THE FARMER'S ADVOCATE

PERSEVERE AND SUCCEED.

VOL. XI. LONDON, ONT., APRIL, 1876. NO. 4

The Farmer's Advocate !

PUBLISHED MONTHLY BY WILLIAM WELD.

OFFICE: RICHMOND STREET, EAST SIDE, BETWEEN THE MARKET AND G.W.R. STATION, LONDON, ONT.

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The Legislature and Farmers

Some of the measures brought before the Legislature this year have been fraught with such interest to farmers that we take brief notes of them, viewing them not as party, but as farmers' questions. Appointment of analysts. We have occasionally availed ourselves of the reports of analysts published in the agricultural periodicals of England. From the writings of Prof. Voelcker especially we have taken some valuable extracts, and the service rendered by him to agriculture has been acknowledged not only in Europe, but also in this New World. The Dominion Parliament has, in the appointment of analysts by the Government, taken a lesson from the Home Government. The Act under the provisions of which the appointments have been made is entitled : "An Act to prevent the Adulteration of Food," and were the analysts merely to prevent that adulteration, the farmers, as well as all other classes, would reap no little benefit, but we hope the work will not rest here, but that all articles that can be subjected to analysis will ere long be examined and proved if they be genuine. There seems to be indications of this in the "tariff of fees" in which sulphur, ammonia and sulphuretted hydrogen are enumerated with articles of food.

Before the Committee on Agricultural Interests, Mr. Norris, M. P., who has been engaged in the milling business and obtained his supplies from the United States and Canada, testified that the importation of American wheat was prejudical to the interests of Canadian farmers. If the importation of American flour, free of duty, were prevented, he could afford to pay Canadian farmers more for their wheat than he now does, and though consumers in this country might, as a result of the exclusion of American flour, be compelled to pay more for what they require than now, it would be cheaper to them in the end than the American flour, because it is better. He thought that millers could afford to sell cheaper in the home market than in the foreign, because their returns would be quicker. Farmers frequently realize more for their wheat when they sell it to millers for manufacture in the country, than when they sell it for shipping. He believed it would be for the interest of the country at large to impose a duty on imported wheat and flour. He would, if he had his way, put a duty of ten cents per bushel on corn coming in from the States, but he presumed five cents was all that they could demand. The importation of corn interfered with the prices of our coarse grains which could not be shipped.

Such are the opinions of Mr. Norris on a subject of great importance to all classes in the country, and to none more than to farmers. Were Canadian produce admitted free to the United States, the question would present a different aspect from what it bears at present. The American duty on flour is 20 per cent. *ad valorem*, or between $1 and $1.50 per barrel according to the value. On wheat it is 20 cents per bushel. During the past year there were imported into Ontario, free of duty, 37,000 barrels of flour.

The Indians to Enjoy the Privileges of British Subjects.

Great Britain has at all times acted towards the Indians in the Empire as becomes a nation bearing the sacred emblem that she does, as her armorial bearings; and the Indians have in all circumstances proved themselves true and faithful allies (we cannot as yet call them fellow subjects), and they have been willing to sacrifice their lives in defence of England's honor. The government now proposes to bring them into closer relationship, and to bestow upon them the privilege of being British subjects; and they, it is said, are willing to enter into the proposed relationship, and to assume the responsibilities necessarily accompanying those precious privileges. By the proposed change they will be liable to taxation as Canadians, and have equal rights of voting for representatives in the Legislature and Municipal Councils. This new element introduced into our representative institution is a matter of no light importance, and the result will be awaited with much interest. To the Indians themselves this measure must have a most salutary effect. The increased responsibilities and newly acquired privileges will, it is to be hoped, stimulate them to higher motives, and conduce to greater industry, and more independence. If such be the effects of the measure, it will be a great benefit, not to them alone, but also to the country at large.

The number of Indians in the Dominion is approximately calculated at 91,910 ; their total personal property is estimated at $489,234. and their real estate $2,844,972; of the Indian population, 7,199 are children, of whom 2,105 are attending school. Besides good stocks of grain and farm produce, they own 2,734 horses, 2,389 cows, 1,568 sheep and other live stock.

The Agricultural Returns of Great Britain for 1875..

An authorized return of the arable land and the agriculture and agricultural produce of that country that affords to us the market for our exports, must be always to us a subject of great interest. The remuneration for our labors must depend, in a great measure, on the demand in England, the great mart of the world for surplus products. From the agricultural returns of the Department of the Board of Trade of Great Britain, we compile the following statistics:—The total quantity of land under all kinds of crops, bare fallow and grass, in 1875 amounted, for Great Britain, to 31,416,000 acres; for Ireland, to 15,775,000 acres, with a return of 92,000 for the Isle of Man, and 31,000 for the Channel Islands—a total for the United Kingdom of 74,314,000 acres, exclusive of woods and plantations, and of heaths and mountain lands. This shows a greatly increased area of cultivated land within the past year, an increase that has been going on continuously for some time; more especially has this been seen for the last seven years. Every effort is put forth by landowners and farmers to supply the increasing demand for breadstuffs and meal.

The total acreage returned for Great Britain in 1875 comprised 18,104,000 acres of arable, and 13,312,000 acres of permanent pasture. Of permanent pasture, there was an increase over the previous year of 134,000 acres, and of 736,000 acres since 1872. The great demand for meat and dairy produce, and their high prices, have produced a marked change in English agriculture; and evidently this increase of pasture is not at an end. Canadians will see the wisdom of such a course more clearly every year.

Of the land under tillage in 1875, there were devoted to grain crops 11,399,000 acres; this includes beans and peas; to green crops, potatoes included, 5,057,000 acres; to bare fallow, 570,000; and to rotation grasses, 6,337,000 acres. Here, too, we find the excellence of English agriculture. So far from impoverishing the land by successive crops of grain, the quantity of land devoted to the grain crop is less by half a million of acres than one-half of the total average under cultivation. There are no worn out farms, no impoverished tracts of country.

The Centennial Exhibition.

Canada is making great exertions to aid the great American Exhibition. The public exchequer has been liberally opened. A good display will, we trust, be the result. Canada has now, as at all other times, done her best towards aiding her American cousins. We hope Canadians will be more fairly treated by Americans, and trust to see our national honor and business transactions placed on a more just footing than has wont to be the case.

Orchard and Garden—No. 2.

HINTS FOR APRIL, BY H. ORTI.

Grafting.—The proper time for grafting fruit trees is as soon as the sap is in motion, which commences first with the cherry and plum, and ending with the pear and apple. The precise time, of course, varies with the season and climate, though generally the time here is from the first of April till the middle of May. Cions for grafting should be cut in the early part of winter, so as to escape the alternated freezing and thawing; placed in the cellar with sand or sawdust, or buried outside, they will be found to be in proper condition to graft. There are over fifty different methods of grafting practiced with more or less success, but we shall only draw attention to two methods, feeling certain that either of these will serve every purpose. In any form of grafting there is one essential point to be observed, and that is that the bark edges of both cion and stock meet evenly. Tongue or whip grafting is best when it can be followed, bringing the cion and stock into readier and more surface contact with each other than any other plan, especially in young trees. The cion should be from four to six inches in length, made with a slanting cut downwards at the base and split, making a tongue as in Fig. 1. Having chosen your stock of the proper size, or as near to correspond to cion, make a smooth cut upwards and a tongue also, as shown in Fig. 2, uniting cion and stock similar to Fig. 3.

Rind grafting is simply making cion as described for tongue grafting, without making the tongue; cut your stock off square, make a cut about an inch long on the side of the stock, and slipping the cion underneath the bark as illustrated in Fig. 4. Cover thoroughly all the cuts and exposed edges with grafting wax, clay, cloth, or any substance that will prevent the air from getting at it.

Pruning not done last month should be attended to. This is essential to the success of your orchard if properly done, but it would almost be better to let the trees run wild than to be butchered by incompetent parties, as is too often the case.

Lice on Trees.—These minute pests want looking after sharply, and to unpractised eyes it is a little difficult to discover the scale-like, minute parasites. Scraping, brine-washing, &c., are beneficial. We have tried kerosene on a sick looking specimen, applied with a paint brush, with good effect.

Plums.—The great success attending plum culture the past few years, and the gradual disappearance of its enemies, have induced such a demand for the trees that nurserymen's stocks are quite limited this season. The black rust can be easily kept under by the prompt use of the knife whenever it makes its appearance. Salt is a good fertilizer for the plum; to bearing trees half a peck may be applied on the surface of the ground every season.

Planting may be done as soon as the ground drys after the frost is out, till the buds push forth. We consider spring to be the best time, but in some localities, on well drained soils, fall planting succeeds admirably. Trees will not grow in wet soils.

It often happens through delay at station, or bad packing, that trees get very dry in transit. If so, on receipt of them, the best thing to do is to bury them in the soil, root and branch, for a few days, when they will, if not too far gone, come out fresh and all right.

This will be a busy month, and, as the old couplet runs—

"March winds and April showers
Bring forth May flowers."

So let April labors and plans bring forth fruit and flowers; let your skill and care assist the season in determining how much will be the return. Pay particular attention to everything. This being the year of the Centennial Exposition, great things are expected of us; let our fruits and products be equal, if not superior to any other nation's.

Hot-beds are necessary to overcome the uncertainties of our spring weather, and have things earlier for table use, the raising of plants for garden and ornamental purposes. They are well described and illustrated with hints for their simple

Fig 1.

Fig. 2.

management in all our seedsmen's catalogues, which are sent to all who apply for them. Uncover all things mulched or otherwise protected from the winter about the middle of the month to the light and air. Roses, flowering shrubs, &c., should have the dead wood taken out and hard cut back; this will increase the luxuriance of the foliage and flowers. Lay out a nice piece of ground for ornamental purposes, if you have none yet; put a hedge around it or by the side. Make a few nice walks, plant some evergreens, a few ornamental trees, flower roots, &c.—something or other to redeem the barrenness of your surroundings and enhance the value of your property.

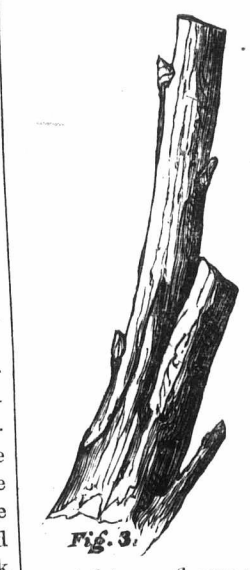


Fig. 3.

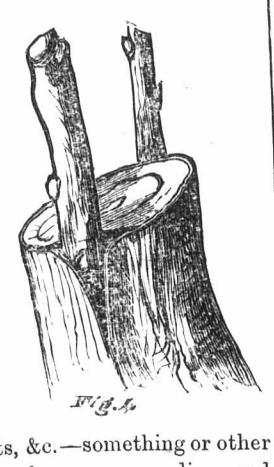


Fig. 4.

Let those now plant who have never planted before,
And those who have planted now plant the more.

What it Costs to Fatten Cattle.

Under this heading the *Farmer* (England) says:

"Let us endeavor to arrive at the cost of fattening "bullocks under ordinary circumstances. * * "The cost must vary with the diet, but if the following may be taken as representing a liberal "allowance for bullocks intended to come out in "March at 6 stone (of 14 lb.), we can soon arrive "at the weekly cost. We shall recommend 4 lbs. "of linseed cake and 6 lbs. of meal, 56 lbs. of "roots, 6 lbs. of hay with chopped straw. This "will probably not be given at first, but be worked "up to in the course of a fortnight or three weeks. "The meal and cake we value at 1¼d per lb., or "£11, 13s 4d per ton; the roots at 3d per cwt., or "5s per ton; the hay at 9d per stone, or 6s per "cwt.; and the straw we shall not value at all. "We shall also charge 5 per cent. on a capita, per "bullock, of say £22 as a middle price, between "buying and selling, and, to make all safe, we "shall charge 10 per cent. per annum on the same "score for risk. Lastly, we shall charge each bullock one-fortieth part of a good man's wages—"say of 16s per week."

Adding up the several items as above, he finds the cost to be 12s 1d of the fattening bullocks per week, and arrives at the conclusion that if the bullock be made to lay on 1½ stone per week, or 21 lbs. of beef at 10s per stone, there is a profit; if he put on only 1 stone he will be fed at a loss.

The prices charged differ somewhat from our prices in Canada. The price of hay is high; not so with the price of roots, but considering that they are fed and converted into manure on his own farm, the producer is well paid for them. If he raise 40 tons per acre, it will pay him for the acre £10—say $50 per acre. None but good, well-bred stock in thrifty condition will pay a good profit, but the English farmer expects his profit from the enriching of the soil rather than from the increased weight and price of the animal fattened; when he adds to these the prices obtained for his produce, without taking it in bulk to market, he thinks he is pretty well paid.

Canadian Sugar.

Mr. Drummond, in his evidence before the Committee on Depression of Trade, referred to the failure of attempts made to introduce into the Dominion the manufacture of beet-root sugar. Some years ago he had attempted to introduce it, but failed, because the farmers would not grow the beets, though he had imported the seed for the purpose. He purchased at the same time a large quantity of machinery for the manufacture of the sugar, but it was not taken out of the packing cases to this day. He had made experiments, and found there was a large per centage of saccharine matter in the roots.

This is but another instance of the reluctance manifested by the greater number of people to move out of the old familiar paths. Some years ago a contributor to this journal gave a detailed account of his experiments in the cultivation of the sugar beet, and his manufacture from it of a fair quality of sugar. The sugar was not equal to much that is imported and refined, but its quality was such as to afford convincing proof that it only required the suitable machinery to supply Canadians with sugar of a superior quality from the produce of their own fields; and had these experiments of Mr. Crofts been followed up by persons possessed of necessary capital and skill, sugar might now be enumerated among the products of our country.

The soil of Canada is adapted for the growth of beets, as of all root crops; the yield is heavy, and in other countries, as, for instance, France and Belgium, its cultivation has been found very remunerative. The sugar manufactured returns a good profit, and the refuse from which the saccharine juice has been expressed is utilized in the feeding of stock. An enterprising farmer in this neighborhood informs us that he had made an experiment on a small scale in the manufacture. He raised the beets himself, pressed them, and in an ordinary sugaring kettle converted the juice into sugar. The quantity of good, granulated sugar and its quality, were enough to convince him, if conviction were needed, that the manufacture might be carried on in this country with fair re-

muneration to the beet grower and manufacturer. This might be a good ground for co-operation; had farmers any assurance that for the products of their labor they would have fair play in our own markets, there might be a co-operation to raise beets sufficient to keep a manufactory employed, and the result of this one stimulate others to do as they did.

April on the Farm.

While through the neighboring fields the sower stalks,
With measured step, and liberal throws the grain
Into the faithful bosom of the ground;
The harrow follows harsh, and shuts the scene.

This is a month for untiring energy. Our spring is short and we must make the most of it. Every fair hour must be put to good account. The farmer who is well prepared for the labors of April may congratulate himself that he was wise in time. He now enjoys the profit from the good care and feeding bestowed on his horses before the busy time. Continue that care. Without good treatment good work cannot be done. The ploughman has not completed his work for the spring, and the seed must soon be cast into the ground. All know the value of a well prepared seed-bed. It should be rich and mellow, and in order to have it so it should be ploughed at such a time and in such a condition as will ensure these requirements. Heavy soil ploughed in the fall has become too compact. To cure this stubbornness use the cultivator; this will make it loose and friable, without turning under the soil that has been improved by the winter storms. Do not plough while the ground is wet. Nothing is more injurious to it. Sow as early as the state of the land will permit. The yield of the crop depends much on the time it is sown; but better sow late than cast the seed into a wet, cold bed. Some seeds perish in consequence, and others, when they do grow, produce weak, hungry stems and blades, and a poor return of inferior grain.

See that the meadows have no bare spots; if there are any, re-seed them, having applied compost or other rotted manure; having re-seeded it, rake and roll. Clover may be sown even in April, either on a winter crop or alone. A dressing of plaster will greatly improve its growth. The ground bears no crop more profitable than clover. The profits are not limited to its value for feeding stock. When growing, it enriches the soil by absorbing ammonia from the atmosphere with its abundant foliage, and bringing up, from far beneath the surface soil, stores of mineral food for plants; when dead, its long taproots, decomposed in the soil, become a rich manure, and the cavities wrought out by them afford passage for the escape of the superfluous moisture that would, if it remained, be injurious to vegetation.

Look to your fences—see that no part of them is down—that none are too weak to keep out trespassers. Good fences make good neighbors. A *breachy* animal breaking into a cropped field may do injury much greater than the cost of repairing the fences. The injury caused by breaking into meadows or new pastures is not much less. Grass lands that are *poached* are greatly injured. The tender, shooting crown of the plant is hardened, and the root affected by permitting cattle to feed and tramp on them.

The live stock on the farm need care, especially milch cows and calves. Clean house, good bedding and nutritious food are needed; let them have them. A little linseed meal, or linseed tea, added to the milk will be of great service to the calves. It is folly to have young animals grow up *stunted*. Lambs need care and attention; all needless exposure must be guarded against; and their dams should not be stinted of good, nutritious food. In short, every animal on the farm needs good food and unceasing care. "The farmer's foot," it is said, "is the best manure." So is it with his eye. His presence everywhere, his constant watchfulness, will keep all the animals in his care thrifty and well-favored.

Compost heaps and all piles of manure need to be turned. Manure will be needed for the root crops, and should be well composted. See that the outlets of drains and watercourses be not choked with mud or sand. No water whatever should be allowed to lie stagnant on or in the soil.

A few early potatoes may be planted late in the month. Potatoes of a medium size, uncut, less liable to perish in the ground, should be selected for the earliest crop. Let them have a sunny aspect and dry soil. Plant but a few now; they will, you may expect, need protection from the June frosts.

For soiling, sow oats and peas. They will come in for cutting after the fall rye, and better soiling for your stock you cannot have. Even if your cattle feed on pasture, some such food cut and given in addition will be found of great use.

Vegetable Garden in April.

In our northern clime we must defer to a late season much of the garden work that is usually done in this month in a milder temperature. Spring is slow a-coming in Canada, and the cold breath of winter is sometimes felt even in April; but the rapid vegetation after a little delay will make amends. We must, however, in April take advantage of every favorable moment, and, if we can do little more, prepare the ground for seeding and planting in May.

To have tomato plants early without the expense of a hot bed, we have but to use a small box for a substitute. An old raisin box will grow more plants than will be needed for the use of any family. Fill it with good soil, rich and light, and sow the seed when the soil has acquired sufficient heat. Place it in a warm, ventilated room, and in such a position as to have the light and heat of the sun. When the plants have acquired some strength, thin them if necessary. Transplant them, when they are grown enough to bear it, into a cold frame, or into a larger box. Plants that have been transplanted from the seed bed to the nursery bed before final planting, are always more certain and thrifty. Some time in May you may risk planting a few, when they are to stand, but they will need protection from the frost.

You may sow lettuces in a dry, warm border. They are very hardy. We have had them, self-sown, bear the winter well. In sowing, see that the soil is pretty dry and has parted with its winter cold. No seed should be sown in a cold or wet soil. Young lettuces bear transplanting well, and it is best to sow or plant them in such a situation that they will be screened from the sultry sun of summer. Lettuce should have a deep, rich soil, that the heads may be large, crisp and tender.

Beets will be time enough sowed next month; but if the latter part of this month be fair and the ground in good order, it is well to sow some in this month for early use. We need not recommend this vegetable. It is well known and highly prized. It is good for the table, palatable and very nutritious, and, if any be to spare, feed them to cows and pigs. We have found the Bassano beet best for early sowing.

Carrots, for early use, are sown as soon as the ground is in good order. Soil should be rich and mellow—light soil preferable. As carrots are apt to grow forked if the growing plant come in contact with manure, the fertility of the soil should be inherent from the previous crop, or from fall manuring. Sow in drills, and hoe between them as needed. Allow no weeds to take root. For early sowing and for table use through the summer and fall, the best variety is the Early Horn. Long Orange is a good variety, much larger than the Horn, but not so tender.

Parsnips, the best vegetable we have for winter use, are sown and cultivated as the carrot, but should have heavier and deeper soil. It is very productive and rich in nutriment. The best way to preserve them for late spring use is to allow them to remain in the ground as they grew. You may cover lightly with tops of turnips, beets, &c., but we have found no protection necessary.

Peas should also be sown as early as the state of the weather and condition of the soil will permit. The earlier the first crop is ready for use the better; and you can have a regular succession of crops through the season. Carter's First Crop and Daniel O'Rourke are among the good early varieties.

Onions.—There are few crops in the garden more profitable, if grown for sale. The produce is from 200 to 400 bushels to the acre. There is no little labor required, and from the time of preparing the ground till the receiving of the crop, they require care; but the labor is light and the remuneration ample, the price being from 75c. to $1 per bushel. For onions, it is necessary that the soil be rich and in a good state of cultivation. Sow the seed as early as the weather will permit. If sown on a large scale, the seeding would be done more expeditiously, and the seed more evenly distributed, by the use of a good garden seeder; but it can be dropped very well by the finger and thumb. Cover lightly, and if the soil be light and naturally dry, it is well to press it down with a light, wooden, garden roller. This will be a means of retaining the moisture from evaporating, and so aid the germinating of the seed. The drills must be of such a distance as to allow hoeing between, but not so far as to have unnecessary waste. They are to be kept free from weeds. The varieties of onions generally are: The large red onion, a heavy cropper and generally esteemed; yellow onion, a heavy cropper, does not grow so large as the red, but is the best onion for long keeping; White Portugal, more delicate in flavor than the red or yellow, but not so hardy—more liable to be damaged.

Cheese Factories.

