# FARMER'S ADVOCATE

PERSEVERE AND SUCCEED.

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## The Farmer's Advocate!

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## A Review of the Shorthorn Sales of 1875.

ENGLISH AND AMERICAN SHORTHORN SALES.

Comparing the tables of the results of sales in the past year in Great Britain and America, it appears that the total amounts realized at these sales were almost the same for both countries. The returns from which we make the comparison refer only to the sales of "pedigree shorthorns." We learn from these returns that the sixty-five sales held in Great Britain yielded a total of £228,088 16s. 6d., and the fifty-seven sales in America amounted to £204,790 6s. 10d. Each of the American sales amounted, on an average, to £3,593, and each of the English sales to £3,509; but the advantage does not rest with the Americans in the average price of the animals, for, though the number of sales in England was eight more than in America, the number of animals sold was only ten more in England. The 3,589 shorthorns sold in America averaged £79 each, and the 2,549 sold in Great Britain averaged £87 each.

FARMERS' SALES OF SHORTHORNS.

Fancy shorthorns, we have been told, are not farmers; none but the aristocrats and speculators have anything to do with these sales and extraordinary prices. It may be rather hazardous for a *mere farmer* to touch such extreme figures, he might, if he got his hand in, get his fingers burned; but it is worthy of note that the largest total realized at any one sale of shorthorns in 1875, was at a sale of a farmer's herd, when 84 animals belonging to the late Mr. Torr, a Lincolnshire farmer, realized the sum of £42,919 16s. The highest price given was 2,160 guineas; the average for the whole lot was £510 19s.

THE MOST SUCCESSFUL SALE.

The most successful sale of the year was that of the herd of Lord Dunmore, of Scotland, when 39 animals fetched the large sum of £26,223 15s., giving an average of £672 8s. for each animal, one of which fetched 4,500 guineas.

## Agricultural Prospects in England.

The year 1876 did not at its entrance present very bright prospects to the English farmer. The area sown with wheat in the fall was less than he had prepared for—much less than usual. The season of seeding was one of great disappointment. The ground was prepared for the reception of the seed, but the sky continued heavy and lowering—no October or November dry furrows; the rain kept falling, not a heavy pour, but drizzling, soaking, day after day; and the wheat that should have been growing in the ridge as New Year's Day arose, was still in the granary. And as the farmer looked back at the departed year, he remembered that it had been "a backward spring, a wet summer, a disappointing and unsatisfactory harvest and a difficult autumn for field work."

But never despair; if not the language of the farmer's life, it is the more expressive language of his daily acts. He is easily discouraged. The coming spring and summer may more than make amends for the unfavorable winter. A May and June favorable for growth and a July dry and warm may bring to the husbandman heavy sheaves and full barns. Last year's harvest weather was just what was most wished for—dry days and warm sunshine, and the greater part of the crop was well saved, so that all was not gloomy. The harvest of 1876 may be as bright and richer in the increase of the crops. At present the prospects there are such as to lead us to expect a good market and brisk demand for the products of our Canadian farms.

## The Weather.

We are all astonished at the unprecedented mildness of this winter. Up to the time of writing, Jan. 19th, it has been a succession of warm or mild days, with rain and but little frost. In some instances the buds have started. Daphne mazereon, a very early flowering shrub, showed its blossoms on the 17th of January, within half a mile of this office, at the St. James' Park Nurseries.

We do not consider this weather as good for man or beast as colder weather, with our usual amount of snow, would be. The wheat crop we do not consider injured up to the present time, but we fear there will be damage done to some of the fruit trees, as the starting of the sap and the sudden frost may split some of the bark and bad results may follow.

Farmers in back settlements have not been able to market their produce. Lumbering and teaming in general has been almost impossible in many places. We all hope for a few weeks' sleighing before winter leaves us. The mild weather may be a blessing to many a poor family, as it has spared the wood pile and the meal barrel. Butterflies have been caught in this vicinity, and rye was sown on New Year's Day.

## An Open Winter—Mild Weather.

It behooves farmers to be on their guard during the open winter. The mild weather should not tempt them to let their cattle forage along the roads or in the fields for that supply that should be given to them in the yard and stables. It is bad management; it is the reverse of profitable. We have never known farm stock come out so well from mild, open winters, when they are permitted to be abroad the great part of their time, as in the hard season when heavy snow and deep-binding frost made it a matter of necessity to keep them in comfortable houses, well supplied with good food. A sufficiently warm temperature is necessary for man and beast, and so also is the avoidance of too great humidity. Open winters produce more bad colds and dangerous complaints of chest and lungs, than seasons marked by deep-binding frost and heavy snow storms. Such seasons are apt to produce similar effects in cattle. Long exposure to the great humidity of an open, rainy winter or spring, and the frequent changes of temperature weakens the constitutions and reduces the condition and wastes the flesh of any domesticated animal. Saving the fodder and stinting the cattle that need it, forcibly illustrate the pithy saying—"Losing the sheep for the pennyworth of tar." Every ounce of flesh that cattle lose from want of care or insufficient good food in winter, will need as much food twenty times told to restore it in the summer; and, worse still, some cattle are permanently injured by such treatment. Guard against open winters. To guard against severe winters no advice is needed; our duty then is self-evident.

## Breeding Farm Horses.

In view of the great demand for horses in Europe and the high prices paid for useful animals, it may be worth enquiring—Might not some of our larger Canadian farms be advantageously diverted to breeding horses? The demand in Europe for really good horses is steadily increasing. But we speak now of breeding farm horses, not the high-mettled thoroughbred nor the heavy Clydesdale. The horse we would have for farm purposes should possess much of the spirit and activity of the thoroughbred, with somewhat of the strength of the English dray horse. He would be a horse for general purposes, competent to do a heavy day's work with the plow or harrow; to bear his part in fetching loads of produce to market, and, if necessary, as a family horse in the farmer's carriage. It was said at a meeting of a Scotch Farmers' Club that "at no period has the value of work horses been so high as at the present time, and this may be attributed chiefly to the great demand for them and to inadequacy of the supply." The number of horses in Great Britain used for agriculture, though augmented by 35,295 over the previous year, seems yet by the great prices paid to be far short of the requirements of the country.

## The Produce of our Dairies.

Whatever is worth doing is worth doing well. This old maxim is not to be disregarded in any position of life or by any class; and we farmers should not lose sight of its importance. As the great wealth of the country is derived from her soil, it is evident that her prosperity must, in a great measure, depend on the industry and skill of the farmer. Nor is it enough that our lands yield us heavy crops. We should see to it that the products of our fields be of first quality, and be put to the best account. What profit is it to us how many bushels to the acre our grain crops average, or how many hundreds weight of butter our firkins contain, if, from their inferior quality, we must sell them for the lowest price in the market. We now direct you to our dairy products, not the least important source of our agricultural wealth.

The great value of the dairy husbandry of Canada to the landowners and country can only be estimated from the quantities of cheese and butter that are exported. Those we are able to asertain, but an estimate of the quantity for home consumption to be added to our exports can only be a matter of conjecture. "The productions of cheese rose from four and a half millions of pounds to twenty-four million between 1869 and 1874, or over 500 per cent. in five years." This extraordinary increase was due to the erection of cheese factories throughout the country. That cheese factories have been a source of profit to their patrons is shown by their continued increase. And so great has been the increase of the production of cheese that the production of butter decreased greatly. The export of butter from Montreal had increased from 72,824 kegs in 1868 to 204,357 kegs in 1871. Owing to the great production of cheese the butter export trade decreased to 102,572 kegs in 1874. In 1875 the butter production again improved, and up to the 30th of November the exports from Montreal amounted to 151,318 kegs. The value of our exports of dairy products in 1869 was $2,891,842. It increased to $6,143,506 in 1874. That there has been a great improvement in the agriculture of the country is shown by the great increase in her dairy products. Wheat is no longer the only article of farm produce that the farmer relies on, and when the profit from dairying is more generally known, pasture, soiling and root growing will receive more of his attention. He needs not dread over produce or glutted produce for his butter and cheese, or his beeves. There is an ever increasing demand in Great Britain for all his surplus. In 1875 she imported, up to the close of November, no less than 137,833,604 lbs. of butter, and of this there had been little more than 6 per cent. from Canada, though the greater portion of her dairy products were exported to British markets. Our country is well adapted for dairy farming; the soil and climate are suitable to it; and we can, if we will, supply Britain with a large proportion of the cheese and butter she needs.

That our dairy farming may be profitable, and its products find a good market, we must have regard to quality even more than quantity. It was said, a few years since, by a Canadian journal, that much of the butter exported to Great Britain from Canada was used only for smearing sheep, and was considered utterly unfit for the table or cooking purposes, the greater portion of it having netted the shipper 7c. to 12c. per pound. If the butter of Canada were of such quality when that was written, we are happy to say it is not now applicable There has been a very great improvement; but there is need of still further improvement. Why should not our butter rank as high as that of the United States. The butter exported from that country is worth, at New York, from 26c. to 33c. per lb., while ours is worth only from 17c. to 22c. This ought not to be so. Their soil is not better than that of Canada. Their grain crops are not equal to ours. Our oats and barley especially are much superior to theirs, and demand higher prices in their markets. In our meat, our beef, still more our mutton, excell them; and the same land the cows are fed on. There must be some cause for this exceptional inferiority.

The fact is, we do not pay sufficient attention to dairy farming. In the United states, on the contrary, everything connected with it is studied with the greatest interest, and the result of their studies and investigations is thoroughly tested and acted on if found beneficial. We require to pay more attention to the food of our cows, to the purity of the water they drink, to the ventilation and cleanliness of their stalls and mangers, to the pure air and freedom from everything that would offend the eye or smell in our milk-rooms and milk-houses. If these be neglected we need not expect good, sweet butter. Much of the value of exported butter depends also on the packing, and no little on the kegs in which it is packed. In the place of packing, as well as in the milk-house, there should be the most scrupulous cleanliness; everything that might by any possibility communicate an undesirable odour should be excluded.

It is better to sell our butter when new. Butter is apt to lose its sweet, fresh flavor when some time made. None will retain it long but such as is of the first quality, and much even that would be classed as such when new will soon deteriorate if badly packed, and betimes from other causes. See also that, in its transit to market and in the warehouse, if it be put in one, no ill odour be communicated by contact with other substances.

## The Railway and Agriculture.

Another Canadian railway has been completed. The London, Huron and Bruce Railway has been opened, and the splendid farming country away to the north is brought into immediate connexion with an excellent market for the products of its fertile soil. That northern country has made great progress, even when it was wholly dependent on the gravel, and in many cases mud roads, for access to market; and now their progress will, we may expect, be much more rapid than it has been. There is every reason to expect that the road will be extended still further north, till it reaches the lake, and perhaps, as some anticipate, to Owen Sound. We hope there will be no restrictive tariff, but that the farmers will, by liberal tariffs, receive that encouragement that they so well deserve and that only can promote the prosperity of farmers and citizens, that this section of country may still be called the "Garden of Canada."

In some parts of Canada there is dissatisfaction with the tariff of railways for local freight. The municipalities have given large bonuses for the building of the roads, and now find that such tariffs have been fixed as are quite unjustifiable. We will give one instance. There are grave complaints of the tariff of the Intercolonial, as being oppressive. The Colchester *Sun* says that promises had been given that special rates would be granted that would counteract the baneful effects of the tariff, and that, on the contrary, abundant proof can be furnished that they are unjust, unfair and inconsistent, and only tend to encourage and foster monopolies at the expense of farmers, who are the mainstay of our country.

We do not anticipate any such unfair preference and restriction on the L., H. & B. The directors know the country and what is needed for its improvement; and that a liberal and just management of the business is fully as necessary for the success of the enterprise as for the prosperity of the country, and we believe that such wise principles will actuate their counsels and govern all their measures.

## Poisoning Effects of Wild Mustard.

Wild Mustard, or Charlock, as it is called in the old country, appears to possess very injurious qualities, so much so that the seed, if partaken of by animals even in moderate quantity, has now been proven to produce deadly effects. In the last part of the Journal of the Royal Agricultural Society of England, Professor Simonds, Principal of the London Veterinary College, inserts in his report on the health of farm animals, some novel and interesting facts by Mr. Tuson, an able analytical chemist, relative to this matter.

In one case rape cake was given in quantities varying from 3 lbs. to 6 lbs. to 37 young animals, all of which were more or less affected with symptoms of poisoning, and eight eventually died. Another instance: two beasts were supplied with a feed of from 3 lbs. to 6 lbs. of the cake, both of which died in 24 hours. A third case, consisting of 21 beasts, having partaken of 1½ lbs. of the cake, all the animals were more or less affected, and 3 died the same night. The symptoms were indicative of narcotico-acrid poisoning, and the post mortem examination revealed in every instance intense inflammation of the stomach and intestines. By chemical analysis and microscopical investigation considerable quantities of wild mustard were discovered in the rape cake, as well as in the stomachs sent for investigation.

