce winds and storms of winter. There is scarcely a farm upon any sandy plain, or exposed hill-side, that could not be made to produce more and better crops if one-eighth of the land now cultivated were judiciously set to evergreen trees. They break the force of violent winds in summer, when the tender crops are growing, and in winter, when the fields are bare. Growing around farm buildings, they afford a welcome shelter for poultry, and other animals, and scattered over a farm, in the right places, they add a charm to the scenery which nothing else can.

Pines seem to increase the temperature of the surrounding atmosphere. Let one try the experiment some cold, windy day, of standing for a short time on the northern, and then on the southern side of a pine grove. The difference in the climate is often as great as between March and May. The north winds as they come down over the snow-covered hills, are checked in their course by the millions of fine, narrow leaves which hold the air stationary, like the double walls of an ice chest. It is not always the coldest air that is the hardest to bear. We all know how much colder it seems to ride against, than with the wind, in a cold day. Cold air in motion, takes the heat rapidly from everything with which it comes in contact.

Dry, still air, or as it sometimes called, dead air, is an excellent non-conductor of heat. Dead air keeps ice from melting in the ice-house and refrigerator. Dead air in the walls of stables keeps the cattle warm, and the manure from freezing. Dead air around our own bodies affords excellent protection from the cold air outside; and dead air, held comparatively stationary among the fine, needle-like leaves which cover our pine trees, affords an excellent protection from the cold to whatever comes within its influence. The heat our animals and our plants thrive in so well comes from the sun, and we should endeavor to save it as much as is within our power by protecting our stables and our fields from the fierce winds which, when unobstructed, carry away this heat and disperse it so rapidly.

To this end, pines or other evergreen trees may be planted on the exposed sides of fields or buildings with marked effect and great advantage. Besides their use in tempering the climate, they are, when well grown, a beautiful addition to any landscape, either in summer or in winter. As we often see them, they are an eyesore and a blemish, as when standing on the sunny side, and close up to the windows of living rooms; or, if such mistakes in planting have been made, where they are trimmed up from ten to twenty feet high, leaving the stems bare and the tops looking like poor specimens of toad stools perched upon tall bean poles. When evergreen trees are found to be in the way or in the wrong places, and trimming is suggested as a remedy, the trimming had better be done very near the roots. A pine tree, when grown alone and as nature designed it should grow, a perfect pyramid of green, is one of the most beautiful sights in nature, but when mutilated by the hand of man, as many often are in private grounds, they are about as forlorn looking specimens of tree growth as one could well imagine. One valuable characteristic of our native white pine is its ability to grow rapidly on very poor, thin land. There are thousands of acres of barren land in New England, both in large tracts and in small patches, which, if planted with pines, would, in a few years be enhanced in value many times the cost of planting.—*New England Farmer.*

Sowing Garden Seeds.

The commonest error is to sow too deep. Seeds want moisture before they will grow, but they do not like to stay in water. They need air and moisture—not moisture or water alone. When, therefore, water lies long about a sprouting seed, and the air is prevented from operating at the same time, the young plantlet is tolerably sure to rot away. Now the danger from water is just in proportion to the depth the seed is below the surface. Very soon after the rain the surface dries. Beneath the surface it is longer in getting away; the nearer the surface, therefore, a seed can be sown, so that it can be kept regularly moist, the surer the seed is to grow.

Of course the texture of the soil has much to do with modifying depth. In a light, sandy soil, water will pass readily away, and the necessary air will follow more readily than it will in a stiff soil; the seed, therefore, that would be in great danger in a quarter of an inch of depth in a heavy soil, would come through an inch of sand; and it is this which renders it impossible to give any rule as to the proper depth to sow the various kinds of seeds, and the necessity of a philosophical chapter like this, which attempts to show the principle of successful culture, rather than a regular rule for the people to follow.

If we could have a regular moisture right at the surface of the ground, and keep secured against any sudden drying, it would be best to sow entirely on the surface, but, as we cannot, results the necessity of covering a little with earth; but if attention be paid to a proper powdering or pulverizing of the soil, we might get the seed much nearer the surface than is generally thought possible.

To know our meaning from experience, which, after all, is the best teacher, let a piece of ground newly dug or ploughed stay for a day or two in its rough condition, until the coarse cloddy pieces are a little dry. Then walk across the ground. If next day the footprints be examined, the crushed soil will be found of a dark brown color, which dampness gives to soil, while the other portions of the land are nearly dried out.

A seed trod in under foot at the time of making these footprints would be nearly sure to grow, while any scattered in the coarse soil would run the risk of either being dried out or drowned out by getting too deep under the soil. Indeed, we know of one man, who has the best success in rasing garden vegetables of any man we know, who always sows his seeds by treading them in. He takes care to get good seed from a reputable source, and then sows on the surface. The ground is first forked up, and lays a day or two to dry. Of course it is made tolerably level, but no special attempt is made to have the surface particularly fine.

When ready to sow, the garden line is stretched in the direction desired, and the seeds sown thinly along the line on the surface of the ground. Then he walks along sideways, each foot closely one after the other, along the line, and the seeds trodden in. He seems to have every seed to grow, and they grow early; and another advantage is that they rarely require much thinning out.

Transplanting Trees.

Everyone thinks he is competent to transplant trees, but were this the case we would see fewer failures than we do. Anyone able to handle a spade can, it is true, dig a hole in the earth, put the root of the tree in it and cover it; but it is not after every planting that the trees will grow, and continue to grow. We have had some experience in planting trees on our own account for years, and we can recommend the following clipping from the *Ohio Farmer* as a plain and practical method:—

One of the most important things in connection with tree planting, is to secure them in good condition. This is of the first importance. In ordering trees this matter should be insisted on, and no tree should be accepted that gives evidence of bad handling. As much root as possible should be secured, as on this largely depends the success of the operation. If to be conveyed any distance they should be securely packed. A failure here may result in serious loss. The money paid for boxes and packing is often the most profitable part of the investment in a bill of trees. As soon as received, trees should be unpacked and heeled in, that is, laid in an inclined position and the roots thoroughly covered with fine, damp soil. From here they should be taken only as they are set, and should not be exposed to the air long enough to allow the roots to get dry; and especially should they be protected from sunshine. Before planting, the roots should be shortened in if very long, and all that have been cut or mutilated must be cut off smooth. This should be done with a sharp knife, at an angle of forty-five degrees, from below, leaving the upper part the longer. This will prevent the entrance of water, which would cause decay; it will also leave the root in the best condition to foam a callous around the wound from which the new rootlets will start. The roots should be well puddled, or dipped in a thin mud till every part is thoroughly coated with it. The place being prepared, the tree should be placed in its position, so that when the job is complete the tree will stand an inch or so deeper than it stood in the nursery, and be so raised that when fully settled it will stand on a slight elevation. If the soil is wet it is well to place the tree just on the surface, and raise the soil in a gentle manner around it. This will serve in some degree to lift the roots above the excess of wet in the deeper soil. In setting, the tree should be placed in position and held by a helper while the planter, with his hand, arranges all the roots in the most natural position possible, and packs the fine, rich soil among the roots. Every crevice and corner must be filled and packed, so that no vacant space shall exist about the roots, as such a vacancy will result in the decay of so much of the root as is not in contact with the soil. The soil should be packed as solidly about the roots as moderately dry soil will admit of. No pulling or shaking of a tree while setting is admissible, as this is very apt to result in leaving open places among the roots. It is a good idea, when the roots are just covered, to pour in part of a bucket of water; when it has settled away, draw the remainder of the dirt in and gently tramp it with the foot. The tree should be slightly inclined against the prevailing wind of the locality, and if very windy it will be a good plan to raise a mound of eight inches to a foot in eight around the trunk till it is established. Many persons are troubled to get their trees to range in the rows properly; even after having the ground staked off in good order they still find their trees stubbornly refusing to range in straight rows. This difficulty may be obviated by the following contrivance: Take a board four inches wide and eight or nine feet in length; near each end have an inch hole, and saw a triangular notch two inches wide and the same in depth in one edge about the middle. Make two wooden pins or pegs one foot long, and of a size that they will easily pass through the holes. The stake being set in the exact place where the tree is to stand, lay the gauge down so that the stake will stand against it in the centre of the notch; now drive the two pins through the holes to half their length in the soil, lift of the board; leaving the pins sticking in the ground, dig the hole and put the tree in its place, replace the gauge, and, having the trunk of the tree in the notch just as the stake stood before, hold it there till the filling in and packing is all done, and the tree will stand in the exact place that the stake occupied. Proceed in this manner with all the trees, and if the stakes were properly set at first the trees will range as a matter of course. This method is doubtless familiar to most of our readers, but there may be those who do not understand it. An orchard is an object of such premanency that it is worth some trouble and expense to have the trees arranged in a neat and tasty manner.—*L. J. T.*

Value of Road Dust.

During the dry season of late summers, every country resident should secure several barrels of road dust. It is worth many times its cost as an absorbent. Those who keep poultry secure by its use a valuable fertilizer, nearly as strong as guano, with none of its disagreeable odor. Place an inch or two of road dust in the bottom of the barrel; then, as the poultry house is regularly cleaned, deposit a layer an inch thick of the cleanings, and so on alternately, layers of each till the barrel is full. The thinner each layer is, the more perfect will be the intermixture of the ingredients. If the soil of which the road dust is made is clayey, the layers of each may be of equal thickness; if sandy, the dust should be at least twice as thick as the layers of droppings. Old barrels of any kind may be used for this purpose; but if previously soaked with crude petroleum or coated with gas tar, they will last many years. If the contents are pounded on a floor into fine powder before applying, the fertilizer may be sown from a drill. Road dust is one of the most perfect deodorizers of vaults—converting their contents also into rich manure. Place a barrel or box of it in the closet, with a small dipper, and throw down a pint into the vault each time it is occupied, and there will be no offensive odor whatever. This is simpler, cheaper and better than a water-closet, and never freezes or gets out of order. Mixing the road dust with an equal bulk of coal ashes is an improvement, making the fertilizer more friable.—*Country Gentleman.*

Notes on the Garden.