By having the woodwork of the vats made perfectly tight, there is no occasion for their being lined with tin. Besides, they will last longer than if lined, and wood is much cheaper than tin. We would use the clear steam for heating the vats, it being less noisy and much more convenient; and if the pipes are properly put in they will heat as regularly as the water. The holes should be put in the pipes in such a way that the steam will strike down and thus become scattered before coming in contact with the bottom of the pan. If allowed to strike the pan directly, it will burn the curd, which is very injurious to the curd and cheeses. The vats should be made to tip, thereby facilitating the dipping of the curd into the sink. The floor of the making-room should be perfectly tight, and made to slope towards the lower end of the vats; there should be a gutter or trough set in the floor running past the lower end of the vats, and from this gutter the water, washings, etc., should be carried in a pipe under ground to the hog yard or some other place, thereby removing the chief cause of such bad odors as we so often smell in passing along the highway in the vicinity of some factories. There is nothing to prevent a cheese factory from being kept as clean and sweet as any ordinary dwelling house, provid-

ed everything is well and properly fixed and kept. Have a good large sink, or, what is better, two of them. It is very important that the curd should be well cooled and aired before being put in the press. We are confident that many factories spoil much of their cheese from this very thing. The tin-lined ones are the best. If there is not a spring to feed the factory, there should be a large tank for holding water for cooling vats, &c., with pipes leading to each vat. The whey should be carried from the vats to the hog yard in a good large pipe under ground. Put in plenty of whey tank room, for by so doing and keeping the tanks sweet and clean, you will be able to get sufficient whey butter or oil for greasing the cheese, which will be quite a saving, besides being much the best for the cheese. The best tank is a large stave one, or two medium ones, sunk into the ground and covered; from these the whey can be pumped up to the hogs. Provide a good large and dry yard for the hogs, with good sleeping quarters and sheltered from the storms and hot sun. This will add much to their comfort and thrift. Procure the very best curd knives that you can get; we would use both the horizontal and perpendicular knife; also get a complete set of testing instruments, and let the patrons know that you have such and intend using them. Don't fail in procuring a good curd mill; no factory is complete without one. They are now made with sharp knives instead of spikes, which is a great improvement. Get your apparatus and dairy supplies from good, responsible houses—ones that you can depend upon—and if they do cost a little more, they will be the cheapest in the end. Secure a good cheese maker, and do not grudge him good wages, for it is a responsible, hard post to fill. See that your milk is delivered in good condition, without being tampered with, and you will have no excuse for not making a good merchantable article of cheese.

Hints to Dairymen.

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

In reviewing the dairy market for the past two months, we find there has been a slight improvement in the trade, but not what holders have hoped for; and this improvement is only for the finest goods—such goods as will always sell at good prices even in a dull market. As remarked in a former article, there has been some bad slaughtering of ordinary and inferior goods. The writer knows of one line of 1,500 boxes of good meaty cheese, No. 3, which were sold at thirty-two shillings. Some of the returns from the auction room sales have been as low as twenty-two and twenty-five shillings. I expect to see cheese go to sixty-eight or seventy shillings for the finest before the new strikes the market, and hope to see the old well cleared out before the new comes in to any extent. Low as prices are, the dairymen have really no reason to complain, knowing as they do, that the price of dairy goods is quite as good if not better than wheat.

Butter has been much the same as cheese—no enquiry but for the finest goods, and is now quoted at 112 to 114 shillings.

As soon as the calf is dropped it should be taken from the mother and placed in an adjoining stall or room, and not allowed to suck. Calves treated in this way are little or no trouble to learn to drink, but it should have its mother's milk all the same. This milk is essential to the stomach of the young calf. If intended for veal it should be kept in a clean, warm place, and given all the milk it will take for five or six weeks, and then sold to the butcher. If intended for a deacon, it should be kept until about the fifth or sixth day, getting nothing for twenty-four hours before being killed, the rennet then carefully taken out, turned and cleaned (but not washed); then turned back, with a little salt sprinkled on it before doing so, and then stretched on a bent stick or blown like a bladder. Rennets treated in this way are worth twice as much as those treated in the ordinary way. Calves that are to be raised should have plenty of new milk for a few weeks, and then they may be gradually weaned from the new milk by gradually introducing some substitute, such as skim milk with linseed meal or boiled flax seed. Another very good thing for calves is corn meal slightly scorched or kiln-dried, and then made into porridge; the kiln-drying takes away or kills the purging properties, which are present when fed without. Aim to give them as nutritious feed as possible, and in all cases give it to them warm. I shall revert more fully to their treatment during the summer, fall and following winter in my next article.

One thing I would endeavor to impress upon dairymen, and that is to take great care in selecting the calves for raising. By all means endeavor to raise the standard of your stock by keeping the best, and on no consideration allow them to go to the butcher or any other individual, no matter how tempting the price. You might as well attempt to grow good wheat, and thirty bushels to the acre, by sowing the screenings year after year, as to expect good stock and good milkers without care and judgment in selecting the calves. Canadian dairymen have been altogether too careless and indifferent about their herds. They have allowed strangers to come in and select their best cows and drive them to another market, or to some other part of the country. By all means keep your best cows; do not allow any price to tempt you to part with them. The man who will induce you to part with such by offering five or ten dollars extra, knows the value of a good cow compared with a poor one, which I fear many of our dairymen do not, or they would not keep the stock they do. If they would sit down and make a careful calculation of the difference between a cow that gives 30 lbs. per day and one that will give 40 lbs., they will find that they were not very shrewd when they sold their best cow for ten dollars more than they wanted for their ordinary ones, for she would pay that amount back to her new owner in six months' time. If dairymen would use their pencil and a piece of paper more, and make a few calculations, it would have a tendency to open their eyes; neither are they studying their own interest by not making strenuous efforts to improve their stock.

There is another thing which dairymen do not attach sufficient importance to, and that is the bulls they use. Instances have come under my observation where there was a fine, thorough-bred bull in the neighborhood, the use of which could be had for five dollars, but which the neighbors thought an exorbitant price. The owner of this same animal was selling his stock for ten, fifteen and twenty dollars per head more than his neighbors, and yet they could not see the advantage they would have gained. I would like to know in what way they could invest five dollars better. If by laying out a few extra dollars, together with a little extra care and good management, you get a cow that will yield you five to ten dollars per year extra, what better investment can a dairyman want? It is better than any bank stock, even with a little watering. Let any one make the calculation for himself between a cow that gives 25 lbs. and one that will give 30 lbs. per day, or an average of 5 lbs. for the year, and he will find that the latter, at a fair calculation, will net her owner ten dollars more than the former, to say nothing of her extra value for beef if well bred. If dairymen could be made to see this matter in its true light, and put the same in practice, it would be the means of putting thousands of dollars in their pockets annually.

If the Grangers would give such subjects their attention, endeavoring to educate their patrons how to make their cows yield 500 lbs. of cheese for the season, instead of 300, and also how to raise 40 bushels of wheat per acre instead of 20 and 25; making two blades of grass grow where one now grows—if they would take hold of such subjects as these and a dozen more that might be named, instead of attempting to purchase their own cottons, teas, &c., they would be doing themselves very much more good and have a much better field of usefulness in store for them.

I feel convinced that the day is not far distant when there will be a strong demand for good dairy stock—stock that will meet the wants both of the dairymen, the butcher and the breeder, for all these qualities can be combined; but for the dairy the milking qualities must be the most prominent. A number of the leading dairymen in the United States are turning their attention to this very thing, and I see nothing to prevent a dairyman from making himself a reputation for dairy stock any more than for those fancy Shorthorns and fashionable thorough-breds.

Protection vs. Free Trade.

The question, though political, is not one of party, as the term is known in Canada. It is one deeply affecting the interest of farmers; we therefore give insertion in the ADVOCATE to two communications on the subject, each viewing it in a different light. Our columns will be open to replies on either side from farmers, but we will expect them to be brief and to the point. It is our desire to live in amity and good neighborhood with our American neighbors, but as Canadians, we are determined to be perfectly independent in our business relations—to crave nothing as a favor, but to demand it as right, and expect to be treated in a like manner. If they purchase from us, it is for their own gain, and if they sell to us it is for their own greater profit. In our policy we must bear in mind that, next to our home market, the best markets for Canadian products are to be found in Great Britain and the West Indian Islands. On another page are two communications on the subject.

The Weather and the Crops.

We are unable to say anything definite about the state and prospects of crops even now at the close of March. The whole season has been unusually changeable. The rain, snow and frost each succeeding the other in quick succession. And these great and sudden changes make it very difficult to express an opinion on the fall crop. Much must depend on the spring weather yet to come. Soft, genial weather in this month would make a great improvement in any crops that may give little promise; but weather of an opposite character might do much injury. We fear, let the weather be ever so favorable, much of the young clover is killed. Any bare ground should be reseeded, and clover seed will bring high prices; however, it will not do to leave the ground bare.

DESTRUCTION OF THE PEACH BUDS.

A St. Kitt's paper says:—"Our esteemed friend, Mr. H. P. Willson, informs us that he has made an examination of the peach buds, and finds that there are something like about one-third or one-half of the blossom buds killed. The buds having been considerably started by the warm weather in January, and then the severe cold snaps coming on afterwards, the wonder is that they were not all killed. Mr. Wilson thinks that there is a probability still of a good average crop."

The Tulip.

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

In the spring there is no class of flowers looked forward to by the amateur with more eagerness for its lovely bloom and gorgeous shades and markings, than his bed of tulips. The cultivation is very simple, and the care is small that is required; but the tulip demands this little most urgently, and must have it. Spring is now upon us, and very likely those who read this article, or many of them, will have an opportunity to see their tulips in bloom. It is an easy matter to grow tulips to perfection in Canada. The bulb is very hardy, and a sharp frost does it no harm. The experience of all countries, even the most remote in temperate zones, is nearly the same regarding tulip culture. It may be summed up in the following directions:

About the first frost in autumn, say the middle of September in Canada, the bed should be thoroughly dug over and cleaned, and, if clay, a good proportion of sharp sand, lime, ashes and charcoal broken very small, and soot, if possible, should be well incorporated, by trenching in two spades deep. The bed should be then well raked and leveled, and be allowed to rest and settle for a month. The sand is useful in opening the clay and leaving little points, into which the long and fine roots of the bulb quickly enter. The lime destroys vermin and worms; the ashes supply potash for the food of the plant; and the charcoal and soot bring out the colors of all blooms, as well as tulips, more distinctly and brightly. Charcoal is a great disideratum in all floriculture in this most important of points; for what is a bloom, if its colors are not brought out clearly, but a failure? If plenty of fine charcoal be mixed in the soil, the grateful tulip will put on its brightest glories and smile, in its gratitude, with more lovely tints and shades. At the end of a month, more or less, well-rotted cow, horse or pig manure, as can be obtained, should be spread at least two inches deep over the bed and dug in equally and carefully, and well worked in. Indeed, a third digging is all the better, as by this means all the ingredients are well mixed. Beds are generally made from three to four feet wide, and should never be so broad as not to be easily reached by hand from the alleys as far as the centre. This point should be carefully noted, as tramping spoils the appearance of the bed. I do not raise the centre of my beds, as advised by some, but keep them level, and throw a little thin skimming off the alley on. The next thing is the planting, and each variety should be planted by itself in lines across. Make a line in the trench about four inches or five inches deep, and never more than six in any case. In this place the bulbs about six or eight inches apart, and so continue making rows a foot apart, and as straight as they can be made. The length of the beds is a matter of taste and circumstance. Ours are twelve and sixteen feet long, respectively, across the garden in continued sections, with a walk dividing, and the alleys are fourteen inches between the beds. After the bed is planted it should be carefully leveled over with the rake, but we do not advise patting it down with the back of a spade, as it will be pressed hard enough in general with a coat of snow, and will be less liable to be raised by frosts. If more than one variety of tulip is in a bed, a tally should be placed over it with the name of the variety. A person's memory is in general very treacherous, and is useless when some hundreds of varieties are in cultivation. The bed is now complete, and you must wait over a long winter till the soft breath of spring invites them from the deep sleep to appear again. But although hid from sight, nature has been at work, and they generally show their budding and sprouting leaves on the surface as soon as the snow is gone. Canada is nothing without its blanket of snow, and the blanket protects the ground from the frosts and biting winds, and all the spring bulbs are growing beneath it, fixing their roots ready for a start. We will leave the consideration of the varieties of tulips till again, and suppose they have bloomed and the leaves have withered. Tulips must now be carefully lifted and placed in a shade to dry. If any one wishes to have a good stock for another spring, this "must" be done. The bulbs, when dry, should be placed in drawers if convenient, or hung up in bags, and a tally with the name put with each. Tulips require a perfect rest from this time till the season of planting again arrives. If they are carelessly left in the ground to take their chance for a few years, the finest varieties will die out, and the stronger and coarser ones become wild and turn red. If any one, for curiosity or experiment, leaves a bed of tulips to take care of themselves, he will soon be satisfied of the truth of this statement. Even one year much impairs them; and the finer sorts of by-blooms, roses and ducban thols will not submit even to that. Let it be laid down, therefore, as an axiom, that all cultivated tulips must be faithfully taken up after blooming, and laid away to have their perfect repose when carefully dried. They should be looked over occasionally, and stirred in the bag or drawer, as mustiness will thus be avoided, and decaying bulbs removed. If these simple rules be attended to, we will guarantee a splendid reward of the finest coloring and shades to the amateur or gardener. A tulip bulb never blooms twice. It dies to feed the flower, and produces from one to four bulbs, which will bear the next spring, and several smaller ones, that generally blossom in two seasons. Some are wonderfully productive, and increase monstrously, but they are seldom the fine-sorts, whilst the most gorgeous are slow producers. In Canada, tulips do well and increase, and few blooms repay the anxiety of the amateur better. They are the delight of all our lady acquaintances, and we have sometimes to guard our beds jealously from over anxious hands. But such sins are easily forgiven. If you can only get the ladies interested in flowers, you will find success a certainty in floriculture.

In some future communication I will give you, Mr. Editor, a short account of the tulip mania that raged in Europe during the seventeenth and commencement of the eighteenth centuries. The prices that were then paid for choice tulips showed a thorough recklessness and temporary insanity. The sum of $1,944 was given for one bulb—"The Admiral," and $500 was common enough for a pair of good roots. Even at the present time large sums change hands in Holland for choice sorts; but $25 to $50 is about the highest, and a good new tulip is sure to get ready sale. It requires five years to raise a tulip from seed, but the chances of a fine one are poor indeed; and tulips must have their characteristics to command the market.

Our Pea Crop.

Judging from the returns in the report of the Bureau of Agriculture, we come to the conclusion that Peas are not so extensively grown in our country as they were some years ago; though, in the market notes of Great Britain and the United States, Canadian peas have the place, and command the attention of buyers, bringing good prices. Still we think, and we speak from experience, they are well worth cultivating, particularly on light, gravelly soil. So far are they from impoverishing the soil, that they are the means of imparting to it a fertility that it had not possessed. Peas feed on the same plant food as wheat or oats, and the greater part of their nutriment is absorbed from the atmosphere. This has been proved by chemical experiments. A portion of soil was analyzed, then put into a box and peas sown in it. After the peas grew and matured, that soil was again analyzed and found to possess more of the elements of fertility than it possessed when first analyzed. This testimony from chemistry is but additional proof to that of our own experience. We know poor, hungry soil to be sown with peas, and the following season to bear crops that it would not produce before the peas had been sown. Not only do peas add to the fruitfulness of the soil—they smother and destroy weeds.

Though peas may not bring as large a money-return as some other crops, they pay pretty well. There are returns of 40 bushels to the acre, but they are few—let us calculate the returns at what is more common:—30 bushels. The N. Y. *Tribune* of March 10th reports: Canadian Peas, 2,400 bushels at 97½c. per bushel. The London (Ont.) *Free Press* reports peas, per cental, $1.25. There is one great profit to be derived from sowing peas, putting aside the marked returns. For soiling cattle there is no better crop, succeeding fall rye and coming in before corn, than peas and oats mixed. It is good for all cattle, and especially for milch cows.

The prevalence of the pea-bug, or weevil, in some sections of the country has prevented its being more generally grown. Other districts are free from it. In this district they have done much injury. Farther north and east the ravages are unknown. We can, in a great measure, prevent the ruin it works, but it requires the farmers of infested districts to co-operate for their destruction. It is of little service to destroy them on one farm, if they be allowed to live and multiply on the farms adjacent. The larvæ feed on the green peas, and by the time he has become dry they have attained full growth. In the cavity it has made in the pea, the larvæ become purpæ, and they change into perfect beet'es in the spring. To be destroyed they must be killed, either when the peas are ripe in harvest, or when about to sow the seed in spring. Put the peas into boiling water for a couple of minutes before planting, and the bugs are killed. In order to kill them in harvest the seed is put into a tight vessel, and in it is put pulverized camphor, 2 oz. to the bushel, or sulphuric ether, a tablespoonful.

In selecting the variety to sow, we must have regard to the quality of soil, as well as the purpose for which we design them—the hard white being best suited for grinding, and for the English and American markets.

Stock Registers.

We notice in an American exchange paper that a stock register is to be opened for Merino sheep, also for Berkshire hogs. No one can doubt that the registration of Shorthorns has had much to do with the advancement of that valuable class of animals and the cause of the high prices being paid for particular animals. A writer in this journal suggested the registration of the most useful classes of horses. If any Agricultural Society, or Farmers' Club, or Grange would take up this subject they might be doing a good service. Why should Canada be behind? Are not our Leicester, Cotswold and Lincoln sheep of more real value to Canada than the best Merino that ever lived. We should be pleased to hear from others on this subject.

THE value of the sheep and lamb's wool imported into the United Kingdom from the Australian Colonies and New Zealand last year, was £16,009,762, as compared with £13,821624 in 1875. The Australian wool trade materially increased in importance last year.

Stock and Dairy.

Roots for Stock Feeding.

A Mr. Lane, of Cornwall, Vt., writes as follows to the New York *Tribune* on the above important subject, one which is very much neglected throughout this country:—

From the first of my farming I have raised roots of some kind to feed stock during winter. Twenty-five years ago, when labor was much cheaper than now, I raised carrots. These I consider valuable to feed to young, growing stock; but the cost of raising them at the present price of labor is generally more than their feeding value. It costs from two to three times as much to raise a ton of carrots as the same amount of the large-growing varieties of sugar-beets or mangel-wurzels. To raise roots and have them cost less than their feeding value, the labor should be done with the horse cultivator and hoe, avoiding thumb-and-finger work. The profit or loss on a crop of roots generally depends upon how the labor is performed, whether principally by hand or by the aid of machinery. The question, "Is it profitable to raise roots to feed during the season that the stock is kept on dry fodder?" is often asked by those who have but little experience in their culture, or are about ro begin raising them. This can be answered two ways, and answered correctly. There are a great many farmers who, every year, raise root crops for feeding purposes, from which they realise a large profit. Then, on the other side, many attempt to raise these crops, and from various reasons, generally through their own neglect, they get small and poor crops, which costs them more than the crop is worth. The cultivation of field sugar beets for feeding purposes is certainly not sufficiently appreciated by most farmers. I have experimented with the various kinds of carrots, turnips, beets and wurzels, and for a few years past have raised as the main crop, and with perfect satisfaction, the American Improved Imperial sugar beet.

The soil most proper for field beets is a rich loam of a clayey rather than sandy character. Light sand land is better for turnips. I sow the first suitable weather after the soil is in fine condition to be worked. I think early sowing is essential in order to obtain the best results. Sow in drills 30 inches apart with a machine, if you have one; if not, plant or dribble in the seed in rows 30 inches by 18. It takes four pounds of seed, if sowed, and about one-half as much if planted. When the beets have been sowed in drills they should be bunched out with the hoe as soon after the second pair of leaves appear, and if there is no danger from worms destroying the plants, as they are not wanted for transplanting, thin the bunches to one plant at this time. All the remaining labor can be done with the cultivator and hoe, and should be repeated sufficiently often to keep the soil loose and free from weeds. From my farm book I copy the following items as the cost of cultivating one acre of beets:—Plowing the land, $3; drawing manure, $4; spreading manure and harrowing, $3, ridging land and sowing seed, $4.50; cultivating once, bunching and thinning plants, $7.50; cultivating five times, $5; hoeing twice, $6; total, $33, as the cost of cultivating one acre which yielded 1,050 bushels. The cost in labor was a trifle over 3 cents per bushel. Add to this the use of the land, manure, and seed, and the whole cost is between five and six cents per bushel, and worth to any farmer from 15 cents to 25 cents per bushel, depending on the location, the kind of stock fed to, and manner of feeding. Every observing feeder knows that any succulent food in the shape of roots fed to stock in winter, in connection with this dry food, increases the appetite and promotes health, and thereby improves their condition. The various profitable uses to which all kinds of roots can be applied should induce farmers to grow them more extensively than they do at present.

S. T. Wood writes to the *American Farmer* :—"My business is dairying butter and cheese. Commenced with Durham grades from a good milking stock, and made a mistake in crossing to an Ayrshire stock. I lost size, consequently beef qualities; the Ayrshire is hard to milk, but gives a good quantity; is very hardy and a mild article. I am now getting back to the Durham, and I use a full-bred Shorthorn. I want milk and beef qualities combined. The experiment of crossing the Ayshires h's not proved very successful.

Dairy Cattle.

A writer in the *Mark Lane Express*, discussing the most profitable stock for dairy purposes, on a farm where milk and its production form a part of the business relied on for the profit, says:—

"For merely a dairy purpose, it matters little what breed or mixture of breeds is patronized, providing the animals, under the influence of liberal treatment, can be forced to milk largely; but as in the system now advocated a much more important question is involved, the milking property can scarcely be allowed to take other than a secondary position. Most practical men who understand this subject, and who have for a series of years tested it by actual experiment, are agreed that a cross-breed cow combines the two much-desired and valuable qualities in a greater degree than can possibly be attained by any pure animal of the standard breeds. As an example of the deep milker, the Dutch cow takes a leading, if not first, position, giving milk, under the influence of good feeding, in an extraordinary quantity, and continuing it far into the season. Her milking capacity is so enormous, that she recommends hereif in an especial manner to those who supply milk in large quantity to public institutions; with this single feature her usefulness begins and ends, as she is a hard feeder, consuming food in excessive quantity, and scarcely at any age compensating her owner for his trouble and outlay in feeding her. The exactly opposite quality is found in the Shorthorn, the tendency to lay on flesh being in the superlative degree; while the milking property, unless in some exceptional strains of blood, is not to be depended on, the cow of this breed, however freely she may milk for a short time after calving, being extremely apt to run dry long before the expiration of the season. Whatever the alloy, the Shorthorn must now be taken as the standard breed of the Kingdom, its blood being largely infused into every herd from which a profit is expected. Where dairy business and the breeding as well as the feeding of stock are all carried on together, a three-quartered Shorthorn fulfils as nearly as possible the whole of the conditions necessary to success in each department, as any slight deficiency in one qualification is more than counterbalanced by the extraordinary aptitude to reach early maturity, which is evinced by her offspring. The breed used to somewhat check the running to flesh, to assist the milking capacity, and retain it further into the season, may be found nearly in every district, often under no distinctive name but that of the common cattle of the country, and although somewhat coarse and strong of bone, will not, on that account prove the less valuable, as their descendents will retain a portion of the hardiness of constitution and free milking quality, for which features they were originally selected, long after the unmistakable impress of the Shorthorn sire has been indelibly stamped on the outline and general character."

Delicacy of Constitution in Animals.

A correspondent of the *Prairie Farmer* says: As a rule, it is the interest of farmers to raise a breed of pigs that will mature rapidly. Breeds have been hurried up till a pig of eight or ten months old will weigh between 200 and 300 pounds. This of course has its advantages, but there are many serious evils to counterbalance them, and these are a prime cause of the present trouble.

Hogs now lack bone to a remarkable degree. They are also lacking in hardiness of constitution, which is apt to make them victims to numerous obscure diseases about which little is known, but which are now classed under one common head—that of hog cholera.