The conclusions arrived at from these and analagous cases of poisoning by rape cake, may be thus summarized:

1st. That lengthened practical experience has established the fact that *green* rape cake is a perfectly wholesome food for cattle.

2nd. That it is equally a matter of fact that wild mustard seed is an irritant poison, giving rise to inflammation of the stomach and intestines.

3rd. That, under these circumstances, and owing to chemical and microscopical analysis having both demonstrated the existence of considerable quantities of wild mustard seed in the rape cakes in question, and in the stomachs of the animals that had eaten it, it is apparent that such cakes are wholly unfit for feeding animals.

4th. That it is probable the wild mustard seed was not in these instances *intentionally* added to the rape, but that both plants had grown together, and that their seeds were not separated before they were crushed and pressed into cake.

Unfortunately wild mustard as a weed is not unknown to the farmers of Canada, in some instances almost destroying the crop. The facts before stated should be a warning against allowing domestic animals to partake of the plant in any form, which, perhaps, in a green state they will seldom do unless pressed by hunger; and the seed should never be allowed to be mixed with flax or rape seeds in any quantities whatever.

## A Diversity of Manures.

Manure, when frequently applied to a tract of land, will, after some applications, cease to have the same effect that it had when applied at first, if the manure be of the same kind. It is becoming apparent to farmers, and more especially to such as are living near large towns and who avail themselves of their opportunity to manure their grounds very frequently with stable manure, that some change is necessary, some diversity of fertilizers. That it has not received more attention generally is owing to the fact that in most cases a number of years elapse from the application of manure to the soil till the same soil is again manured; and the fertilizing elements supplied by the former manuring are consumed by the succeeding crops before the next application of manure.

The more frequent the application of manure of the one kind, the necessity for some change be-

comes the more apparent, and the more is it forced upon the attention of the farmer. On farms where the four-shift system is pursued, and each division is manured every fourth year, the need of a rotation of manure, as well as of crop, is soon seen. It is not the frequency of manuring that is at fault, but the repeated applications of manures of the same kind and composed of the same elements.

This is especially the case with farm yard manure. Than it there is no better fertilizer for the general purposes for which it is applied. Combining the stimulating properties of horse and swine manure with the cooler and more abiding properties of the manure from the cow-house, it contains the elements most needed to promote the germination of seeds and the maintenance and continuous support of plant life; and the mixture of these constituents with other matters that are by themselves comparatively worthless, as it is in the well prepared dunghill, adds greatly to their utility. And there is no manure of which the waste and abuse by a too frequent application to the soil is so frequently witnessed. Wherever there is a greater facility of obtaining it and the temptation to use it, year after year, to force such crops as are in greatest demand in the market, the injurious effects are soon apparent.

Not only does the yield of crops become less, but also their quality becomes inferior to what it had been. In some crops this is especially observable. Cabbage from this cause becomes club-rooted. Turnips grow stringy and are less nutritive. Potatoes rapidly degenerate. They lose that floury property so characteristic of them when of good quality. They become dark in color, bitter to the taste, and very liable to disease. In those heavy, murky seasons, when the disease is most prevalent, the potato crop on ground so treated is sure to be cut off, while under other circumstances it may escape little injured.

The evil effects of the too frequent use of a fertilizer fs not limited to farm-yard manure. The too frequent repetition of any other is sure to produce similar results. Great as is the value of lime as a fertilizer, it will, if applied after too brief intervals, cease to act as beneficially as when first applied. There is in the soil less of those organic elements for it to exercise its chemical force on. The term "lime-sick" is not unknown to farmers where lime is extensively used.

The effects produced by guano when first applied as a fertilizer, are experienced no longer after it has been many times used on the same fields. Its partial disuse may be in some measure attributed to this cause, though it is more usually attributed to a falling off in the quality of the guano now obtained. From our experience in the use of this fertilizer, we have looked upon it more as a stimulant than as a manure enriching the soil permanently or even for a few years. We have used it in our growing root crops, as turnips, to aid the germination of the seed and force its rapid growth to the rough leaf, but we always applied farm-yard manure and used the guano in addition as a stimulant.

## The Maryland Agricultural College.

From the *American Farmer* we take some brief extracts exhibiting the working of institutions that are professedly Agricultural Colleges: "We "believe no agricultural experiments were ever "attempted to be carefully and systematically "made on the farm; certainly their results were "never given to our farmers; and we suppose the "first correct and complete analysis of a soil has "yet to be made on the premises. The technical "education given was nothing. Among farmers "all over the State it was a subject of derision; "and for a considerable portion of time we believe "the chair of agriculture was not even filled. "The practice of agricultural pursuits was ne-"glected entirely." In proof of the charges made, the writer quotes the language of a gentleman who has been long in the college, and who cannot be taken as a prejudiced witness: "The "college has failed absolutely as a school of agri-"culture—its primary purpose, and the present "scale of expenditure is enormously out of pro-"portion to any educational result of whatever "kind."

"The farming puts us to open shame. The in-"stitution seems to have produced one effect only "—namely, the squandering of very large sums "of money granted by the Legislature."

## Wheat—Its Present and Future Production.

The following article on the production of wheat by a contributor to the *Western Rural* will well repay the farmer for its reading. That there must be a full supply of lime in the reach of the wheat plant or it fails to perfect itself, either in staw or grain, or both, is based on scientific principles, and has the additional proof afforded by the experience of the cultivators of the soil for ages. In this, as in other matters, we see the entire agreement of science, when properly understood, with the knowledge gained by the observations of practical men, who know nothing of scientific reasonings or demonstrations. In the rule given by the writer to distinguish between a natural wheat and a grass soil, he is scarcely explicit enough. All water as it descends on the earth is pure and soft. It becomes hard by passing through salts that are in the soil, whether lime-soil or not. All say there is no soil without some lime, as is shown by the fact that plants have lime as one of their constituent parts, and that it is a constituent of every animal whose frame is supplied from the plants grown on the soil; but the lime in many soils is so much less than is needed for the successful production of wheat, that the application of lime in some form is necessary. Water may be so hard that it will not readily make a lather, and yet need the application of lime. The means indicated are insufficient to ascertain the need of the application of lime.

The average yield of eight bushels of wheat per the acre is not applicable to our farms and farming in Canada; though we too can increase the produce of our fields and add to their yield *four bushels per acre:*—

Assuming the premises laid down in previous articles to be as correct, at least, as the ten per cent. guesses of the Commissioner of Agriculture, we have an area of 165,000,000 acres of improved land inclosed and in farms; we have also 3,000,000 of farmers upon that area, whose individual occupany is equal to fifty-five acres, or the size of the farms will average fifty-five acres of inclosed land. Not over one-half of that area is annually under tillage and in crops. Of the area thus occupied, only one-fourth of the breadth is under wheat annually, or about seven acres on each farm, and the acreable annual product is only eight bushels of sixty pounds to the bushel. We have annually in wheat crop, 21,000,000 of acres, producing a nominal crop of 168,000,000 of bushels.

To spare a surplus for export, which is in no wise desirable under our present system of farming, we must either increase the breadth annually sown, or the acreable produce of the land in crop. The breadth will not be materially increased; and if it was, the increase of population would absorb it. Our surplus, then, must come from an increased product of the land annually seeded. Can this be done? Most undoubtedly; for "what man has done, man can do."

Over all this broad land, from California to Maine, where wheat has been attempted to be grown, there are in every locality exceptional instances where as high as twenty, twenty-five and thirty, to even sixty, bushels per acre have been made at a single crop. In Georgia the writer saw a field which had borne six consecutive crops of wheat, and had commenced with an annual crop of six bushels to the acre, and the sixth had just threshed out eighteen bushels to the acre; and the fertility of the land was being annually augmented by a system of cultivation both cheap and profitable, mainly by green manuring, making, with a little help from artificial manures, the land to furnish the material for its perpetual fertility. This was an exceptional case, it is true; but the soil was only a fair sample of the prevailing soil of the South. It was not, perhaps, the poorest, nor was it the best, of Southern wheat soils.

I have seen on the sandy soils of New Jersey, large fields which have given this year as high as thirty-two bushels to the acre, over a considerable area of territory, and by a process of manuring which was also profitable in itself.

Notwithstanding our slovenly mode of cultivation, and the want of adequate capital among farmers to prosecute a system of high farming, it is possible to increase the annual product of wheat to an extent that will meet a largely increasing home demand, and all the probable demand for export.

It will be found that our normal crop is not much, if any, in excess of 168,000,000 of bushels. If, therefore, we are called upon for an export supply, we must fail to yield it, or, perchance, coming when we have had an unusual crop, it may be supplied from the accumulated surplus of years of plenty when the normal annual crop has been in excess.

If, therefore, each farmer who raises a crop of wheat should resolve that he will increase his crop by only four bushels per acre, there will be no deficiency in the supply, and our people may still enjoy the pleasures of the "wheaten loaf" and the pains of the national disease—dyspepsia. But there is no fear of famine, or starvation of the poor, as long as Indian corn is produced in its present "profuse abundance."

It would seem of little use to prescribe rules for the successful cultivation of this plant in so diversified a country, in soil and climate. Every farmer ought to know, and does know, whether he has prepared his land in the best manner to give him a full crop. He ought to know what kind of seed is best for his land, and when it should be committed to the soil. All this he ought to know, or else he ought not to sow. If, therefore, he finds when his crop is threshed, that he is below the average yield, he must ask himself, "Have I done my duty? or is the fault in the season?" If the fault is with him he can amend it next time.

There are certain rules which must be observed in every climate and in every soil. The natural soil for wheat is calcareous, or where the spring water is hard. Wheat, of all the other cereals, is the most exacting on lime. There must always be a full supply in the reach of the plant or it fails to perfect itself, either in straw or grain, or both. One of the readiest means by which to distinguish between a natural wheat and a grass soil, is in the nature of the water of the springs. If it be "hard," or does not readily make lather with soap, it is a natural wheat and fruit soil. If, on the contrary, it be soft like rain water, it is a grass soil, and potatoes, flax and tobacco will grow best in it. Any plan of manuring, therefore, which does not contemplate adding to the soil a sufficiency of lime, where that mineral is deficient, will be productive of feeble results.

Where the cultivation is attempted in alkaline, or soft-water soil, and the lime cannot be added, the crop should only be put in at long intervals, and upon a heavy coating of vegetable matter plowed under.

By practising upon these rules, modified by the peculiarities of the locality, the wheat crop may be largely increased, and a surplus always on hand to meet the varying demands for export.

LIME FOR PEACH TREES.—John M. Clayton, of Delaware, U. S., who was a large and successful peach grower, found lime the best manure he ever applied to peach trees. He scraped the dirt off and applied from three to a dozen shovelfuls of lime fresh from the kiln to the naked roots. It killed the grubs and favored the growth of fruit. The editor the *Plough* said:—"Certainly we have never seen more healthy looking trees than those of farmer Clayton." Sometimes one can kill the larvæ of the curculio under peach trees by a heavy dressing of lime recently slacked.

## Hints to Dairymen.

*Written for the Farmer's Advocate.*

In looking back over the past season, we find that it has been a very unsatisfactory one, both to the producer, the shipper, and the dealer in cheese. A season in which, even at the low prices which have been realized, and at which the dairymen are complaining the dealers have lost heavily. This unsatisfactory state of things is attributable to the very bad state of trade in England, and, in fact, all over Europe and America. The make has been very large the past season all over the country. Home consumption is not what it should be, owing to the scarceness of money, and the large numbers out of employment. Consumption has been checked from the same causes in England, there being thousands there out of employment, and thousands more working on half time and reduced wages. English letters from men in the trade which we have seen, described the trade as "wretched" and that "they never saw it worse." Another says "he can give cheese away but cannot sell it." What the dealers there call "good, useful cheese," and which would embrace a large number of our Canadian factories, has been selling at from 30 to 45 per hundred. Large quantities have been sent to the auction rooms and fairly slaughtered. The only enquiry is for fine September and October cheese. Summer cheese can hardly be sold at any price.

Bearing in mind the very large make all over the country the past season, and taking into consideration the various causes which have checked consumption, we can easily see why cheese has been so dull, and the only wonder is that it has not been worse. Dark as the outlook may seem, there is this consolation, and this fact to be borne in mind, that cheese is not like many other articles of consumption, it cannot be carried over into another season, but must be cleared out before the new comes on the market, even if it has to be given away or sold at 15c. to 20c., which is sometimes the case. Bearing this in mind, we look for a quiet, steady trade the coming season, at good fair paying prices to the dairymen. There is another thing which will have a tendency to help next year's business and keep things from dragging along as they have done the past season, and that is that factory men will be disposed to sell their goods when they have a good fair price offered them, and not be holding for high and fancy prices. Had they taken the market price when their goods were fit to move and let them have gone forward, it would have helped the trade this winter very much by having the market cleared of poor and summer cheese. We would strongly urge upon all factorymen to take the market price for their goods when they are fit to ship. No matter what the price may be, it keeps the trade steady and quiet, which is much better for all parties; besides your cheese is out of the way, you have your money, no further risk to run, and your mind is relieved, for the present, of any further anxiety about it. If you do not feel disposed to sell a month's, make sell two week's, and keep it moving; this is particularly applicable to the first three or four months of the season.