Diseases of the Plum Tree. — The plum tree is subject to a disease called the punk rot; it commences or shows early in the spring by a burst or split in the inner bark, which gradually swells to a long callis, first green, and then turning black. The remedy is to pare the affected part, as soon as seen, with a sharp knife. The whole of the affected parts must be cut out and bathed with a solution of vitrol; as soon as it dries, cover over with grafting wax; it will soon heal over. But if the sore is an old one, the best plan is to cut the whole out and burn it. I think the best preventitive against this disease is not to plant too deep, which is against all stone fruit trees, and also to keep all weeds and grass from growing on the ground they stand on, and also to have the ground only moderately rich, and not have an overgrowth of young wood. Salt is good dressing for plum trees, say one bushel for eight or ten bearing trees, also the sweepings around the anvil in the blacksmith shops; lime is good dressing to make them bear well, and also to kill the curculis in its chrysalis state. These should be mixed and applied as a dressing as soon as the frost is out of the ground in the spring.

Hants Co., Nova Scotia. W. Ferguson.

Large English Pears.—We have from time to time read in the newspapers surprising accounts of the enormous size pears and apples have reached in California and other favoured places in the United States, but we had no idea that we possessed in England either a climate or a soil sufficiently fertile to produce pears rivalling the fruits of our Brother Jonathan. A few days ago we received from Carmarthanshire a box of specimen pears of such unusual size and beauty, that we think they are worthy of being noticed in the pages of our journal:

Easter Beurre, 17 oz.; Beurre Superfine, 16½ oz.; Durandean, 14½ oz.; Beurre d'Anjou, 12 oz.; Marie Louise, 12¼ oz.; Winter Nelis, 10½ oz.; Gansel's Seckle, 8 oz.; Zephirin Gregoire, 6¾ oz.; Dogeune du Corrise, 17¼ oz. This last magnificent specimen measured 13½ inches every way. The pear trees were not delicately nurtured under glass in an orchard house and fed with stimulants; but they grew in the open air, and carried full crops of fruits. The Marie Louise last year produced upwards of 640 pints, and has yielded another very large crop this year.—*London Journal of Horticulture.*

The Onion Family.

There are a good many members of the respectable family so celebrated for fragrance—we mean the onion tribe. Some of them, of course, are well known and appreciated, as they are very likely to be, for they have a peculiar way of attracting attention, though they may be too modest to speak for themselves. Others are not as popular, though perhaps not unworthy of a passing notice.

The leek in many countries is quite extensively grown. In America it is found in the markets of our large cities, and in some particular sections, but generally in the country it is almost unknown. The leek is very hardy, bearing a good deal of freezing when in the ground, without any injury, and therefore in climates not too severe is allowed to remain in the ground during the winter, to be gathered as needed. This, of course, makes it very desirable for many localities. In very cold climates, it is taken up before winter and preserved in earth, about like celery, though not needing so much protection. The leek forms no bulb, and the thick stem, which is the part used, must be blanched by earthing up. The leek is prized for soups, and is often boiled and served as asparagus. Culture as for common onions.

Chives is a small and not very important member member of the onion tribe, quite hardy everywhere, and will grow for years from the same bulbs and in the same spot. In old times it was the custom to make a little border of chives among the herbs. The leaves are as slender as fine knitting needles, and appear in bunches early in the spring, and are cut and used in the raw state, and may be shorn several times during the spring. It is propagated by divisions of the root.

Shallots are somewhat similar to chives, but larger and better. The roots being quite hardy, they are kept in the ground during the winter, and in the spring one bulb will separate into half a dozen or more. They are then taken up, divided, and bought and sold as young onions. The shallot ripens about the middle of summer, and can then be taken up to be planted in the autumn, or retained for winter use. Some people prize shallots for pickling. If planted in the spring they do well, but are not ready for use if set out in the fall.

The most pungent of all the family is the garlic. It seems as if the essence of a whole bushel of onions was concentrated in one of its little bulbs. The root or bulb is composed of a dozen small bulbs called "cloves." Garlic is much used in the South of Europe, and the American traveller at first gets the idea that everything he eats has been flavored with it. The little cloves are planted in the spring six or eight inches apart, and in August the tips will die, when the bulbs are ready to gather. They do best in a light, rich soil.—*Vick's Floral Guide.*

A Garden Extraordinary.

One of our considerable seed firms, in arranging their stock for last spring's business, laid aside a large quantity of flower seeds which remained over after the previous year's business. Unwilling to sell seeds of doubtful vitality, the following plan was hit upon for a disposal of it which should promise an unusual if not a profitable return. The article is published in the *American Garden*, and we give as much of it as our space permits: "We plowed a strip about six feet wide all around a five-acre field, close to the fence. On this plowed ground the seed — previously well mixed—was thrown, just as it happened to come. The surface having afterwards been smoothed over, we waited the result. This proved more than satisfactory. We had a wild garden indeed! The plants came up as thickly as they could grow, and flourished and blossomed as freely as though they had enjoyed all the care usually given to delicate hot-house exotics. Sweet Alyssum, Mignonette, Phlox Drummondi, seemed to cover the ground. Morning Glories of every shade, and delicate Cypress vines, tried to cover the fences and run up every tree. Quaint little yellow and green Gourds appeared in the most unexpected places, and the whole bed seemed in a blaze with the brilliant Eschscholtzia, Marigolds and Zinnias.

"Every morning would find some new and unexpected flower in bloom. In short, the place was a constant delight all summer to each member of the family, as also to the neighbors. The children, especially, who revelled in a garden where they were allowed to pick whatever they pleased, were never tired of the excitement of hunting for something new.

"A quantity of the same seed was sown in the adjacent woods. Many of these germinated—and the sight of Morning Glories running up the trees in the wildest part of the woods, and bunches of Balsam and Zinnias and Asters looking up through the underbush was, indeed, passing strange, and promotive of intense enjoyment."

Those who putter over the planting of such seeds in pans and frames, may learn a lesson from the above rough and ready treatment.

Danger of Paris Green.

As Paris green is a most dangerous and deadly poison, great care is necessary in mixing it for any purpose, owing to the fine dust which arises—this being inhaled and also rapidly absorbed by the pores of the skin, especially if the person using it be in a state of perpiration. Malignant sores are not unfrequently caused by scratching the skin when itching or irritated from handling the green. As a remedy, hydrated peroxide of iron is recommended—the sores to be well covered with this, as with a salve, and a teaspoonful in a wine glass of water to be taken twice a day internally while working with the green.

Ashes and Manure.

The saving of wood ashes and their application to the soil is a part of the business of the farmer, and there is no part of his business that will pay him so well. During the greater part of the winter, a portion of his business should be the manufacture of manure, and its preparation for application to land in the spring, with the least possible waste of time and the lavor of his teams. Ashes being a very active and concentrated manure, can always be used to enrich the coarser and less valuable materials, of which the compost heap must contain a large proportion. Even leached ashes can be used in this way to an unlimited extent. The lime which they contain is is of itself a very material addition, of a high value, because it has been reduced by the action of the fire to such a fine powder that it readily comes in contact with the material with which it is surrounded. The chemical action induced by the two articles, potash and lime, aids also in generating heat in the manure heap, and to put in action the changes which reduce the raw manure to that condition which makes it of the utmost value as a fertilizer, which not only yields food to the crops, but by its action on the unfertile soil also reduces it into a better condition to sustain vegetable growth, and develop an increased production of stem, leaf, and seed.—*Michigan Farmer.*

Cultivation of the Polyanthus, Whaelu, Gloucester.—In raising this favorite flower from seeds, some recommend its being sown in July, some in December, but we think the former is the best. Sow in pans of good garden loam, well drained, the seedlings will soon be up, and must be kept moist; never allow to flag from want of water or exposure to the sun. As soon as they are large enough to handle, transplant into shallow boxes or pans and place on a shady border. Towards autumn they may be planted into beds or borders, bearing in mind that they do best in a rather shady position, with a cool bottom, the soil inclining to clay, but the drainage should be perfect. They also do admirably in pots for indoor decoration. In this case put the seedlings into small pots and plunge in soil or cold ashes in a cool frame, re-potting into large sizes as they require it. Be careful that they are plentifully watered, and shaded from the mid-day sun. During hot weather a sprinkling overhead will greatly benefit them, and occasional watering with liquid manure will assist their growth and add brilliancy to their colors.

Birds the Farmers' Friends.—Not long ago, near Rouen, in the valley of Monville, the crows had, for a considerable time been proscribed. The cockchafers accordingly multiplied to such an extent that an entire meadow was pointed out to me as completely withered on the surface. The larvæ had pushed so far their subterranean works that every root of grass had been eaten, and all the turf could be rolled back on itself like a carpet. The multiplication of insects is almost incredible, but our birds seem equal to the emergency. Michilet says: "The swallow is not satisfied with less than 1,000 flies per diem; a pair of sparrows carry home to their young 43,000 caterpillars weekly; a tomtit, 300 daily. The magpie hunts after the insects which lie concealed beneath the bark of the tree and live upon its sap. The humming-bird and the fly-catcher purify the chalice of the flower. The bee-eater, in all lands, carries on a fierce hostility with the wasp, which ruins our fruits. A large number of insects remain during the winter in the egg or larvæ, waiting for the spring to burst into life; but in this state they are diligently hunted by the marvis, the wren and the troglodyte. The former turn over the leaves which strew the earth; the latter climb to the loftiest branches of the trees or clean out the trunk. In wet meadows the crows and storks bore the ground to seize the white worm which, for three years before metamorphosing into a cockchafer, gnaws at the root of our grasses.

Bruised Shoulder and Wasting of the Muscles.—Melvin Scott's mare was severely bruised above the left eye and on the point of the left shoulder last August. The muscles shrunk from point of the shoulder to within four inches of the withers, and though the lameness is now slight, and she can be used at light work, yet the wasting remains. The injury has evidently bruised the cords of the muscles playing over the outer side of the joint, and perhaps even done some harm to the bone, and hence the long-continued lameness. Give a good deal of walking exercise on level (not slippery) ground, but don't use at a faster gait, and keep up a little heat and tenderness over the point of the shoulder and shrunken muscles, by rubbing occasionally with tincture of cantharides (1 part cantharides, 20 parts alcohol). Should the exercise increase the lameness, stop it, and have the outer side of the joint fired in points at three-fourths of an inch apart, and not quite penetrating the skin. After firing, smear the part daily with lard, and rest until the surface heals. If available, a mild current of electricity may be sent through the wasted muscles daily during this period of rest to prevent further wasting, and the same should be kept up, along with plenty of walking exercise, and the application of tincture of cantharides after lameness has disappeared, and until the shoulders become full and plump.—*New York Tribune.*

The Story.