One prime cause of these diseases and delicacy of constitution is the extreme early age at which pigs are allowed to couple and breed. If unrestrained they will gratify this instinct at six weeks of age, or even less. Nearly all our choice breeds are the offspring of parents, in almost every case, on both sides, of less than one year old. They come from pigs, not hogs, and this process has gone on, and bids fair to go on, till no more hogs will be left in the West, if this is not already the case.

A male animal ought not to be used for breeding if under one year old. He ought to be selected for size, bone and vigor of constitution, and ought to serve a limited number of sows, none of whom ought to be less than a year old—still better if they are older. The boar ought to be kept up, and on no account should be allowed unrestrained access to the younger females of the herd.

It is to be hoped that some of your observing readers will act on these hints, and give the results in your paper. When a sire, possessing the proper and necessary qualities for one, is found, he ought to be kept at least five years for this special purpose, and if the sows let to him are over three years of age, their offspring will be all the better, in every respect.

Clover—Its Value for Stock Feeding.

The growing of clover is an essential part of good farming. Clover, whatever its variety, seems to enrich the soil, and every variety has its own good properties. Whether it be the common red clover, the Alsike or Crimson, or the Dutch White Clover, each supplies to our live stock a large quantity of nutritious food. As a sheep pasture there is no grass equal to the white clover, though it is better pasture if mixed with a good selection of grasses. In every pasture there should be a mixture of good grasses. In the food of all animals it is well to have a variety, and a variety we have by a mixture of grasses. For soiling, red clover is almost indispensable, its two cuttings coming in very opportunely when needed, and affording a healthy nourishing fodder. Some people think that as hay it is inferior timothy or rye grass. We always considered that when clover is sown with those grasses and saved with them, the hay is better than if it were only grass. A writer on this subject in the *Ohio Farmer* says:—

We do not overestimate the value when we say that, for animal food, the farm does not produce anything which equals good clover. Every animal on the farm, from the horse on down, will winter and thrive on it better than on an equal value of any other kind of food. I do not refer to the so-called hay which is often fed or sold as clover hay, but to clover properly cut and cured.

We carry a lot of horses through the winter better on a given weight of clover hay, than the same animals can be brought through on the same weight of timothy hay and an additional allowance of four ears of corn per day; and the manure made from the former would be worth one-third more than that made from the latter. The cows will give more milk and make more butter on good clover hay than if fed on the same value of timothy hay and an addition of two quarts of corn meal per day. The colts, calves and sheep will thrive and do well on clover hay when they would not hold their own on timothy hay. I want nothing better to carry a lot of hogs through a winter than clover hay. Your turkeys, chickens and ducks will gather up the last leaf and head of a basket of the refuse from the barn floor, if it be thrown them on a cold winter's day.

In comparing the difference in cost in feeding clover or timothy hay, we will estimate the timothy hay worth $20 per ton, and clover hay as worth one-fourth less, or $15 per ton. Messrs. Laws & Gilbert give it, timothy hay, for manure, as worth one-third of its cost, or $6⅔ per ton, and clover at two-thirds of its cost, $10 per ton. Allowing a herd of 20 cows to consume one ton per head, if fed on timothy, would cost $400, and if fed on clover, would cost $300 leaving a balance in favor of clover of $100.

Value of timothy as manure..	⅓ of $400	$133.33
" " clover "	⅔ of 300	200.00
Leaving bal. in favor of clover as manure.		$66.67

This would leave a total difference in favor of feeding 20 tons of clover hay, of $166.67. But as we before stated, the clover hay would exceed the timothy by two quarts of corn per day—225 bush. for six months; at 50 cts. per bush., or $112.50, which, added to the above, gives us $279.17 as a grand total in favor of clover.

The conclusion would be that the time is not far distant when the price of clover hay will rival, as it should, that of timothy hay, and the farmers should feed their clover hay in preference to selling it, while they should seldom, if ever, feed their timothy hay.

Youatt says he thinks the Devon red are the best suited for all purposes in the west of England. All that is necessary to keep them up in size and proof, and of a good growth, is to change the bull every two years. This is very important, although an overlooked and unappreciated principle of breeding, even where the stock is most select. No bull should be longer used by the same grazier, or some degree of deterioration will ensue.

The Ayrshire.

The Ayrshire cows are justly celebrated throughout this country and Great Britain for their excellent dairy purposes. Though the most recent in their origin, they are pretty distinct from other Scotch and English races. In color the pure Ayrshires are generally red, and white, spotted or mottled, not roan, like many of the Shorthorns, but often presenting a bright contrast of colors. The head is small, fine and clean. The face is long and narrow at the muzzle, with a sprightly, yet generally mild expression. The eye is small, smart and lively. The horns are short and slightly twisted upward, set wide apart at the roots. The neck is thin. The body is enlarging from fore to hind quarters. The back is straight and narrow, but broad across the loin. The ribs are rather flat. The joints are rather loose and open. The hind quarters are thin. The teats of the cow are of medium size, and set wide apart. The milk veins are always very prominent and generally well developed.

On the whole the Ayrshires are good looking, but want some of the symmetry and aptitude to fatten which characterize the Shorthorn, and which is supposed to have built up this valuable breed on the basis of the original stock of the county of Ayr, a county extending along the eastern shore of the Frith of Clyde, in the south-western part of Scotland, and divided into three districts, known as Carrick, Cunningham and Kyle; the first famous as the lordship of Robert Bruce, the last for the production of this, one of the most remarkable dairy breed of cows in the world. These cattle are naturally hardy and active, and capable of enduring severe winters and of easily regaining condition with the return of spring and good feed. They have been known to produce over ten gallons of milk in a day.

It is the opinion of good breeders that a high-bred Shorthorn bull and a large-sized Ayrshire cow will produce a calf which will come to maturity earlier and attain greater weight and sell for more money than a pure-bred Ayrshire. This cross, with feeding from the start, may be sold fat at two or three years old, the improvement being especially seen in the early maturity and the size.

In this cross with the Shorthorn the form becomes ordinarily more symmetrical, while there is, perhaps, little risk of lessening the milking quality of the offspring, if sufficient regard is paid to the selection of the individual animals to breed from.

The Ayrshire unites to a greater degree than other breeds the supposed incompatible qualities of yielding a great deal of milk and beef.—*Ex.*

Whipping Horses.

Prof. Wagner, in writing upon this subject, says: "Many think they are doing finely, and are proud of their success in horse training, by means of severe whipping, or otherwise arousing and stimulating the passions, and then through necessity crushing the will through which the resistance is prompted. No mistake can be greater than this, and there is nothing that so fully exhibits the ability, judgment and skill of the real horseman, as the ease displayed in winning instead of repelling the action of the mind. Although it may be necessary to use the whip sometimes, it should always be applied judiciously, and great care should be taken not to arouse the passions or excite the will to obstinacy. The legitimate and proper use of the whip is calculated to operate upon the sense of fear almost entirely. The affectionate and better nature must be appealed to in training a horse as well as in training a child. A reproof given may be intended for the good of the child, but if only the passions are excited the object is depraving and injurious. This is a vital principle, and can be disregarded in the management of sensitive and courageous horses only at the risk of spoiling them. I have known many horses of a naturally gentle character to be spoiled by whipping once, and one horse that was made vicious by being struck with a whip once while standing in his stall."

Mr. Carpenter says the farmers in Somerset are endeavoring to breed the sort of cattle that will answer for the pail, the plow and grazing—a very difficult task, he admits, for those that are of the highest proof (exhibiting those points or conformations of particular parts which usually indicate a propensity to fatten) are generally the worst milkers, both as to quantity and quality.

Obstructions in the Teats.

I have a four-year-old heifer which, when she calved last fall, did not give the milk from one quarter of the udder. It was filled with a thick, cheesy substance, and there did not appear to be any bunch or stoppage. She will calve within a month or two again. Can I do anything to make it all right again when she calves?

REMARKS.—The teats of the cow are subject to various affections, which more or less impede the flow of milk, or stop it altogether, and often form the basis of an inflamed state of the udder. One of the chief causes of these obstructions are small tumors of about the size of a pea, which may be felt on compressing the teats between the finger and thumb, and can be often moved up and down the teat. Sometimes these entirely stop the flow of milk, and at others a small stream can be got by much pressure. These small substances are either what are called lacteal calculi (milk stones), or tumors attached to the lining of the teats. In these cases a silver probe or a knitting-needle must be pressed up to the teat, and the obstruction either broken down or passed into the udder, where they often remain without inconvenience. It is not often possible to extract them from the end of the teat, nor should this be tried, as, from the irritation caused, inflammation is frequently set up, and the quarter is lost. Strictures frequently exist in the passage of the teat, diminishing the flow of milk, or causing the same to become curdy or cheesy. In these cases, a probe or knitting-needle, as large as the stricture will bear, and gradually increasing in size, should be frequently passed, so as to distend and keep the passage open. Warts at the end of the teat are occasionally found, and are a great annoyance, not only obstructing the milk, but, from their soreness, causing the cow to become fidgety and uneasy while being milked. In these cases the wart must be removed, either with the knife, or by a ligature of fine silk tied around it; the latter is a preferable mode, as warts when sloughed off are not so liable to return as when excised with the kine.—*Nat. Live Stock Journal.*

Balky Animals.

The brain of a horse seems to entertain but one thought at a time, and for this reason continued whipping is out of the question, and only confirms his stubborn resolve. But if you can by any means change the direction of his mind, give him a new subject to think of, nine times out of ten you will have no further trouble in starting him. As simple a trick as a little pepper does, or the like thrown back on his tongue will often succeed by turning his attention to the taste in his mouth. A simple remedy is to take a couple of turns of common wrapping twine, such as grocers use, around the fore leg just below the knee, tight enough for the horse to feel, and tie in a bow-knot. At the first check he will go gently dancing off, and, after going a short distance, you can get out and remove the string to prevent injury to the tendon in your further drive. Or tie a string lightly around his ear, which will serve to direct his mind to forget his stubbornness.—*Our Dumb Animals.*

COLORING CHEESE.—The *Agr. Gazette* says:—"The preference for colored cheese is one of the strangest commercial infatuations we are acquainted with. These Yorkshire people, shrewd as foxes in things generally, have a notion that plain cheese is not genuine for some reason or other, that it is not so rich as the other, whereas it is really the colored cheese that is not genuine—that is actually adulterated with annatto to produce the deep tint which they unwisely prefer. If these good people were to taste just a teaspoonful of annatto, such as is used to color cheese with, we venture to predict they would eschew colored cheese for the future. However, this fallacy is being gradually extinguished."

The roan bull 2nd Duke of Collingham has gone to the poll axe in his tenth year. He was an excellent heifer getter, two of his getting having brought 1,810 and 1,000 guineas respectively at Lord Dunmore's sale. Mr. Seddon, of Warwickson, into whose hands he passed three years ago, thinking him now uncertain as a calf getter, tied him up to fatten. Without much artificial feeding he scaled 23 cwt (2,576 lbs.,) and was sold to the butcher at 50 guineas.

Mr. D. Peetor, Markham, Ont., has sold the Shorthorn bull Duke of Boston, to Mr. Kennedy, Kentucky.

Increased Demand for Good Butter.

In the last number it was suggested that as the demand for butter was increasing much more rapidly than the demand for cheese, "the hope of the dairy interest lies very largely in the widespread introduction of butter factories," to which we now wish to add another suggestion, equally important, in connection with the same matter.

The tendency of the times is to do everyting by combination—by wholesale—and in all branches the large establishments crush out the small ones. We have no doubt but the time will come, and perhaps sooner than most persons think, when the evils of this system will outweigh its benefits. But assuming that the mania is to run its course, we suggested the increase of butter factories, as likely to be more remunerative than the further increase of the manufacture of cheese. We should, however, be very glad to see an increase in the home product.

Among the evils connected with the factory system may be mentioned the facilities for combinations to keep down the prices of milk and cream, and to influence the markets against the domestic product. Cattle breeding is also very injuriously affected by the large dairy business. The professional dairymen seldom rear calves, and the cows seem peculiarly subject to the epizootic abortion. On the other hand, the prices they pay for cows will not justify the breeder in rearing cattle for this purpose—being usually about 50 per cent. less than good steers will bring at the same ages.

In view of these facts, the suggestion we have to make, in connection with the butter supply, is this: Cannot farmers, having two or three hundred acres of land in any of the Western States, make a herd of cows pay a very fair profit by making butter and rearing calves? In the fore part of the season a part of the milk could be taken, and by feeding the calves (which should be on good grass) liberally with mill feed, they may be weaned at four or five months, so that in the fall all the milk could be had for the dairy. We think butter can be profitably made by our farmers on this system; and we are very decidedly of the opinion that every consideration of public policy requires that the whole business should not be subject to the control of these factories.

If any of our readers, who are practising approved methods in the manufacture of butter or cheese on the farm, will favor us with the results of his experience, we shall be under great obligations, as we have no doubt the public will.—*Exchange.*

Fresh Meat to Europe From South America.

The French steamer Frigorifique, which is in the docks at Havre, is being fitted up with special apparatus with all possible dispatch. This steamer, commanded by Captain Lemaise, is intended for the transport of fresh meat without any preparation, simply by constantly maintaining a very low temperature in the store rooms. The whole of the interior, with the exception of the engine-room, will form one vast warehouse, isolated throughout the whole length by a sheet-iron partition lined with planking, but having betwen the iron and the wood a layer of non-conducting substance, consisting of chopped straw and felt. The quarters will be suspended by hooks, as in a butcher shop.

X. A. Willard, in his report, says:—"The difference in the relative market value between these (English cheddar) and American extra fine cheese has not seemed to attract so much attention as recently. Dairymen are now asking the question, Why it is that English cheddar, which has been selling on an average for 72 s. per cwt.—equal to 22½c.—should be worth so much more than extra fine American, which sells at 66s.—not quite 16c. of our currency. At the Rome convention Mr. Adams told the dairymen that it was because American cheese was not equal in flavor and long keeping qualities to the English cheddar. Be that as it may, the unvarying high price of English cheddar cheese in England shows that the English are willing to pay high prices for extra fine goods, and that consequently our extra fine cheese is likely to advance rather than decline in price.

The *Live Stock Journal* says the Tennessee Co have refused for the bull 5th Duke of Hillhurst an offer of $15,000.

The Carriage Horse.

The first breed of carriage horses of which we have any account were the Cleveland Bays. A breed that originated near Cleveland in England, from whence they derive their name. They were a cross between the Suffolk Punch and common hackey or part bred horse. They were described by the early historians as a tall, powerfully built, bony animal, ranging from 15½ to 16 hands high, and were quite enduring on the road at the rate they were able to travel, which was about six or seven miles an hour. These have been superseded by a higher breed coach horse that is better calculated for the road, with finer form and more graceful movement.

One with a high head well set on to a clean cut out neck, with fine range of body and a more lofty step and more prefect in their paces. From these Cleveland Bays, now nearly extinct, a very superior animal has descended, called the modern carriage horse.

In order to increase the speed and endurance of this once famous breed, the best Cleveland Bay mares were stinted to thoroughbred stallions. The superior foals of these half-breed colts were reserved for stallions and again coupled with the same kind of Cleveland mares. This cross culminated in the improved English carriage horse, and is now looked upon as an ornament to the coach and the finest animal of his species.

Another cross of the half-breed mares to the throughbred stallion has proved a capital roadster. After three or four crosses to the high bred horse the celebrated English hunter is said to have descended from the Cleveland Bays.

The importation of stallions of this class laid the foundation of the breed in this country. A Cleveland Bay stallion, obtained from the Emperor of France, was imported into Virginia by William C. Rives. Cleveland Bays were imported into Massachusetts at an early day, and left their mark upon the horse stock of New England. A Cleveland Bay stallion was imported into New York and stood on Long Island in 1830. One was imported into New Jersey, and they were introduced into several other States.

The shoulder of the carriage horse should be a little thicker, containing more bone and muscle than the buggy horse, also broader on the loin and heavier in the quarters, because greater weights are attached to them. Weights require more strength than activity. The perfect shouldered coach horse will stand with his legs perpendicular to the ground. In walking he will put his fore foot forward to correspond with the point of the shoulder. If he exceeds this natural point of progression he is faulty in the shoulders and will prove imperfect in his paces. The carriage horse is most valuable for the pleasantness of his paces, his safety, good temper and endurance. We can judge of the comparative safety of his action from his shoulders. The upright shoulder is apt to be sluggish in the movement and awkward in appearance. The slanting shoulder forming the right slant in the angle throws out the foot and gives stride, when it swings like clock-work upon the pivot of a perfect shoulder it forms the graceful movement. The soundness of the horse can be estimated from his feet and legs. If he has good-sized, firm sinewed limbs, dry and hard to the touch, and open heeled feet, he may be set down as sound on his pins. One good body will wear out two sets of poor legs.

The carriage horse should throw his feet square out, and bring them down flat in the tread as a matter of safety. If he stubs his toe into the ground he will prove a stumbler. In examining the shoe if the toe be much worn while the heel is not worn, the odds are that the subject is not sure footed, and will prove unsafe for family use. A pair of good styled, fine acting, well matched carriage horses are seldom to be met with. There are so many good qualities to be combined that they are seldom found in the highest form with perfect similarity in two animals. They must be similar in color, size, form, disposition, speed and endurance to make them valuable. Any vicious habit, such as pulling, shying, stumbling, kicking or baulking, renders them nearly worthless for family use. Kindness, obedience and safety are precious jewels in the family horse. They shine upon their own merits. The world can see their lustre, and recipients of their services will learn their worth.—*Observer in Michigan Farmer.*

GALLS ON HORSES.—There would be no necessity to cure galls if common sense were used in selecting a properly fitting collar. If a farmer wore a pair of loose shoes, constantly slipping up and down at the heels as he walked, he would be treating himself as he often treats his horse, and would learn by experience how galls might be prevented. Sometimes the collar is badly made as well as badly fitted. A good collar should be hard and smooth on the inside, and ought never to have anything applied to it that would interfere with its smooth surface. Anything of an adhesive nature would dry on the skin and create a sore spot.—*Ex.*

THE horse meat establishment in Paris delivered for consumption during the past year 6865 horses, asses, or mules, which yielded 1,249,190 kilogrammes (2.2 lb. each).

The Hog Engaged in Farm Labor.

Nothing new, some will say, to see the hog turning up the soil; but none of our readers, we are sure, ever saw him, as he is here represented, in harness, and actually assisting the farmer in his labor. In olden times, he was trained to the plow in some of the Eastern countries, and was prized for his good day's work. He possesses great strength in proportion to his size; but we think none of young Canadians would care much to hold the plow after an animal of his class.

Horse Diseases.

Dr. John N. Navin, V. S., in reply to an inquiry in the *Indiana Farmer*, says :

Distemper is not a name for any particular disease, but is applied alike to any disturbance of the animal economy. Dr. Dodd, a very able writer says ; "strangles is erroneously called distemper, horsetail, pinkeye, and many other unscientific names." Mr. Peruval, of London, the ablest physiologist in England, says : "I have known it (strangles) to largely prevail all over the country among young horses, up to eight years old, and some entirely escaped it for life." Just so, a man might as well try to prove that measles attack only children below a certain age, as to try to prove that strangles, which is highly epidemic, as well as contagious, attacks horses in a state of colthood. The true facts in the case are, that while horses are young, whether kept in stable or field, rarely escape contracting it, from the fact that they never take it twice, therefore, of course, it seldom touches horses in old age. It being epidemic as well as infectious, the majority of colts go through it before maturity, but are liable until the turn of life, not materially differing from those diseases among the human family that are a preventive to a future attack, for life, such as measles, whooping cough, etc., therefore, diseases that impregnate the system with their influence for life, are all both epidemic and contagious, and therefore the young are more susceptible to their attack than those of mature age. Just so among horses.

Let me also state that catarrh fever is not infectious to any certain degree, but is epidemic and exporatic, and may be taken ten or more times by the same patient, either man or beast. I have doctored horses for catarrh fever more than three times within nine months, and have had it myself several times. It was the disease we had in this country a few years ago some called epizootic, which is, like our distemper, no positive name for any disease, but a prefix signifying a general disease among beasts, as epidemic signifies a general disease among the human race.

Heaves in Horses.

By Professor Wagner.

Heaves produces increased action of the flanks. The inspiration is natural, but the expiration requires two motions to expel the air. There is always a short cough, or grunt, and at the same time expels wind while coughing. Heaves are never found in the racing stable, where horses are properly fed. They are always found among cart or team horses, where the owners suppose they must feed a large quantity of coarse food or hay.

The seat of the disease is located in the air cells of the lungs, causing enlargement and sometimes a rupture of these cells. This disease is often produced by forcing too large a quantity of food into the stomach and bowels, and the greedy animal, not being even then satisfied, eats the bedding. He is then taken out and worked or driven hard, the bowels and stomach pressing on the diaphram, thereby not allowing the lungs to expand by being filled with air, and by this increased pressure the air cells are enlarged or ruptured, and the horse is said to have the heaves.

Much has been said by different authors regarding the curability of heaves. Some advocate one means and some another, among which is that of feeding on Western plains, or prairie grass, or feeding prairie hay, which is said to contain resin weed that will effect a cure.

Prairie hay or grass is more laxative than timothy hay, and the animal cannot eat half as much in a given time of the former as of the latter, consequently it not only promotes a condition favorable to respiration, by stimulating the bowels, but does not cause the pressure upon the lungs that the timothy, in consequence, does. While prairie hay has a decidedly beneficial effect in alleviating heaves, there are several other kinds of food equally as good, or better, than prairie hay or grass. One is cornstalk fodder. As it is the amount of saccharine matter that food contains which makes it valuable, and the less compass it occupies in the bowels the better, we must arrive at this conclusion, and experience proves it to be correct. One quart of oats is equal to an armful of hay, and three pounds of corn leaves contain more sugar than six times the bulk of hay. The cause, the cure and treatment is marked in these words, the heaves are produced by pressure on the diaphram, by too much food in the stomach and bowels, and is cured by lessening the quantity of a better quality of food, to occupy the same space. If horses are turned out to grass, after a few days heaves will generally disappear, from the fact that the bowels are generally relaxed by taking exercise and having pure air.

"The only treatment which will prove in any degree effective is as follows: First, give one of the following balls: Ginger, powdered, ½ oz.; capsicum, ¼ oz. Form a ball. This ball to be given three nights in succession; then omit two or three nights, and one or two balls may be given again in succession, or eight or ten drops of tincture of phosphorus may be given in drink several times a day for eight or ten days. The horse should have regular exercise, be watered often (small quantities at a time), and have straw instead of hay to eat (corn fodder would be much better). Under this treatment heaves will disappear.

FAVORITE REMEDIES OF GREAT VALUE FOR HEAVES.

"1. Spanish brown, 2 oz.; tartar emetic, 2 oz.; resin, 4 oz.; ginger, 2 oz. Mix and give two teaspoonfuls twice a day in the feed.