To the factoryman as well as the dairyman we would say—as you have leisure during the winter months and long evenings, get some good works on the subject and read and study them up, and make yourselves masters of your business. The man who thinks he knows enough and that he can get along well enough, is just the very one who will fall behind in the race, and who will come to the conclusion that farming and dairying, and perhaps both, do not pay. This is an age of progress and advancement in every department and business of life, and he only will succeed and be well repaid for his labor who strives to excel in his bnsiness or profession, and he who does excel will have to read, study, plan and work with his head as well as with his hands. To the dairyman the cow is nothing more than a machine for making butter and cheese, and it should be his aim and study to keep that machine in good working order; to furnish it with the best material for the manufacture of milk. He should also make himself master of the various departments of that machine, so that if the machine is not a good one or not in working order, he may be able to know the cause and apply the remedy. It is an old saying and a very true one—"What is worth doing is worth doing well." It it pays to keep cows, it will pay to keep them well. It takes no longer to milk a good cow than a poor one; it takes no longer to feed good cows than poor ones, and it takes no longer to feed them well, regularly and with good feed than in a slovenly way, irregularly and with inferior feed. The average yield per cow throughout the country is about 300 lbs. of cheese, and yet there are numbers of good dairymen who get as high as 500, and in some instances 600 lbs. per cow. There is where the profit is; if by good care and management and good cows you can realize 500 instead of 300 lbs., you thereby nearly double your receipts, and your investment, labor and expenses are about the same.

We would strongly impress it upon dairymen the importance of taking good care of their stock during the winter season. Depend upon it that all you feed a cow in the winter in the shape of bran, meal, roots, etc., she will pay you back the following summer in the shape of milk, and that good, healthy, rich milk. Another important thing is good, warm, comfortable stables; if a cow is exposed to the cold, bleak winds and storms, it takes all she can eat to keep up the animal heat in her system, whereas she should be laying up a store of fat and flesh to fall back upon during the heavy flow of milk, as well as recruiting her system. Treat her gently and kindly, and do not allow the milk stools and fork handles to be used for any other purpose than for which they were intended. She is naturally a gentle animal, and her temper and nerves should in no way be ditsurbed or excited. Make her comfortable and contented, and she will then look upon you as her friend and protector, and will truly "chew the cud of contentment."

## The Corn Crop of '75 not Profitable

Our neighbors south of the Line are complaining of the corn crop of '75. Very heavy crops do not pay when the quality is very low. An early frost with a cold, damp summer and autumn has caused the grain to be soft, and not well ripened—a large proportion of it only fit for stock feeding. It is doubtful if corn grown to such an extent as it is can be a paying crop, especially when far from market, as in the far West. If fed to good stock on the premises, it may pay expenses and leave a little profit, but otherwise the charges for transportation and marketing swallow up the profits.

The importation of the Canada horses purchased by J. A. Moore, Esq., at the Government sale for the North Sydney and Boulardarie Societies will be a great benefit to the Societies, as well as the country at large, as there is great room for improvement in our stock of horses; and as the directors are authorized to dispose of the funds of the Society in the incorporation of improved breeds, seeds, &c., they will continue to do so from time to time as opportunity may offer.

In reference to the crops the past season, there is much room for gratitude. Hay has been an average crop. Wheat, where cultivated, a good crop. Oats, a good crop, both in straw and grain. Barley, we regret to report, is not sown to any great extent. Potatoes, below average, but turnips and all other root crops are good.

# Correspondence.

## Free Grant Lands—Letter No. 2.

SIR,—As I am frequently getting letters from parties who read the ADVOCATE, asking particulars about incidental affairs in connection with the real question as to the advantages of settlement in the above territory, I deem it advisable to inform the public, through the medium of your widely circulated paper, of some of those minor items of interest. I consider that stock can be raised and kept the year round cheaper there than here in Markham. The land does not cost anything, in the first place, consequently there is no interest on capital invested; and the summer feed does not cost anything, and is abundant, and those cheap lands produce extremely good crops for winter feeding. And cattle winter much easier there where there is a uniformity of weather; while, on the other hand, in this section of country the land is high, and the summer feeding is expensive as well as the winter, as our pasture land is worth from four to five dollars per acre rent. In reference to the home market there for meat, it far surpasses any place I ever was in; as well as vegetables and hay, oats, &c. The most of the hay fed there is taken up on boats to Prince Arthur's Landing, which sells from fifty dollars down to twenty-eight dollars; oats, 75cts; potatoes, from $1 to $1.50. The market for for the present has to be supplied from this side of the lakes, farming being in its infancy there yet, as the free grant land has only lately been surveyed. But parties spending a summer there, as I did, can judge of the productiveness of the soil by inspecting the proceeds of an old farm at Fort William, belonging to the Hudson Bay Company, which has been poorly worked for the last fifty years. The Township of Oliver being the nearest free grant township to the town of Prince Arthur's Landing, and having the advantage of the Dawson Gravel Road, and the Canada Pacific Railroad, will improve extremely fast, the land being good and so splendidly watered. A very novel thing to me in that country is to see the mountain ash growing abundantly through the woods. There is an extensive saw mill at Fort William, belonging to Adam Oliver & Co., where settlers can procure pine lumber at from $9 to $13 per 1,000 feet, and there has been a brick yard started there with success. I would like to get the opinion of some of your contributors as regards the advisability of farmers raising Hungarian grass as a means of new settlers getting the more early advantage of the high price of hay while their clearings are small. The quantity of hay used in that section is large, and it will take the settlers some years to get fairly started in raising Timothy hay, where, if Hungarian grass will yield productively on a clay loam soil, and in a somewhat cooler climate than this, it would be of great advantage to new settlers to raise it. As the land is so easily cleared, they could soon clear off a few acres in the spring, and sow the seed the latter part of June, so as to have a crop the first year. I would be thankful for some information on this subject, that I might advise many who are looking to me up there to send them all the interesting information I can for their benefit. I am willing at any time to correspond privately with any of the readers of the ADVOCATE, on any subject wherein I am conversant, relative to the prospects of the free grant territory. There are four lines of boats running regularly from Windsor, Collingwood, and all intermediate ports, to Prince Arthur's Landing in the summer season. The distance from Toronto to Prince Arthur's Landing is 750 miles, and the fare is $20 from Toronto, going either route, and the time going is three days from Toronto, either route. The routes have run to Prince Arthur's Landing for the last four seasons as early as May 12 to 15, and as late as from 27 to 30 November. The trip is delightful, and Prince Arthur's Landing is becoming a place of note as a summer resort. The accommodation in hotels there is pretty good, and the charges also, as will be expected in so new and rising a place. Mr. Editor, hoping I am not trespassing on too wide a space in your paper, and with the compliments of the season, I beg to remain yours respectfully, L. JONES.

Markham, Jan. 11th.

## Seed Report.

We have from every point of the compass reports of the produce of seeds issued in 1875, and we hold them over till next month—a more suitable season for their publication.

## Lucerne or Alfalfa.

SIR,—I wish you could inform me about the Lucerne. I have seen it growing near St. Catharine's; it stands our winters well. I would like to try it. Where can the seed be got, or any other information respecting it will be thankfully received.

JOHN ADAMSON.

Mount Elgin, Dec. 31, 1875.

[In a former number of the ADVOCATE we wrote pretty fully on this subject, and we give for the benefit of Mr. Adamson and other subscribers, the following from an American journal. We have no doubt it will be a valuable acquisition to our farmers, if it prove hardy enough for our Canadian winters, as we have every reason to hope it will.—ED.]

Alfalfa or Lucerne is the great forage crop of California now, but it is only a few years ago since its introduction there. The common grasses of cultivation, timothy, clover, etc., had been tried, but would not stand the long, dry summer. Public attention was attracted to the task of finding a grass suited to the peculiar soil and climate of the State. Parties began to experiment with Alfalfa, but for a long time were unsuccessful, because of ignorance of its habits and requirements—just as it has been here in the East. But they stuck to it, and as the peculiarities of the plant became better understood, it began to grow in favor, and men began to make money by growing the seed. At one time it sold at thirty cents per pound, and many made small fortunes in the business. The *Record Union*, from which we gather these facts, says, in regard to the increase of this crop:

The product of seed has been increasing from year to year, until it is probable that the product for the present season will not be less than twenty thousand tons, and the price will probably range from ten to fifteen cents a pound. Those who have saved the second cutting for seed have generally made a paying crop, but those who have cut two crops of hay before letting it go to seed have this season not been very successful, as they have not for a number of years past. Taking one year with another, the second crop is most likely to fill well and make a paying crop. Since the settlement of the State by Americans, there has not been a more important event for this material prosperity than the introduction of Chili clover as one of the products of her soil.

Because Alfalfa is so successful in our warm and dry climate, the impression has become quite prevalent that it will not do well in a colder climate where snow and freezing weather are common in the winter season. This, however, is a mistake, and every one who is familiar with the country in which it had its origin, upon a moment's reflection would see it without being so told. Alfalfa has been one of the most valuable forage plants of Switzerland since the history of that country has been known. It is known there as Lucerne, and is the grass which has rendered the Swiss dairies so famous the world over. We have frequent inquiries as to whether Alfalfa will do well in cold climates. The fact that it is a native of Switzerland should be a sufficient answer to all such inquiries.

## Free Grant Lands.

SIR,—Seeing an article in your ADVOCATE on "Free Grant Lands in Thunder Bay," written by one L. Jones, who offers to give information to any one applying for the same on the subject, but who does not mention in what way, I would like, through your paper, to receive some information as to what way a person would get there, cost of travelling, and also who to apply to and where the agent lives. Information on the price of food and other necessary articles would be very acceptable.

JAMES G. RICKWOOD.

We will thank Mr. Jones to let us have his reply to these inquiries in time for our next issue.

## Lameness in Pigs.

*Reply to the enquiry of J. S.*

SIR,—I see by the December number of the ADVOCATE that J. S. complains of his pigs becoming lame, and you are of opinion that it is caused by worms in the kidneys, of which I think there is no doubt. I have often had pigs taken the same way, and have always cured them by giving them soft soap suds to drink. A dose or two is always sufficient, if given when first taken.

T. J.

## Items Suggested by the January No. of the Advocate.

SIR,—I must say I am not sorry for some of the people beginning to feel want, but I am for others. Not many months ago, some of the city artizans would turn up their noses at farmers, if asked to work on the farm at good wages—of course their families suffer now. I think farmers would help if the proper means were taken to collect and distribute.

You are right about the railways. I think Canadians should be treated as well as Americans. Government, attention!

Mr. G. Wiseman, just cut your tamarack a little before the fall of the leaf. You will find more gum in it then than any other time, and, of course, will last longer.

Any one that advocates to compel farmers to raise no grain but wheat and to reduce its price, is not safe to run loose by himself. If wheat is not cheap enough now, at 94 cents, with fifteen bushels to the acre, please warn those people to keep clear of Wentworth County.

The hog disease is very fatal—good care, warm, clean pens, and clean feed are the best preventatives

Shorthorn conventions I look upon as a ring of moneyed men bound to make more money.

"Impoverished Soil" is a good, sensible article. It is quite possible for an animal to get so far down that it can't digest well, so with soil. It wants a new stomach put in it.

Land plaster I consider the cheapest manure we have. I say manure, not stimulant. Sow that early in the spring, that it will be thoroughly dissolved, or else it will not do any good—it takes 20 lbs. of water to dissolve 1 lb. of plaster.

I wonder if Government did not pay something for that Canada thistle. I can give a remedy to kill Canada thistles, and I believe I am the only one: Do not plow till they have made their growth—about the last of June or the beginning of July; if the ground is very dry, all the better. Plow and harrow and cultivate three or four times before the 1st of September; manure the land; sow fall wheat thick with clover; cut your clover a little early; mow your clover two years; if not not killed they will be sick; then repeat the dose. Nothing but work and attention is needed.

IS DRAINAGE NEEDED.—Joseph Harris, on "Walks and Talks," says: Dig a hole 3 feet deep, and if any water gathers in it in two weeks it needs draining. I believe he is correct, and does the work thoroughly.

HORSES.—I will take part with you, Mr. Editor, in that our horses are like the Turkish cavalry, too little and too long, as the Enniskillen dragoon said at the time of the Crimean war: "I could ride through six deep of them like sticks."