One Day in a Settler's Life.

"If you had had a grain of real love for me, you never would have dragged me out into this desolate wilderness," said Mrs. Roland Hardy, half sobbing and really angry.

She arose and flashed round to the window; there pressing her hot face so closely against the pane that her nose immediately began melting a grotesque pattern of herself in the sparkling frostwork. "Had you been a gentlemen, Roland, you never would have thought of doing it."

When wives get into a passion they are apt to say things that they may hereafter bitterly regret. Mrs. Hardy was no exception. Her husband stood breathlessly silent, his face paling. They had not been married a year yet.

"Jane," he answered at last, in tones hard and cold, "if I had not thought you were willing, aye, and more than willing to risk it, I should never have brought you, and you know it. Remember, I told you it would be a rough life, yet you were eager to come."

Jane Hardy remembered very well. But the memory of her ardent protestations, her generous forgetfulness of self, only angered her the more just now.

"How was I to know it would be like *this?* There! You can go if you are going. I should like to be alone—with all this work to do."

"I am going directly," was Mr. Hardy's answer, striving for tranquility. "Will you be good enough to put up my luncheon? I shall not come back until night."

"Oh dear, yes," she replied with alacrity, bringing her face away from the window with a jerk, and proceeding to make a great clatter in the cupboard, which in this pioneer cabin was a combination of pantry and china closet.

"I fear there is but a short allowance of wood: will it last till evening," asked Mr. Hardy, dubiously looking at the woodbox he had just replenished, and turning to brush up the bits of bark that had fallen on the neat rug carpet. His words were kind, but his tone was as chilly as an icicle.

"There is plenty; do not trouble yourself," responded his wife resentfully, her eyes bent on the bread she was buttering.

In five minutes, man, dinner-pail, axe and dog had vanished in the direction of the great forest; and the young wife was alone, as she had vehemently desired to be. Roland Hardy had gone forth to his day's work of felling timber.

Most young and angry wives would have burst into tears at this point. Jane Hardy did not. She leaned against the rude mantleshelf when her husband's footsteps no longer sounded in the crisp snow, and looked unutterably sad and hopeless, as if the light of her life had suddenly gone out; looked remorseful, too, as if conscious of having had something to do with its annihilation.

The story is one of those often enough enacted in the New World. Certain expectations suddenly failing him, Roland Hardy manfully resolved to betake himself to the mighty woods, clear out a settlement for himself, erect his own house, Robinson Crusoe fashion, and in time, by dint of his hands' hard labor, become prosperous. Hardy, the settler, he would be then, with his farm lands around him, his flocks and herds, his people and his comforts. But all that would have to be patiently worked on for, and the beginning must, of necessity, be weary and toilsome. Jane Deane, to whom he was engaged, decided to go out with him—his wife. He told her he had better go on first, say for a year or two; her friends urged the same advice, but the young lady would not listen. So far as he was able, Mr. Hardy, before the marriage, described what their toil and their lonely life would be. Jane Deane looked at it with rose-colored spectacles, and thought it would be charming, a kind of perpetual picnic. It is true she did not bargain for the help they had taken with them, in the shape of a man and woman-servant, deserting them speedily, tired with the new rough work, sick at the loneliness; and those engaged in their places (after endless trouble and negociation) had not yet come. But she had put her own shoulder bravely to the wheel in the summer weather, and made light of hardships. It was winter now; and for the first time her temper had given way.

Everything seemed to have gone wrong in the cabin that morning; and her husband's calm cheerfulness through it all had provoked her most unwarrantably. But she was not feeling well.

It is possible that many of us have such mornings—mornings when everything animate, and inanimate, conspires to bring to the surface the original gorilla that slumbers within the soul. These vexations have to be beaten down promptly under one's feet, and Mrs. Hardy had stooped to squabble with hers. A dear little rose had been discovered frozen, though wrapped in flannel and placed in the warmest corner of the burrow under the floor, called, as a matter of dignity, the cellar. To be sure, the potatoes had been kindly spared: but what were gross potatoes when lovely Lamarque buds drooped in death? Mourning over them Mrs. Hardy forgot the milk-toast, and the milk-toast indignantly boiled over. Catching the pan from the stove, lo! a splash of hot milk fell on the front breadth of her clean crisp French gingham, and another on the ear of poor David, stretched on the hearth, and the dog howled responsivly. At another time Jane would have laughed, but it was very far from her mood this morning; life in general was looking depressedly gloomy, and when Mr. Hardy came into this atmosphere of burnt milk and piteous dog-whinings, she was declaring, in her fervid way, that housekeeping out West was simply villainous, and that she hated it—here she caught his provokingly smiling eyes—yes; hated it, and him, and the place, and everything.

He met the words jokingly, and it incensed her. In her anger she said unforgivable things, and Mr. Hardy was provoked into retorting. So they jarred and jangled through breakfast. That is, she did.

For some little time Roland Hardy had feared that a sort of suppressed discontent was taking possession of his wife. She was quieter at times, almost sad, and less given to laughter than in their old bright days, as he had got to calling them.

He had hoped everything of her love and devotion—hoped that he might ever remain as near and dear, as much "all the world" to her as she had often declared him to be. And now this had come of it; this dreadful quarrel. She had spoken out her mind.

His heart was aching with her reproaches; but generous ever, he excused her to himself as he walked along to the woods.

It was asking too much of mortal woman, he argued, anxious to make himself wretched, to tear her far away from home and friends, and all the comfortable delights of well-regulated New England life, and to expect her to be always glad and bouyant, and brave, and hopeful, keeping his own soul up with the wine-like tonic of her blithe spirits. No. It was the same old beginning of the end, a mere question of time. Eventually she would become the indifferent, matter-of-fact sort of woman that most wives appear to be: regarding him—the lover—as a kind of mild inevitable evil, necessary to her support, and respectable to have about the home. Sooner or later, he supposed, all husbands and wives awoke from their dream of love, to the long, dreary reality of making the best of things. Nevertheless, her fierce outburst on this particular morning took him by surprise; somewhat arousing his indignation. Had it not been her free choice to enter on this "villainous" housekeeping? Had he not warned her freely and fully that her days, if she came with him, would be anything but a bed of roses?

Was not life harder for him, inexpressibly harder, than it had ever been, a totally different thing altogether; but he bore on perseveringly and untiringly, looking to the end in view, and making matters light for her sake. Suppose—suppose—a flush dyed the young man's patient face as the thought occured to him—suppose she refused to stay here and went home to her friends?

Meanwhile, Mrs. Hardy stood by the mantle-piece, horribly miserable—more miserable than she had ever dreamt of being in any of the love quarrels that had flickered their courtship. There seemed to be no "making-up" in this sort of thing; there was no light in it: it was unmitigated, hopeless wretchedness. For Mrs. Jane Hardy, her passion over, was chewing the husks of bitter repentance. He did not love her any more; he could not, or he never would have said harsh things to her; and this was the end of it all!

"To call me 'Jane!'" she exclaimed aloud, as if the word "Jane" contained all forms of vituperation. "Nobody has been cruel enough to call me that in all my life!" turning to the breakfast dishes with a bravely conquered sob. For this young lady, who had been a pet at home, had never been called by her husband, or by anybody else, by a harder name than Jenny.

Work is a good thing. Auerbach says it should have been the first commandment: "Thou shalt work!" Jenny was too unfamiliar with heart-torture to be conscious of how good her work was; but she could not but be aware, as the morning passed away, that something was driving the clouds ont of her sky. Roland could not despise her all at once, she was sure. She would gather up the remnant of his love, and guard and nourish it so tenderly that, like her poor Lamarque rose, it must still lift itself to the sun again, and some time blossom into a little beauty of sweetness, and so make life endurable. She would, in so many noble and heroic ways, prove to him—but no; how could she do that?—there was nothing noble or heroic to do. Women's lives—ordinary women's lives, like hers—had no heroic chances. She could only keep his house in nice order, cook his favorite dishes, watch over his shirt buttons, forget the old days of ease when she was a listless young lady, and never, never, never lose her temper again. It was all dreadfully commonplace, and of no account, but she had embraced this lot of her own free will, and out of her deep love for him, and it was the only way by which she could hope to climb to the heights of his regard again. As for his old romantic love for her, his tender, chivalrous devotion, that could never come back; she wasn't worth it. And so, accepting the dust of humiliation, and, like a genuine woman, having no mercy on herself, she went through the household duties, thinking all the time how dear to her were husband and home, and how she would strive to make herself endurable, please God, to them.

It was a decidedly pleasant log cabin. Log cabins are always pleasant when an apt housekeeper presides over them, and enough of the world's lucre can be afforded to cover the walls with tasteful paper, and the floor with comfortable carpets. Those rude logs of which we read, with their thatched roofs, clay floors, and chimneys built of sticks, are far more endurable on canvas and in the rhymes of young poets than in actual life, where they mean simply rheumatism and insects. This house was different; it was a spacious, comfortable, well-furnished place, and only called a cabin after the fashion of the country.

A stanch roof; substantial walls, ornamental within; carpets, books, pictures, a rare clock, easy chairs: everything for comfort met the eye. The sleeping-rooms above gave evidence of ingenious and tasteful powers brought to bear upon their building and furnishing. Charming expedients, graceful rustic ornamentations, pretty and useful things that cost little, made the cabin seem very much of a cosy mansion in a small way. In the midst of an almost savage wilderness, Roland Hardy had erected his dwelling, with a view rather to future exigencies than present needs; and he and his wife both possessed the gift of "making the most of things."

And it is surprising how deftly in these remote homes a woman, though she may have been gently born and reared, soon learns to accomplish the needful daily work. Where there's a will there's a way; and Jane Hardy had learnt to take a pleasure and a pride in it.

By noon to-day the work was done, and the house in the trimmest order. White loaves, just from the oven, were diffusing their fresh yeasty fragrance; the week's ironing hung warm and spotless across the clothes-horse. On the table smoked an exceedingly lonesome cup of tea; and over it leaned the pensive young housekeeper, pretending to do justice to her solitary luncheon.

Her thoughts were away in the snowy woodland with him, her husband; who was doubtless, about this time, eating prairie chicken and clammy bread and butter. "He might build a fire, and give it a little roast on a stick," she pensively murmered; and then she felt how very glad she should be when night should come, and she could, in many furtive ways, confess to him how sorry she was, how deeply in need of his dear love.