"2. Vegetable tar, in mass, ½ oz.; gum camphor, ½ oz.; tartar emetic, 1 drachm. Form into a ball, one of which is to be given once a day. If proper attention is given to feeding, this will cure the heaves in three days, unless very bad.

"3. The following prescription is one of the very best remedies known for heaves, and will in many cases cure: Take indigo, 1 oz.; saltpetre, 1 oz.; rain water, 1 gallon; mix and give a pint twice a day in the feed."

Advantages of Different Food for Stock.

The adoption of fermented instead of cooked food for cattle feeding, is not only making much way in France, but also in Germany. Perhaps the chief cause of the change is to be found in the fuel economized. It was a Bohemian agriculturist, M. Audre, who in 1830 first tried the plan; in 1836 Dr. Schweitzer, of Saxony, exposed its advantages; since, M. Moel, professor of agriculture in this city, has become the most prominent advocate of fermented food. Instead of chopped straw, he employs colza pods, in alternate layers, with sliced turnips and beets; the mass being well trodden in a barrel, having a capacity of 330 gallons; each layer is well sprinkled with water containing bruised oil or colza cake, and a little salt; the mass is left to ferment for 72 hours, and is then given to the animals for their noon feed.

The climate being equal, Continental farmers are divided into two camps respecting the cultivation of maize for fodder, green and preserved, and clover, beet, etc. Maize requires good manuring, and when so treated succeeds well on freshly reclaimed heath land; clover by its dead roots enriches the soil. In a dry summer, beet is not so certain a crop as maize, and opinion is divided as to their comparative yield. M. d'Esterno announces that he can profitably feed hogs on preserved maize till within the three months requisite to fatten them, when of course they must receive farinaceous food. The forage must not be given in a raw state, but cooked and chopped in lengths of one or two inches. The pig likes, as a rule, to be spared mastication as much as possible. In some parts of France cooked grass, nettles, thistles, etc., are given to pigs with one part of potatoes. Beet is dear, costing 13 francs per ton, while preserved chopped maize is one-half less.—M. d'Esterno purchased two pigs on the 27th of Sept. last for 172 francs, and sold them, fattened, the 12th of November following, for 235 francs, difference 63 francs, from which has to be deducted their keep, valued at 11 francs, thus leaving a net profit of 52 francs for 44 days feeding. For the first 22 days he gave them for ration 27 pounds of cooked maize fodder, 1¼ pounds of mill refuse, and half a pound of potatoes; the remaining 22 days they were fed on 37 pounds of maize, 9 pounds of potatoes, and 1¾ pounds of buckwheat, daily.—*Foreign Correspondence of the W. F. Jonrnal.*

Breeds of the Prize Takers at Smithfield.

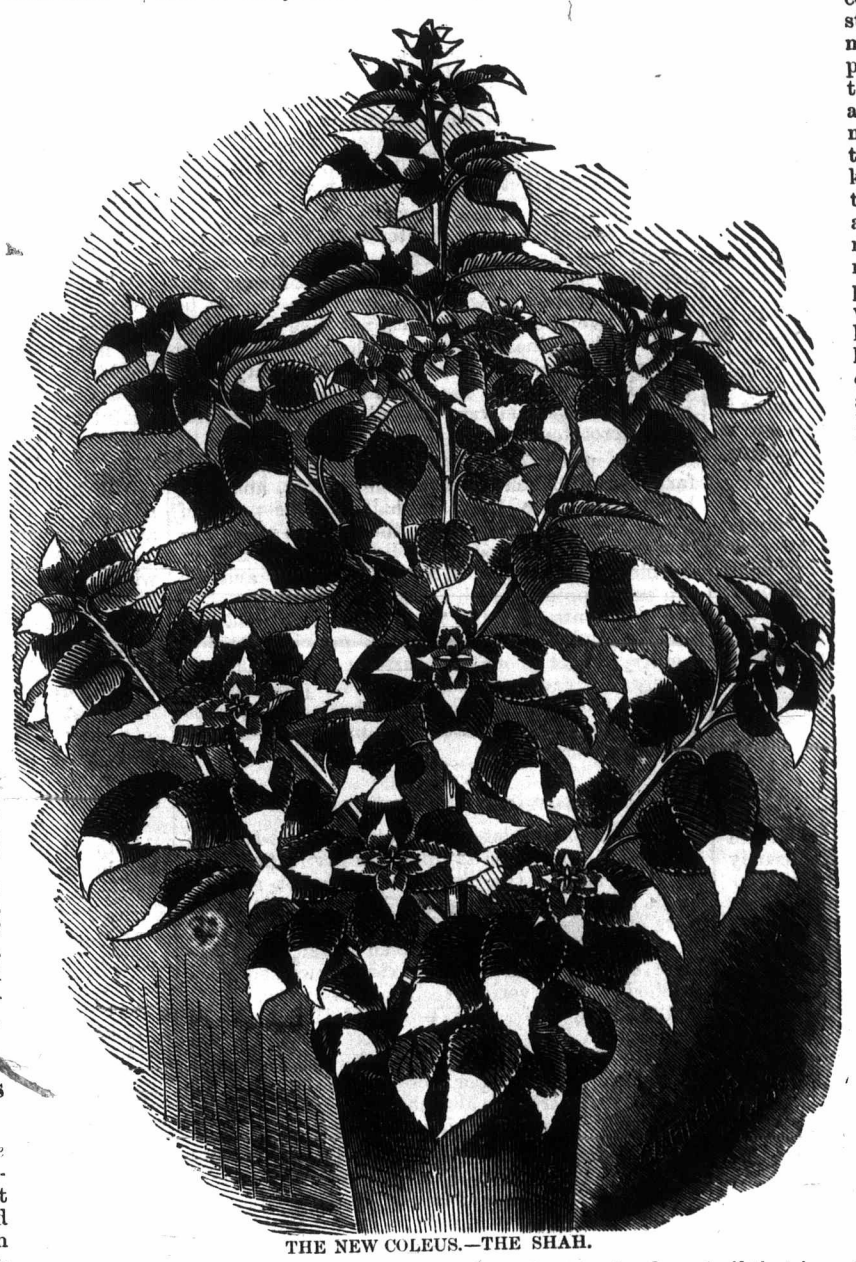
The London *Agricultural Gazette* contains an interesting table, comprising all the most important awards of prizes by the Smithfield Club since its establishment in 1807. From 1809 to 1829, however, the shows of the club were not held, so that the number of years covered by the table is only forty-five. In 1807 and 1808 the prize-winning ox was a Hereford. For fifteen years, 1830 to 1843 inclusive, a gold medal was given to "the best beast in any one of the classes;" it was taken twelve times by Shorthorns or "Durhams," twice by Herefords, and once by a North-Devon. For the thirty-one years since 1844 two prizes have been given each year—one for the best steer or ox, the other for the best cow or heifer, in the show. Of these 62 prizes 39 have gone to Shorthorns; and three to crosses of Shorthorns with Devon, Scotch, and Hereford blood respectively—21 to Herefords, and one to a Hereford and Longhorn cross—15 to Devons, and three to Scotch-Polled. For the past seven years there has also been a champion plate for the best beast in the show, irrespective of age or sex. This has been continuously won by Shorthorns, with the single exception of 1872, when a polled Aberdeenshire steer was successful over all competitors. Thus we see that in an aggregate of 86 prizes 57 were taken by Shorthorns, against 15 by Herefords, and 14 by all other breeds and cross breeds, three of the latter being half of Shorthorn blood. This is even a stronger record than we supposed to exist. As the Smithfield prizes are awarded wholly on the animals as beef, it can scarcely be claimed that these awards were influenced by questions of fashion or pedigree.

Can Glanders be Cured?

To deny that a certain number of cases of glanders recover, would be rather a reckless assertion in the face of occasional instances of recoveries, and of the frequent recoveries from farcy, which is but the same disease with its local manifestations confined to the skin. On the other hand, it must be acknowledged that recoveries from acute glanders or farcy in horses are very rare indeed, and that of apparent recoveries from chronic glanders, a large proportion are unreliable, as the disease breaks out again whenever the animal is put to hard work. In the interval between the apparent cure and the relapse, the horse is allowed by the over-confident owner to mingle with other horses, and many instances might be adduced of the destruction of whole studs by glanders contracted from the subjects of such alleged cures.

Considering this, together with the fact that the loathsome, painful and fatal disorder is communicable to man by inoculation, there is good ground for questioning the economy or morality of treating even chronic glanders. Among the remedies which have at different times succeeded, might be mentioned a long list of tonics; but perhaps the best is the arsenite of strychnia, in doses of five grains daily. Bisulphate of soda may be added in drachm doses, twice daily. The fumes of burning sulphur may be inhaled at the same intervals, for half an hour or more at a time, care being taken not to have it so concentrated as to cause irritation, coughing or sneezing. Finally, the enlargements under the jaws may be rubbed daily with iodine ointment, to be stopped when the skin becomes very tender.

A comfortable, dry box and perfectly pure air, with sound and highly nourishing diet, are all important. In summer, the patients do better in the open air, on rich grass. If kept in-doors, they should have regular exercise, but no work. Such exercise should be given in a private, secluded place; no glandered horse should ever be allowed in a public thoroughfare, since a speck from his nose in snorting or coughing may cost the life of a human being. The need for care of bridles, buckets, sponges, litter, etc., is self-evident.—*Prof. Law, in N. Y. Tribune.*



THE NEW COLEUS.—THE SHAH.

Breaking Colts.

The winter season is a good time for breaking colts. They are now kept up in stalls, and are necessarily handled more or less. They should be petted, treated kindly, and taught that man is their kind friend—not an enemy; that he likes them, not hates them. A colt soon learns to do what is required of him, if kindly handled. But he must be taught what to do just as much as a child. A man might with just as much propriety whip his child for not being able to read after he had pointed out the letters to it, as to whip a colt for not doing what it had never been taught to do. A horse is taught by its senses. He can see, smell, hear, taste and feel, as well as man can. Providence has given him all these senses for his own protection; and through these senses he is educated, trained, or broken, and frequently it is the latter in its worst sense.

The first point is, to overcome the fear of the colt. When this task is done, the worst is half accompl shed. The next point is, to show him you are absolute master. This can be done by kindness as well as by force. One thing only should be done at a time—one thing only should be taught at a time.

Accustom the colt to the bridle and to the saddle. Mount him in the stable, where he can't harm you, and show him he is not going to be harmed. Ride him, and get him accustomed to being guided by the bits, and to meeting teams on the roads.

Put the harness on him, and drive him around some time before hitching him to the wagon; and when he is found to be tractable, finally, with a steady horse, hitch him to an empty waggon. Be careful not to hitch him to an empty load till he learns how to draw by degrees.

We have broken scores of colts by this plan, and never have had one that would balk or kick or try to run away. The colt must be educated slowly, surely and thoroughly, and then he will always do all that is required of him.—*Colman's Rural World.*

The Coleus.

This very handsome plant, of which we are enabled to present the above engraving, will be welcomed by every one who delights in the beauties of the flower garden. It is introduced by Messrs. Ellwanger & Barry, the extensive nursery and seedsmen, New York. The darker hue in foliage plants forms an agreeable contrast to the rich variety of the more gorgeous colors of the flower garden, and this one, possessing as it does some of the most pleasant tints to be found in the foliage plant, will add greatly to the pleasures of floriculture in the season for out-door gardening, and will also be an additional ornament to our window gardens, which render our dwellings so cheerful

Agriculture.

The Utility of Plaster as a Fertilizer.

From an Address by Prof. Kedzie to the Michigan Agricultural Society.

First—Plaster acts best in dry soils and in moderate dry seasons.

Second—It is inactive, or at least fails to give the best results in soils deficient in vegetable mold.

Third—It tends to dissipate the vegetable matter in soils by promoting oxidation.

Fourth—Plaster benefits plants by directly supplying sulphur and lime, and by indirectly supplying potash and magnesia.

Fifth—It fixes or converts the volatile carbonate of ammonia into the non-volatile sulphate of ammonia. Its office in preventing the waste of carbonate of ammonia in the stable and in fermenting manure is much more important than in fixing the ammonia of the atmosphere.

Sixth—It increases the development of leaves and stalks without a corresponding increase of seed. The most careful experimenters assert that it is of no benefit to cereal crops.

Seventh—It is markedly beneficial to clover and all leguminous crops.

Eighth—As plaster is of sparing solubility in water, a comparatively small dressing is as beneficial as a very large one. A hundred weight is as good as far as the crop is concerned to which it is applied.

Ninth—Since plaster is rapidly washed out of the soil by the heavy rains of fall and spring, it is best to apply the plaster to the crop we wish to benefit in the quantity which the crop requires, and at the time it is found to do most good, viz., in early spring growth.

Tenth—There is great diversity of views among farmers in regard to the influence of plaster on Indian corn. Although corn ranks second or third as a market crop, yet for use upon the farm it stands first in importance among our grains. All doubts in regard to the influence of so important a manurial substance on a leading crop should be solved by accurate, careful and repeated experiments by farmers in all parts of the State.

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. Where the "virgin soil" is still unexhausted, and manure is left to rot idly 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 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, 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 were 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, 40 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 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 will there 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 greater 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.—*Am. Agriculturist.*

Sowing Extra Seeds.

A discussion was lately held at one of the English Farmer's Clubs, upon the merit of saving and sowing extra seed. One gentleman present showed heads of wheat, of the year 1870, containing eleven rows on a side; those of 1871 with twelve rows; those of 1873 containing fourteen rows; and those of 1874 with fifteen rows. Sixteen rows had been reached. The varieties displayed were, 1874, Hallet's Red, Hunter's White, and Hallet's Pedigree Golden Drop, and the exhibitor said: "On my poor clay this extra grain produced six quarters and seven quarters per acre," or from 48 to 56 bushels. There was also shown a sample which has been kept in a bag since last August, and you see 105 heads growing on one root, on which more than 8,000 grains were growing at once.

This of course cannot be reached with our systems of cultivation unless in exceptional years, and with extra cultivation, but—and we have often called attention to the fact—we can nearly, if not quite double our yield by carefully selecting our seed and paying proper attention to the sowing and after care.

Let us now see how we may make a beginning in this direction, and that at little extra cost. If you have not got a good fanning mill, it will pay you to take your grain to some one that has a mill that will separate the large plump grain from the smalles and shriveled ones. After having cleaned the grain so far as you can thus, you may still further improve it by selecting a wide barn floor, and casting the grain from side to side, saving only that which flies the farthest, which will be the plumpest and heaviest.

If the seed thus obtained cost you double or treble what it heretofore has, be sure it will pay. If you have any doubts, sow the inferior grain side by side with the other for a series of years and note the results. Keep a correct account, and you will find that the inferior grain will constantly bring you in debt, while the plump grain, getting better and better each year, pays you better. Get pure seed to begin with, of whatsoever kind it may be, and thereafter not only keep it pure, but continue to improve it year after year by selection.

We have heretofore spoken of the means of improving seed corn. Every time the corn is re-sorted you will still be able to pick ont particular ears better than the others. If these be carefullly saved, whether it make a peck, a bushel, or more, and it is planted by itself, you will get returns therefrom far better than from the ordinary plantings, and the longer you continue this course the easier it will be to sort and save thereafter. This pedigree grain, whether corn, wheat, rye, barley, oats, flax or other seeds, when it becomes known, may be sold for five times the price of ordinary seeds, and then the buyer may make money.

Clover and Timothy.

The growing of clover and timothy on the same soil has some good arguments in its favor.

First, we premise that clover is, or should be, in nearly every case, the important crop, and wherever timothy is grown it should be entirely a secondary consideration. There are only enough exceptions to this to establish its validity as a general rule. Considering that we are aiming at mostly clover, there are very good reasons for adding a little timothy. If the aim were otherwise—to make timothy the main crop, as may sometimes be advisable on rich river bottoms, where hay is grown for sale—the addition of even a small amount of clover would be a decided disadvantage. To bring the highest price in most markets, timothy hay ought to be as pure as possible. Clover in a field of timothy grown for market is simply a weed—a useful and beneficial weed for the soil, it is true, but none the less detrimental to the value of the crop.

When clover is made the main seeding crop, the addition of a little timothy is not at all objectionable. The farmer need not delay cutting his clover a day on account of the timothy. Cut the clover when the blossoms begin to open, just the same as if there was nothing else on the field, as, in point of fact, with a good catch of clover there will be little else the first year. Early in the season the young timothy will be small and immature, but what there is will dry much more rapidly than the coarser-stalked clover, and aid in curing the whole into hay. Farmers who grow pure clover are every year plagued by large quantities heating and sometimes rotting in stacks and mows, despite every care in curing. A little timothy mixed with the clover quickly becomes thoroughly dry and aids in absorbing superfluous moisture. Farmers who have dry straw can use it between layers of clover hay in the mow for the same purpose, and with excellent effect.

If timothy is sown in the spring with clover seed, it will not the first or second seasons interfere in the least with the clover. The farmer will get just as much clover as if there were no timothy, and the additional grass will be so much clear gain. If the field is to be plowed the second season, the clover will have benefited the soil just as much as if it alone occupied the soil. The timothy grass and roots only occupy spaces that would otherwise have been vacant or filled with weeds. If, however, the timothy was sown the fall previous to sowing the clover seed, there is danger that it will occupy the land and less clover will catch. In all cases where a crop of clover is desired, six quarts or a peck of clover seed should be sown, and the timothy seed, whatever the amount, be put in extra.

If for any reason the field cannot be plowed after the first clover crop has been taken off, the timothy will then come forward and occupy the land. Sometimes in very dry seasons the clover catch fails entirely, and then it is important that land seeded one or two years before should be kept in grass, and then the timothy with clover comes in good play. Clover is a biennial, dying out after the second year, unless under very exceptiona circumstances. Timothy may not be a profitable grass for farmers with arable land, but it is a great deal better than nothing. It is also better for fields soon to be plowed than blue grass, which will inevitably gradually creep in where dying clover has found no better heir to fill its place. Hence we advise farmers, when sowing clover this spring, to add a little timothy, unless they are quite certain that the clover is to be plowed under the year following. Even then it will do no hurt.—*Rural World.*

Ashes as a Fertilizer.

From time immemorial ashes have been known and valued as a fertilizer. They presumably contain all the mineral substances found in plants, and it is these which are most generally deficient in soils long cropped. Nitrogen is found in unlimited quantities in the atmosphere, and it is now generally conceded that soil, or plants, or both, have some means of utilizing or and retaining it. With this element supplied, the chief probable deficiencies would be in phosphate of lime and potash. Ordinary wood ashes supplies both of these elements, notably the potash, of which, when unleached, it usually contains six to twelve or more per cent. The phosphate of lime in ashes is not in very soluble condition, and it is retained with very slight loss after leaching, while there is also a considerable quantity of potash remaining in leached ashes.

We have found some good farmers say they regard leached ashes fully as valuable as those unleached. They are good farmers, and their conclusion was based on the result of experience. They had found by trial that leached ashes produced even better average results than ashes that were fresh and unleached. Of course there must be a loss of potash and some other soluble elements in the former case, and a result so apparently contradictory to the popular idea deserves examination and, if possible, explanation. We have given this matter some thought, and broach a theory which will at least set our readers to thinking, and may develop ideas still nearer the exact truth.

While potash is always valuable, and particularly so for some plants, the potash in newly burned ashes is not in best condition to be available as plant food. It is just the thing for the soap-maker in its caustic state, as it will then eat the grease and make a good soap. But for growing plants, this caustic potash is not immediately available—its alkali needs to be neutralized, leaving its mineral element in the form of a sulphate or nitrate of potash. It requires no act of man to make this change. Nature and the elements will do it in very little time. Ashes kept in any confined place where a current of air is not constantly blowing over them rapidly absorb moisture, and with that they have the faculty of uniting with the nitrogen of the atmosphere, forming from their potash a nitrate of potash or crude saltpetre, one of the most valuable of all mineral manures, and freely soluble. But this nitrate of potash is unfit for soap making. Housewives have learned this, for they all know that they cannot make soap by leaching old ashes that have become damp from long exposure to the air. Why? They say the ashes have lost their strength; but there has been no leaching, so the mineral element must still be present. Nothing is gone from the ashes. It is only the nitrate acid of the damp atmosphere which has neutralized the alkali of the potash and formed a nitrate. No housewife would think of making soap from saltpetre, yet this is what is attempted unless the ashes are fresh.

These old ashes, damp from long absorbtion of moisture from the air, are just what the farmer wants for his crops. They have lost most of their caustic properties—their "strength" for soap—but they are just what is needed for manure. They give the plant both nitrogen and potash, each in its most available form, and cause growing plants to shoot up with astonishing vigor. They are especially valuable for potatoes, corn, and tobacco. So important do we regard it that the alkali should be neutralized for immediate benefit to crops, that we would have a house built of stone and, if possible, partly under ground for storiug ashes. Here the change to nitrate of potash would go forward rapidly, and once a year when cleaned out it would furnish a considerable quantity of valuable manure. The same building could be used as a smoke-house, and being of stone would not be liable to be burned. Under some circumstances not well understood, moist ashes are liable to spontaneous combustion, and would be dangerous if left in contact with wood.

It is not doubted that fresh ashes will be good manure. This change to a nitrate can and does take place in the soil as well as elsewhere. It is quite probable that it does occur soon after the ashes are washed down into the soil, and only after the ashes are washed down into the soil can they do any good. But the question arises, Does not the nitrogen in the soil uniting with potash detract so much from the soil's fertility, while if the combination was made above ground it would be so much addition thereto? This subject involves many interesting questions well worthy the attention of thoughtful farmers and scientific men.—*Rural New Yorker.*

How to Make a Farm Pay.

The following essay on the above subject was delivered by Mr. Appleton Elsoat, at a late meeting of the Tuckersmith Farmer's Club :—

In order to create a starting point we must have a farm of say 90 acres of clearing. To stock this the farmer should have five cows and their offspring, which will give him five head of cattle to sell at three years old every year, bringing say $30 each. He will also require two mares and one colt one year old and another two years old, and by raising a colt every year he will always have one three years old for disposal, which should be worth $100. He can also fatten half a dozen hogs till they weigh about 250 lbs each, two of which it will be necessary to keep for his own use, while the other four can be sold at $7 per cwt. In addition to this it is also desirable to have some poultry. The butter and eggs will keep the house in groceries and the children in clothes. To keep this stock will require 30 acres, part for hay and the rest for pasture. This will leave sixty acres for the crop.

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

Five head of cattle at $30 per head	$150
One horse at $100	100
Four hogs, weighing 250 lbs. each, at $7 per cwt	70
200 bushels of peas at 60 cents per bushel	120
400 bushels of wheat at $1 per bushel	400
200 bushels of oats at 35 cents per bushel	70
280 bushels of barley at 75 cents per bushel	200
Two acres of potatoes at $50 per acre	100
Total	$1210

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

Ammoniated Phosphates.