The elk is like his Indian friend, dying slowly but surely.

Sheep raising is not looked at in its true light by farmers—cows seem to be the rage. The first thing we know, sheep are going to be high.

Uncle Tom's and Minnie May's Department are full of good things, and ho! for the Grangers.

I would rather have the fourth of the price of stock sales than the whole scrape of them.

HORACE.

[We hope to have the pleasure of receiving criticisms from "Horace" frequently. It is unnecessary for us to review the reviewer.

## Clover.

SIR,—The subject of clover, or the question in one of your numbers on *Trifolium*, is one I wish to say a little about. The plant *Trifolium*, or, botanical name, *Trifolium Incarnatum*, is quite a distinct variety from the common red clover, so widely cultivated in this as well as other countries. It is quite unnecessary to describe or say anything of the red clover, it is so well known and appreciated. But the other being quite distinct in its habit, and also in its shape of flowers, &c., I will give you a slight sketch of it, and what I knew of it in Old England. First, then, it grows about 2¼ or 3 feet high; the leaf just such as the common clover, but the flower is something like a sugar loaf, being quite conical, and the same as the common clover in color. It was usually sown in the latter part of August or beginning of September, on stubble land that was well manured before that crop was sown and clean; the land was not deeply ploughed, but merely run over each way with the two-horse grubber, so as to get soil enough to bury the seed. It was always thought to like a firm bed, for we used to roll down with heavy roller after sowing. Its seed is very different from ordinary clover; it is entirely yellow in color, and in size very much larger than the kind we usually sow in this country. As a yielder it is very good, and is in general use as a forage plant for horses. As green food, it is excellent, so even in the shape of hay it is eagerly sought after by all herbaceous animals. It is also used for sheep to be folded on it, and is considered to bring on ewes and lambs quickly. I do not know anything of it as far as Canada is concerned, but if any one wishes for the seed I shall be able to supply them if they communicate in time with me; but not for sowing this next spring, but in time for autumn next. I have imported the seed before now, but have never seen the plant in this country, as all the seed was lost by fire. If it will stand the winter, I must say it would be a very great benefit to the farmers of Canada generally.

Yours, &c., D. MESSENGER.

[We thank Mr. M. for his communication. He is right in his observation that we desire and solicit correspondence from our subscribers on anything pertaining to the subject of agriculture, especially in reply to questions asked by correspondents. We hope he will often favor us with his communications.]

## Farmers as Contributors to the "Advocate."

Mr. Alvin W., Simcoe, says:—"I am now taking six papers and magazines and cannot give up any of them. Could you not persuade us farmers that are not capable of writing scientifically on agriculture, just to give some account of our practice in a plain, simple way, so that the readers would get the ideas and never mind the language used." Well, Mr. W., we would just say in reply, your suggestion is a good one. We have long been persuading you farmers to do as you say, and though we have had such plain statements of facts as you desire, we are anxious to have more contributors, and your idea pleases us so much that we hope to have you among the number.

## Boring Machine for Sale.

SIR,—I notice in the January, 1876, number a boring machine wanted, for boring fence caps and tiles. By applying to David Bell, Caledore P. O., they will find what they want.

Yours truly,
WM. PEARSON.

## Canada Thistles.

SIR,—I am glad to see the interest you take in the Canada thistles. If there could be a general law, so every township council would be obliged to appoint one or two persons in every township to prosecute every person that don't keep his thistles from growing to seed. In Beverly Township they have had it so for four years, and it works well. Last year they tried it in Brantford Township, where they fined some of the wealthiest men. The present system of having pathmasters won't do; it just makes a neighborhood broil.

As for registering letters, the present system looks curious to me. If a letter is registered to you in a distant town, how are you to become aware of the time it will reach you?

DAVID PHILPS, Sr., Boston P. O.

[Mr. P. sees that we publish another contribution of Canada thistles as well as this. It is well that the owners and tillers of the soil, in many parts of the country, see the necessity of exterminating weeds, root and branch. Let us persevere till the plants beneficial to us shall have entire possession of the soil.

## Berkshire Pigs.

SIR—I keep the large English Berkshire Pigs. Do you know where I could find some pure large Berkshires, for a cross with mine.

Yours ever,
GEO. BAKER,
Simcoe P. O., Ont.

[Perhaps some of our readers will kindly furnish Mr. Baker with the information.]

## Preparation for Seed Wheat.

SIR,—Diptheria is raging so frightfully that I have not had time to write you, as I intended. It is a new life for an Englishman. I am urging draining as a permanent cure.

What do you think of the following as a preparation for seed wheat:

Make a strong solution of salt with camphor water; then soak the wheat in it for not less than 24 hours. Throw it on the floor or into a basket; while it is damp mix with every basket of wheat 1 oz. of sulphate of soda and ¼ lb. of flour sulphur. The camphor is to make the seeds germinate; the sulphate of soda (in preference to sulphate of copper) to prevent mildew. The sulphur is good for the plants; it may also prevent weevil or other insects. Camphor has also the same tendency, but the smell of camphor will soon evaporate; the smell of sulphur will remain.

I doubt the utility of lime. A friend of mine in old England plowed in a portion of a field during winter with quicklime, and in another portion ashes. He then sowed turnips at the usual time. The seeds with the ashes quickly germinated, and did well; those with the lime were long in germinating and did not do well. He came to the conclusion that lime was injurious to seeds.

Are fire weeds injurious to the land—to let them grow and then rot on the land?

P. E. Island. JAMES SHAW, M. D.

[We publish the above from our P. E. I, correspondent. Though our journal has always been true to its profession—an agricultural paper by farmers—for farmers—we are glad to have contributions from men of science, such as Dr. S. We can not ignore the benefits agriculture has received from men of science, and from science tested by practical working farmers we may expect the best results.—ED.]

## Lice on Cattle.

SIR,—If you think my plan of treatment for lice on cattle worth a place in your paper, you are at liberty to insert it.

Some ten or twelve years ago a writer in an agricultural paper observed his bull to be free from lice, while all the rest of his cattle were troubled with them; and thinking over the matter, he came to the conclusion that the habit of pawing dirt over himself must have the effect of keeping lice off the bull, and he tried dry earth on the rest of his cattle with the best effect. Ever since reading the above I have used nothing but dry earth, and have repeatedly put it on cattle having lice, and have found it perfectly efficacious both as a preventative and as a cure. If in winter I find it needed and cannot get earth otherwise, I go into my cellar and obtain a few quarts (no fear of using too much), and dry it on the stove; I then sprinkle over the back from the head to the tail, and the earth working into and through the hair, soon destroys all lice. I believe the earth to be just as efficacious, less dangerous and less expensive than tobacco or any of the acids recommended in former numbers of the ADVOCATE.

Bridgewater P. O., Ont. JAS. MAIR.

[The preventative and cure recommended in this communication has in its favor its simplicity and safety. If proved to be as effectual a cure with others as it has with Mr. M., it will be of great advantage to stock owners. Poultry seem to know by instinct that it is useful, as is seen by their dusting themselves as much as possible when they have an opportunity. In speaking of the means of getting rid of vermin, let us not forget that by good care and feeding on good, well-saved fodder, we may guard against them. "Prevention is better than cure."—ED.]

## Piscatorial.

SIR—Please give answer in ADVOCATE how to fix a pond to breed trout to best advantage, how to fix spawn bed, &c.

Barnston, Que., Dec. CHESTER CLEVELAND.

[Will Mr. Wilmot, or any of our readers who has experience in pisciculture, be so good as to send us a reply to the above query.—ED.

## Canada Thistles.

SIR,—The Canada Thistle, which was almost unknown in this township twelve years ago, is rapidly spreading all over it, and becoming a greater nuisance than the potato beetle. The Thistle Act of 1865, part of which was published in a late issue of your paper, enjoins road overseers to see to the eradication of these pests of the farm, but unfortunately has omitted to provide for the appointment of some one to oversee the overseers. The Reeve of this township last year told me that the Township Council intended to pass a by-law enjoining the road overseers to carry out the Act, and when I suggested that it would be better to appoint a paid inspector for that purpose, he objected to the expense, and, as I fully anticipated, the by-law, although duly passed, signed, sealed and expressed in the minutes, has remained a dead letter.

To expect that the road overseers, who are not paid for the discharge of their duties, should spend their time in looking over their neighbor's fields and make enemies of them by enforcing the law, is unreasonable. The township councillors will not call the road overseers to account for neglect of duty, for they have all Canada thistles growing on their own farms, and would consequently be in danger of being fined themselves; besides, that would make them unpopular, and endanger their seats at the next municipal election. And here I may remark that the person who drew up our present Game Protection Act made a great mistake by including racoons in the list of animals protected by law from May to November. No more 'coon hunting for you, my boys, if this part of the Act is enforced. President Grant once said that if a law is bad, the best way to get it repealed is to enforce the strict observance of it, and in this point of view I could wish that some one in every township where Indian corn is cultivated to any extent, would proceed against every one who may venture to infringe the law. No kill racoon, no Indian corn; no Indian corn, no more husking bees for you youngsters; so look out for yourselves.

SARAWAK.

[Our correspondent, "Sarawak," wages war on every evil that he sees around. Above he fights against thistles and does not spare the authorized measures for their destruction, when not sufficiently effectual. His letter just received on education we can only publish in part, ours being an agricultural paper. Any articles relating to the farm or garden we shall be glad to receive at any time. Sometimes we are obliged to postpone the insertion of letters to another time. We have held over "Canada Thistles" till now.—ED.]

## Fruit Trees Freezing.

SIR,—I would like to express my opinion concerning some writer's views about fruit trees freezing. I observed a piece in the ADVOCATE saying that the writer thought that a good June grass sod around the roots to keep them warm would effectually protect fruit trees. In one sense I think him right. I have had a long experience in raising trees, and it is my opinion that the freezing of fruit trees is caused by too much forcing or an extra flow of sap and exposure to the sun and frost. I find that trees often freeze about a foot from the ground, and I think that an extra flow of sap between the bark and the tree bursts the bark from the tree. Let us borrow a comparison from the forest:—Those black maples are the best to run sap, and the cause is they have more sap than another tree; they are consequently split with the frost, and the sap runs down and makes them black. I think, therefore, that a good June grass sod would prevent that overflow of sap; but I do not approve of June grass around a tree except the ground is too rich, and that is not very often the case.

If you think this fit to put in your paper, I would like some one to reply, and give me their opinion. HENRY DANIEL.

Kincardine, Jan. 3, 1876.

[We would thank some of our readers to give Mr. Daniel the reply he desires to his letter, which we publish without comment. A great advantage of having the ground around trees in sod is this:—The thaw in the soil is more gradual and retarded than in cultivated soil; and the early thawing being sometimes succeeded by freezing is more injurious than a steady frost. Our opinion is that a proper mulching will save trees from the effects of freezing. We have found it so.]

## Wild Mustard.

SIR,—On the question how to kill wild mustard, I hereby offer a few remarks: Wild mustard might be easily killed when first it makes its appearance, by pulling it by hand from amongst the grain, when it comes in blossom, but if neglected the first time it will yield an hundred fold, and will not only appear in grain or root crops. You may seed down to pasture for any number of years and see nothing of it, but like wild oats when broken up again, it is still there, and the most successful attempt at killing it I have seen was in Aberdeenshire, Scotland, where an eight acre field was broken up, sowed with oats, the said wild mustard was so thick when in blossom nothing but itself could be seen. The following spring immediately after seeding—being plowed in the fall — it was cultivated about three inches deep, let lie till a "braird" came up which covered the ground entirely, and after being about one inch above ground. The field was plowed about four inches deep, and well harrowed, this brought another "braird" as thick as before, and was about six inches in height before the second ploughing. Being busy with other root crops—this ploughing was from five to six inches deep, and again well harrowrd, bringing a third crop, about one-fourth of the thickness of the other two, and was plowed under between haying and harvest; third plowing about eight inches deep, and well harrowed; scarcely any mustard to be seen after this plowing. It then after harvest got a good coating of black muck, from a newly dug ditch close by. The following spring it was laid out in twenty-four feet lands seeded down to rye grass and clover along with a crop of barley. There was no sign of mustard in the barley. The field was again broken up after being mowed one year and pastured the next, and again sowed with oats, and not a stem of mustard could be seen.

GEORGE ALEXANDER, Pomona P.O.

[In a former number of the ADVOCATE we published some essays on the destruction of this very injurious weed. From an article in this paper, it will be seen that it is not merely as a weed injurious to the growth of useful plants, that we are to strive to extirpate it from our fields, but still as poisonous to our stock. The great resemblance the seed bears to rape seed makes it necessary to prevent its growth entirely. To effect this, such measures as those recommended by our correspondent, must have good effect.—ED.]