It was nearly three o'clock when, mechanically looking through the window in the direction of the forest, she was surprised to see the dog, David, making for the house in a wavering, uncertain way, as if he had half a mind to turn back to the woods. David had more than once wearied of the monotony of watching wood-chopping, and came to the house an hour or two in advance of his master; so there was nothing startling in his coming now. He scratched at the door in his usual obsequious fashion; darted to devour, when admitted, a morsel of bread and meat; but, quitting it instantaneously, went and sat down before his mistress with the air of having something to say, and began to whine.

David was not a remarkable dog: not at all any dog in particular. He was yellow and undersized, with only a white spot on his forehead by way of ornament; and he was inclined to be lazy. He had come to them one stormy night, a lame, starving vagrant from some emigrant train, and kind-hearted Roland fed him, put liniment on his leg, and called him David, after a faithful dog he had recently possessed, and lost. And David contentedly remained, exhibiting no marked talent for anything, and sometimes betraying a lack of decent intelligence. His mental faculties had been dwarfed by persistent ill-treatment, Mr. Hardy thought; the dog seemed to be *cowed*. One peculiarity of his was, that he never asked for food. He was the most unobtrusive, retiring sort of animal that ever yearned for cold meat. If meat came to him, well and good; but he never uttered a whine, or gave one beggerly wag of his tail to indicate that he was hungry. He would not have done it if he was starving. Jenny was wont to say he was poor, but proud. So to-day, when he planted himself before his mistress, and looked at her with all the soul he had in his eyes, and whined like a professional beggar, he was regarded with a good deal of astonishment.

"More dinner, David? Is it possible you have brought yourself to ask for more dinner?"—going to the cupboard and carving a bone for him.

David looked hurt. Nevertheless, he took the bone gently, carried it to his rug in the corner, and left it. That caused Mrs. Hardy to look at the rug, which she had not done before, and then she saw that he had not eaten his dinner. The dog returned to his old position, whining before her as she sat.

"Oh, it is water, then!"

No, it was not water. He retreated from the basin with an air of increased injured feeling, and continued to regard his mistress with appealing eyes. All at once some instinct penetrated to Jenny's mind, and her heart gave a great leap of fear.

"David! David! Is it your master? Is it Roland?

The dog made a bounce of joyous relief, as if glad of being understood at last, and trotted to the door, casting a look back at her over his shoulder. If ever a look said plainly, Come on, that look did.

"I will come, old fellow," said Jenny, going to the wardrobe, and hurridely getting out some wraps and her fur-lined overshoes. "Something is the matter with the dog, and it may be that. At any rate, there will be no harm in my running out to the woods," she added, with a nervous little laugh. "Roland need not know how silly I am; I can say that I wanted to find lichens."

The sun was disappearing behind a cold, hazy horizon; a chilly wind whirled the snow-clouds across the level plain, ferrited out the fallen weeds that strove to hide from it, and sent them scudding on again. The still radiance of the winter day was giving place to an early and boisterous night; to such a night that will not be forgotten in that country by living man or woman.

In her stanch overshoes, short cloth skirt, and shaggy walking-jacket, a costume in which she had tramped many a time with her husband on expeditions to the distant post-office, where a blacksmith's shop and a grocery store had put their heads together and declared themselves a city, Mrs. Hardy prepared to start. But she first of all unlocked a small store chest, and excavated from its depths a sealed bottle with "Catawba Grape" written in homely chirography on its deliciously dingy label.

"My dear old father!" she exclaimed, by no means addressing herself to the bottle; but, with dim eyes, thinking of the kind hands that were young hands when they made this wine, which, from its age and strength, was, as a cordial, equal to brandy. The hands were old hands now, capable of little but writing her shaky letters from the dear old homestead. "Who knows but Roland may be past its aid; that some dreadful accident—but I won't think of it. And who knows but I may meet him trudging homewards; and he will ask me what on earth I have brought out the wine for? But he shan't see it: I will not show it; and to-morrow I shall laugh at myself for these foolish fears."

Talking thus incoherently, but doubtless thinking connectedly enough, she poured out a flaskful of the wine, secured it in her pocket, threw her husband's scarf over her arm, and told David she was ready. At which word the dog gave another appreciative bounce, and fairly flew past her as she opened the door.

But, once in the path leading to the forest, David seemed to have had his brief flicker of intelligence taken out of him. Instead of trotting on and leading his mistress in the right way, following the recorded example of all sensible dogs, he held back shrinkingly, evidently declining to take an active part in the search or to lead it. It was just as though he meant to say, "I have done my part; you go on and do yours."

"You are an awful idiot, David; or else I am!" snapped Jenny. But David only meekly curled his tail and trotted behind her.

The forest, or the "wood-lot," as Roland called it, catching the word from other settlers, was a good mile away. Mr. Hardy's acres covered an amount of ground that would have turned his late New England neighbors dizzy with its vastness. It would soon yield him an ample return; at present, during these preliminary struggles, it was not much more than a living. But in the event of a certain phantom railroad becoming a real railroad, he would make a speedy fortune.

The path was rough. Roland's boots alone had formed it, tramping backward and forward to his tree-felling. Generally he paced it four times a day, going home for the mid-day dinner. The drifting snow hid treacherous holes that well-nigh went to break Jenny's ancles, as she stumbled on. The wind, growing every moment more violent, pushed her on with a giant hand; sharp needle points of snow smote her neck. "It will be rather sharp going home," she said, shivering, and pulling her scarf closer.

In October she had come to the woods for autumn leaves, and the spot was in a degree familiar to her. But the path seemed to disperse and lose itself after entering the thicker parts; and she had to direct her way by the piles of wood that had been cut in places where the trees could be most conveniently felled. If they had not said those dreadful words to each other! if they were only as they had been yesterday, when Roland loved her, she might not have felt so desperately anxious. How was she to find him? She called again and again, but the wind overpowered her voice.

There was no sound of the axe. As she paused, listening intently, she could hear nothing but the dreary whistle of the blast through the naked trees, and the sharp, sifting sound of the snow as it smote their trunks.

"David, where is Roland?—where is your master? Go and find him this minute!" impatiently menacing the cowering dog in her terror. "Find your master, there's a good dog," she added, in a coaking tone of entreaty, patting the poor animal, who stood before her with drooping head. "Good David! good old dog!"

David went on then. In the lowest natures is sometimes enshrined the pearl of delicate feeling. This dog had bad news to tell, and shrank from telling it. He made no pretense to a light-hearted pace. He crept, halted, and seemed anxious to defer something.

(To be continued in our next.)

Uncle Tom's Department.

Modes and Manners.

A careless, slovenly, untasteful habit does not indicate superior intellectual powers in a man. Long straggling hair, untidy beard and dirty finger nails, with buttons gone or half unused, never make up for lack of brains. On the contrary, they show the owner needs thorough reconstruction. Neatness and tidiness do not show that a man is a "dandy," as some people may think. I do think farmers are too careless and slovenly in regard to their attire.

I do not urge such extreme measures to present a fine appearance as to do their hair up in papers to make a fine cluster of curls, as Lord Byron used to do; but our farmers might bestow a little more attention to their dress, which would give them a decidedly more respectable appearance. I know all about the ways of boys—flinging their coats on one chair, vest on another, tossing their boots in one corner, and their collars, neckties, suspenders, gloves, cuffs, etc., may lie around from one Sunday to another, unless some careful mother or sister puts them away. Joe Matthews, who lived in a farm house next to ours, used to keep a dress suit for two years, and it looked better at the end of that time than his brother Tom's did in six months' wearing. Their sister used to say, in commenting on the fact, that Joe always folded his coat, pants and vest, and laid them smoothly in a drawer, and that he had boxes for his neckties, and did not spend half so much as Tom did, and always looked better dressed. It is a bad custom to allow clothing to remain in a mud-bespattered state until the next time of wearing. It takes the newness off it more than wearing two or three times.

UNCLE TOM.

Puzzles.

[We have only received three correct answers to puzzle No. 43 in last No. The puzzle is original by one of our staff. Try again.

Name of a place.

43.—
B A Y
L H

44.—CROSS-WORD ENIGMA.

My first is in street but not in lane;
My second in town but not in main;
My third in love but not in hate;
My fourth in dark but not in light;
My fifth in William but not in Bill;
My sixth in stream but not in nill;
My seventh in apple but not in plum,
My eighth in finger but not in thumb;
My ninth in cat but not in dog;
My tenth in garden but not in bog;
My whole is the name of a river;
C. H.

45.—A QUESTION.

A man travelling entered a hotel and said to the landlord, "If you will give me as much money as I have, I'll spend 10c; he did so; and he went his way and came to a second and said unto him likewise, and spent 10 cents; and then he went his way and came to a third and said unto him likewise, and spent ten cents, and he had no more left. How much had he when he started. J. D. C.

46.—DIAMOND PUZZLE.

My first is a vowel;
My second is an animal;
My third is a point;
My fourth is a surname;
My fifth is solitary;
My sixth is a building;
My seventh is a consonant.
E.E.S.

47.—Four things I saw all of one height;
One deformed the rest upright;
Take them away and then you'll find
Exactly ten is left behind;
But if you should split them in twain
One half you'll find would eight contain.
M.B.E.

48.—What is it that is ever going, and never stopping? J.R.

49.—What bridge is it that a man can never pass over? W.R.

50.—P rs v r y p rf cl m n to k p in mind th pr c pts. Fill in the spaces to read with sense.

51.—A CROSS-WORD ENIGMA.

My first is in Britain but not in Spain;
My second in wheat but not in grain;
My third in John but not in Jack;
My fourth in arm but not in back;
My fifth in earth but not in Moon;
My sixth in song but not in tune;
My seventh in able but not in strong;
My eighth in square but not in long;
My ninth in April but not in May;
My tenth in night but not in day;
My whole together you may bind,
And a village in Ontario find. E. E.

52.—CRYPTOGRAPH.

Vige em het pdeht fo vole hatt grinpss
Morf phriefsind ni siftumornl wrong
Sa yiv ot het irun sliggn
Hewn vyree hoter pohe ash fowln
Igiv em hatt nofd fondcingi voel
Hatt ughout tub thad flisit nca libthg
A malfe ahtt dalsren nacton vemo
Tub umbrs ni keandrss bloudy birthg. C.C.

53.—What is the difference between the north and south pole. R.P.C.