The use of prepared fertilizers by the farmers of this State is yet in its infancy. The service which they would render its agriculture is almost unknown, yet if the growth of crops and of live stock is to be carried out so that the land will continue to yield all that it is capable of producing, they must come into the service of those who cultivate it. The experience and successful practice of agriculturists who depend largely upon them cannot much longer be ignored. It is but a few years since their use became a part of the practical work of the farmers, and now it is well understood that their application to the land has become a necessity. Every farmer knows that his live stock increases in size and weight by feeding, because they assimilate in their bones and tissues substances extracted from the soil by vegetable growth. The very grasses, the commonest of all productions of the farm, yield the substances which form the animal, and the greater the production the more they take of these valuable matters in the soil. Some of these substances are of more value than those which form the bone, for the greater part of the matter they contain are composed of the phosphates. So with the grain crops—they too contain a large amount of the phosphates. These substances, when absorbed by the animal, are never returned to the soil, and consequently each year the soil diminishes in its productive power, and the profits of the farmer are lessened. Modern agriculture tells us that all matters contained in the animal comprise a large proportion of phosphates, and when the offal, the bones, and the other parts of the animals that are daily slaughtered for consumption, are applied to the land in a form not too concentrated, they add materially to its productive power. It is these substances properly prepared that take the form of manufactured fertilizers. They have been tried and tested and found of the greatest service in the increased production of the crops where it has been applied to the land. It contains not only a large proportion of phosphates reduced to such a condition as best fits it for the immediate food of plants, but also a large proportion of ammonia or nitrogenized substance which is peculiarly serviceable as one of the substances which enriches the soil that it comes in contact with, and renders it more adapted to grow plants. Hence this substance is an ammoniated phosphate, a form of fertilizer whose action enriches and mellows the land where it is employed, and is not a mere stimulant like plaster. This fertilizer should be one of applications which the farmer may use with profit.

Good Seed.

How important is parental influence! and how unreasonable is the practice (still pursued by some) to sow inferior or unsaleable seed as a matter of economy! Admirably as our dressing machines now separate superior seed, still the more powerful blower which follows soon exhibits a selection of light or comparatively imperfect kernels or seeds. A light ordinary sample of dressed grain passed through a powerful blower comes out in a very improved condition. I invariably blow all my seed and grain, and by doing this with oats often extract one-fourth as unfit for sowing. The same remark applies in some degree to grass and other seeds. In the case of peas or beans, a riddle or screen gets rid of the scri gelings. How forcibly and clearly does Liebig, in his "Natural Laws of Husbandry," enforce the necessity for care in the selection of seed. The development of a plant depends upon its first radication, and the selection of proper seed is therefore of the highest importance for the future plant. Poor and sickly seeds will produce, in a great measure, the same character. The horticulturist knows the natural relation which the seed bears to the production of a plant which is to possess all or only some properties of the species, just as the cattle breeder, who, with a view to propagation and increase of stock, selects only the healthiest and best formed animals for his purpose.

J. J. MECHI.

Weather and Crops in England in February.

The *Farmer* (England) says:—We experienced fairly seasonable weather in February, although the weather was somewhat changeable. A few cold winds helped to dry the ground, and the mildness of the temperature at other times was favorable to the development of young corn and early seeds and grass. Reports from the country show that the weather has been, on the whole, favorable for resuming field work. On light soils the "ground teams" have been afield busy at work ploughing for oats and barley, and doing other necessary field work. The autumn sown wheat is doing well, and the plant is strong and healthy. Wheat more recently grown spears thickly, and will now grow apace if the mild weather continues. Artificial grasses look well, and the pastures are in good condition for this time of the year. What nipping frosts we may yet experience to cut down the thriving wheat plant, none can tell, but we hope for the best. Hay and straw are abundant in most districts, and will last out the winter, and as far into the spring as necessary. Roots also being a good crop last year are generally plentiful, although from some places reports reach us that the wet winter has considerably damaged their keeping qualities. All kinds of farm stock continue to thrive well, except where those lamentable contagious diseases, foot-and mouth and pneumonia, are prevalent. The lambing season progresses fairly, certainly with average success to the flockmaster, who is deeply anxious just now for a continuance of mild, open weather for his flock, both old and young.

Alfalfa or Lucerne.

We have had another enquiry about alfalfa. We spoke before now of the nature and valuable qualities of this forage plant, and treated of its culivation and of its profitable adaptability to our soil and climate, but as every year adds to our readers so many subscribers, who have not had an opportunity of reading the back numbers of the ADVOCATE, we give, as a reply, the following article, in which a correspondent of the *Rural World* relates his experience in raising alfalfa. The State of Missouri, where he made the experiment, differs, it is true, from that of Canada; but there, too, the winter brings its severe frosts, and plants grown in a warm climate, as that of Missouri, are less hardy, and consequently less able to bear the rigours of winter than if grown in the seed bed in our Canadian climate. If our correspondent would sow on a small scale, as an experiment, he might, at the approach of winter, spread over it some litter, as it would protect it from the freezing and thawing that sometimes winter-kill our hardiest plants, and it would nourish the young plants when the winter has passed away.

"Something over a year ago, I ordered one hundred pounds of alfalfa seed from a dealer at Marysville, Cal., to be certain of getting true seed, as I had heard of common red clover seed being sold for alfalfa. I paid 19 cents per pound, gold; and after paying exchange, freight, &c., my seed cost me about 30 cents per pound. I sowed it very evenly with the timothy sower of my Buckeye wheat drill; had the ground well plowed and harrowed; it was again harrowed by the drill teeth, during the sowing; then rolled the land; sowed sixty pounds on eight acres, and forty pounds on three acres; secured a good catch in each case. But the eight-acre lot was a very foul piece of land (bottom), that had for a long time been in the hands of a bad tenant. The season of 1875 was the wettest known here for many years, and the weeds grew twelve feet high, and very thick, but were cut off and removed, when the tops of the alfalfa were found bleached and dead, but the new shoots were appearing around the crowns, and both fields are now (March, 1876) giving promise of a good crop (perhaps two or three) this season. I sowed the seed on the 1st and 6th of April, 1875, and after it came up, but before it made much growth beyond the second or third leaf, we had several severe frosts which did it no harm, although friends in California had warned me not to sow it, as it would come up before the frosts ceased, and frosts would injure or kill it while young. It has stood the winter well. The crowns are shooting out wonderfully, some having twenty to forty shoots. I pulled up a couple of roots yesterday to show to a friend (small sized ones, where there was a thick stand), and they measured two feet nine inches each, going straight down—evidently hunting the level of the mineral fork. As seeing is believing, I send you one with this. I think you will agree that it bids fair to stand frost, drouth or grazing, and that is what is wanted in a forage plant for this region. I can tell better after trying it a few years, but present appearances indicate that two acres well set in alfalfa will furnish more pasturage than two hundred of common wood pasture. N. W. B."

We would add that the seed of lucerne is large—twice the size of red clover—and a greater number of pounds of seed will be required to the acre of clover seed. Another reason in favor of thick seeding is that the stalks are inclined to grow strong, and cattle do not or cannot eat very strong stalks. For this largeness of the stalks the best remedy is thick seeding. Sow not less than 20 pounds of lucerne seed to the acre. If the plants live through the first winter, you need have no fear of its perishing afterwards. It is perennial, and will give three heavy cuttings in the season.

NOVA SCOTIA claims the honor of possessing the first piece of railroad laid down on the American continent. It is the coal road from the Albion Mines in Pictou County to their shipping wharf. When first built the rail was flat with a groove in the centre in which ran the beveled wheels of the engine and cars. The modern rail has since been substituted. There may yet be seen daily plying on this road, the third steam engine that was ever manufactured. It was built by Stephenson in England. His first was an open cylinder boiler, his second was an experiment in introducing tubes into the boiler to get more heat, his third was a perfect machine, after this manner, and was purchased by the Coal Company and sent to Pictou, Nova Scotia, where it may yet be seen in splendid working order.—*Col. Standard.*

Correspondence.

BEANS FOR FEEDING STOCK.—It has long been a study with our scientific farmers as to what kind of food will produce the most beneficial results with respect to particular kinds of stock. If you will give the following detail a space in your valuable columns, it may be the means of suggesting new thoughts to some of your numerous readers.

Last year I had a quantity of beans so badly injured by the early frost as to render them almost worthless for the market I intended them, and feeling rather "blue" over the loss, I mentioned the matter to a friend (an American gentleman well versed in agricultural and horticultural pursuits). He told me that if I would boil or steam the beans until they were thoroughly cooked and then feed them to milch cows, I would be satisfied with the results. I accordingly did so, and, Mr. Editor, the results are as follows: — The cows fed with the beans began rapidly to increase their flow of milk, and up to the present time continue to give a good supply, although some of them will calve in April. One cow gives more milk daily than at any time last summer.

These cows are not stabled, and are fed at present on hay, but during the greater part of the winter were fed with straw. The quantity of beans given each cow daily equals about two quarts of dry beans. Allow me to add that although the quantity of milk produced has amply repaid both trouble and expense, the cows are also in good condition, some of them almost fit for the butcher's stall.

I believe if the beans had been ground, and the meal given instead of the cooked food, the result would have been still more satisfactory.

Although bean haulm produces an inferior quantity of manure in comparison with the straw of wheat, oats, &c., it should be remembered that the beans grown exhaust the soil much less, the succulent stems and leaves absorb much nourishment from the atmosphere, and both carbon and mucilage are restored to the soil by the leaves falling off and decaying.

It is frequently advocated that the soil upon which beans are to be grown should be worn out, but if the advocates of this theory will manure the ground well before planting, and take the trouble to keep their ground well cultivated and free from weeds until the vines begin to blossom, they will find the crop not only greatly augmented, but after the crop is removed, the land will be in excellent condition to receive fall wheat. In fact, some of our "American Cousins" prefer this preparation to a fallow.

According to Einhoff, the proportionate amount of nutriment matter, in comparison with other grain, is as follows:—Wheat, 47; rye, 39; barley, 33; oats, 23; beans, 45, and peas, 49. This calculation is based on equal measurement.

Thus whilst raising a kind of grain highly nutritious, the grower is not heavily taxing the soil, and, by judicious cultivation, the land is made free of weeds, and fitted to receive other grain.

I did not intend to say anything with respect to the growth of beans when I commenced writing, my object being merely to write about them as food for milch cows. Yours, &c., ECONOMIST.

Aylmer, March 22.

WE had purposed to include an article on the cultivation of beans as a field crop in the contents of the next number, feeling assured that its value was not sufficiently appreciated. Would our Aylmer correspondent let us have an article descriptive of his mode of culture.

WINTER FEED FOR HORSES.—I feed my horses sheaf oats, cut with the straw-cutter. It makes a cheap and wholesome feed for horses working on the farm. One good sized sheaf makes a good feed for each horse. The oats should be sowed on clean ground, and more seed to the acre than if sowed for other purposes; they should be cut on the green side. The manger should be made close, and the bottom eighteen inches higher than the floor. I use no other feed for my horses from the time the fall ploughing commences until the month of March, and they always look and feel well. It is also excellent for calves.

C. W. R., Markdale.

We endorse C. W. R.'s recommendation of sheaf oats as provender for horses. We used it for that purpose for years. Oats for this use should always be cut when the grain is merely commencing to change color. The grain having then been fully grown, possesses its nutritive properties, and the straw retains its succulence. Oats so treated, is hay and oats combined. A span of horses that got no other feed, we saw come into this town, heavily laden, and their spirit and excellent condition were clear demonstration of the value of sheaf oats for horse feed.

ILLNESS IN JUVENILE SWINE.—I have for some years back lost several young pigs by some disease that I do not understand. When from two to four weeks old they gant up in the belly, their ears hang, their breathing is quick and short, and they die in one or two days. If you can tell me the disease and what will prevent it, you will greatly oblige. My pigs are the Improved Berkshire breed. In '73 I fed pea meal, and last spring I fed shorts, but with no better result. SAMUEL STAPLES.

Cavan, March 22.

The disease of young pigs may be caused by confining them to too great a sameness of diet. Were you to give them some other food, it might have a good effect. Cooked potatoes might be of service. It would be a great change, and especially if they be in any way costive, cooked roots would serve them. Or the cause might originate from the sow. Young pigs sometimes die in consequence of their dams being in too high condition. We would thank any of our readers, who have experience in the matter, to write to us about it.

ON THE MODE OF TREATING COWS.—Kindly give me some information on the treatment of cows a short time before and after calving. What is to be done if they do not "clean," as the term is with us farmers, and much oblige, etc., S. E. HUNTINGTON.

[The best advice or information we can give on the above subject is to take good care of your cows before and after calving. Keep them in a healthy, thriving condition up to the time of calving as well as after. There is a heavy strain on the system of the cow in calf for two or three months prior to calving, and hence the necessity of great care and good feed, with a warm stable or tight enclosed shed, which will protect them from the cold and storms. Give them plenty of good hay, with some roots and bran or meal. Cows treated in this way are seldom any trouble. At the time of calving, keep them as quiet as possible, and give them warm bran mashes, with luke warm water. On no condition allow them to drink cold water for a couple of days. Some dairymen give their cows a half-dozen or more ears of corn that have been scorched or smoked slightly over the fire, or a sheaf of oats that has been treated in the same way. But should the after-birth not come away properly, the best thing to be done is to let nature take its course, giving the cow warm feed, with some boiled flax seed and a little saltpetre. Being disturbed and worried at the time of calving, and allowing them to drink ice cold water is the frequent cause of trouble.]

ROTATION OF CROPS.—I wish you to publish in your paper a regular rotation of crops for general farming purposes. ALBERT E. MENTHORN.

Oakwood, March 22.

ROTATION of crops has been already fully treated in our columns; but as there is a numerous addition to the list of our subscribers, they who have been reading our paper but a comparatively short time may need information on some topics that we had previously written of. We will, therefore, take up the question in the May number. Meanwhile Mr. M. may, as a commencement of the rotation system, sow a plot with peas and oats mixed. They make a very good cattle feed before corn can be sufficiently grown for cutting. We have not found a better summer feed for the farm stock, and, more than others, for milch cows. The varieties of both that give most fodder should be selected if they can be had. The earliest soiling in the season is fall rye, but any one commencing in spring or summer, without previous fall preparation, cannot have the profits of soiling earlier than the oats and peas are grown.

ODESSA WHEAT.—In your last ADVOCATE you speak of the Odessa wheat. Last year I procured four ounces of it from the northern part of Wisconsin, I sowed in a field with other wheats, it stood up first-rate, it filled well, did not rust, the quality I believe to be excellent, it yielded considerable better than other wheats in the same field, I cannot say exactly how much more as I did not measure the land sown by either variety, but the four ounces of Odessa yielded five pounds of as good spring wheat as I ever saw; every one that has seen it tries to get a few grains, in fact I would not have a grain to sow if I had not put on the breaks pretty strong. JAMES SHERLOCK, Thamesford.

SUPERPHOSPHATE.—In the last number of the FARMERS ADVOCATE I saw an article on Brockville Superphosphate. I have used the above superphosphate for the last six years; it has given me good satisfaction, when worked in the soil, but it has not done so well when applied as a top-dressing. I find it of great advantage on land that I am seeding down, even if it is in good condition; the young grass will get such a start that it will live through a drought, I will also get a good crop of grain. I find it a particular advantage in market gardening, as it will cause vegetables to ripen a week or ten days earlier. You know when you were here last year that my potatoes was that much ahead of any you had seen. I would like to see a number of your readers give the Brockville superphosphate a trial this spring, and report the result in the ADVOCATE. In giving it a trial, I would advise them to use a barrel. One pound or five pounds is too small a quantity to be a fair test. Let them try every alternate row on potatoes, corn, or a ridge of grain. I have used other superphosphate, but it has not given me the satisfaction that the above has.

Brockville, March 15. ALBERT ABBOTT.

LANDS OPEN TO SETTLERS.—Observing your request for subscribers to write to your valuable paper, I concluded to pen a few remarks, for which I hope you may find room. There are many young men of moderate means, who do not know exactly how to procure a home, thinking there is no possibility of doing so in Ontario. To such, I would say that there are still places in this Province, in which they could secure comfortable homes, without any very great expenditure. There are farms in this country, which, if cleared and properly cultivated, would vie with any in the Dominion. This country, in the vicinity of Colpoy's Bay, has been vastly misrepresented, by individuals coming from old settled countries, and expect to find things the same as in townships which have been settled for forty years. Others get discouraged on seeing so much rock, as there is along the shore, and never think of travelling inland at all; which, if they did, they would find land that would satisfy their highest expectations. I would advise people wishing to settle in a country, where they can have their children around them, to give this country a trial, before going to those far-off places, of which we hear so much. THOMAS F. ROTHWELL.

Albemarle, March 12.

BRITISH COLUMBIA AHEAD.—We have raised 900 bushels of turnips per acre; we have seen a field yield 1,000 bushels. We have had reports of 11, 12, and 13 hundred bushels of turnips per acre, but Mr. Adam Innes, of Longley P. O., British Columbia, writes to Mr. Shearer, of Westminster, saying that he purchased seed from the Agricultural Emporium, London, and harvested a crop of 1,600 bushels per acre. He measured one rod, and they weighed 600 lbs., equal to ten bushels. He has sent again for more seed for 1876.

SUPERPHOSPHATE FOR FRUIT TREES.—The following communication from Mr. Cowan, in reply to a query from one of our correspondents, forwarded to him by us, needs no comment—it speaks for itself: Your postal of the 8th inst. is to hand. Without knowing precisely, I should judge that superphosphates would be good for fruit trees, if not put on too strongly. Bone dust cannot be injurious if put on in the same proportion as would do for a field crop. I fancy parties use about 20 times as much, and hence the mischief. This is simply my opinion, without a practice or test. A. COWAN, Manager B. C. and S. W.

Brockville, March 10.

ALFALFA OR LUCERNE.—Having noticed in the ADVOCATE from time to time some inquiries about alfalfa, I thought I would send you what information I could upon the subject. I have seen it grown in northeastern California and in southwestern Nevada, with very good results. The winters of those places are as cold as that of Canada, but much shorter. A good catch of alfalfa means grass forever after. The older it gets the better it is; I have examined its roots, and find them as large as manigolds; it sends up a large, thrifty bush of clover; it is the first thing green in the spring, and the last in the fall. It is also tenacious of life. I have known it to live in a milking correll for years, and to grow up through the dust from morning to night. It is very tender the first year, and will heave out if sown in a place where water and ice stands all winter. I would advise sowing it on the dryest land that might be found on any farm, as it has long since been admitted that the roots go to water. That is the secret of its great value in dry countries.

Hollin, March 9. VANNESS.

From the number of inquiries we have had about alfalfa, we expect this valuable forage will he tried in may parts of the Dominion, and if it realizes our expectations, it will be a very great acquistion to farmers. The only doubts we at all entertain is as to it its hardiness before it has established sufficiently in the soil to resist our Canadian winter. The suggestions on the subject in the letter above, are very seasonable. In another column will be seen a short article relative to it. Thanks to our Vanness correspondent. We hope to hear from him frequently. We are desirous that the ADVOCATE should be a medium of communication between farmers throughout the country.

CHINESE YAMS.—I have been asked to give some explanations how the Chinese yams are cultivated. If you plant the tubers in the spring they will have small roots in the fall. I leave mine in the ground all winter. The first year's growth will frizzle up, a new sprout will spring from that one and become a large yam in the fall of the second year, and if I leave them in the ground until the third or fourth year, they will be fine large yams. The upper part, which is called the neck, should be cut off close to the yam. I cut them in small sections, 1½ inch in length. I plant them in drills six inches apart, in the drill I cover two inches deep; I do not let any fresh manure come in contact with them at the time of planting. They should not be planted in a deep soil, as it is difficult to get them out. They should be taken up about the last of October for winter use. I have some tubers and roots to spare. They have done well with me. G. EMBURY.

Thomburg, March 1.

SMUT IN OATS.—I would like to know if you could tell me what is the cause of so much smut being in the oats the past two or three years; or if you could tell me anything that could be done to mitigate the evil. I will look for an answer in your next issue. J. BAIRD, Burns P. O.

The unusual humidity of the past season has been the cause of more smut than is usual in our generally dry climate. Excessive moisture promotes the growth and dissemination of rust, mildew and smut. The same remedy as for smut in wheat will serve for smut in oats. Steep the seed in strong brine, this will kill the seeds or sporaeles; then spread it on the barn floor and mix it with quick lime, to dry it before sowing. We treated the subject of smut in wheat in a previous number of the ADVOCATE.

REPLY TO SUBSCRIBER, ST. LAWRENCE P. O., N. Y.—A subscriber of Jeff Co., N. Y., will see in the April number of our Journal a brief notice on barley, its yield, &c. It had been written before our receipt of his letter. A farmer assured us, a few days since, that he found it the profitable cereal grown on his farm. New York farms may produce as large a yield, but of this we cannot give an opinion; but in quality, our Canadian barley is much superior to any other offered in the U. S. markets. We hope that with the improvement in agriculture, the yield in barley and other farm products will increase at least 25 per cent. in a few years.

NEW WHEAT.—In your seed report for March, I noticed the several varieties of wheat recommended. Permit me to give you a description of a new variety of wheat which I introduced from Minnesota some three years ago. I commenced with 100 lbs. at a cost of $11.25. Sowed that year, and only threshed 16 bushels. Sowed the 16 bushels the following year, and sowed Fife wheat in another part of the field; had 23 bushels per acre of the new variety, and only 11 per acre of Fife. I did not sow any other variety last year, and threshed 302 bushels of clean wheat from 11 acres of fall wheat stubble land. Also last year I sold several small lots, which have done well as far as heard from, averaging from 15 to 22 bushels from 1 bushel sowing. It is named the Minnesota Brooks Wheat, has taken the lead in prizes wherever shown, weighs 64 lbs. to the bushel, and makes good flour. I herewith send you a part of a head, as you requested, not being able to find a complete head.