## Weighing Cattle by Measurement.

SIR,—In the October number there are given two rules for weiguing cattle by measurement. Will you be kind enough to explain in next months' ADVOCATE how they accord, *e. g.*:—height, 6 ft.; girth, 4 ft., 72 in. x 48 equals 3,456 ÷ 144 equal 24 x 16 equal 384 lbs. weight by one rule. 4 x 4 equal 16 x 6 equal 96 x 336 equal 322.56 weight by the other. 384—322.56 equal 61.44 lbs. differ.

[Rules given for finding the weight of cattle by measure are not designed to give the exact but the approximate weight. They are useful merely as a means to *estimate* not to calculate the weight of animals. The two rules referred to are both in use for that purpose as serviceable, though not agreeing in the answer. Of two animals, equal in dimensions, there may and most probably will be found a difference in weight, when brought to the scales, as much depends on circumstances, such as quality and condition of animal, and the length of time fattening, and kind of food.]

## New Zealand Oats.

SIR,—Enclosed please find sample of New Zealand Oats. You will see by examination that the hull is very thin. They look beautiful growing—they have more and better straw than most kinds of oats.

Hammond P. O. JAMES HAMMOND.

[Should any of our readers wish to try the oats they can apply to Mr. Hammond for them.]

# Stock and Dairy.

## Shorthorn Breeding.

CONDUCTED AS A SCIENCE, WITH A VIEW TO MAINTAINING THE HIGHEST EXCELLENCE IN USEFUL QUALITIES.

[Address delivered by Judge T. C. Jones before the American Shorthorn Breeders' Convention, at Toronto.]

(Continued.)

The theory upon which the early improvers proceeded was, that by bringing together males and females possessing the same valuabe properties, they would insure the presence of these properties in their offspring; and by continuing to breed from the produce of such offspring, and always keeping in mind the properties that constituted their value, they would finally establish the excellence desired. At length, by this process, the term blood came to be distinctively applied; and according to an early authority, "when reference could be made to a number of ancestors of distinguished merit, the term blood was admitted." And thus, we may assume, the use and value of the pedigree were suggested. The pedigree was convenient and valuable, but the all important matter was, that which the pedigree was supposed to represent, to wit: an ancestry of animals possessing the properties they sought to produce and perpetuate. The perfect pedigree was not the one sought, but the perfect animal; and the pedigree was only valuable as it aided in furnishing evidence of the material that could be relied on in breeding.

In the early history of the Shorthorn race, as of all other breeds, in what may be supposed to have been the period they were moulded into the approved type, there was a good deal of in-and-in breeding, that is, the coupling together of animals that were closely related; a practice that seemed justifiable, however, because of the limited number of cattle of approved excellence to breed from, and because the tendency of the practice is within certain limits to improve the symmetry, refine the bony and muscular structures, and increase the early maturity—objects which these improvers were, we may suppose, quite anxious to accomplish.

We therefore find that the great multitude of the race now disseminated throughout the world, are all descended from a very few animals. The distinguished bulls of the Collings, from which all pure bred animals trace descent, were from Hubback, R. Barker's bull, Dalton Duke, and the cows Houghton, Lady Maynard, Duchess, the dam of Red Rose and Old Daisy. It would seem, therefore, that with this common origin, there could be little occasion for controversy as to the superiority of blood in the different strains; and that within the prescribed limits as to pure blood, the all-important object should be to breed from the best animals in useful and profitable qualities. To quote the language of Professor Low. "So many fine animals are now reared from the same race, that no one is laid under the necessity of breeding solely from a few individuals; and in the future cultivation of the breed hardiness, soundness of constitution, and the milking qualities of the females, may all receive their due share of attention. In all thoroughbred herds there will be more or less relationship between the different individuals, and according to the general testimony of practical men, breeding from remote affinities is not objectionable. In breeding thoroughbred horses, the coupling of cousins and even second cousins is regarded as in-and-in breeding, and held not to be allowable more than once, or at most, twice without a fresh cross. In Shorthorn practice the mating of animals in this degree of relationship would hardly be regarded as in-and-in breeding; while by many the persistent and continued breeding together of individuals related in the first degreee, as brothers and sisters, and parents and offspring, is practiced and defended. As to the general effect of this practice, I am not aware that there is any ground for a difference of opinion among intelligent and impartial men. Except in the beginning—the building up of a race, or, as it has been expressed—"when the breed is new," if the system is long continued, the injurious effect, as stated by Professor Low, will be the manifestation to the animals of "symptoms of degeneracy, as if violence had been done their instincts. They become, as it were, sooner old; the males lose their virile aspect, and become at length incapable of propagating their race, etc. * * * These effects may not for a time be very observable, but by carrying the system sufficiently far, they never fail to manifest themselves. * * Both sexes become more subject to disease, as appoplexy, and inflammation of the digestive and respiratory organs." The tendency is to produce animals neat, handsome, and fine in appearance, but not growthy. The skin is thin, and appears to be drawn tight over the carcass—the hair is frequently short and scanty, and the flesh deficient in depth and evenness.

Let me appeal to the experience of the intelligent breeders here assembled, and inquire whether they have not observed as the result of long continued in-breeding, this absence of good feeding quality, with light flesh and slim waists, not only in the in-bred animal, but what is a much more serious matter, in the immediate progeny of such animals, where they have been crossed on other stocks?

The fact that close inter-breeding tends to refine the extremities, and to impart elegance and style to the general appearance of the animal, will explain why it is that men of taste have adhered to the practice where those of a more practical eye would have detected a deterioration in useful qualities. And the common assumption of superior excellence in particular strains, and the enormous prices they have made, will also explain why the system has been followed, in some instances, by the use of animals that were confessedly inferior. In the case of the in-bred families commanding these high prices in the market, it is hardly to be expected that men will change their breeding where it involves pecuniary loss, and it may therefore be assumed, that so long as these finely-bred animals are in demand at higher prices than others, so long will they be bred. And yet, whatever we may say in defence of breeding with an eye to the requirements of the markets, in this, as in other cases, it can hardly be necessary that we should be the advocates of a system whose tendency is, in some degree at least, to diminish the excellence of our stock in useful qualities. I think it scarcely possible that among the intelligent and practical men here assembled, there can be a difference of opinion on this point. For, sir, we all know that however desirable it is that we have beauty of form, with that peculiar refinement, and nice balance and blending of parts, that denote the high bred animal, it will be comparatively valueless, unless we have the profitable qualities for the production of human food. In other words, we must have an animal with the vigor and thrift that constitute a grower. Of all the points of excellence in a bullock, none can be more important than this, which we know long continued close breeding tends to impair. And the same is true as to the influence of the practice upon fertility, and the production of milk. In reference to this, I quote the following passages from Darwin's work on the origin of species:—

"I have collected a large body of facts, showing, in accordance with the almost universal belief of breeders, that with animals and plants a cross between different varieties, or between individuals of the same variety but another strain, gives vigor and fertility to the offspring; and on the other hand, that close inter-breeding diminishes vigor and fertility." The same author has somewhere observed, that it must be admitted that in nature there is a strong tendency to out-crossing; a remark which the observation of all intelligent men will confirm. For who is there that has not observed the universal disposition among male animals to seek the society of strange females away from home? There seems to be an intimate connection between the breeding and milk-producing qualities; and I think it seldom or never happens that a large milker proves an irregular and uncertain breeder. For this reason, as well as because the Shorthorn race has from the earliest period of its history, been distinguished on account of its combination of excellencies, we must not neglect or under-estimate the milking qualities, or allow them to deteriorate. There is now no necessity for resorting to this refined system to give style and beauty to the form—for, as observed by Professor Low, "The external form has been already brought to all the perfection which art seems capable of communicating; and now, those other properties remain to be attended to, without which no further refinement of breeding will avail, for the purposes of profit to individuals, and benefit to the country."

Gentlemen engaged in the in-and-in practice, seem to be aware of its influence in impairing useful qualities, as is shown by the fact that they are constantly seeking bulls as remotely connected as possible with their cows, so they are within the tribe, to make what they call a fresh cross. These breeders also hold, that if they are driven to go out of the family for a cross, they should resort to what they call a low or miscellaneously bred bull, assigning as a reason, that if they resort to another in-bred family, each being equal in heriditary power, there will be no blending of qualities, and therefore, the result will be unfavorable.

There is no doubt but such crosses are unsatisfactory, because the evil results of in-and-in breeding, whatever they are, are still present in both parents, and it is, therefore, self-evident that they will be transmitted to the offspring. It is claimed that the cross from a strain that is not in-bred is a success, because the heriditary power being comparatively weak, the cross will not materially interrupt or change the type of the in-bred family. This is based upon the assumption that in-and-in breeding increases the power of transmitting qualities to offspring—that, indeed, the more in-bred the animal, the greater his potency in this particular; and conversely, we suppose, the less an animal is in-bred, the less potent he will be as a getter. With this argument I take issue, and deny the assumptions on which it is based—I deny that the mere fact of in-breeding increases the heriditary power, and insist that among the most distinguished of our breeding animals for potency in transmitting qualities, have been those that were not in-bred.

I of course admit that many in-bred bulls have been remarkable for impressing their characteristics upon their offspring, but I deny that this is to be attributed to the fact that they were in-bred. The advocates of the assumptions which I am combatting, refer to Favourite to sustain them. Let us look at that case. Favourite was an in-bred bull, but he was not from an in-bred ancestry. His sire Bolingbroke and Phœnix his dam, were both by the same bull, Foljambe, and the dam of Bolingbroke, Young Strawberry was a half sister to Phœnix, both being daughters of the matchless Lady Maynard. The coupling of Bolingbroke with Phœnix, the dam and sire of Favourite, was, therefore, the first in-and-in breeding in this pedigree; here, then, was but a single incestuous cross, which, according to all authority, may frequently occur without injury, especially where animals are of high excellence and of vigorous constitution. How was it here? Phœnix was equal in excellence to any cow the Collings ever bred; and she was of large size, and a great grower. Bolingbroke was regarded by Mr. Coates as the best bull of his day—was a fine feeder, and inherited from his sire, Foljambe, substance and constitution, and from Hubback, through his dam, superior quality of flesh. Foljambe, the double grandsire of favorite, we are told, was a useful, thick beast, wide back, etc. Richard Barker's bull, the sire of Foljambe, was also a bull of good size and symmetry. On the other side, we find that the sire of the dam of Bolingbroke is Dalton Duke, described by Mr. Coates as of great substance with a wide back.

Such, Mr. President, were the elements from which was bred the most distinguished bull in Shorthorn history—Hubback—R. Barker's bull, Dalton Duke, the cow, Dam of Houghton, "by a bull Mr. Colling bought of Mr. Bamlet," and Lady Maynard. How could Shorthorns less related in blood have been selected? And the progeny of these were so coupled as to avoid in-and-in breeding until Bolingbroke and Phœnix, the sire and dam of Favourite, were produced. Surely, sir, we can find nothing in all this to support the idea of continuous incestuous or line breeding! On the contrary, was it not, until we came to Favourite himself, what would now be called "miscellaneous" or "low breeding?"

*To be Continued in our Next.*

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HOG CHOLERA.—We learn that Hail Talbot, Esq., of Loutre Island, Mo., has recently lost one hundred and fifty head of fattening hogs by the hog cholera. From every direction the news comes of the great fatality of this disease. What is the disease? What causes it? What will prevent it? What will cure it? Why will not the medical profession all over the West give this matter their serious attention? The internal organs of swine resemble those of man more than those of any other brute. It seems by careful examination that some of our best physicians can tell us what is the matter, and how to cure and prevent the disease. "An ounce of prevention is worth a pound of cure," and those having hogs that are now healthy, want to know what treatment to give to keep them so.—*Rural World.*

## Steamed Food for Live Stock.

The editor of the *N. E. Farmer* has been visiting a stock farm at Worcester, Mass., on which there are fed thirty-one head of cattle, of which twenty-eight are pure Ayrshires. The party of which he was one were prominent breeders of fancy stock, and were all endeavoring to have the very best methods of feeding and tending animals. His account of the method there practised we subjoin abridged:—

"This farm, of some 200 acres, is excellent for grass, as also for fruit, and nearly all other farm crops. One hundred tons of hay are annually cut and stored, besides the fodder from some ten or twelve acres of tilled land. During the winter the stock is all fed twice a day, upon a variety of fodder and grain steamed in a large, tight, wooden box, mounted, for convenience in hauling, upon truck wheels. At noon a small feeding of dry hay is given to each animal. A ten horse power engine and boiler furnish the steam for cooking and the power for cutting hay, and pumping either warm or cold water for the cows to drink. The boiler is an upright tubular one, and fully equal to all the demand made upon it. They believe that many who have tried steaming food for cattle have failed from the use of small and inferior kinds of boilers. If steam is to be used, it is cheaper to generate it from ample boilers.