54.—Two R's, two A's, two M's and a G;
If you are a scholar, come spell it to me.
A. McC.

55.—What ship is always laden with knowledge. A. McC.

56.—
I'm a box, I'm a tapster, I live by designing;
I'm a dealer in wire, with a gilding all shining;
Reverse me you'll find I'm a recompense sweet,
Whose hope lightens labor though ever so great.
T.M.T.

57.—RIDDLE.

What has a mouth larger than its head·

58.—PICTORIAL REBUS.

59.—MULTUM IN PARVO.

Out of what one pronoun can you get nine pronouns, inclusive?

60.—BLANKS.

Fill the following blanks with words pronounced alike but spelt differently:—

Will you——me a——?
The —— sang a plaintiff
————The men saw the
————Will read a
They gave A to read
————Will————the tree
His——was that of a——man
J.H.M.

61.—PUZZLE.

Make sense out of the following letters:—

YADOT
OMOTO
ZZELD
RPVLN
OWETA
WTNTC
WOFFU
HATYO

62.—A RIDDLE.

What is that which flies high, lies low, has no feet, and wears shoes.

Answer to April Puzzles.

28.
G
L
E
GLENELG
E
L
G

29—Victoria.

30—ANAGRAM.

War and love are strange compeers,
War sheds blood and love sheds tears;
War has swords and love has darts,
War breaks heads and love breaks hearts.

31.—William Weld.

32.—
U
ONE
UNCLE
ELK
E

33.—Because they have their next (twirled) world.

34.—X L 40.

35.—The blacksmith.

36.—One hundred times, because he will have two ears of his own.

37.—Shad, Ash.

38 Livingstone.

39.—The letter O.

40.—Civil.

41.—The letter M.

42.—Manitoba.

Names of those who have sent correct answers to puzzles in last number:

Annie McGregor, E. H. and S. S. Switzer, Maggie Dawson, J. P. and L. Bowerman, F. Robinson, Chas. H. King, V. Force, T. C. Rinner, G. Kettkinson, J. and C. Clemens, Charlotte Brown, Jno. Holmes, Thos. Wilson, J. H. Houser, Mary A. Baird, Jno. McCowan, Chas. Brighton, Kate Crerer, Hugh McTavish, Hy. Shever, Miss Gages, Lizzie Johnstone, Grace McNee, Jno. Howlett, J. J. Shier, Marian McKay, C. Storey, Mary Douglas, Miss Atkinson, Jas. Sibbala, Wm. Jeffrey, James Hartney, Jared M. Stanffler, M. Plaxton, James Davidson, Hannah Sunley, James Anderson, T. M. Taylor, Jennie McLean, J. H. Oliver, Mary Adams, Thos. Lemon, Sarah H. Leroy, Geo. Hoover, alcolm McLean, W. J. McBayne, A.ra Gahm, AMf. Ruther, V. N. Collins, Dav d iBelll Geo. Woodhouse, Sarah Sharpe, R. P. Coulson, J. Robertson, Maggie McEwen, V. E. Smith, Wm. Broughton, J. H. Oross, W. E. A. and O. Purser, Robert Wilson, C. B. Matthews, Archy Taylor, J. E. Loveline, D. and J. Stewart, Alice Sherk, Wm. Patterson, Wm. J. M. Kinnell, Maggie Dunloy, Chas. Wright, W. McKay, Myria Clemens, Rosa McNames, Jno. Graham, W. H. Sutherland, M. A. Platon, Hattie Haviland, Mrs. R. McCubbin, Lizzie Wilson, Mrs. H. Daniels, S. P. and E. J. Day, Jos. Grant, C. H. Coon, J. Kane, J. Oldfield, Bella Manning, Stella Pardon, J. E. and M. Everitt, J. Thomas, O. Ellis, Wm. Telford, M. L. Iler, K. Crerar, W. Storey, A. Fraser, A. Hassard, M. A. Anderson, Jane Hyde.

HUMOROUS.

Men of short memories and misers are alike; the former are always forgetting, and the latter always for getting.

"Is your house a warm one, landlord?" asked a gentleman in search of a house. "It ought to be," was the reply; "the painter gave it two coats recently."

Neither false curls, false teeth, false calves, nor even false eyes, are as bad as false tongues.

A good time—dinner time.

GOOD MANNERS.—A civil, respectful way of treating everybody is one of the surest ways of getting along comfortably in the world. It costs nothing but a little thought, and is worth a great deal.

"I am astonished, my dear young lady, at your sentiments; you make me start." "Well, I have been wanting you to start for the last hour."

"I am afraid you will come to want," said an old lady to a young gentleman. "I have come to want already," was the reply. "I want your daughter."

A new name for tight boots—A corn crib.

"Mother," said Ike Partington, "did you know that the 'Iron Horse' has but one ear?" "One ear! merciful gracious, child, what do you mean?" "Why, the engin-ear, of course."

Teacher—"What is the definition of flirtation?" Intelligent young pupil—"It is attention without intention."

Minnie May's Department.

The Fashions.

A few hints as to the knick-knacks of dress will doubtless be very acceptable to many of our nieces, as the merry month of May with all its welcome birds, buds and blossoms, and all verdant beauties, is again with us. About which poets write all brightness, sunshine and warmth, which exists only in their imaginations, in this nineteenth century of ours; and the probability is that we wrap our jackets as closely around us in the early part of May as we have done in the past month. Still, by this time, we either have, or are about to invest in season dresses, and, perhaps, in no month in the year does dress occupy our minds more. The latest New York novelties are as follows:—

Parisian authorities have at length ventured to give some hints with regard to the material and trimmings for the coming season.

Spring suits are being made for young ladies of woolen poplin bordered with bands of Scotch plaid. Suits are also made of navy-blue and bottle-green, trimmed with cream-colored mohair. Velvet skirts are as much worn as ever in the city, but for country wear they are not likely to be in as great demand. Faconne, which has been so much used, is rather heavy for this season, and is to be replaced by mohair in all shades, and crepe d'ete, which bids fair to become generally worn; this being also manufactured in various shades, three different designs being used for the same costume—plain, striped and checked. These combinations come in most of the light summer woolen goods. The eternal beiges are as prominent as ever; the name is changed, but the material and colors remain the same, the general aspect being altered by combining stripes and checks.

The corset basque extends smoothly over the hips, and is gracefully curved on the lower edge. The back has the long side forms that extend from the shoulder seam, and give the long-waisted appearance now considered stylish. Just at the waist line of the two middle forms of the back is a fan cluster of side pleats of silk. These pleats may be set on or let in, as the wearer pleases. If the lower part of the basque is cut out and the pleats are inserted, there should be two or three bands of elastic ribbon placed across underneath to keep the pleating from flaring open too widely. The front has two short darts, and the edge is finished with piping. The neck has a Byron collar and a bow. The trimming of the basque is lengthwise bands of silk in bretelle shape, which also contributes to the appearance of slenderness and length of waist. The sleeves are of silk, with a square cuff of the woolen goods.

The burnous over-skirt has a long wrinkled apron, trimmed with bows down the middle and two bias bands of silk. There is usually a seam down the middle of this apron—a thing that would not have been permitted in the costumes of a few years ago. If the fabric used is very wide, such as Cashmere or shepherd's check, it is possible to make the entire apron of one wide breadth by joining small pieces on the sides; but for goods of ordinary width the better plan is that adopted in the pattern, of having a separate front gore, with a wide gore on each side. The pleating that gathers up the fullness must extend very far back on the sides, and begin quite low down. The wide back drapery forms a long, soft puff that is finished off at the top by a hanging point that reminds one of the graceful hoods worn on Arab mantles, and gives the title of burnous to the over-skirt. This back breadth is a single straight width of wide goods, or two of narrower material; it is gathered in down each side to the apron, and the long hanging top is trimmed all around with a bias silk band. The bottom of the over-skirt is trimmed with a box-pleated frill of the woolen goods, cut straight and raveled on each edge to form fringe. This fringing, however, will not look well except on heavy twilled fabrics, as thin fabrics are too light, and need either an added fringe, or should be merely hemmed. The parasol pocket is suspended by ribbons from underneath the basque, as the wrinkled skirt will not allow it to be sewed on smoothly. It is quite broad at the top, showing the silk lining, and is sloped away to a point where a bow finishes it. Its name is given from its resemblance to a parasol when closed. It is sometimes very prettily made of small fine side pleats to match the cluster in the back of the basque. The lower skirt is of silk, with trimming of silk and of the checked wool.

The reader is advised that this dress need not be made of two materials, as it looks exceedingly well made up of a single fabric; at least the skirt and sleeves may very well be of the material of the dress, though the costume will be more effective if trimmed with a darker shade of bows and bands. Thus, plaid summer silks look best with solid-colored trimmings; light brown de beges and other wool stuffs may have the same material of darker shade for the accessories. Solid-colored silks are preferred when only one kind is used. Black Mexican grenadines are being made by this pattern, as the fullness of the over-skirt is desirable for thin goods. These have a silk lower skirt, with grenadine flounces that cover it in all the parts not concealed by the upper skirt. The trimming for grenadine upper skirts is Spanish lace in two or three full rows. The corset basque is the grenadine over a silk lining, trimmed with lace. Ecru Mexicaine over dark brown silk is handsomely made up in this fashion.

Flowers in the Country.

What is the reason there are so few flowers cultivated in the country, where there is plenty of space which should be so well ornamented that our young people would find attractions at home strong enough to keep them from the allurements of the city?

Almost every lady says she loves flowers, and would consider it an insult for any one to intimate that she did not. Many ladies complain that they cannot get the ground prepared, or they have no luck with flowers, or they have so much to do, though they can find time to watch their neighbors for an hour at a time, or run off half a mile to gossip with some of their dear friends.

Now, my nieces, let me say a word. Try spending half of this waste time in cultivating a few sweet flowers, which will add to the beauty of your homes. The question naturally arises: What varieties shall we select; and how must we prepare the soil for the pets? Flowers of all sorts like a rich mellow soil. If the ground is heavy and adhesive fine chip manure, old sawdust, half-decayed bark, fine mould from the forest, or fine scrapings from the barnyard, will be found excellent in preparing flower beds.