March 22, B. H. ROSSER,

FROM OUR MICHIGAN CONTRIBUTOR.—This has been indeed a very unusual winter for our climate, and, as a consequence, business of all kinds has suffered. The wheat sown last fall got a fine start, and showed, up to the middle of January, that we might expect a good crop the coming season. But the frequent freezing and thawing has hurt many fields very much, which, with the most favorable circumstances, cannot now wholly recover. On the whole, however, our farmers have little cause for complaint. The fruit crop of last fall was unusual in quantity and quality, and commanded a good price. Pork has been very high, and has brought to the pockets of the farmers of Senawa County a very bountiful return for the cost. The Senawa Junction Farmers' Club has been making reports of the actual cost of farm products, through committees appointed on the various crops. The report on fattening hogs showed from the true weighing every week that poor corn which was not marketable at all was made to pay 27c per bushel fed to hogs—at the prices pork has commanded. The oat crop showed a cost of only 16½c to 18c per bushel; corn, from 9c to 15c in the crib. This club held its third anniversary meeting a couple of weeks ago, and, from the report of its historian on that occasion, shows remarkable results. The benefit has been of untold amount, and with no signs of abatement, far out-doing the results of any grange in our county. This we are sorry to have to acknowledge, for we had looked to the grange movement for a grand result to the interests of agriculture. There seems to be a general lethargy gradually but surely spreading itself over the entire organization—a sort of general disappointment in what was expected of it at the beginning. There was no doubt an over estimate on the part of the agitators of the idea, and farmers got their standard of money returned too high. They were induced to believe more than was possible to accomplish, hence their disappointment. The social benefits of the grange cannot be as well appreciated by the masses as is that of the club, for the meetings are private, and no reports of their work made public, and, as a consequence, benefiting only the few, while the club has thrown open its doors, and all its discussions have been reported in the country papers every week—the one having lighted its candle and placed it in a candlestick, while the other has put it under a bushel. We hope there may be some changes in the working of the order that shall revive it, and yet prove that there is good in it. There is now on foot the organization of a county farmers' institute, to be held quarterly at the city, which promises to bring good results. We hope it may.

Adrian, Mich, March 8th, 1876.

RYE AND OATS FOR HORSES.—I have been in the habit of sowing spring rye with oats, and find it pays well, as there are 60 or 70 bushels to the acre. It makes good cut feed for horses. The rye straw is strong, and the oats are better on that account. Two bushels of rye seed mixed with the oats is enough for eight or ten acres. Mix the seed on the barn floor. Both ripen well. It is best to cut green. As one of your subscribers, and getting valuable information from you, I wish to say you may recommend this mixed crop to any person. I have tried it five or six years, so I can speak from experience. THOMAS J. DUNN.

Hope, March 22.

WE have made trial of several mixtures of grain of the different varieties, and, in every instance they confirmed our opinion that when mixed the yield was greater than that of either kind separately; but we have not tried the experiment of sowing rye with oats, as recommended by our Hope correspondent. The result of his experiment, (if we can use such a term for a course pursued for six years) will, we expect, induce many to follow the example. The mixed grain must make good feed, as each, by itself, is rich in nutritive properties. Taking it on the whole, there is no one grain for the horse to equal oats—nothing to give him such high spirit and power of endurance.

ROARING IN A HORSE.—Could you, or some of your correspondents, tell me, through the columns of your paper, some cure for what is generally known as roaring in a horse. I have a horse—a very good working one, too—that is troubled with it, especially in winter. When on pasture, it is scarcely noticeable. F. ELLIOTT,

Richmond Hill, March 22.

In another column Mr. E. will find the information he asks for.

A Farmer on Protection.—I take the liberty, Mr. Editor, of asking you to give me a small space in your valuable columns to try and show that protection is the best policy for the farming interests in this country. I will do it under two headings. 1. By reference to some of the strongest free traders who advocate protection in some cases. 2. By showing what things the farmer most requires protecting. Under the first heading, I shall refer to Canning, J. Stuart Mills, and the Westminster Review of January last. Canning, at the time when vessels were admitted free from Holland into English ports, saw the folly of it, wrote to the minister at the Hague, and said we will tax the Dutch flat-bottoms equally as they tax our vessels. John Stuart Mills says in certain cases a new and rising country requires protection, to enable them to free themselves from older countries. His reasons for saying this are, that protection encourages home manufacture, and partly excludes foreign manufactured goods. Are we a young and rising country? Most decidedly we are. I say that is conclusive evidence that the greatest free trader of the present day advises protection for this country. As far as I can make out what the policy of the Government is, they claim to follow John S. Mills, and if they do they must have forgotten the part that refers to Canada. The Westminster Review says: "We hope we shall not be premature in pointing out the changes in this direction, (referring to free trade), when we read in public print that tires are being delivered in Sheffield far lower than they can be produced there; that American cotton is sent for sale to Manchester at 13d a pound, while the same quality cannot be produced there under 13½d. (Now I am coming to the point which affects Canada.) That a Halifax carpet factory has removed to the United States, where they expect to make their goods more quickly and profitably." This paper is the chief organ of the Cobden and Bright free trade principles. If we go further into the reasons that made the Halifax carpet factory remove to the States, we shall find that they had a heavy duty to pay for all goods sent by them to the States, that the States could send goods in here at a very slight duty, and supply us with their surplus stock, which of course they sell cheaper than our manufacturers can sell their main stock, with no outside market open for their surplus stock. What benefit will they get now? They will be able to sell their main stock for a good price, and send their surplus supply of second-rate stuff to undersell our first-rate, and everyone knows that in a country like this, where money is scarce, the cheap article has to be bought, however bad, that is by the mass. Ought we to let that go on? No; but the question is how are we to stop it. By protecting our own manufacturers, and then we should have competition enough in this country to get the good article at the price we now pay for the inferior. There is another great point that must not be lost sight of by the farmers, and that is how much each family dependent on a manufacturing business is worth to them per annum. It is worth at least $200. So if a factory with fifty families dependent on it leaves the country, it is a loss of $10,000 to the farmer alone, without the loss to other businesses, and it is not a very large business that has fifty families dependent on it. If such a business as Redpath & Co., who employ 300 hands, were to leave this country it would be a loss to the farmers of $40,000 per annum. There is not the slightest doubt that they must leave; they have shut down now and will not open again with the present tariff. I would much rather see them leave and take the hands with them than shut down. Because if they shut down the hands are thrown out of employment, and have to be kept by charity, which is the heaviest tax possible, as we never know where it is to end. At the present time we clasp the Americans to our breasts and say we will treat you as brothers, though you treat us as enemies. They put heavy duties on our produce and we put light duties on theirs. Does that seem reasonable, when we are just as able to supply ourselves as they are. If we had a protective tariff we should not see in every paper we read thousands of dollars voted as bonuses to factories, because they could stand without them. At the present time farmers voluntary tax themselves by giving bonuses, and the Government are doing their best to tax us heavier by driving the people out of the country who we expect to buy our produce. It is a false idea to suppose that if we retaliate on the States they will still put on higher duties, as they know full well that if we build up a manufacturing country we shall not care for them; we shall have our own country to supply, as well as Europe. Our cattle trade will not be hurt, as we can now send them to England, both dead and alive, and make more on them than in the States. Our barley trade will not be hurt, as the States are only to glad to get it, as they cannot grow good barley themselves. Our horse trade will not be hurt; as the time has come when we can profitably ship them to the Old World. I do not know of a single thing that is produced on our farms that will be hurt by protection, and I will go on to show many things that will be directly benifited as well as all being indirectly benefited. We should have a market at our doors, instead of having to ship everything. What I have said about the Halifax carpet factory applies as much to nearly all the factories in Canada, and far more to some. Brother farmers, let us come forward like men, hold our own, and say we will no longer give bonuses to manufacturers if the Government fights against us. The Government is gradually bearing the farmer down, and when he is down the country will be down. Let every Grange in Canada put a bold face on and show what their good is.

Westminster. A Farmer.

Free Trade vs. Protection.—Do the farmers of Canada understand what the manufacturers are aiming at when they hold meetings to urge the Parliament of the Dominion to afford them more protection to manufacturing industry? Either these manufacturers have, of their own accord, engaged in some business naturally unprofitable under their circumstances, and now want the Government to interfere in their special favor, and make it profitable to them by artificially raising their prices, or else they are engaged in profitable undertakings and desire the Government to make them more profitable by legislation for their special benefit.

Free competition is the mother of skillful work and moderate profits. But the manufacturers seek the high profits of monopoly; and they urge the Government to shut out by higher duties those commodities which can be produced cheaper and better abroad than in Canada. The manufacturers want the monopoly of the home market, whatever this may cost the rest of the country.

Are the farmers content with the home market for their crops? Do they not know that their best markets are abroad; and that the foreign consumers of Canadian farm produce are the more able to buy and pay a full price, if their manufactured goods are freely admitted into the country from which they purchase their food?

We farmers are scattered all over Canada—not assembled in a few large towns—and our occupations afford few facilities for uniting to look after our common interests. The master manufacturers can meet together and plot, and we cannot readily combine to counter plot their selfish schemes for enriching themselves at the cost of all other classes. Yet something we can do: we can combine in petitions to Parliament, protesting against every cunningly-devised taxation or duties that would raise the price of manufactured articles for the special benefit of the manufacturers, at the cost of the consumers and purchasers of their articles.

Moreover, we must watch and question those busy and scheming politicians who are so anxious to represent us in Parliament. Examine their promises, speeches and votes. When they talk of protecting the industry and developing the resources of the country, ask them if they will vote against every attempt to foster particular interests by taxation and duties which raise the price of the commodities they deal in on all other classes, thus taxing the whole country for a special interest.

Cheap goods are not an evil but a good to all except those who sell them, and no one else complains of their cheapness. But there is another question which the manufacturers continue to mix up with this question of cheap foreign goods. The narrow and erroneous policy of a neighboring people seeks to exclude our produce from their country by high duties on them. No one can dispute the right of the Canadian Government to retaliate against this selfish and illiberal policy; but I believe it will be found that, even under these aggravated circumstances, we are the gainers by adhering to our present policy of comparative free trade, and would gain more if we made our trade with the whole world freer than it is.

The grangers should remember that low duties encourage importations and facilitate the payment of good prices for their exported crops—that low duties yield a large revenue to Government, encourage large importations, and secure cheap goods to the people at large. After paying the taxes necessary for the support of the Government, what money is left to us is our own, and we have a right to spend it in the best and cheapest goods we can find, whether manufactured abroad or at home. Every grange in Canada should unite in protesting to Parliament against all this miscalled protective legislation as hostile to our interests and our rights.

John Granger.

Garden Orchard and Forest.

Notes from Vick's Floral Guide.

The principal insect enemies of the rose are the green-fly, the leaf-hopper, sometimes called the Thrips, the rose-slug and the rose-bug. The green-fly is easily destroyed by syringing the infested plants with a weak solution of tobacco; take a quantity of tobacco or tobacco stems and let them stand in water until the strength is soaked out of them. If the water is too strong it will burn the foliage and turn it yellow; therefore, before using it, it should be tested by dipping into it some green foliage, and if it burns it is too strong, and must be reduced by adding water. When sufficiently diluted, the plants can be syringed with it.

The leaf-hopper can be destroyed by the same means, but we have always preferred to use a weak solution of whale-oil soap for it—say one pound of soap to five gallons of water. The plants can be syringed with it, and care should be taken to throw the water upwards against the under side of the leaves, as well as on the upper side, as the insects are usually in greater numbers beneath.

The rose-slug, which eats the upper surface of the leaf, and is often very destructive, can be effectually destroyed by the use of whale-oil soap, as described above. Our own experience is that, with good soil, good cultivation and the timely and proper use of whale-oil soap, there is as little difficulty in raising roses and keeping them thrifty, as there is in raising beets or turnips. The rose-bug can only be successfully attacked by hand-picking or brushing off into a dish of water, where they can be scalded or otherwise destroyed.

Air-slaked lime and carbolic acid seem the most effective in destroying the cabbage worm, that has lately taken to eating mignonette. The pansy can only give its best flowers when the plant is young and vigorous. It does not flower well in hot and dry weather. If you get plants from the florist, see that they are young and vigorous—the younger the better. Do not pick out the oldest, largest plants; if you do you will make a bad selection.

Sowing Flower Seeds.—The time of sowing the seed is of great importance, it being better to wait till all danger of frost is past and the weather is mild. The depth of sowing varies with their size, some of the larger seeds, as lupins, sweet peas, nasturtiums, &c., may be sown three-fourths of an inch deep; asters, balsams, &c., half an inch; mignonette, &c., quarter of an inch. A great many require to be merely covered, and others that are very small require to be sown at the actual surface, a slight pressure being sufficient to imbed them properly.

The Apple Tree Borer.

A writer in the *Turf, Field and Farm* says:—It is almost impossible to save a tree unless taken early. At first the insect may be taken out with the point of a knife. If deeper in the wood, it may be extracted by a flexible barbed wire, or punched to death in its hole by a flexible twig. To prevent the insect from emerging and laying its eggs, it is doubly important that this be done early in the Spring; but the trees should be examined at other periods of the year.

The perfect insect is a brown and white striped beetle, about three-fourths of an inch long, which flies at night. It deposits its eggs late in the Spring or the first of Summer, in the bark near the surface of the ground, and sometimes in the forks of the branches. The first indication of its presence is the appearance of numerous small holes, as if the bark had been perforated by buckshot. These holes will soon become visible by the ejected dust. The best account of this insect is given by Dr. Fitch, the gist of which is herewith appended.

The beetle goes abroad in June and drops its eggs under the loose scales of the bark, low down near the surface of the earth. The worm which hatches therefrom eats inward through the bark

until it comes to the wood. It there remains feeding upon the soft outer layers of the wood, and thus excavating a shallow round cavity under the bark, the size of a half dollar; though where two, three or more worms are lodged in the same tree, as they always preserve a narrow partition between their cells (one never gnawing into that of another), the cells, by crowding upon one another, become of an irregular form, and almost girdle the tree. The cell is always filled with worm dust, crowded and compacted together, some of which becomes crowded out through a crack in the bark, or through a hole made by the worm; and it is by seeing the sawdust like powder protruding from the bark that we detect the presence of these borers in the tree. The worm continues to feed and enlarge its cell under the bark for about twelve months, until it has become half grown, and from a half to three-fourths of an inch in length. Its jaws have now acquired sufficient strength for it to attack the solid heartwood of the tree, and it accordingly bores a cylindrical hole from the upper part of its cell, upward to the solid wood, to a length of three or four inches or more, this hole inclining inwards towards the centre of the tree, and then curving outwards till its upper end again reaches the bark. It then stuffs the upper end of this passage with fine chips or worm dust, and its lower end with short fibres of wood, arranged like curled locks of hair, thus forming an elastic bed on which to repose during its pupa state. These operations being completed, it throws of its larvæ skin and becomes a pupa, usually at the close of the second summer, or about fifteen months after it is hatched from the egg. In this state it lies through the winter, and changes to its perfect form the following spring, but often continues to be dormant several weeks after its final change. Awakening then into life and activity, it crawls upwards, loosening and pulling down the chips and dust that closes the upper end of its burrow till it reaches the bark. Through this it cuts with its jaws a remarkably smooth round hole of the exact size, requisite to enable it to crawl out of the tree. The sexes then pair, and the female deposits its crop of eggs.

Various remedies have been prepared to prevent the beetle from laying its eggs in the bark. A mixture of tobacco water, soft soap, and flour of sulphur, applied to the bark in the form of a wash; or soft soap alone, used in the same way, has been attended with partial success. The application should be made towards the end of spring, and repeated for a few weeks if washed off by rains. But the best and most perfect remedy is the examination of the tree, and the destruction of the young insect as above described.

Liquid Grafting Wax.

Mr. L. Houme Lefort invented, not many years ago a grafting composition which is very cheap, very easily preserved, and keeps, corked up in a bottle with a wide mouth, at least six months unaltered. It is laid on in as thin a coat as possible by means of a flat piece of wood. Within a few days it will be as hard as a stone. It is not affected by severe cold; it never softens or cracks when exposed to atmospheric action. When applied to wounds in trees, it acts as an artificial cuticle. After a few days exposure to the atmosphere in a thin coat, it assumes a whitish color and becomes as hard as stone, being impervious to water and air. As long as the inventor kept the preparation secret, it was sold at very high prices. It is made after this formula: Melt one pound of resin over a gentle fire; add to it an ounce of beef tallow, and stir it well; take it from the fire; let it cool down a little, and then mix with it a tablespoonful of spirits of turpentine, and, after that, about seven ounces of very strong alcohol (95 per. cent.), to be had at any druggist's store. The alcohol cools it down so rapidly that it will be necessary to put it again on the fire, stirring it constantly. Still the utmost care must be exercised to prevent the alcohol from getting inflamed. To avoid it, the best way is to remove the vessel from the fire, when the lump that may have been formed commences melting again. This must be continued till the whole is a homogeneous mass, similar to honey.

This is undoubtedly a valuable recipe. I have heard that gum shellac, dissolved in alcohol, was one of the most useful of preparations that a gardener could have, and it should always be kept on hand and used like paint, to coat over any wounds in trees. In budding, it is a good saving of labor when you wish to cut away branches to give the new one from the bud an opportunity to grow, as it excludes the air until the wound heals.

Orchard Grass.

We have had more enquiries about orchard grass. Is it hardy? Is it good for pasture? Is it good for soiling and for hay? It is hardy—it is indigenous in Canada, and so it must be well able to endure the climate. We have not seen the Cocksfoot (orchard grass) in some years—not since we left Europe—till we met it growing among other natural grasses and weeds in the angle of a snake fence, here in the county of Middlesex. It had been self-sown, grown without culture, eaten close and tramped by the hoofs of cattle; it had borne the scorching heat of the dog-days and the frigid cold of the winter; and despite all, it continued growing and flourishing. It is a perennial, not short-lived, as some other grasses, and maintains possession of the ground till ploughed or dug out. It is good pasture. It starts earlier in its spring growth than any other grass. After eaten close to the surface it is again fit for pasture in a very short time. It stands the drought remarkably well, and it bears frequent cropping or cutting. It is succulent and nutritious, but must not be allowed to grow too strong before it is cut down, as the stem might become hard and tough. If cut for soiling, it will give two or three heavy cuttings in a season. A farmer who grows it says he can keep a cow on a half acre of orchard grass during the summer, and have some hay for winter use on the same plot of ground. This must, we think, be taken to be an exceptional case. The farms must be few on which the yield of orchard grass, though more productive than any other grass, will afford pasture for a cow to the half acre, and have some to spare. If cut for soiling it will do all that is claimed for it. It makes good hay, but it should, for hay, be cut before it is ripe, and then the stalk becomes hardy and fibrous, and is less nutritious. Ripening the grass is, besides, injurious to the future growth of the plant.

English Oak Trees.

We have before us a statement of an English planter that he has two acres of oak timber, planted in 1845, now with trees fifty feet high. We have seen English oak do better than that in this country, and believe the timber, from some few observations we have made, to be better than any of our own species. We believe the time will soon be when a plantation of English oak will be one of the most profitable parts of one's farm. In less than ten years it would play no small part in fencing.—*Gardener's Monthly.*

I find that all tar compositions do more harm than good. They form a waterproof covering, it is true; but if the surface is broken and the water once gets into the wood, the tar covering prevents its exit.—*English Mechanic.*

Poultry Yard.

Eggs and Chickens.

An egg is a little house filled with meat, containing also the germ of a new life, provided with an air-chamber for the perfection and vitality of this life. (I had been told that an egg without an air-chamber visible would never hatch; I tried it, but it did hatch.) An egg consists of white and yelk. Properly speaking, there are two albumens or whites in a newly-laid egg. The first is thin and watery; the second consists of a thicker fluid, more jelly-like, which serves to hold the yelk in place, which in a new egg is the centre of the whole mass, with two treads reaching out lengthwise through the second albumen. The shell is furnished with minute pores, which convey a certain moderate degree of moisture and air to its contents, which keeps the embryo germ in a natural state. The shell is lined with a thin skin, which in all fresh eggs is of a delicate sea-shell hue. During the process of incubation their skin thickens and toughens, and grows stronger than even the shell itself, holding the moisture about the growing body. This skin is soft and elastic, while the shell grows more stiff and brittle and smooth. The air-chamber is situated between this skin, or sack, and the shell, and in a newly-laid egg is about the size of a three-cent piece in some; in others not larger than a pea, while in others it cannot be discerned; still the egg will hatch. If an egg be taken in the hand, between the thumb and two forefingers lengthwise, placing the thumb on the small end and the fingers on the large end, and turned slowly around in front of a strong lamp, or candle-light, the air-bladder will be discovered. In the course of a week this air-bladder enlarges, and at two or three weeks attains the size of an old-fashioned penny. Such eggs will be thin and watery, not fit for boiling, and their incubation very questionable. It would be well for those purchasing eggs of precarious dealers, to give a thorough examination before setting, when they purchase them for fresh eggs. Eggs will hatch when three or even six weeks old, in cool weather, if only fertilized and not allowed to become chilled; but, as a general rule, success is not certain with old eggs.

There is no established theory whereby the sex of the egg can be determined before hatching. I had heard that if the air-bladder be directly across the top or crown of the egg, the chick would be a cock; if considerably at one side, the result would be a pullet. I experimented on this theory pretty effectually the past season. I set only those eggs having the bladder decidedly at one side, discarding those directly over the crown. The result was as near and decidedly one-half male, and the other female, as one might wish, where I expected only females. I exchanged a sitting with one of my neighbors, giving him what would be termed all cock eggs, with the air-bladder evenly balanced all around on the top. He hatched five chicks, only three of which proved to be cocks. This was farther and decided evidence, which went to convince me that no dependence whatever can be placed on the bladder theory. This experiment was tried with Brown Leghorn eggs, and the parent birds were both young. Some years ago I raised a brood of twenty-three Spanish chicks, twenty-one of which proved to be pullets. I did not pick the eggs, but set them as they were laid. I have never met with such luck since. I had a a fine flock of breeding hens, and a magnificent cock. Both hens and cock were of an age—two years. I find, where a majority of pullets is desired, it is more successful to breed from old birds, and from those as near of an age as possible. They give finer, stronger, larger chicks, that better withstand the diseases to which early chickenhood is more or less subject.

In selecting birds for breeding purpose, secure only the very best, discarding all weakly ones and those with bad or indifferent points. Mature birds give larger eggs, and the chicks will be more uniform in size and plumage. When long silvery hairs are discovered extending beyond the feathering on the thighs and lower part of a bird, be assured it is a direct indication of health and hardiness. I have observed that long-pointed eggs do not hatch as much per cent. as short, round ones; they are very seldom fertilized. Why it is so I have never yet been able to ascertain for a certainty, but have attributed it to some weakness of the bird producing them, which renders her incapable of breeding. The shape is rather unnatural. Eggs that are gathered for the purpose of setting should be as even-sized as possible, and if placed under the hen before the animal heat escapes, will hatch a day earlier, and produce better, stronger birds. Where one has a breeding flock of twenty or more hens, this can readily be done. Birds laying eggs for hatching should not be kept in too high a condition or forced. If so, the eggs are not so wall fertilized; the shells are apt to be thin, and consequently cannot go through the period of incubation.

Hens should run at large as much as possible where it is convenient, and they are not in danger of the approach of breeds different from their own, or exposed to an indifferent cock. This must be avoided. With the black Spanish, one active cock is sufficient to impregnate the eggs of twenty hens; the smaller, early maturing breeds, about eight or ten is the limit.

Turkeys and Ducks.