"The attempt to use kettles and small boilers, they believe, has done much to discourage many who have tried steaming fodder. Their boiler, engine, cutter, pipes, shafting, &c., cost about $1500. and has been in use four years.—They are convinced that, for a herd of the size of theirs, and with considerable quantities of coarse fodder to work up, it will pay to use steam, especially for producing milk for sale. They fill the box with a mixture of hay and grain twice a day, and each mess is given to the animals warm, after the fodder has been exposed to the steam under pressure some two or three hours.

"At the time of our visit the following rations were served:—200 lbs. hay, ¾ bushel corn meal and 1½ bush. wheat bran for the night's feeding, and the same kind and quantity of grain, with corn stalks instead of hay, for the morning feed.

"The cows in the stables at the time of our visit were looking healthy and contented, and were producing liberal quantities of milk, which is sold daily in the city of Worcester at a paying price. While we were there, the steam was let on and the hay-cutter on the barn floor was started, while one of the attendants run through a few bunches of corn stalks, to show with what ease and speed they could be worked up into chaff. The proprietors are strongly attached to the Ayrshires for milk."

## Our Engraving.

Sweet Auburn! loveliest village of the plain,
Where health and plenty cheer the laboring swain,
Where earliest spring its earliest visit paid,
And parting summer's lingering blooms delayed.
How often have I paused on every charm,
The sheltered cot, the cultivated farm,
The never-failing brook, the busy mill,
The decent church that topped the neighboring hill,
The Hawthorn bush, with seats beneath the shade,
For talking age and whispering lovers made!

—*Goldsmith.*

## Foot and Mouth Disease.

From the *Farmer*, England, we take the following extract on this subject, one of the important now effecting the agricultural interests of the country:—

It is well known how cattle disease is frequently due to ships' holds and railway tanks. Foot and mouth disease cannot originate in these, whatever their cleanliness or ventilation may be, unless they already contain the special virus of the disease, cast off from some infected animals previously carried by them. As, however, vast numbers cannot help passing along our railways in the present state of the country, it is important that the law in force for the disinfection of cattle trucks, should be insisted on. At Liverpool, an action was brought against the London & N. W. Railway Co., for a breach of the Contagious Diseases (animals) Act, by neglecting to cleanse and disinfect certain cattle trucks at Stanley station.—The charge against the company was made by the Privy Council Inspector at Liverpool, who found seven trucks that had evidently not been properly cleansed for some time, loaded with a fresh lot of cattle. The defence of the stationmaster was that the drovers, always anxious to truck their cattle as soon as possible, had seized the trucks and loaded them without the permission of the servants of the company The thirty-five wagons of the train had all been cleansed except these seven, and these, it was maintained, would have been cleansed, had the drovers not seized them before the men were able to get at them. They were afterwards unloaded, disinfected, and reloaded. The Bench imposed a penalty of 15 pounds on each information, the total amount of fines making a sum of 105 lbs.

At Glasgow, A. & J. Tieman were charged with the following offences against the Contagious Diseases (animals) Act:—1. With having exposed within the market 23 head of cattle affected with the foot and mouth disease. 2. With another offence of the same character. 3. With having in sheds in same cattle market, where animals are commonly placed for exposure before sale, 19 head of cattle affected with foot and mouth disease. 4. With another offence of a similar nature, on another occasion. As this was the first complaint against the defendants, they were fined in the modified penalties of 30 pounds.

At the Edinburgh County Justice of Peace Court,

Robert Wilson, cattle dealer, was fined 20 pounds for having driven along the public road thirty cattle, all more or less affected with foot and mouth disease, and with having had them in a field in his possession, and having failed to give the necessary notice to the police authorities. Another cattle dealer was fined at the same time for a similar offence.

## Our Breeding Stock.

No doubt the farmers of the country have made decided progress in the breeding of cattle within the last twenty years. This is too apparent to any one who has been in the habit of attending our country and town fairs during that time. Still there is much room for improvement, and we ought not to stop where we are, but to press forward to something higher and better than anything yet attained. Step by step it may be, and by slow degree, we shall improve our stock and bring it up to a much higher level of excellence.

We incline to think the point to look at more carefully now is the quality of the dam from which we propose to raise stock. Our great effort has been devoted chiefly to the male, and this, it must be acknowledged, is the true way to begin. But well begun is only half well done. We are too prone to pay little attentien to the quality of the dam, and to think that if the service of the best male is secured, the end will come out all right.

It will be admitted that it is of the utmost consequence to look out for the pedigree and especially the quality of the sire. That is a settled rule. We want to see him perfect, or as nearly perfect of his kind, as possible, and we can offord to go to considerable expense to secure this perfection in the male. But if we are to arrive at a certain perfection in the offspring, *both* parents must be perfect. This law holds good in regard to all animals, not excepting man. The certain transmission of qualities will be readily seen to be of great benefit in the rearing of our domestic animals, if properly taken advantage of. If we wish to raise a good dairy, we should breed our best milkers to bulls regularly descended from a line of ancesters eminent for that quality; and, in this region, we should breed from no others, for the product of the dairy is the most important agricultural product to which our cattle contribute. Even if we wish for beef or work, we are not aware that the possession of a good milking pedigree detracts in the least from those qualities; for which reasons breeders who are raising thoroughbred stock to supply the wants of New England with breeders, should begin to understand that everything in their line is below par that does not possess the power to transmit excellence in the dairy. This doctrine, or law of transmission, is a two-edged sword, and will cut to the quick in the wrong direction if the least impurity of the blood remains in our breeding stock. This is the doctrine of the thorough-breeders. We are all acquainted with what is denominated *breeding back*, that offspring are as likely, or more so, to put on the appearance of the grandsire or granddam, even farther back, as of the father or mother, especially if they descend from a race of long-established character. Thorough-breeders, beware that you do not sow tares with your wheat, for your tares, you say, are more likely to take root than the wheat.

Now what we have to do is to weed out the tares, to cull out and sell all inferior specimens, and to breed only from the best. When the whole body of farmers have come up to this point, we shall have made a great step in advance. The improvement of our stock is certainly, as claimed by our breeders, a matter that can hardly be overrated. If any one has not worked up to this idea, let him cast back to the time previous to the injection of better "blood" into the veins of our cattle, when our very best two-year-old cattle, when butchered, would only on rare occasions come up to five hundred pounds, dressed weight, and so unthrifty or of so small capacity for growth as to hardly pay for their keep. Then let him compare what he can recollect of them, with what is patent to his senses now, when he beholds our best stock, which our best breeders and raisers annually exhibit at our fairs, and though as inclined to sleep as Rip Van Winkle, we think he would be thoroughly aroused.

The first efforts at improvement of our cattle began with a few individual farmers here and there. They persevered till one after another followed their example. The result of their labors is what we behold to-day in the improved condition of New England cattle. The number now interested in this department of farming is vastly greater than it was twenty years ago, but we must not cease our efforts till the interest becomes universal.

Butter from Milk Four Years Old. — The *Agricultural Gazette* says:—A sample of condensed milk, weighing about 1 cwt., was lately exhibited at the rooms of the Society of Arts, and an interesting experiment made thereon. This mammoth piece of solified fluid was prepared by Hooker's process. It had been exposed to the action of the air for four years and three months, yet its quality was so excellent that, in a few minutes, it was resolved, by churning, into fresh butter. This trial was only one of a series, made at the International Exhibition, South Kensington, and elsewhere. In each case the same satisfactory result was obtained.

## To Prevent Cows Sucking Themselves.

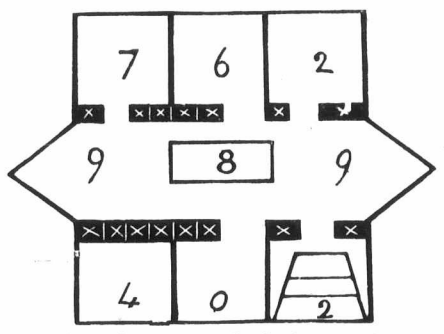
Sir,—I have a cow that will turn her head under her udder and suck her own milk. What is the best way to prevent her from doing so?

J. S., Bruce.

[We know of no better remedy than the accompanying cut shows you. We have heard of putting cayenne pepper on the bag with grease, but do not approve of the plan. Some consider putting the knife in the throat the safest and most profitable mode of dealing with such cows.—Ed.]

## Plan of Poultry House.

We have two applications for plans of poultry house. We give this plan, sent in by Mr. G. Steedsman, of Ratho, as one which is considered by some a good plan:—"XX, coops; 2, roost for




hens; O, feed house; 4, duck house; 6, geese; 7, turkeys; 8, pond; covered yard and angles for outside yards and door-ways; feed boxes same as in description of hen house, with nests and roosts same."

## How to Pack Butter to Keep.

Prof. Arnold gives the following recipe in the New York *Tribune*, which will preserve the butter and keep it sweet for eight or nine months:—"Make a brine with a saturated solution of the purest salt you can get, using a pound of saltpetre to about twenty pounds of salt. Scald the brine by bringing it to a boiling heat, skim, and apply when sufficiently cool. The casks should be carefully prepared, as well as the brine. If the gum and sap in the wood are not removed before the casks are used, they will work out into the brine and affect the butter. To remove the woody flavor from the casks, a thorough steaming with a high pressure is the quickest and best means. If soaked before the steam is applied, hot steam will cut the gum and woody flavor all out in a short time. If steam is not convenient, soak in brine a week or so, and then fill with boiling hot brine and let it stand till it gets cold, and the woody flavor will be sufficiently removed. By keeping the butter under the brine, the casks full, and in a cool place, the butter will keep safely. Some of the tin-lined packages which have recently been introduced, and which are easily hermetically sealed, would be much more convenient, and probably full as cheap, as the oak casks and brine, and are claimed to be equally efficient in preserving." In reference to the use of unglazed jars in which to pack butter, another correspondent says:—"I have kept a dairy of fourteen to eighteen cows for some years, and find most persons prefer earthen jars to wood. Where I send the butter to families, these jars are returned each season to be refilled. We find it impossible to cleanse the inside of the cover if it is not glazed; it absorbs every taint or bad odor that may come in contact with it, and every such tainted cover is sure to spoil the contents of the jar. I have had jars of butter spoiled in forty-eight hours so they were not fit to use. My object in writing to you is to call the attention of those who send butter in jars, as well as those who make jars, to this defect. I think if the inside of the cover could be glazed, it would save much loss of butter packed in jars. I find many covers are tainted before the jars are filled, as many merchants keep their jars in cellars or near kerosene, or some other rank-smelling substance. I have not seen this subject noticed in the discussion of dairymen, and I shall be much obliged if you will attention to it."

## System in Farm Labor.

The following pair of pertinent paragraphs, which we find in the New England *Homestead*, must have been written by some level-headed body who keeps his eyes wide open, and knows how to tell what he sees and thinks.

The amount of muscle that can be saved by a little brain labor is wonderful. And yet the science of doing everything in proper time and place, in fact, properly, is something that agricultural papers, or farming books, cannot teach. Experience, calculation and forethought are the mentors. A month before a piece of machinery is to be used, a glance at it will show where it is defective. A rainy day, a spare hour, a chance to take it to town to be repaired without going on purpose. These present themselves to the intelligent farmer, and, when the harvest is ripe, or the corn ready for the cultivator, there will be no delay for the mending of damaged machinery.

There is no such weak laziness, or wicked waste of time and opportunity, as the man practices who never has time to do anything properly. He goes to town with three errands, and comes home with only one finished—he has no time for the others. He plows with a dull plow, and chops with a duller axe for lack of time to sharpen them. All these are the lack of forethought and system—a neglect to use the brain that God has given him to shape and direct his work and save the muscle.