Sifted coal ashes and soap suds will render the soil light and will improve the fertility. If you raise good flowers this year, you will not go without them next. Amongst the many varieties, I find Zinnias, Portulaccas, Phlox, Balsams, Asters, Cypress Vine, Verbenas, Coreopsis, Gladioluses, Panseys, Geraniums, Coleus, Petunias, Carnations, Chinese Primrose, Mignonette, Roses, Fuchsias, etc. Now, dear nieces, try and persuade your brothers or fathers to prepare a little garden for you, and you take charge of it and let us know how you succeed. MINNIE MAY.

DEAR MINNIE MAY,—As the season for wearing starched clothing will soon be with us, I take the present opportunity of presenting to you the following laundry secret, which may be of service to some of your many readers. M. J., Ingersoll.

TO MAKE STARCH.

Take two ounces of fine white gum arabic powder, put it into a pitcher and pour on it a pint or more of boiling water, cover it and let stand all night; in the morning pour it carefully from the dregs into a clean bottle and cork it and keep for use. A tablespoonful of gum-water stinted in a pint of starch made in the usual way, will give the lawns, either white or printed, a look of newness.

COCOANUT PUDDING.

To the grated meat of a cocoanut take six eggs, six large spoonsful of sugar, half a teacup of butter and a little soda. Line a dish with puff paste and fill with the mixture. Bake in a quick oven.

BRIDE'S CAKE

The whites of 12 eggs, beat to a stiff froth; 2 teacups of white sugar; 1 teacup of butter; 2 teaspoons cream tartar; 1 teaspoon soda; 1 cup sweet milk; 5 cups flour. Put the cream tartar in the flour, dissolve the soda in the milk, put in the milk last of all.

GROOM'S CAKE.

Make the same way as Bride's Cake, except using the yolks instead of the whites of eggs.

TO KEEP HAMS.

There is no better way to keep hams through the summer free from taint or insects than by hanging them up in the smoke-house, which is of course to be kept perfectly dark. When there is no smoke-house or dark room, sew each ham up in a canvas bag and thoroughly whitewash it. They have also been kept perfectly by rubbing into them wood ashes, packing them in barrels, and covering them with ashes.

TO REMOVE RUST FROM STEEL.

Dinner knives sometimes get very rusty, and may be brightened by covering with sweet oil; let it stand for forty-eight hours and rub with unslaked lime, or powdered brick. A fine grain red brick, finely powdered, is good for polishing knives. Whiting is an excellent article for cleaning and polishing silver, brittania, tin, etc., when properly used, making it look almost like new. They should first be rubbed with it wet, then polished with dry.

DEAR MINNIE MAY,—I thought, as I liked your column so much, I would write to you. I have read a number of letters from your nieces and have found some very useful hints in them. We are all anxious to see the puzzle department, my brothers amuse themselves very much in making out the puzzles. I enclose a recipe for making potato cheese-cakes, which I can recomment.

Your respectful niece, JENNIE.

POTATO CHEESE-CAKES.

One pound of mashed potatoes, quarter of a pound of currants, quarted of a pound of sugar and butter, and four eggs; to be well mixed together. Bake them in patty-pans, having first lined them with puff paste.

Our Scrap Book.

"Learn to save yourself work," is the best maxim to be observed in housekeeping.

To render flat-irons smooth, rub them well with salt, and then over a piece of beeswax after eating.

Stove-blacking mixed with vinegar instead of water, is more permanent and gives a higher polish.

To remove smoke and dust from wall paper, rub it with a soft cloth and plenty of dry bran or Indian meal.

Gilt frames should have a coat of demar varnish, which will keep them from becoming soiled with dust or fly specks, and permit their being cleaned with a damp cloth.

Zinc that is used under stoves should never be dampened. If it becomes soiled or dim, rub with soft flannel and a little fresh lard. Cleaned in this way, a zinc may always be kept as bright as when first purchased.

To sprinkle damp bran upon a carpet before sweeping is a good way of laying the dust without injury to the carpet. Oil-cloths should be cleaned in warm, not hot water, and rubbed dry with a cloth wrung out of milk and water.

A bottle of aqua ammonia is invaluable to the housekeeper. A spoonful put in the iron pans and kettles, in which meat and vegetables have been cooked, will remove all grease, and make the cleaning of these vessels a very easy operation. One of the best washing fluids is made by mixing equal parts of turpentine and ammonia. This fluid makes rubbing almost unnecessary, while it whitens the clothes without rotting them. House plants are very much stimulated by giving them water which contains a small quantity of ammonia. Two spoonfuls to a quart of water are sufficient.

Good Humor.

Keep in good humor. It is not great calamities that embitter existence; it is the petty vexations, the small jealousies, the little disappointments, the minor miseries that make the heart heavy and the temper sour. Don't let them. Anger is a pure waste of vitality; it is always foolish, and always disgraceful, except in some very rare cases, when it is kindled by seeing wrong done to another; and even that noble rage seldom mends the matter. Keep in good humor.

No man does his best except when he is cheerful. A light heart makes nimble hands, and keeps the mind free and alert. No misfortune is so great as one that sours the temper.—Until cheerfulness is lost, nothing is lost. Keep in good humor.

Stock Notes.

Imports of Live Stock from Europe Prohibited.

RIGID QUARANTINE ESTABLISHED.

The *Canada Gazette* issued at Ottawa, April 21, contains an Order in Council for the restriction and the regulation of the importation of cattle and other animals on account of the disease prevailing in many parts of Europe. The importation of cattle from Europe is prohibited, except at Halifax, St. John and Quebec, and all importation through these ports are to be subjected to a rigid quarantine.

The Commissioners of the Centennial "assume" that 700 head of cattle will cover all desirable entries, and apportion the stalls upon that basis—270 to Shorthorns, 140 to Channel Islands, 70 to Devons, 70 to Holsteins, 70 to Ayrshires, and 70 to other breeds. Draught and fat cattle to be admitted irrespective of breed. The programme seems to have been drawn up by some one not overburdened with knowledge of stock matters. The Herefords, one of the most important breeds, are left out, and, if shown, would have to be among "other pure breeds."

Seven cattle of the Rose of Sharon breed arrived in New York recently from Kentuky, for shipment to England. They are valued at $5,000 each, and were purrchased by A. F. Fox.

The Western Fair Association held a meeting, April 12, in London, to make arrangements for the next exhibition. They decided to expend the sum of $12,000 in making an attractive show.

The Kingston Dairymen's Board of Trade have resolved that eight cents per gallon of ten pounds be the highest price paid for milk this season, delivered at the factory.

Mr. Simon Beattie, of Toronto, Ont., has recently sold to Mr. Wm. Crozier, of Northport, N. Y., the important one-year-old Clyde horse, Dinna Forget, and the imported Clyde mare, Falls of Clyde; also the Clyde mare, Queen of Scots, and two improved Ayrshire cows. The entire lot was sold for $4,350. In addition to the above sale, Mr. Beattie has sold to Mr. Brooks, Mitchell, Ontario, the superior stock horse, Glencarn, at a long price. He must have been a good one, as Mr. B. says he was too good to leave our "canny country."

Messrs. Moore & Robson, of London Township, have imported the very fine Parcheron horse, Louis Napoleon, from R. G. Brooks, Bloomfield, Illinois. No doubt but he will add value to the stock in his locality.

The favorite Shorthorn stock maintain their place in public estimation, and bring as good prices as heretofore. From English exchanges we take a synopsis of sales lately reported:—

At the Drayton exchange sale there was a large attendance, and 25 yearling bulls and bull calves of Sir Wilfrid Lawson and Mr. John P. Foster were disposed of. They were brought out in excellent condition, and the bidding was brisk. The twenty-five animals were sold at an average price of £48 11s.

At the Broadway sale there were sold 29 cows and heifers, averaging £74 1s. 7d., and three bulls at an average of £41 6s. Total amount, £2,272 4s.

At the joint sale of shorthorn bulls, held at Torres, about sixty animals were sold at good prices. The majority of the animals were of average quality, though several were of great merit. Mr. Brine topped the sale, both as to average and individual prices. His nine bulls averaged £49 a head, the highest price being seventy-three guineas.

At a joint sale of stock of Messrs. Collart, Sprague and Dr. Devin, U. S., seventeen cows and heifers and one bull were sold at an average price of $345. Total amount, $6,220. Twenty-nine cows and heifers were sold for $6,260, and eight bulls, $1,005—an average for the thirty-seven animals of $197.

At the sale of the herd of Mr. Brett, Nottingham, there was a large company present, but the stock was not in the most suitable condition, having suffered from a late attack of foot and mouth, said to be the eleventh time in fourteen years. Thirty-five cows averaged £28, and eleven bulls £11 18s. 6d. The highest price for a cow was 50 guineas, and for a bull, 30 guineas.

The stock of Mr. R. Thornton, farmer, Darlington, comprising thirty-two pure-bred Shorthorns were sold in consequence of the proprietor, who is now in his eighty-second year, retiring from the farm. The highest price was 62 guineas for a cow, Darling Gwynne, a representative of the Gwynne tribe. The chief lot among the bulls was April-Fool, by Albert King, for 45 guineas.

Mr. Marshall, McLean County, Ill., has lately obtained nine head of Cotswold ewes, bred in Canada, and safe in lamb by imported rams, at a cost of $25 each.—*Live Stock Journal.*

IMPORTATION OF THOROUGHBRED STOCK.—We notice that Mr. Moncrieff has imported to this town two very fine thoroughbred short-horn cows —Lady Halton and Rose Third, both of which are with calf. They are of sound pedigree and are beautiful specimens of short-horns, and in ordinary condition, we should say, would weigh about 1,500 lbs. each. We question much if they have any equals in the country. The same gentleman has also imported two very fine Berkshire pigs, named respectively Prince Arthur and the Fifth Duchess of Gloucester. Prince Arthur's dam was imported Souvenier, and his sire the famous boar Lord Liverpool, imported from England in 1874, after he had taken first prizes at the Bath and West of England, the Royal Counties, and the Gloucestershire Shows. Lord Liverpool was sold last fall for $700, to go to Missouri. Fifth Duchess of Gloucester's dam was from Imported Duchess of Gloucester, and her sire imported British Sovereign. They were both bred by Messrs. John Snell & Sons, of Edmonton, and are without exception two of the most perfect models of pigs we have seen for some time, and well worthy the inspection of all those interested in thoroughbred stock. Mr. Moncrieff has, in our opinion, made excellent selections, as they will undoubtedly be a credit to Beechwood Farm. We hope to hear of many following in the same footsteps; improvement of stock is much needed in this neighborhood, and all efforts in that direction should meet with hearty support.—*Petroleum Advertiser.*

Mr. John S. Armstrong, of Cranberry Farm, has left for Great Britain to purchase stock for Canada. His stock has wintered well; some of them never looked better. He has some choice heifers, from his imported bull, Young Heir. He has disposed of all his yearling bulls, except some first-class young ones for next year.