The sunflower seed is used extensively in the best Western henneries for fattening turkeys and ducks. It has been observed that fowls carefully fed on this seed and fattened for the holiday market in the Western States, are tenderer, sweeter, and command a higher price than those which are fed on other food.

No soil or climate in the world is better adapted to the cultivation of the sunflower than that of California, especially the southern counties. Fine hedges can be made of the plant as well, and the seed may be used profitably for feed. People who complain of the lack or high price of feed for their fowls, would do well to try this experiment.

LAMENESS IN FOWLS.—In the March number of last year I enquired through the ADVOCATE regarding lameness in fowls. I read a response, but still found my fowls dying after trying remedies commended. I noticed a black gummy substance ooze out of the openings between the scales on the legs. I tried an experiment on a hen that I gave up as lost: I took a sharp knife and cut all the sca'es off the legs, wrapped the legs in cotton-batten and moistened the batten with coal oil. The hen got well, and that is the only hen that recovered. Perhaps some of the many professional poultry men, or some of the secretaries of poultry exhibitions would give us farmers a little information on this subject; they might do good. I send this, if you think the information is worth publishing print it, if not burn it. JAMES SHERLOCK, Thamesford.

PEKIN DUCKS.—If you can give me a little information in your next issue about the Pekin ducks, their qualities, price, &c., and where obtained, you will confer a favor on W. A. Moore.

[We do not know any who have the Pekin ducks in Western Ontario, but if any of our subscribers have them we would be obliged if they would give Mr. W. A. M. full particulars of these ducks.]

The Depression in Trade.

This has been for some time the topic of conversation, the leading question in newspapers, the subject of anxious enquiry and keen debate in the houses of Parliament. Of the existence of the depression there can be no doubt, but of the cause of this depression there are diverse opinions.

It is held by some that depressions in financial affairs must occur in the course of years; that there is no available precaution that can prevent their recurrence, for that, after a few years of prosperity, a year or years of adversity are sure to come, guard against it as we may. But, in reply, we ask—Why should this be the case in the affairs of nations more than of individuals. As timely precaution and the exercise of common sense carry individuals unscathed through trials and difficulties, may not a like prudence guard against the evils of extreme depression in the affairs of a community? Have we not councillors? Have we not skilful helmsmen to guide the State.

Another of the causes assigned for the depression is an over-abundance of money. Specie, they say, has become too plentiful, too easily acquired, and hence the hard times. But has the complaint not been heard from every part of the Dominion, and been general among all classes, that money has been so scarce that it is not to be procured for the ordinary purposes of trade—that debts long overdue have not been paid; that people have been discharged from every branch of manufacturing and mercantile industry, and are standing at the corners of the streets idle, because employers cannot command money to pay wages?

Another cause has been assigned for the depression in trade in Canada. The business that her merchants and manufacturers expected, and were prepared to transact in their own markets, has been done by the people of another country, and the moneys that it was hoped would circulate among the people of Canada was carried off by the U. S. traders, who supplied those commodities that would, if produced and sold by Canadians, have prevented, or at least have mitigated, the depression.

And the depression was intensified by itself, as the frigid atmosphere receives additional frigidity from the cold it has communicated to the earth. Such a state of affairs has too often the effect of increasing our love of self. Each for himself, and none for the common-weal is the rule too much acted upon at such a time. The general cry of hard times, caused many, who might, by a judicious expenditure, have done much in ameliorating the circumstances of the times, to hoard their money, or deposit it for safe keeping in banks, and by so doing, they added greatly to the general depression. Millions have been lodged in bank vaults, and the banks have tightened the screws.

The extreme rigor of some of our winters are beyond our control; we cannot prevent them; so also is it with the tempests that rage with terrible fury, and strew our shores with the wreck of many a noble vessel. But it is not so with depressions in trade. They are not always beyond the control of man. They can be guarded against, and if they do come upon a people, their evils may be mitigated, and, in a very short time, wholly removed. Mutual confidence and a determination to overcome whatever has conduced to the evil, are the true remedies. Let all resist whatever has been a means whereby the financial depression has been originated or promoted, and Canadians can again repeat the oft-heard sound, "All's well."—AN OBSERVER OF THE TIMES.

NOTES ON THE GARDEN AND FARM.

AN Alabama Society has appointed a committee to visit the farm of each member of that Society, and to report in writing the state of the growing crops; condition of farm and fences; quality and condition of stock; methods of cultivation; rotation of crops; kinds of crops raised, and the varieties of each; varieties of fruits raised, and the condition of farm buildings. These reports are not for publication, unless the owner desires, but are to form the subjects for discussion at future meetings. Such good work cannot but be profitable to the community in which it is is situated, and could be imitated by other Societies with much benefit.

A NEW TURNIP LIFTER.—On the 7th of January a turnip lifter invented by Mr. Thomas Hunter, Maypole, England, was tried on a field of turnips on the farm of Dowhill near Girvan in the presence of some of the most practical and experienced farmers in the district. The land operated upon was sloping ground, and stiff soil, and, in addition, there was a slight crust of frost, yet the machine was of light draught, and went on smoothly and steadily. The cutting of the tops and the roots of the turnips was as near perfection as possible, and elicited the approbation of all present. The machine leaves the turnips, after being operated on, standing on the drill, an advantage when carting them off the ground. It can easily lift five acres per day. The great benefit derived from this machine is at once recognized when we take into consideration the scarcity and expense of out-door workers.—*Farmer, E.*

THERE is an enormous, and, it is reasonable to suppose, highly remunerative, trade to be done with England, and perhaps with France too. There is no prejudice here against Canadian cattle, nor will there be against the beef when it reaches us in joints. But there is a very strong and just prejudice against the Australian "canned" meats, which, to use a homely if vulgar phrase, are "done to rags" before they leave the antipodes, and have no flavor of "fish, flesh, fowl, or good red herring" left in them when "knifed" in England. Talking of a Canadian milk trade with France as a possibility of the future, food and the commodities of life are so dear there now that even masses have gone up fifty per cent. The *Aveuir de la Vendee* says that in consequence of high prices the Bishop of Lucon has decided on raising the price of masses in his diocese from a franc to a franc and a half The new tariff began with this year.—*London Cor. Globe.*

The Story.

Ruth's Stepfather.

"No," he says hotly. "I hadn't the heart to take it."

"Then that money you paid was yours, Luke?"

"Yes, mother," he says simply; and those two stopped looking one at the other, till the wife bent down and kissed him, holding his head afterwards, for a few moments, between her hands; for she always did worship that chap, our only one; and then I closed my eyes tight, and went on breathing heavy and thinking.

For something like a new revelation had come upon me. I knew Luke was five-and-twenty, and that I was fifty-four, but he always seemed like a boy to me, and here was I waking up to the fact that he was a grown man, and that he was thinking and feeling as I first thought and felt when I saw his mother, nigh upon eight-and-twenty years ago.

I lay back, thinking and telling myself I was very savage with him for deceiving me, and that I wouldn't have him and his mother laying plots together against me, and that I wouldn't stand by and see him make a fool of himself with the first pretty girl he set eyes on, when he might marry Maria Turner, the engineer's daughter, and have a nice bit of money with her, to put into the business, and then be my partner.

"No," I says; "if you plot together, I'll plot all alone," and then I pretended to wake up, took no notice, and had my supper.

I kept rather gruff the next morning and made my self very busy about the place, and I dare say I spoke more sharply than usual, but the wife and Luke were as quiet as could be; and about twelve I went out, with a little oil-can and two or three tools in my pocket.

It was not far to Bennett's Place, and on getting to the right house I asked for Mrs. Murray, and was directed to the second floor, where, as I reached the door, I could hear the clinicking of my sewing machine, and whoever was there was so busy over it that she did not hear me knock; so I opened the door softly, and looked in upon as sad a scene as I shall ever, I dare say, see.

There in the bare room sat, asleep in her chair, the widow lady who came about the machine, and I could see that in her face which told plainly enough that the pain and suffering she must have been going through for years would soon be over; and, situated as she was, it gave me a kind of turn.

"It's no business of yours," I said to myself roughly; and I turned then to look at who it was bending over my machine.

I could see no face, only a slight figure in rusty black; and a pair of busy white hands were trying very hard to govern the thing, and to learn how to use it well.

"So that's the gal, is it?" I said to myself. "Ah! Luke, my boy, you've got to the silly calf age, and I dare say——"

I got no farther, for at that moment the girl started, turned round, and turned upon me a timid, wondering face. that made my heart give a queer throb, and I couldn't take my eyes off her.

"Hush!" she said softly, holding up her hand; and I saw it was as thin and transparent as if she had been ill.

"My name's Smith," I said, taking out a screw-driver. "My machine; how does it go? Thought I'd come and see."

Her face lit up in a moment, and she came forward eagerly.

"I'm so glad you've come," she said, "I can't quite manage this."

She pointed to the thread regulator, and the next minute I was showing her that it was too tight, and somehow, in a gentle timid way, the little witch quite got over me, and I stopped there two hours helping her, till her eyes sparkled with delight, as she found out how easily she could now make the needle dart in and out of hard material.

"Do you think you can do it now?" I said.

"Oh, yes, I think so; I am so glad you came."

"So am I," says I, gruffly; "it will make it all the easier for you to earn the money, and pay for it."

"And I will work so hard," she said, earnestly.

"That you will, my dear," I says, in spite of myself, for I felt sure it wasn't me speaking, but something in me. "She been ill long?" I said, nodding towards her mother.

"Months," she said, with the tears starting in her pretty eyes; "but" she added, brightly, "I shall have enough with this to get her good medicines and things she can fancy;" and as I looked at her something in me said—

"God bless you, my dear. I hope you will;" and the next minute I was going down stairs, calling myself a fool.

They thought I didn't know at home, but I did; there was the wife going over and over again to Bennett's Place: and all sorts of little nice things were made and taken there. I often used to see them talking about it, but I took no notice; and that artful scoundrel, my boy Luke, used to pay the half-crown every week out of his own pocket, after going to fetch it from the widow's.

And all the time I told myself I didn't like it, for I could see that Luke was changed, and always thinking of that girl—a girl not half good enough for him. I remembered being poor myself, and hated poverty, and I used to speak harshly to Luke and the wife, and feel very bitter.

At last came an afternoon when I knew there was something wrong. The wife had gone out directly after dinner, saying she was going to see a sick woman—I knew who it was, bless you!—and Luke was fidgeting about, not himself; and at last he took his hat and went out.

"They might have confided in me," I said, bitterly, but all the time I knew that I wouldn't let them. "They'll be spending money—throwing it away. I know they've spent pounds on them already."

At last I got in such a way that I called down our foreman, left him in charge, and took my hat and went after them.

Everything was very quiet in Bennett's Place, for a couple of dirty, dejected-looking women, one of whom was in arrears to me, had sent the children that played in the court right away, because of the noise, and were keeping guard so that they should not come back.

I went up the stairs softly, and all was very still, only as I got nearer to the room I could hear a bitter, wailing cry, and then I opened the door gently and went in.

Luke was there, standing with his head bent by the sewing machine; the wife sat in a chair; and on her knees, with her face buried in the wife's lap, was the poor girl, crying as if her little heart would break; while on the bed, with all the look of pain gone out of her face, lay the widow—gone to meet her husband, where pain and sorrow are no more.

I couldn't see very plainly, for there was a mist like before my eyes, but I know Luke flushed up as he took a step forward, as if to protect the girl, and the wife looked at me in a frightened way.

But there was no need, for something that wasn't me spoke, and that in a very gentle way, as I stepped forward, raised the girl up, and kissed her pretty face before laying her little helpless head upon my shoulder, and smoothing her soft brown hair.

"Mother," says that something from within me, "I think there's room in the nest at home for this poor, forsaken little bird—Luke, my boy, will you go and fetch a cab? Mother will see to what wants doing here."

My boy gave a sob as he caught my hand in his, and the next moment he did what he had not done for years—kissed me on the cheek—before running out of the room, leaving me with my darling nestling in my breast.

I said "my darling," for she has been the sunshine of our home ever since—a pale, wintry sunshine while the sorrow was fresh, but spring and summer now.

Why, bless her! look at her. I've felt ashamed sometimes to think that she, a lady by birth, should come down to such a life, making me—well, no, it's us now, for Luke's partner—no end of money by her clever ways. But she's happy, thinking her husband that is to be the finest fellow under the sun; and let me tell you there's many a gentleman not so well off as my boy will be, even if the money has all come out of a queer trade.

GEO. MANVILLE FENN.

CONCLUDED.

Uncle Tom's Department.

To our Nephews and Nieces.

A great many of our young friends have sent us puzzles, rebuses, enigmas, etc., and wonder why they are not published. We heartily thank those who have forwarded them, and make a general acknowledgment of those we have used and those we have not. We endeavor to select the best of them, though sometimes find it quite a task, as there are such a number to choose from. Some of our little nephews and neices forget to send the answers, those we cannot publish; and some send those which have appeared in our columns before. Please remember these little mistakes in future. Hoping to hear from you all soon, UNCLE TOM.

Puzzles.

28.—DIAMOND PUZZLE.

My first is in green, but not in brown;
My next is in village, but not in town;
My third is in knife, but not in fork;
My fourth is in mutton, but not in pork;
My fifth is in elbow, but not in arm;
My sixth is in field, but not in farm;
My seventh is in August, but not in May;
My whole is a Township in County of Grey.
C. W. R.

29.—CROSS-WORD ENIGMA.

My first is in live, but not in die;
My second is in wing, but not in fly;
My third is in come, but not in go;
My fourth is in tie, but not in bow;
My fifth is in lose, but not in find;
My sixth is in cross, but not in kind;
My seventh is in dirt, but not in clean;
My eighth is in saw, but not in seen.
My whole is the Christian name of the girl that composed this. V. S. M.

30.—ANAGRAM.

Arw dan vole rae egnarts cerspcom,
Raw hesds oolbd nad ovel eshds earst,
Wra sha wordss adn olve hsa tarsd,
Rwa keasrb dahes nad owl rebkas thares.
L. B.

31.—
My first is in wood, but not in tree;
My second is in hive, but not in bee;
My third is in needle, but not in thread;
My fourth is in blanket, but not in bed;
My fifth is in night, but not in morn;
My sixth is in shear, but not in shorn;
My seventh is in mast, but not in ship;
My eighth is in waist, but not in hip;
My nineth is in reap, but not in mow;
My tenth is in plain, but not in saw;
My eleventh is in drag, but not in plow;
My whole's a name well known to you.
T. M. T.

32.—DIAMOND PUZZLE.

My first is a vowel.
My second a number.
My third a relation.
My fourth an animal.
My fifth a vowel. F. L.

33—. Why have chickens no hereafter?

34.—A gentleman being asked by a lady how old he was, answered, Madam, what you do in many things. How old was he. ROSA.

35.—RIDDLE.

What shoemaker makes shoes without leather,
With all the four elements put together,
Fire, water, earth and air,
And every customer takes two pair. HATTIE H.

36.—How many times will a black squirrel have to go to a corn crib that has one hundred ears of corn in it, and take three ears with him each time. L. S. V.

37.—Curtail a fish, and then transpose,
A well-known tree it will disclose. T.M.T.

38.—NUMERICAL ENIGMA.

I am composed of eleven letters.
My 10, 9, 7, 11 is part of the visage.
My 1, 9, 3, 11 is strongest of all sentiments.
My 1, 2, 5, 10, 11, 8 is a singing bird.
My 7, 8, 9, 10, 11 is a mineral.
My 7, 8, 9, 3, 11 is almost indispensible in cooking.
My whole is the name of a celebrated Arctic explorer. A. N.

39.—
It's seen in the stones, and dwells in the wood;
It shuns the bad, but loves the good.
It's often used when John is hurt,
It shuns not gold, though it does dirt.
It's seen in you, and not in me,
And now its name you'll quickly see. FRANCIS.

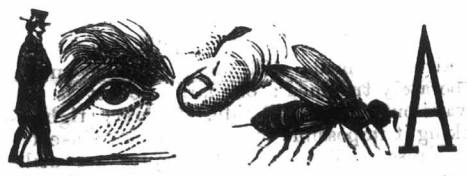
40.—I am a word of 5 letters.
My third is one tenth of the fifth.
My fifth is one-half of the first.
My second and fourth stand for yourself.
The whole is what I hope you all are. R. W. K.

41.—
There is a little thing that's found in many lands,
Although it teaches multitudes, yet nothing understands.
'Tis found in every kingdom, yet not in earth or sea;
'Tis in all sorts of timber, yet not in any tree;
And in all sorts ot metals, but yet, as I am told,
'Tis not in iron, brass, tin, silver, nor in gold.

Wild Africa this wonder wants, and so doth Asia,
But yet, as travellers do inform, 'tis in America.
Germany enjoys it, yet does not France nor Spain;
In Hungary and Poland you seek for it in vain.
In Amsterdam 'tis common, yet Holland wants it still.
It is in every mountain, yet not in any hill.

It never was in Italy, in Rome it still sppears;
It comes in every moment, yet not in twenty years.
Old England cannot show it, nor Scotland, as men say,
Yet in Westminster and Cambridge you may see it every day.
And though you never think of it, 'tis never out of mind,
And always in its proper place, indeed, you may it find. LIZZIE S.

42.—PICTORIAL REBUS.



A place in Canada.

43.— B A y
L H

Name of a place.

Answers to March Puzzles.

16.—A lighthouse.
17.—The bells, because they ring when they are tolled (told); but the organ says, "I'll be blowed first."
18.—David. 19.—Stone.
20.—There stands a castle by the sea,
With an ancient keep and turrets three,
And in it dwells a lady rare,
Rich and lovely, with golden hair,
By the wild waves splashing wearily.
21.—The Farmer's Advocate.
22.—London. 23.—Carrie.
24.—Sir John Macdonald, Benjamin Disraeli, Prince Bismarck, William Ewart Gladstone.
25.—Minnie May's Department.
26.—Lord Dufferin. 27.—Spider.

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

Mrs. J. Brown, Maria Clemens, William Jeffery, C. Strong, Joseph Grant, J. C. Hunter, Fred Niles, Lewis Van Sickle, A. J. Taylor, Mary Douglas, Francis Atkinson, Rosa McNames, Duncan McIntire, Wm. Broughton, Sarah J. Sharpe, Mary McLean, Robt. Hyde, Margaret George, H. Mctavish, Hattie Haviland, Geo. Wilson, Alice Nicolson, Minnie Thompson, Geo. Woodhouse, W. J. McBrayne, J. Palmer, Frank Lawson, P. Duart, John Blake, Albert Shier, Henry Parker, Stella M. Duart, A. E. Harvey, Thomas Taylor, E. Elliott, S. Rudd, J. Day, B. H. Kerr, S. Wilson, Thos. Lemon, J. H. Houser, M. Adams, Mrs. F. Rothwell, Libbie Poole, F. Washington, J. H. Reesor, B. Woodhull, Geo. Stonemagel, Norman Samis.

ERRATA.—We regret that the printers made a few errors in printing some of the puzzles last month, but hope they will be found correct in the future.

HUMOROUS.

A little fellow, who was at a neighbor's house about noon the other day, watched the preparations for dinner with great interest, but, when asked to stay and eat something, he promptly refused. "Why, yes, Johnnie, you had better stay," said the lady; "why can't you?" "Well, 'cause," said the little fellow, "ma said I mustn't unless you ask me three times." They invited him twice more right off.

It takes the Chinese to bring out the inherent beauties of that favorite rhyme, "How doth the little busy bee:"

How belly small chin-chin sting bug
Im-im-plove ebly sixty minit all a time,
Go, pickee up sting bug juice all day,
All kin' places 'loun flowels just got busted.

What is the difference between forms and ceremonies?—You sit upon forms and stand upon ceremonies.

"How long have you been in England?" was the question put by a young Englishman to a young American at a public dinner in London recently. "About two weeks," was the reply. "Really!" was the rejoinder of young John Bull; "and I notice you talk our language as well as we do." "Yes," was the reply of Brother Jonathan, "I have not been here quite long enough to forget how to speak it."

"Well, my son," said a Detroit father to his eight-year-old son, the other night, "what have you done to-day that may be set down as a good deed?" "Gave a poor boy five cents," replied the hopeful. "Ah, ha, that was charity, and charity is always right. He was an orphan, was he?" "I didn't stop to ask," replied the boy. "I gave him the money for licking a boy who upset my dinner-basket."

The rose of Florida, the most beautiful of flowers, emits no fragrance. The birds of Paradise, the most beautiful of birds, give no song. The cypress of Greece, the finest of trees, yields no fruit.

LUCK AND LABOR.—Luck is ever waiting for something to turn up.
Labor, with keen eyes and strong will, will turn up something.
Luck lies in bed, and wishes the postman would bring him news of a legacy.
Labor turns out at six o'clock, and with busy pen or ringing hammer, lays the foundation of a competence.
Luck whines.
Labor whistles.
Luck relies on chances.
Labor, on character.
Luck slips downward to indulgence.
Labor strides upward, and to independence.

DEAR SIR,—A little incident came under my observation a few days since, which was so amusing and so characteristic of a largs class here, that I thought I would send it to you, though it does not come under the head of "servant-gal-ism." We were waiting at a small station for a train, when two girls (I should say young ladies, I suppose) came in, with that peculiar strut which they intend shall let you know "I am as good as you." They walked about, makingall sorts of remarks in a loud tone, and at last came to a window opening into the little telegraph office; though no one happened to be there, the machine was chiking away.

"What in the world is that?" cried the more modest of the two.

"La! don't you know? That is a sewing-machine; my sister has one just like it."

"But it is going, and there is no one here."

"Oh, well, it is only spooling thread now; it does that itself. Don't you see that green spool on top?"

This was satisfactory, and the sewing-machine that "went all by itself" called forth much admiration, much to the amusement of the waiting passengers. AN OLD SUBSCRIBER.

"What are you looking after, daughter?" said an old man at a Christmas party. "Looking after a son-in-law for you, father?" was the reply.

A SWEET ANSWER.—A little boy and girl, each five years old, were playing by the roadside. The boy became angry at something and struck his playmate a sharp blow on the cheek, whereupon she sat down and began to cry. The boy stood looking on a minute, and then said, "I didn't mean to hurt you, Katie; I am sorry." The little girl's face brightened instantly, the sobs were hushed, and she said, "Well, if you are sorry, it don't hurt me."

Minnie May's Department.

A Few Words With Our Nieces.

"Dear me," sighed a young friend, what a pile of dinner dishes I have to wash ; it seems to me there can be nothing left on the shelves; every pan and dish seems to be dirty. Our friend did not accustom herself to the following rules : It is a good plan never to allow such a pile of dishes to accumulate, but to make a practice of washing them as soon as you have finished using them. It takes but a few minutes at the time, and then you escape having one of those immense piles that we all detest so much. They wash much easier before they have stood an hour or two, and tins in particular keep their brightness much better for this practice. It is a poor principle to allow a pile of unwashed dishes to be standing around drawing the flies ; everything should be washed and put in its proper place as soon as used ; it simplifies work a great deal to follow this rule.