An ox will do the work but he cannot plan it. The horse is powerful, but he is controlled by his master, and his power utilized. Man's labor is but brute strength, and the stronger the brain force that is brought to bear upon it the more surely every stroke tells, and the more grand will be the result.—*Colonial Farmer.*

Feeding Pot Plants.—We have tried a number of experiments this season with liquid manure, and all lead us to have faith in the application of it at watering, in a weakly state. A number of old fuchsias were stunted and pot bound, but pressure of more important matters prevented our potting them into fresh earth; but to each watering a portion of guano was allowed, and the plants with their pot-bound roots have not only made vigorous growth, but flowered freely from June onward to November. Some Pelargoniums which were cut down last season and allowed to break in the usual way, were shaken out of the pots and placed in smaller ones; but when they should have been shifted they were allowed to remain in the small pots, which were crammed with roots. Guano water was given at all times when they required moisture, and the plants grew and flowered better than others which are favored with larger pots and fresh soil. We could give many other examples to prove that giving liquid manure frequently, and not until roots are in abundance to consume it, as the proper way to deal with this important assistant to cultivation.—*Florist.*

## Grain for Feeding Stock.

The high and increasing price of oats draws much attention to substitutes for that food, which cannot be equalled for horses. Bearing in mind that the nutritive qualities of plants vary more in respect of climate than of season, it is not surprising to witness different results from the same description of aliment. Barley raised in southern is superior in quality to that grown in northern climates. In the East, in Spain and in Arabia, horses fed on barley acquire more vigor and power of endurance, while in temperate climates it is fattening and refreshing in its effects. To excite fowls to lay or to hatch, oats and light wheat are given; to fatten them, barley. Whenever the French invaded Spain, their cavalry was decimated by inflammatory diseases, produced by feeding the horses on barley. On the other hand, Arabian horses, when imported into France, can only be kept in good condition by being fed, not on barley, but on oats. Barley is a tonic in warm climates, but enervating in temperate ones. Maize is but an auxiliary, it can never become a substitute; it has not sufficient force-producing power. M. Adenot experimented with feeds of equal rations, of nine pounds each, of maize and oats, on 48 of his wagon horses, extending over a period of two months. The animals lost one-fifth of their draft-power—which they recovered, however, when their full oat ration was restored. The economy in the way of oats disappeared by loss of strength. One-eighth of maize with oats turned out well, but then the maize must be American, not French. How nearly soever related maize and oats may be chemically, in physiological effects they are widely different. Thaer & Dombasle recommend buckwheat for farm horses, as being capable of replacing in part oats. Their opinion is questioned; but buckwheat differs in richness according as it may have been saved, when matured, or otherwise. M. Audenot has found a mixture of 13 pounds of oats with 6 of rye very successful; his experience extended over fifteen years, the stables containing not less than 350 draught horses; the mixture was not equal in producing vigor to oats alone, but was not the less a capital feed when grain was scarce. In former times wheat was given to stallions during the season of serving, and to mares when suckling, but wheat fattened rather than imparted strength or produced muscle.

In the production and reparation of muscular force, beans rank with oats, exciting the appetite, and excellent for horses that digest badly their full feed of grain. Field peas are favored by some for fast horses; improving their wind, while forming a change of food. Oats being unrivalled, many farmers object to either bruise or break them. Containing less farinaceous matter, they nourish less, in the sense of fattening less; this quality Messrs. Magne & Baillet attribute to an aromatic principle in the skin, analogous to vanilla, and to which the stimulating action of the grain is to be traced. Now, mountain oats, small and light, are more exciting than others, because they contain less farinaceous, and more of stimulating matters, and hence why many breeders keep stocks of mountain and lowland oats, giving feeds of each alternately, never mixing, for where the ingredients of rations differ in volume, much that is small escapes unmasticated or incompletely mixed with saliva.—*From French Correspondence of American Farmer.*

## Roots for Butter Cows.

A "Subscriber" to the *New England Farmer* asks, "Which is the best root to raise for cows, when butter is the principal object?"

Now, if the writer is farming upon land similar to much of the sandy soil of Bristol and Barnstable counties, in Massachusetts, he would probably do well with carrots, while if his farm is a heavy clay, like much of the soil in Vermont, he might do better with mangolds or sugar beets. One variety of root might be better than any other if the cost of raising were equal in all cases. We would never grow turnips for feeding to butter cows if carrots or beets could be obtained at the same cost.

There are, probably, few questions upon which farmers differ more widely than the turnip question. Let one ask, in a gathering of farmers, if turnips injure the quality of milk or butter, and he will get answers as diverse as the colors of the raiubow. Some will assert that turnips may be and have been fed in large quantities to milch cows, without producing any injurious effects whatever; while others will cite cases where a single turnip leaf has spoiled the milk of a cow for a day; and Mr. John C. Dillon, farm superintendent at the Massachusetts Agricultural College, goes even farther than that. He tells of an instance where a sensitive person was able to detect a very disagreeable turnip taste in the milk three whole weeks before the cows had eaten any turnips. This was a case where turnips were being fed to other cattle in the barn, and the person who discovered so much turnip taste in the milk had seen the teams drawing turnips to the stables, and supposed they were being fed to the milch cows.

On the other hand, we know of a gentleman, Mr. White, of Putnam, Conn., who feeds turnips to his cows very freely, and who has never heard any complaint from his customers about turnip flavor in either milk or butter. He tells of one of his city friends who had been very much troubled by the turnip taste in a tub of butter bought from a farmer who raised turnips for his stock. The city friend sent to Mr. White for a package of fall butter to be laid down for winter use, and remarked, when sending the order, that he did not like the butter he bought last year, because the cows ate turnips, and he sent to him because he heard he made fine butter which gave good satisfaction to numerous acquaintances of his in the city. Mr. White wrote him that he would make a tub of butter and send it in, and if it did not suit he might return it, and he would pay expenses.

The butter was made and sent, the cows eating turnips as usual, only that the quantity was doubled while gathering the cream for this lot of butter, "for," said Mr. White, "I meant to give this turnip question a severe test." The butter was received, examined, and pronounced excellent; and the buyer sent Mr. White the price for his butter, and added in a note, "That butter suited me. No turnips fed to the cows that made that butter."

These are the two strongest cases upon the question of turnip flavor we have ever known. In one case, the lady who saw turnips being carried to the barn, tasted turnips in the milk three weeks before any were fed; and in the other case, a person who was very sensitive to this turnip flavor, used up and pronounced excellent a whole tub of butter made from cows which were fed all the turnips they could well manage.

It is claimed by some that turnips may be fed, during certain portions of the day, with perfect impunity, while, at other times, a single leaf may seriously injure the flavor of the milk.

Our own experience has seemed to indicate that turnips, when first fed to cows, may injure the milk, but after feeding them for a few days, this tendency to flavor the milk grows less and less till no unfavorable effect can be detected, except by persons with extremely vivid imaginations.

There are two reasons why we raise no turnips for our own milch cows. First, because the land we cultivate is not adapted to their growth; and second, because we are not willing to run the risk of making even one mess of poor butter from cows fed upon these roots.

Carrots are in better repute than turnips among both butter makers and butter consumers, but we know of men who have tried them repeatedly for producing first-class butter and with repeated failures. Carrots have a very strong flavor, and one which, to many persons, is exceedingly disagreeable, and the milk and butter produced from cows fed largely upon carrots are, undoubtedly, often affected by them to a very perceptible degree. We have no reason, however, to doubt that they may be fed in such a manner that no injury will follow after the first few days. But carrots cannot be grown profitably except upon rather light and easily worked land.

In certain portions of Eastern Massachusetts and in Rhode Island along the sea coast, where the land is too sandy for grass, these roots are often grown in immense quantities, and at a relatively small cost. If "Subscriber" is farming on such land, he may raise carrots with advantage, and by a judicious system of feeding may use them with little danger of bad results.

Mangolds and sugar beets have never—so far as we know—been charged with injuring the quality of the milk or butter from cows to which they are fed. They are sweet and nutritious, and easily raised on a heavy clay or good loamy soil, if well manured and kept free from weeds by frequent cultivation. They are also late keepers, and may be fed all through the winter months and in spring till the grass starts in the pastures.

## Old Pastures, or New?

There are two opinions about pastures. One is that it is more profitable to feed only newly-seeded land, using it not more than two years before plowing it up for a re-seeding; and the other to let it remain for many years, allowing the surface to become fully occupied by native grasses, these being supposed to be best adapted to develope its power of production.

If we consider this question according to the general practice of farming communities in this country, we cannot hesitate to decide that the greatest profit will follow the first-named method, for there is no disputing the proposition that timothy, red-top, orchard grass and red clover, newly sown on a well-prepared and well-manured soil, will produce much more forage of a highly nutritious kind than will a close turf of blue-grass, white clover, etc., which has for many years had full possession of the ground, and has had no artificial stimulation. The difference in amount will be much more than enough to repay the cost of breaking up, manuring and seeding.

It is not now a question whether the cows will do better on one kind of pasture than on the other, only which will produce the largest money profit. If a single cow were allowed to roam over ten acres of short old pasture, picking up her whole living in white clover and the tender sprouts of blue grass, there is no denying that she would give more milk, more butter and more cheese than she would if feeding, however abundantly, on the coarser grasses of an artificial pasture. But our purpose in farming is not to get the largest possible yield from our cows, but to get the largest possible yield from our land The cows are only implements for converting the products of the field into the saleable products of the dairy.

An average first-class cow coming in in May will make 200 lbs. of butter in the season on good natural pasture, but she will require at least three acres of land for her exclusive use. At 30c. a lb., the season's produce will be $60—or $20 an acre. On a good artificial pasture she may only give 180 lbs., worth $54, but she will be fully supported by the produce of a single acre. Supposing that a third of the produce is consumed by the interest on the extra number of cows, and by the cost of keeping up the pastures—which is surely a very liberal allowance—we shall have $36 instead of $20 as the return per acre. In addition to this, we shall make ourselves much more independent of variations of the seasons, for a well-worked rich meadow is far less injured by excessive drouth than any natural pasture on the same soil could be. This of itself will often equal the drawbacks allowed for extra cost.

To put the proposition in another form, we may expect, from the foregoing calculation, as large a cash profit from ten acres of natural pasture, and there would be far less risk of loss from unusual drouth.

It is not proposed, of course, that rough or waste lands should be used for artificial pastures (they would not repay the cost), only that such fields as are susceptible of probable subjection should not be left in a barren state.

How nearly natural pastures may be made equal to artificial ones by the use of the harrow and liberal top dressings is a proposition not considered above. The cost would generally be less than that of re-seeding, and the result equally good. In any case, no pasture—old or new—should ever be overstocked.—*Am. Agriculturist.*

## Meat and Manure.

Let it be remembered that the manufacture of beef is only profitable when it is coupled with the production of manure. Both scientific and practical men are agreed on this point, and hence the preservation and perfect making of dung is a matter of great importance. All good buildings should be contrived so that the manure from the various animals accommodated may be well mixed. We have in our thoughts a set of farm builnings, designed with much display of scientific knowledge in many respects; but alas! the architect had overlooked this cardinal point, and to this day the horse, pig and cow dung are all thrown into separate heaps, there to suffer from dry-rot; or, at best, to result in a badly mixed and inferior quality of dung. Stables and byres should open into courts, over which the litter from the horses and cows should be regularly spread every day. By this means alone will a good result be obtained.

The respective merits of boxes, byres, and fold-yards for fattening cattle in a great measure de-

pend upon the quality of dung they turn out. The box is economical in the matter of straw, and will be esteemed for this reason in suburban districts. It is also favorable for the manufacture of good manure, as, being under cover, the litter is wetted by the droppings of the animal only. The byre is still more economical of straw, but is not favorable to the manufacture of good manure, owing to the animals being tied up. Litter from byres ought to be thrown out into courts and trodden down with young stock. Fold-yards require much litter, as they are always more or less open, and are for this reason preferred in rural districts, where the value of straw is not yet felt.

Excellent manure may be manufactured in small troughed folds, with a considerable proportion of shedding. Cattle will do well in any of these forms of accommodation, but if tied up in byres it will be humane, as well as profitable, to have them brushed and curry-combed daily. It must be remembered that animals thus confined cannot lick or rub themselves, and that they are deprived of the cooling effects of air and rain. The skin under these circumstances becomes irritable; and especially where, as is often the case in byres, dirt adheres to the animal, brushing and cleansing the skin and attention to the state of the feet cannot be too strongly enforced.—*London Agricultural Gazette.*

## How Much Should Cows Eat?

We have had an enquiry from a farmer in Nova-Scotia, of the quantity of food necessary to keep stock in good condition, and for fattening. We have deferred our reply to his query till next month, when we hope to answer him fully. Meantime we give below an article from the *N. E. Homestead* that will, no doubt, be interesting to our readers, and it may induce them to ascertain by their own experiment what quantity of food they should feed to their stock. The results of such experiments we will, with pleasure, give place to in the FARMERS' ADAOCATE.

"For eight cows I began wheeling the corn to them by the wheelbarrow load. This was slow work, as the cows would consume one load while I was after another. I then took it to them by the wagon load, keeping the cows in at night. One small wagon load would not suffice. I thought I would like to know how many tons one cow could eat in a day. I weighed one load, and found it to be 2,345 pounds, and on Saturday, 5 p. m., the eight cows were set to work. Let me say, further, that they were not starved for 24 or 48 hours prior to this, but were well filled at the time of beginning the task. At 7 p. m. the stalks were turned over to them until they were full, and enough for their lunch during the night left within reach. They were let out for watar on Sunday, but were not dry, only two indulging. They were fed three times on Sunday. None would drink on Monday. Again they were fed during Monday, and at 5 p.m. the whole load, 2,245 pounds, was consumed, an average of 146½ pounds per day—or each cow ate 293 pounds in the 48 hours, and was not uncomfortable, either. The cows shrank during the time about three pounds each. The corn sowed was Ohio mixed; at the time of cutting, it was fully ten feet high. From August 1st, my pastures have increased, owing to keeping the cows off at night. I regard grass as better for milch cows than fodder, unless you are making butter. I sell milk in town, and to produce it in large quantities I feed 'brewer's malt;' this produces a large flow of 'lacteal fluid;' but followed up with meal, or corn and oats ground together, it makes a large flow of good milk. I cannot afford, these hard times, to buy meal, so I feed sowed corn (cut and fed green) which answers every purpose, and is much cheaper.