Messrs. J. & R. Hunter, of Sunnyside, have sold short-horn bulls as follows:—To John Cook, Shakespeare, roan bull Pilot, got by Knight of Warlaby [1634] (29014), dam Queen of the May by Clifton Duke 2nd [133] 7711. To Mr. More, Shakespeare, red and white bull, got by Knight of Warlaby [1634] (29014), dam Rose by Sir Henry [678]. To Henry Groff, Almira, red bull Young Lord Aberdeen, got by Lord Aberdeen [3481], dam Flora by Knight of Warlaby [1634] (29014). To John Gerrie, Parker, roan bull Marksman, got by Lord Aberdeen [3481], dam Princess by Knight of Warlaby [1634] (29014). To Wm. Fareweather, Alma, roan bull Windsor, got by Knight of Warlaby [1634] (29014), dam Oxford Lass by Bell, Duke of Oxford 830. Their short-horns have wintered well, and are all in a healthy breeeding condition. The calves, the get of Lord Aberdeen, are a very even lot. They have two heifer calves by Baron Booth of Kilerby, one of them out of the prize heifer Maid of Honor, a very pretty roan, with a square thick body on short legs.

Messrs. Walter S. Rogers, of Bradford, and E. Jeffs, of Bond Head, have lately purchased from Colonel Taylor, of London, the short-horn bull calf "Duke of Sharon." He is got by the celebrated bull 17th Duke of Airdrie, his dam is the Rose of Sharon cow "Rosa Sharon 4th," The calf promises to make a grand bull, and no doubt will be a great benefit to the farmers in the vicinity, who may have the privilege of obtaining his services.

Richard Gibson, London Township, sold to A. J. C. Shaer, Thamesville, Ont., bull calf "Frantic's Airdrie," by 22nd Duke of Airdrie, dam Frantic 18th. The above is a very large well-fleshed young bull of excellent quality. He will no doubt be of great benefit to Mr. Shaer's herd; and also "Bosanquet Prince," a roan, bred by C. E. Coffin, Maryland, got by imported Lord Abraham, dam Gwynne Duchess 2nd., to Mr. Pollock and others, Forest, Ont.

T. L. Harrison, Esq., Albany, N. Y., has sent his fine Cambridge Rose, and Bonny Red Rose 2nd, and Mr. B. Sumner, Woodstock, Conn., his Bright Eyes and heifer Sunshine to Mr. Gibson's 22nd Duke of Airdrie 16695.

John Snell & Sons have secured by cable message, from Mr. Heber Humfrey, Shrinenham, England, his Berkshire boar, "Sir Dorchester Cardiff, a "royal winner," and probably the most valuable boar in England. This boar with two sows in farrow, and another fine young boar, are expected out sometime during the present month. Messrs. Snell have recently sold six Cotswold rams to C. W. Cook & Co., of Camp Baker, Montana Territory.

The following Canadian sales are announced:—

June 14th,—Hon. H. M. Cochrane, Compton, P. Q., Simon Beattie, Toronto, and John Markham, will hold a joint public sale at Toronto.

June 15,—Hon. Geo. Brown, Bow Park, will hold a public sale of Shorthorns at Toronto.

June 16,—Messrs. Snell & Sons, Edmonton, will sell their entire herd at Toronto.

Prize Offer.

We will give a prize for the best article on Seeding Land for Meadows or Pastures, to be in this office by the 20th of this month, to be written by a farmer.

We hear that the Hon. G. Brown has sold Bow Park, for three hundred and twenty-five thousand dollars, to a company, for the purpose of more fully carrying on the improvement of stock. We believe this will be of advantage to the country.

Weeping Trees.

The association of the common weeping willow with water leads people to think that it will not succeed elsewhere; but there are few spots, even away from water, in which it will not thrive if the soil be deep. I have seen really grand specimens of it growing on lawns. Scarcely less beautiful is the weeping birch; for, although its spray is not so long as that of the willow, yet, owing to the tree being more lofty, it is nearly equally effective. Not so graceful, perhaps, as either of these, but a better arbor tree, is the weeping ash. Owing to its extreme pendulous habit, it is necessary that it should be worked on very tall stocks, as if height is not secured at first it cannot be obtained afterwards. The weeping ash should be planted in quiet, secluded spots, where, when fully grown, it may form a pleasant retreat during sunny days. It will be found that a tree with a stem considerably bent or inclined at the top, will form the most convienient arbor tree, as the position of the stem will then be at one side, instead of in the centre.—A. D., in *The Garden.*

MANUFACTURE AS WELL AS PRODUCE.—If, as a nation, we desire to become practically independent and permanently prosperous, we must manufacture as well as produce. We should export mauufactured articles, instead of sending to other countries so vast an amount of raw material as we do. When we do this, and at the same time import articles made from it, it indicates a very small per cent. of common sense. Our true policy is to develope, in a proportionate rate, both agriculture and manufactures. One of our ablest contemporaries very justly remarks that:—Only that community or section is prosperous which manufactures as well as produces raw material. The operatives in the factories being consumers, also give home markets for products. If we can manufacture all we need, the operatives will use here at home such of our products as they now consume off somewhere else where we now have to ship this produce, and pay high freights on it to them. What we furnish them has this freight added, and they are in turn compelled to add this difference to the price of the goods trey manufacture, ship and sell back to us. We pay three freights; one on raw material, one on manufactured goods sent back to us, and one on the food we send them for their workmen.

Patrons of Husbandry.

To the Editor of the Farmer's Advocate.

SIR,—In your last issue I see the inquiry, Was the petition asking for protection upon agricultural products ever presented to Parliament, if not, what was the reason? An answer to this is certainly due to the patron who made the enquiry, as well as an explanation to those whose signatures were attached to said petition. Blanks were sent out by the Dominion Grange to all subordinate Granges in Canada. A portion of these only were returned, to these about 5,000 names were attached. A large number of the petitions were never returned, and letters were received from many Granges with expressions of disapproval of such action.

The Executive Committee, feeling the responsibilities resting upon their action, and wishing to be guided by the general united sentiments of the members, believed they had not a sufficient guarantee to proceed with the presentation of the petition at this time. And, after careful consideration, resolved to postpone the matter for the present, with a view to obtain farther information and a more general expression from the Granges.

This, I trust, will be a satisfactory reason, inasmuch as the motives which prompted the Committee to take this course were purely unselfish, and only actuated by a sense of due regard for the opinions of all.

The importance of this subject demands mature consideration, as it is one the farmers of Canada are deeply interested in, and should be discussed without prejudice in every Grange, laying aside party feelings. View it with unbiased minds, with the object to determine whether a duty upon agricultural products imported from the United States would be beneficial or otherwise to the farmers as a class. If this be done and reports made, the Executive Committee will, if so required, be in a position to act understandingly in the matter.

W. P. PAGE, Sec. D. G.

Patrons of Husbandry.

Now that the Patrons of Husbandry have so increased in numbers, and their influence has become proportionably great, it is the more needed that all their councils be guided by wisdom. They may, and we hope they will, be the means of doing much good. To perpetuate that union that has given the influence they possess, they will bear in mind the necessity of refraining from intermeddling, as Patrons, with all party politics, and with sectarianism. Either would prove a dangerous rock, on which the order might suffer shipwreck. Their meetings, discussions and councils, if devoted to the true benefit of farmers, the improvement of agriculture, and their social, intellectual and pecuniary interests, will be for the good of all classes. The institution of the order and the proportions, to which it has already grown are engaging the consideration of many. In the columns of many journals, as, for instance, the *Monetary Times*, the *Markham Economist*, and others in Canada and the United States, we meet articles on the Grange, condemning their influence in mercantile affairs, and admitting the judicious policy of their uniting for agricultural purposes. We hope they will realize the expectations of their friends, and be a power for good in the land.

Grangeism in England.

A London special states that Mr. Wright, the United States Grange Commissioner, has returned to England, after an extensive tour on the Continent. His report is, in the main, gratifying. He met with considerable success in Germany. While there he had interviews with Herr Voltke, Minister of Education, and Herr Fredenthall, Minister of Agriculture, at which he was furnished with much valuable information relating to German Agricultural Associations. In England, Wright conferred with the Central Chamber of Agriculture and other societies. He wil remain here until after the Industrial Congress on April 15. Mr. Ruskin has written to him, saying he approves of the system of Granges, and hopes that they will take root and prosper in Great Britain. Wright is not sanguine of any such result at present, but thinks that the basis of a union will be soon formed between the British Co operative societies and corresponding Grange Associations in America.

Granges Organized Since Last Issue.