So, too, in regard to mending, to sew on a button, or darn a pair of stockings, in an odd minute or two, and not allow your sewing basket to become full the comfort and tidyness of a family is greatly benefited by following this simple rule. The kitchen never presents a scene of confusion with everything out of place and nothing in readiness when wanted. MINNIE MAY.

Don't Allow Talent to Rust.

As by constant friction steel is kept highly polished, so by constant exercise is talent ever at its brightest.

Will our powers grow by use? If we neglect to cultivate the habit of observation we might as well walk through the world blindfold. We lose our faculty of what artists call our "touch" by neglect of practice on other things besides the piano.

The man who seldom reads, reads slowly. The woman whose writing is confined to an infrequent letter to some absent friend, spends more time over that than does a practised writer over a dozen pages of manuscript. Exercise of possessed talent is absolutely necessary, then, if we would retain our gifts. For example, if our occupation is sedantry, we need to plan for walks, rides and active games to keep our muscles lithe and serviceable. But if our employment gives us enough muscular action, we should plan for mental exercise, for employment enough of our memory and our reasoning powers to keep them from rusting. And in either case then life must provide exercise, for mind and body can alone bring us to the statue of the perfect man. M. M.

MY DEAR MINNIE MAY,—I have often found some very useful recipes and hints in your pages and have never seen a recipe of Scotch-bread, which is very nice and will keep for months. As you requested your nieces to help you and send you some good recipes, I embrace the opportunity with pleasure. Will enclose one for Scotch-bread. From your friend. J. D. HUGHES, Toronto.

GENUINE SCOTTISH SHORT-BREAD.

Take two pounds of fine flour, one pound fresh butter, half pound fine sifted sugar ; thoroughly kneed these together, roll out the cake to half an inch in thickness, and place it over paper in a shallow tin, and fire slowly until of proper crispness. It is usual to insert in upper surface a few caraway confections and small pieces of orange-peel.

J. D. H.

MY DEAR MINNIE MAY,—A great many people may find their supply of preserved fruit insufficient to last until the fruit season. I am speaking ing from experience. I know we have, and are very glad to use apple marmalade, which is easily made. I will give the recipe I use for making the marmalade for those who may wish to use it. From your friend. J. COOK, New York.

APPLE MARMALADE.

Peel and core two pound acid apples and put them in an enamelled saucepan with one pint of sweet cider, or a half a pint of pure wine, and one pound of crushed sugar ; cook them by a gentle heat three hours or longer, until the fruit is very soft, then squeze it first through the colander and then through a sieve. If not sufficiently sweet, add powdered sugar to suit your taste, and put away in jars made air-tight. It is delicious eaten with cream, but very good without.

Rings which have stones in should always be taken off the finger when the hands are washed, or they will become discolored.

MY DEAR MINNIE MAY,—Please accept the following recipe from your niece and well wisher.

TEA HUSKS.

Half a pint of new milk and one cup of yeast, add flour to make a batter, and set the sponge at night. In the morning, add half a pint of milk, one cup of sugar, one of butter, one egg, one nutmeg, and flour to make it sufficiently stiff. Let it rise, then roll it, and cut it out, let it rise again, and then bake. M. J., INGERSOLL.

DEAR MINNIE MAY;—I have become much interested in your monthly department, and would like to assist you a little. I think something about the fashions now and then would not be amiss in your columns. Some who live in the country have not the advantage of magazines, therefore might derive some benefit from a little description concerning the fashions occasionally. Mr. Weld may object to having fashions in his agricultural paper ; but "tell him" that we belong to the farm, therefore wish to look as tidy as possible, and, when he comes to see us, not to be "decked out" in a dress that was made fashionably perhaps eight or ten years ago, to receive him. What is more mortifying than to go to town in a nice new dress which cost forty or fifty cents a yard (for I must say as a general rule farmers wives purchase expensive goods) made up in some ancient way, and overhear two city ladies, dressed in a material which only cost a shilling or fifteen cents though made fashionably, say one to the other, "Do look at that dress, Lizzie, I believe it belongs to her grandmother," and another say, "Oh, Annie, how do you like the style of that dress," besides being stared at by all the curious people in town. Now I will give you a few hints on

SPRING FASHIONS.

Skirts are made still more clinging and some elaborately trimmed ; one large pocket is almost always put on the left side, the very tight skirt making it impossible to use a pocket inserted in the dress. The curiass basques are still the favorite, they are made longer than they were three months ago, some extend at least two-eights of a yard below the waist. The over-skirt is cut very long in front and very narrow, so that it may be draped at the sides to fit closely to the figure. The back consists of one breadth of double width, material bunched up in the back to form puffs. Deep flounces cut on the bias, gathered and headed by a narrow knife-plaiting frill, flounces plaited on two inches from the top to form a heading, to stand up. Ruffles, deep puffs and deep scallops are the most fashionable trimmings. Another new over-skirt is made quite long on the left side and short on the right side. Now that two colors are worn, it is a good plan to make two old dresses into one, make the under-skirt trimming for the over-skirt aud sleeves of the one, and over-skirt trimmings for the under-skirt and basque of the other and you will have a fashionable dress.

MYRA.

Barley—Produce and Profit.

Barley has again proved a remunerative crop, though the season was unfavorable for harvesting it in the finest condition, and consequently there was a less quantity classed "Canadian No. 1" than in previous years. However, the demand for malting barley continued brisk, and such brought a good price, while inferior samples sold at paying prices for feeding stock. The yield throughout was good, and many will, no doubt, continue to grow it, as part of their crop of cereals, and let the soil rest from the long-practiced succession of wheat crops. By growing barley as one of a rotation of crops, farmers would have their land in a less exhausted condition. Was such a system generally pursued there would be a regular supply of barley in the market, not a glut one year and another year a dearth; and, with a regular supply, it would be more used for feeding, for which it is very valuable; and there would be a constant demand. A farmer in the neighborhood of Larma threshed, last season, 800 bushels of merchantable barley from 16 acres of light land, that would not have yielded 15 bushels of wheat to the acre; and this was not an uncommon yield. Much higher produce was had in the neighborhood of Kingston and the Bay of Quinte.

International Exhibition, Philadelphia, 1876.

The Ontario Advisory Board are prepared to receive entries of horses, cattle, and other live stock for the Centennial Exhibition. The entries will close on the 10th of April. We understand that four ex-Presidents of the Provincial Agricultural Society have undertaken the duty of making selections of such animals as are likely to maintain the credit of the Province in competition. We hope the Dominion will fully uphold her credit in the pressure of the nations of the world. Her live stock and cereals stand high in the estimation of judges, and we cannot doubt that some of the animals our stock breeders will exhibit, will not fall behind any on the continent. From all parts of Canada we hear the note of active preparation.

One mistake made by the greatest exhibition yet seen—that of Vienna—will, we hope, be guarded against at the Centennial. Their admittance fees were so high as to prevent from being present those who would have gladly gone. We know many farmers are anxious to go to this exhibition, and we hope the charges will not be so high as to keep away a class whom it may greatly benefit. Many also are afraid that the expenses of boarding, and other expenses, such as hotel charges, will be extravagant. Could any members of the Advisory Board or Mr. Frazer let us have any information on the subject in time for the issue of the next number of the ADVOCATE.

Woods, grains, grasses, wool, flax cotton, agricultural machinery, and all objects except fruit and other perishable objects, and live stock, must be located previous to April 19th, 1876. Fruits will be admitted in their season. Vegetable and other perishable products will also be admitted in their season. Dairy products will be admitted on Wednesday of each week during the period of the exhibition.

The live stock exhibition will be held within the months of September and October, the periods devoted to each class and family being fifteen days, as follows:—Horses, mules and asses, from Sept. 1 to 15; horned cattle, from Sept. 20 to Oct. 5; sheep, swine, goats and dogs, from Oct. 10 to 25; poultry, from Oct. 28 to Nov. 10. Animals to be eligible for the exhibition, must be, with the exception of trotting stock, walking horses, matched teams, fat and draught cattle, of such pedigree that the exhibitor can furnish satisfactory evidence to the Chief of Bureau that:—As applied to thoroughbred horses, they are of pure blood; as to short-horned cattle, they are registered in either Allen's, Alexander's, or the English herd book. As to Holstein's, Hereford's, Ayrshires, Guernseys, Brittanys, Kerrys, and other pure breeds, they are either imported or descended from imported animals on both sides. As to Jerseys, they are entered in the herd register of the American Jersey cattle, or in that of the Royal Agricultural Society of Jersey. Exhibitors will be expected to furnish their own attendants, on whom all the responsibility of the care of feeding, watering, and cleaning the animals, and also of cleaning the stalls, will rest. Forage and grain will be furnished at cost prices at depots conveniently located within the grounds. Water can be had at all hours. All animals must be entered according to the prescribed rules, as given in forms of entry, which forms will be furnished on application to the Chief of the Bureau of Agriculture. The exhibition will open on the 10th of May, and close the 10th of November following. All sheep offered for exhibition must be accompanied with a certificate to the effect that they have been shorn since the 1st of April, and the date given. Poultry can only be exhibited in coops made after specifications furnished by the Bureau of Agriculture.

Messrs. E. Caswell and C. E. Chadwick, of Ingersoll, and Thos. Ballantyne, M. P., of Stratford have been in Philadelphia completing arrangements for the exhibition of dairy products in the Canadian Department. Intending exhibitors or visitors can have any information required by applying to Mr. R. W. Fraser, Centennial Commissioner, Scott street, Toronto.

We would call the attention of those interested in draining to Mr. Tiffany's Brick and Tile Machine advertised in this paper. It may be seen at work at E. Leonard & Sons' establishment in this city. Mr. T. has shipped one machine to West Virginia, despite the high rate of duty on Canadian manufactures.

Patrons of Husbandry.

List of Subordinate Granges.

370 Dunn—Peter Grant, M., Byng P. O.; Francis Splatt, S., Port Maitland.
371 Sunderland—Wm. Walter, M., Clarksburg; John Irwin, S., Ravenna.
372 Dumfries Central—Robt. McCormick, M., Glen Morris; Hugh Mitchell, S., Glen Morris.
373 Central Bruce—Allan Nelson, M., Greshan; Herman Ewald, S , Greshan.
374 Hamburg—Henry Huffman, M., Bath; Daniel W. Ball, S., Hamburg.
375 Harris—W. J. Massey, M., Belville; Thos. H. Blanchard, S, Bellville.
376 Beta—David Vandewater, M., Bellville; James Farley, Sec., Bellville.
377 First Lennox—Elias Clapp, M , Adolphustown; Fred. Membery, S., Adolphustown.
378. Hawthorne—John Holborne, M., Ravenshoe; James Cowreson, S , Queensville.
379 Eden—Wm. Broomfield, M., Beaverton; John Leslie, S., Beaverton.
380 Mariposa—Alex. McKay, M., Cambray; Neil McCorvey, S., Oakwood.
381 Hickling — Jonathan Hickling, M., Maxwell; Patrick Burns, S., Maxwell.
382 Mayfair—Angus Campbell, M., Mayfair; John M. Corneil, S., Longwood.
383 Milbrook—Thos. McCannus, M., Bailieboro; H. Kenedy, S., Mill Brook.
384. Mount Sion—Wm. Avison, Sr., M., Primrose; Wm. Dynes, S., Primrose.
385 Banda—Thos. Johnson, M., Banda.
386 Fullamore—Richard Hewson, M., Stanley's Mills P. O.; Richard Thomson, S , Fullamore.
387 Nobleton—James Bowman, M., Nobleton; John Beasley, S., Nobleton
388 Welcome—John Gibson, M., Port Hope; John Symons, S., Welcome.
389 Egmondville—Robt. Charters, M., Egmondville; G. McAdan, S., Egmondville.
390 Kinsale—James H. Rogers, M., Kinsale; J. W. Clarke, S., Kinsale.
391 Forest Beauty—Thos. Ricard, M., Aughrim; Oliver T. Smith, S , Sutherland's Corners.
392 Lily of Mersea—John Hooker, M., Blytheswood; Christopher Ogle, S., Blytheswood.
393 Hullett—Hugh Radford, M., Londesboro; H. A. Baker, S., Londesboro.
394 Stanley—Geo. Hart, M., Brucefield; Wm. Murdock, S., Brucefield
395 Wesleyville—J. H. Lyall, M., Wesleyville; Robt. Carscadden, S., Wesleyville.
396 Lyons—James McCredie, M., Lyons; Jacob Sherk, S., Lyons.
397 Grand River—Francis Shiel, M., Galt; John Sipes, S , Galt.
398 Port Dover—Isaac Kitchen, M., Port Dover; Thos. M England, S., Port Dover.
399 Crowland—James Henderson, M., Crowland; M. Misner, S., Port Robinson.
400 Seeley's Bay — John Chapman, M., Seeley's Bay; J. McCutcheon, S., Seeley's Bay.
401 Orchard Union—James Dodds, M., Orchard; John C. Bain, S., Orchard.
402 Holstein—W. Morrison, M., Holstein; J. B. Shields, S., Holstein.
403 Hawkstone—Wm. Fell, M., East Ord P. O.; John Williamson, S., Hawkstone.
404 Duntroon—Donald Blair, M., Duntroon; Hugh Currie, S., Duntroon.
405 Manilla—Wm. Ramsey, M., Manilla; Henry Glendinning, S , Manilla.
406 Heathcote—Wm. Vamplen, M., Heathcote; John Proctor, S., Heathcote.
407 Corunna Line—George Needham, M., Corunna; Robert Fleck, S., Corunna.
408 Maple Avenue—Charles Horsman, M., Thamesford; Henry Horsman, S., Thamesford.
409 East Nissouri—Francis Patterson, M., Thamesford; J. G. McKay, S., Thamesford.
410 Whitfield—Thomas McKee, M., Whitfield; George Saking, S., Whitfield.
411 Bear Island, N.B.—Jesse Parent, M., Upper Queensburg N.B., J. H March, S., Bear Island, N.B.
412 Wainfleet—J. H. Overhold, M., Marshville, Ont., Charles Priestman, S., Marshville.
413 Williscraft—David Robb, M., Williscraft; Francis Graham, S., Paisley.
414 Alma—Henry Yerex, M., Little Britain; John Connell, S., Little Britain.
415 Star of Hope—A. Marchell, M., Ayr; Minnie Hullman, S., Roseville.
416 Fairview—Abram Sevens, M., Black Bank; Andrew Sirm, S., Black Bank.
417 Lavender—Peter McHaffie, M., Lavender; W. D. Anderson, S., Lavender.
418 Wheatland—George Elliot, M., Woodbridge; George F. Wallace, S., Woodbridge
419 Eramosa Centre—Alex McQueen, M., Rockwood; D, McCaig, S., Everton.
420 Quinte—John A. Spencer, M., Rednersville; W. G. Stafford, S. Rednersville.
421 Owen Sound—Wm. Meelands, Jr., M., Owen Sound; Alex Bell, S., Owen Sound.
422 Kilsyth—Wm. Brien, M., Kilsyth; R. A Stark, S., Kilsyth.
423 Honeywood—Wm. Tupling, M., Honeywood; D. C. Lamont, S, Honeywood.
424 Star—Edward Dawson, M , Bowmanville; T. Smale, S., Bowmanville.
425 Niagara—Alex Servos, M., Niagara; Wm. Shearer, S., Niagara.
426 Shetland—Thomas Wilson, M., Shetland; Thomas Bell, S., Shetland
427 McGillivray — John Robinson, M., Ailsa Craig; Wm. Wright, S., West McGillivray.
428 Farmers' Home—D. McFarlane, M., Kinlough; Jacob Nichols, S., Kinlough.
429 Huron—John Smith, M., Pine River; Wm. Montgomery, S., Pine River.
430 Pine River—George Blair, M., Surgan; John Willson, S., Pine River.
431 Reach—John Tipp, M., Port Perry; Albert Orchard, S., Port Perry.
432 Altona—Hiram Kester, M., Glasgow; A. D. Spears, S., Altha.
433 Earlton—John Buckingham, M., Feversham; John Douglas, S. Feversham.
434 Stayner—John McColman, M., Stayner; John Brown, S., Stayner.
435 Irvine—John Hunter, M., Alma; Robert Cromar, S., Salem.
336 Tosorontio—John Holy, M., Arlington; David Nichol, S., Aliston.
437 King—James Bomiar, M., Coventry; W. J. Peatson, S., Lloydtown.

DIVISION GRANGES

No 27 Huron—John Whitfield, M., Grey P. O.; Alex Stewart S., Grey P. O.

A Patron enquires what was the fate of the petition to the Dominion Parliament for the protection of agricultural products, so that American products might pay, on being imported into Canada, a duty equal to that levied in the United States on Canadian produce imported there. The petition was numerously signed and forwarded to the proper authorities to have it presented. Was it presented? If not, what was the reason? Perhaps the officers of the Dominion Grange can give the required information.

Seed Report.

The red fern wheat you sent me grew well. The straw was strong and a great length. I had twenty-four large sheaves from one pound of seed. My Scott wheat was a grand crop, but I have thirteen acres of it and nine of Treadwell. I like to have plenty of fall wheat, as it divides the sowing and the harvest. Some sow Scotch wheat, some the mud or Swamp, and some the Tea wheat; but the largest sowing is the Red Chaff. Yours, etc., THOS. HENDERSON.

The red fern wheat I received from you I sowed on pea ground, and raised 23 lbs. of good wheat from the 4 oz. of seed. I think it a good wheat. The 4 oz. of Egyptian wheat did not yield half so much on the same ground. It rusted and shrunk bad. A. B. POTTER.

Correspondent's Items.

In your March Issue of the destruction wrought by borers among our shade and fruit trees in the letter to the *Prairie Farmer*, tells us of a successful application of kerosene for the preservation of trees from the borers. First, I give my opinion as to the effect of kerosene. I have applied it for five years in the following way:—Kerosene, 1 pint; 1 pint of soap and 2 gallons of weak lye. It gives the tree a healthy appearance. Kerosene will kill the borers, and very likely kill the tree also if used alone. I applied it last year to a bunch of worms on a limb, and it killed the worms, but the limb died after. When they begin to work in trees, I find the tree is in an unhealthy condition. In all cases I find them in trees that are bent over with the storm or wind. I find some trees that sit upon the ground, and have not earth enough around to support the substance of the tree, and they are also effected by the borer. I had one particular tree which bore three or four bushels of apples, and in a healthy condition. The borers attacked it, and as I could not prevent them from working in it, I examined it and found that the earth was scraped away. My opinion is that to prevent borers, is to keep the trees straight and solid in the ground, and plenty of soil around the roots so as to give nourishment to the trees, it will prevent them in it. Yours, with respect, W. J. BROWN, Wyoming, Ont.

I have two hives of bees and they are full of honey, which I think will be useless for them, and I would like if you would be kind enough to inform me through your ADVOCATE whether it could be got from them without injuring them or causing them not to swarm, as they would if the honey was not disturbed. ARCHY LE ROY.

[You are fortunate in your bees having too much honey at this season. You do not say if your hive be box or otherwise. Were they patent hives, you would have no trouble in taking the honey. If you smoke them, reverse the hive, put another on top to receive the bees, then tap the old hive and they will go up into the top one, and you take what honey you think they can spare. Then reverse the hives, and they will take up their old quarters. Some of our subscribers who are well versed in bee keeping might perhaps give another method.]

ERRATA.—In S. Going's letter, in April number, where "pea beetle" occurs, read "bugs."

STOCK SALE.—Wm. Lackner, of Hawkesville, has sold his thoroughbred stallion, Dr. Butler, to Israel Ebz and Aaron Cressman for $1,000.

Commercial.

LONDON, ENG., MARKETS.

Floating cargoes. Wheat rather easier. Corn steady; quotations of fair average quality spring wheat, per 480 lbs., 42s to 42s 6d, to 44s. American mixed corn, per qr. of 480 lbs., 26s 9d. Canadian peas, per qr. of 504 lbs, 41s.

LIVERPOOL MARKETS.

Flour, 24s 6; Wheat, red, 10s; Wheat, white, 10s 5d; Barley, 3s 6d; Oats, 3s 6d; Pork, 81s; Cheese, 62s.

NEW YORK MARKETS.

Flour less active; Rye flour firm at $4 10 to $5 10; Wheat quiet, without material change, $1 13, $1 26, $1 46; Corn firmer, $64½c to 69c; Barley quiet and unchanged; Oats 43c to 52c; Pork dull; Cheese, 6c to 13c for common to prime.

CHICAGO MARKETS.

Flour steady, unchanged; Wheat dull, declined 90c to $1 06c; Corn 40c to 46c; Barley steady, firm at 57½c; Rye, 65c; Pork, $22 50; Detroit wheat firm at $1 23 to $1 43; Oats 35½c to 40c.

MONTREAL MARKETS.

Markets dull and prices unchanged; Flour, bakers, $4 90; superfine extra, $5 25.

TORONTO MARKETS.

Wheat inactive, fall, $1 07; Spring, $1 03 to $1 04; Barley, 68c; Peas 74c; Oats 35½; Hay, scarce, $15 to $10 per ton; Flour $4 20 to $4 60.

LONDON, ONT., MARKETS.

Wheat, per 100 lbs, Deihl, $1 65 to $1 75; Treadwell, $1 60 to $1 68; Red winter, $1 55 to $1 65; Spring, $1 55 to 1 68; Barley, $1 to $1 30; Peas, $1 04 to 1 08; Oats, 32c to 35c; Corn, $1 to $1 10; Beans, 90c to $1 20; Rye, 40c; Buckwheat, 80c to $1; Butter, rolls, 30c to 33c; Crocks, 22c to 25c; tubs, 16c to 18c; Cheese, 11 to 11½; Eggs, per doz., 15c to 22c; Hay, $10 to $12; Fleece wool, 30 to 32; Clover seed, $6 to 6 50; Potatoes, per bag, 37c to 45c; Cordwood, $3 50 to $4; Dressed hogs, $8 to 8 25.

LIVE STOCK—Cattle, live weight, per 100 lbs, $3 to $3 50; Sheep, each, $4 to $5; Milch cows, $35 to 40; Lambs, each, $3 to $4.

ENGLISH GRAIN MARKETS.

March 11.—There is very little change in the general condition of the trade. The weather continues, with very little intermission, wet and unfavorable for field work, and also for threshing out. All kinds of grain are purchased sparingly and for immediate requirements only. At Mark Lane and the country markets, the supplies have been very light, but, owing to the bad condition, were difficult of sale, and went off slowly at irregular prices. The imports of foreign have increased, and for good qualities the trade is firm, and a moderate demand exists. Matting barley, and especially good and fine qualities, continue to harden in value.

HOLLAND.—The condition of the winter-sown wheat fields elicit no complaints. Seldom has so quiet a tone ruled in our market for rye.