438, Cedar Grove, John Durand, M., Dorchester Station; G. Patterson, S., Thamesford—439, Clear Creek, Elias Foster, M., Port Royal; Ansley Becker, S., Clear Creek—440, Port Rowan, R. Richardson, M., Port Rowan; Wm. Franklin, S, Port Rowan—441, Vanatter, James Dowling, M., Orangeville; Joseph Simpson, S., Vanatter—442, Waldemar, Robert Philip, M., Waldemar; Joseph Lomas, S., Waldemar—443, Hornings Mills, Robert McGhee, M., Hornings Mills, John Polley, S., Hornings Mills—444, True Blue, Thos. Gallangher, M, Perm; Thos. Kirkpatrick, S., Perm—445, Cornwall Centre, George J. Dixon, M., Mille Roches; R. R. Milroy, S., Mille Roches—446, Henry Doering, M., Milverton; Samuel Whaley, S., Milverton—447; Columbus, Samuel Beall, M., Columbus; James Burns, S., Columbus—448, Union, Franklin Hathaway, M., Union; James Davidson, S., Union—449, Prince William, E. D. Estabrooks, M., Lower Prince William, New Brunswick; George Ingraham, S., Lower Prince William, New Brunswick—450, Ashworth, Wm. Thompson, M., Uxbridge; J. D. Bagshaw, S., Athens—451, Zephyr, L. Weller, M. Zephyr; Calvin Weller, S., Zephyr—452, Wilfrid, George Hart, M., Wilfrid; S. R. Way, S., Wilfrid—453, South Elderslie, John McIntyre, M., Paisley; Samuel Ballachey, S., Paisley – 454, Chiselhurst, Thos Gilgan, M., Chiselhurst; James Connor, S., Chiselhurst—455, Carleton, T. W. Longstaff, M., Woodstock, N. B.; H. B. Smith, S., Woodstock, N. B.—456, Oakleigh, George Oliver, M., Galt, Ont.; A. J. Goodall, S., Galt—457, Rob Roy, Wm. Bristow, M., Rob Roy; Geo. Bristow, S., Rob Roy—458, Artemesia Centre, Geo. Briskin, M., Flesherton; Wm. Wilcox, S., Flesherton—459, Villa Nora, Wm. Ewin, M., Villa Nora; Ira Stafford, S., Villa Nora—460, Taylor, Thos. Taylor, M., Inistioge; C. Treadgold, S., Flesherton—461, Oakland, Henry Key, M., Oakland; Thomas Mills, S., Oakland—462, Claremont, Wm. Miller, sr., M., Claremont, E. M. Pugh, S., Claremont—463, Utica, John Orchard, M, Utica; Hugh Munro, S., Epsom—464. Purpleville, D. McMurachy, M., Purpleville; A. Malloy, S., Purpleville—465, Osprey, P. Wismer, M., Feversham; Josiah Gamey, S., Maxwell—466, Prospect, Wm. Ireland, M., Strathroy; Orin Demery, S., Strathroy—467, Quebec Hill, W. J. Taylor, M., Stayner; J. C. Horner, S., Stayner—468, Sunnidale, Geo Hawkin. M., Staynor; Charles Hislop, S., Stayner—469, Adjala, Joseph Wright, M., Keenansville; Matthew Ronan, S., Athlone—470, Royal Oak, Thos Gillis, M., Richmond Hill; Henry Newbury, S., Richmond Hill—471, Acton West, W. Gordon, M., Acton West; R. B. Campbell, S., Acton West—472, Lovely, Lauchlin Curry, M., Hartly; Thos. Broomfield, S., Elenarm—473, East Oxford, B. A Mallins, M., Burgessville; J. D. Chambers, S., Holbrook—474, Carnegie, A. Catto, M., Carnegie; John Heniet, S., Carnegie—475, Me'rose, David Hill, M., Maxwell; Wm. Hicks, S., Maxwell—476, Victoria Corners, James McMurray, M., Victoria Corners; David Irvine, S., Victoria Corners—477, Uxbridge, E. H. Hilborn, M., Uxbridge; G. B. Miller, S., Uxbridge—478, Smithfield, Richard Penhall, M., Smithfield; Joseph Moffatt, S., Smithfield.

Obituary.

We much regret to record the death of Mr. Thomas Scatcherd, of this city. He was a member of the House of Commons; he sat for the North Riding of this county. Mr. Scatcherd was what we may safely term an honest lawyer; he had a very large practice; he had been our legal adviser since the death of the Hon. Judge Wilson. Mr. Scatcherd sat in the Parliament of Upper and Lower Canada; he was the gentleman who drew up and aided the passage of our Agricultural Emporium Charter. His advice and counsel we found most correct. As a statesman, we do not consider we had a finer man in the House. There were many more fluent, but few calmer or more considerate. We, the farmers, and the country have lost a friend.

For the Centennial.

Seven car loads of timber have been shipped from the Ottawa District. One car was laden with log timber, from which it is intended to erect a log house on the exhibition grounds. There also was sent,—harness and trunks; lumbermens' tools, silver-mounted and plain; a twenty horse-power oscillatory engine; graphyte pure, crucible, lubricating and electrotyping graphyte, and a specimen weighing 4500 lbs.; iron ore, iron billets and manufactured iron; child's carriage, worth $200; Hydraulte's cement and liquid dryer of paint; artificial stone; telescope tress, &c,, &c.

From London, the goods forwarded for exhibition have been of the most varied description. The display of the Entomological Society, under the management of W. Saunders, will, we believe be unequalled by any display of the kind made from any State or any part of Canada. Mr. Waterman has sent Kerosene in various states of preparation.

TO OUR CORRESPONDENTS.—All communications intended for insertion in the ADVOCATE, in any department, is chargeable with only one cent postage prepaid; the envelope not closed or sealed, and having written on it "Printer's MSS."

Commercial.

STATE OF THE GRAIN TRADE.

London, April 17.

The *Mark Lane Express* says:—The grain trade during the past week has undergone no marked alteration. Sales have been strictly of a consumptive character. All quantities except fine white sorts have realized rather less money. The results of the stock-taking at the beginning of the month show a very small diminution, London showing about 450,000 quarters, against 560,000 at the end of 1875. For the quarter of the year now commenced, a larger consumption of foreign wheat may be fairly anticipated.

THE PRODUCE TRADE.

April 24.

The Liverpool breadstuffs market are firmer, owing to the unsettled state of the weather prevailing. Flour is up 1s per barrel on the inside quotation, and there is an advance of 1d per cental in white and 2d in club wheat. Peas were 1s 6d per quarter lower. In New York there was no change in wheat or flour. Wheat in Milwaukee was 1c higher. From Chicago there are no reports, owing to municipal elections taking place there. Montreal continues very dull, only small sales of flour being reported. Here there was a fair inquiry for flour, with not much offering. A lot of 500 barrels superior at an outside point changed hands at equal to $4.85, but spot lots are worth $5.00, f. o. b., and upwards, according to quality. Extra was asked for at $4.65, with no sales. Spring wheat, extra, would command $4.25 to $4.30, 100 brls. selling at the latter price. Wheat was inactive but firm, saleable at $1.05 to $1.06, f. o. b, for No. 1 spring, and $1.10 for No. 2 fall. Barley was steady, with sales of one car of No. 1 at 82c, f. o. b., and of five cars No. 2 at 66c. There is little or no No. 3 offering. Peas were unsettled, owing to the decline in Liverpool, and in the absence of any sales to-day, quotations are nominal. Some round lots were reported to have changed hands yesterday, but the terms were not made public. There was no change in oats, which are worth 35c on track in bulk; two cars, bagged, sold at 36c.

REVIEW OF THE MARKETS,

April 22, 1876.

The weather continues cold for this season of the year, and there has been little or nothing done as yet by the farmers in the way of plowing or sowing, and to all appearance there will be but little done before the first of May. From what information we can gather, the injury done to the wheat crop by winter frosts is not so serious as was at one time anticipated by many. A much better prospect of the growing crop in England and throughout Europe, together with very heavy stocks of wheat in Liverpool have had a very dull and depressed effect upon the market. We have heavy stocks in Canada, there being some 450,000 bushels in store in Montreal and 800,000 bushels in Toronto, besides what is held in some other ports and inland towns, to say nothing of what is still in the hands of the farmers. Peas are dull with a downward tendency, being 1s 6d lower in Liverpool the past two days. Taking everything into consideration, we do not see any prospect of an advance in prices, unless very unfavorable weather for the growing crop in England and Europe.

Cheese also continues very quiet and remains about the same, being quoted at 62s, with little or no enquiry for anything but the finest goods, 64s to 65s having been realized for choice. Shipments have been heavy from N. Y. the past few weeks. This, with fair stocks in Liverpool, will keep prices low and quiet until the new begins to go forward, so that we cannot look for any material advance, and may expect new cheese to open low, with a fair demand, and we may look for a quiet trade the coming summer. The writer asked a prominent N. Y. dealer a few weeks ago what he thought of the prospects for the coming season. His reply was:—"You will see a quiet, steady trade for this reason, all our speculators in cheese are broken down or so crippled that they are not in a position to speculate." Butter has been much better than cheese the past winter. Although very dull in the fall and early winter, it has ruled very steady with a quiet advance and is now quoted at 120s to 130s for Canadian fine in Liverpool. We would urge upon all manufacturers of both cheese and butter to spare no pains in getting up a nice article, bearing in mind that the consumer of these goods codsiders he is getting the best value for his money by purchasing a good article and paying a good price for it.

TORONTO MARKETS.

We have no improvement to note in trade since our last report, while in some branches of business the past week has been of very marked dullness. In produce there has not been much movement, although the market has been steady, and some sales have been reported. Vessels are now taking in cargoes of grain, the bay being clear of ice, and will shortly clear for Kingston and Oswego. Provisions have been quiet but steady, the advance in butter, of which there is scarcely any to be had, being fully maintained. Wool rules very dull, especially the pulled combing, which will not command over 28c.

LIVERPOOL MARKETS.

Flour, 23s to 24s; wheat, 8s to 10s 8d; corn 26s to 29s per qr.; barley, 3s 6d; oats, 3s to 3s 6d; peas, 38s per qr.; bacon, 53s to 56s per cwt; cheese, 62s.

MONTREAL MARKETS.

Flour, superior extra, $5.15 to $5.25; extra, $4.95 to $5.00; superfine, $4.25; peas, 92½; butter, 20c to 26c for kegs; cheese, 11c to 12c.

TORONTO MARKETS.

Fall wheat, $1.07 to $1.10; spring, $1.03; oats, 37c; barley, 60c to 83c; peas, 73c to 74c; hay, $16.00 to $21.00 per ton.

NEW YORK MARKETS.

Flour, dull; prices in favor of buyers; rye flour, $4.25 to $5.25; wheat, from $1.07 to $1.50; corn, 69c to 70c; barley, firm; No. 2 at $1.05; oats, 45c to 52c; pork, firm at $22.00; butter, 27c to 37c; cheese, 6c to 12½c.

CHICAGO MARKETS.

Flour, quiet and unchanged; wheat, dull and weak; corn active and lower; oats, in fair demand; rye steady and unchanged; barley, quiet and weak.

LONDON, ONT., MARKETS.

The finest cereals in good demand. Wheat of the different varieties bringing slightly advanced rates, from $1.55 for spring to $1.76. Barley was also firmer, and may be quoted at $1.00 to $1.40. Peas brought from $1.15 to $1.22. One choice load for seed brought $1.25. Oats, 90c to 92c, and in some instances 95c for clear seed. Clover seed, $7.00 to $7.50. Corn, $1 to $1.12. Beans, 90c to $1.20. Butter in liberal quantities and cheaper, at 18c to 25c. Cheese. 10c to 11c. Hay, $12 to $13. Straw, $2 to $4. Potatoes, 25c to 30c per bag. Onions, 40c to 50c. Cordwood $3.00 to $4.50.