"The amount of fodder corn a cow will eat, according to the above statement, is certainly very large; but we must remember that this food is very juicy, holding a large per centage of water. If we are to take the baking experiment of the jovial President of the New York Agricultural Society (Harris Lewis), the 146½ pounds of corn contained only about 11¾ pounds of dry food, which would be a rather small allowance, after all, for a good-sized cow, since she will eat 25 to 30 pounds of well-cured hay per day in winter. But the probability is that our friend Lewis carried the drying process to a very great extreme, having carbonized a large proportion of the woody fibre; and when corn is dried at a moderate heat it will be found to contain, in its most succulent state, 16 to 18 pounds of dry substance to 100 pounds, which would give about 25 pounds of dry food to each cow in the above experiment, and this would be just equal to 29 pounds of air-dried hay. We have tested cows with clover in its most watery state, and found they would each eat 100 pounds per day. This gave about the same amount of dry substance as 146 pounds of green corn—as clover will dry out about 75 per cent. But J. H. S. may congratulate himself on feeding even 146 pounds of green corn per day; for if his corn was ordinarily thick on the ground and 10 feet high, he had, no doubt, thirty tons per acre, which would feed a cow thirteen and one-half months. What crop will do better than this?"

## Milk and Soils.

At the annual State Convention of the dairymen of New York, Prof. L. B. Arnold, of Rochester, presented a paper upon "Milk Affected by Soil." In drawing their sustenance from plants, animals do not assimilate all the elements they find in the plant. Nor does the plant extract all elements from the soil. These compounds which support animal life are known as organic. But they do not alone build up vegetable structures. Inorganic elements help from the animal structure, and plants absorb both organic and inorganic substances. Plants selecting from this supply take up in variable quantities elements both needed and not needed. Hence composition of animals, and the secretion vary with the composition of the food. Milk, therefore, varies in composition and value according to the food eaten. Potash in wheat varies from 35 to 50 per cent., and soda varies from 0 to 27 in other plants. In all agricultural plants the elements vary according to the soils in which they grow; and their influence is great upon the secretions of the animals, and especially upon the constituents of milk. A change of ration will not suddenly cause a change in milk, but its ultimate influence is certain. In 1869 the speaker had noted the change in the quality of milk brought to his factory when the change of feed was made from grass to clover. The grass milk produced much more cream than the clover milk. The per cent. of casein hardly varied, but water took the place of cream. It seems to be a law that a variation of plants involves a variation of function and secretion in the animal. The composition not only of milk but animal tissues changes with a change in soils and foods. Milk may differ in composition, and be equally good. In moving to the black slate hills of Herkimer county, to the clay of Tompkins county, the speaker had found that the same methods of making produced different results. The cheesy matter of milk may be much modified by difference of soils. The practical inference is that neither the analysis of milk nor comparisons of methods may be relied upon in localities differing so widely as England and Holland or as the United States and England, or different localities of either. But few general principles may be derived for all localities.

## Dairymen's Association of Ontario.

The annual convention of this Association will be held at Ingersoll on the 9th and 10th February, and the committee hope to make it both beneficial and interesting to dairymen and farmers generally. Addresses will be delivered by several eminent gentlemen, and a large attendance is anticipated. Any parties wishing to attend and become members may obtain certificates by applying at once to the secretary, Mr. J. C. Hegler, Ingersoll, on presentation of which to the different stations on the Grand Trunk and Great Western railways, they will be entitled, owing to special arrangements made with these companies, to tickets at one fare and a third the double journey. It is desirable that parties wishing to attend should apply to the secretary at once for certificates, so as to avoid confusion and delay.

CURE FOR THE QUINSY IN HOGS.—The following is said to be one of the best remedies for the cure of the quinsy in hogs:—For each hog, take one quart of grated horse-radish, put it in one gallon of sweet milk and boil until the mass thickens. Place the hog on his back, and as soon as sufficiently cool, pour the liquid down the throat. Then take a sharp knife and scarify the throat on the outside, and anoint it thoroughly with a mixture of equal parts of coal oil and spirits of turpentine. Never known to fail, if applied in the early stages of the disease.—Ex.

## The Flesh of Diseased Cattle.

This question is not one in which farmers and stock feeders are the only interested parties. It comes home to every family and every individual. But to stock owners it is a question in which they feel the deepest interest, as bearing on production as well as the consumption of that which is indispensable to every Canadian home. As such, this article we reprint from the *British Medical Journal* has no little interest:—

"Some passages in the Annual Report of the Veterinary Department of the Privy Council Office raise the important question as to whether or not the carcasses of animals slaughtered in consequence of their being affected with pleuro-pneumonia are fit or unfit for human food? On this question, two Departments of the Government are divided in opinion. It appears that the owners of such cattle receive a compensation for the loss they have sustained, and that it is a general practice in estimating this loss to consider the flesh as fit for consumption. With reference to this practice, the Local Government Board state that, though not possessed of any conclusive evidence that the flesh of pleuro-pneumonia animals is hurtful, they are advised by their medical officer that it is unsafe for use as human food. The Lords of the Council, in reply to this opinion, express their regret that the Local Government Board is advised that the flesh of animals which have been the subject of any febrile disease should be considered unsafe for human food, and proceed to point out that, if such an opinion were acted upon, it would entail so large an outlay that they would hesitate to continue their order rendering the slaughter of such animals compulsory. The importance of the question can hardly be overrated, and though no definite conclusion has as yet been arrived at, it has been the subject of investigation by some of our most competent physiologists, with whom we have been in correspondence. The conclusion at present arrived at is that if the disease is recognized in so early a stage that the animal is killed before general constitutional disorder has been set up—*i. e.*, before the muscular tissue has undergone these changes which, in all febrile diseases, attend the development of the febrile state, is not unfit for consumption. Consequently, the question whether any given carcass is fit for human food must be judged in each case on its own merits. If, on inspection, the muscular tissues be found to be in a perfectly natural state, and there is evidence to show that reasonable despatch has been used in killing the animal before it has begun to be seriously ill, then it would be unjust for the law to interfere; for, as regards pleuro-pneumonia, there is not the slightest reason for believing in the existence of any specific contagium in the organism of such a nature as to be itself injurious irrespectively of the alteration of tissue produced by the morbid process. In the contrary case, it is undoubtedly highly improper for the meat to be used as food. Hence, we have two practical alternatives—inspection or prohibition. If inspection can be carried out so as to insure that only such meat as is in a wholesome—that is, natural—state is offered for sale, then the use of the flesh of pleuro pneumonia animals may be permitted under this guarantee. But if such inspection is impossible, the only way is to prohibit the use of diseased meat altogether, for otherwise the public are exposed to the risk of consuming meat unfit for consumption; not on the ground of any specific infective ingredient it may be supposed to contain, but on the ground of the altered condition of the flesh of animals in advanced febrile disease."

THE HOG.—The hog is properly an European animal, though the wild hog was found in the mountains of Syria and Asia Minor, and still exists in the wilds of the Atlas mountains in Africa. The prohibition of swine's flesh among the Egyptians and Hebrews, shows that it was known as a domestic animal even in those early times. Among the Greeks and Romans the hog was rather popular as a flesh furnishing animal. It is the most prolific of our domestic animals, and a given weight of its flesh can be produced at a less expense than any other form of animal food; but it is the hardest of digestion, and least healthful of all our meats. In cold climates, however, the large amount of fat it contains is important as a heat producing element, and, therefore, northern nations use largely of pork. The filthy habits of the hog are owing chiefly to his domestication. In the wild state the hog is a cleanly animal, living almost exclusively on vegetable food, while the domestic hog is omnivorous, and quite fond of animal food.

## Notes on the Garden and Farm.

Professor Buckman says:—"There is not a particle of doubt that for mildew, whether in grapes, hops or cucumbers, sulphur is the best remedy." He recommends dusting the plants. Solution of one ounce of sulphur along with lime in two gallons of water killed the plant to which he applied it. If the solution is used it should be greatly weakened.

Nearly eighty thousand sheep are reported to have been killed by dogs the past year. Probably enough more not reported were killed to swell this to 100,000, for there are large districts not reported. In some parts of the South-west, I understand that wool growing has been abandoned on account of the destruction of the sheep by these useless animals. And at the same time there are vast ranges for sheep unoccupied.

WHEAT FOR STOCK.—Mr. Wilcox, of Almondsbury, Gloucestershire, says: "I have been in the habit of feeding stock with wheat for some years past. I consider it to be more nutritious than any other food I have ever used. My plans are as follow: Cut straw and hay to fine chaff, the greater proportion being straw, thrown over a given quantity (4 pounds or 5 pounds) of meal with as much pulped root as you feel disposed to put, mixing it together. Give it twice a day. To sheep I always give it crushed or bruised—say a pint or pint and a-half each per day; it is the finest food for sheep I have ever used."

Mr. Torr, of Aylesbury, England, has surpassed anything of ancient or modern times in the success of a cattle sale. He is one of the prominent cattle breeders of Great Britain. A few days ago he sold eighty-five animals for $214,650, being an average of $2,525 a head. The highest priced beast, Bright Empress, brought $10,800, and other cows sold at $8,000, $7,500 $6,000, two at $5 000, and heifers at from $4,000 to $6,000. Fifteen hundred persons were present, and the result of the sale is pronounced to be unprecedented in the history of cattle traffic.

KEEPING POULTRY IN ORCHARDS.—Some farmers make it a practice to keep their poultry in their orchards from early spring until cold weather sets in, and they find that it pays. A picket fence should be built around the orchard, high enough to prevent their flying over, with suitable buildings in one corner of the yard to shelter them at night. Thus situated, the poultry will thrive and prosper, keeping themselves in good condition, and the increase of eggs will be greatly augmented and their usefulness enhanced to their owners at least, on account of the myriads of insects and worms they destroy, and which will more than repay the cost and labor of building the fence. By keeping them enclosed in this manner, a large number of fowls may be retained in the orchard, and the continual scratching which is done by them will prove advantageous both to the soil and trees themselves. —*Colonial Farmer.*

ENGLISH WHEAT.—Foremost as wheat is among the cereals of the temperate zone, it is not selected for uniformity of composition; few grains, indeed, vary more according to season, soil and situation. English wheats, however, come nearest to an average standard of best bread-making qualities; and if we do not turn out the highest-priced flour, it is entirely owing to the want of skill or judgment on the part of the miller. The wheat-corn of southern climates, and during excessively warm periods of growth, preponderate in gluten and hardness of grain over those of colder countries and cool, wet seasons. Hence, the hard wheats of Venezuela, Africa, and Taganrog. Payen, who chiefly illustrates from these, declares that they yield over 20 per cent. of nitrogenous substance when chemically dry; but this is an impossible ordinary condition, and leaves the real amount very uncertain. Whatever may be the *maximum* per centage of flesh-forming compounds in wheat from the sunnier clime, anything exceeding 13 per cent. must be taken from the entire grain. But when the kernel of hard corn shows as much as this, it is altogether unfit for bread-making, unless a large quantity of a poorer or softer wheat-flour be mixed with it. We find the hard Italian wheat only suitable for making macaroni, vermicelli, and similar pastes; nevertheless, good, hard Russian corn, coarsely ground and dried, makes the best substitute for oatmeal in porridge, when that is found too heating to the blood of young children, as experienced Scotch physicians tell us is sometimes the case.—*The Sanitary Record.*

The Windsor *Record* says: Mr Charles Janez has manufactured a thousand gallons of wine, free from sugar, spirit, and indeed every foreign substance. The fruit used was all grown in Essex, chiefly in Gosfield, and consisted of Clinton and Isabella grapes. The treatment pursued was precisely that followed in the manufacture of claret in his native Province, and indeed this article has been pronounced superior to French claret.

SUPERPHOSPHATE ON ASPARAGUS.—Peter Henderson says he has found superphosphate of lime very useful as an application to asparagus beds, at the rate of five hundred pounds per acre (which would be a little over three pounds to the square rod), sown on the beds and hoed in. When tried on alternate rows, the difference was nearly a foot in the height of the stalk in favor of the phosphated rows; and the crop was nearly double when cut the following spring.

THE ROAD TO POOR FARMING.—1. Invest all your money in land, and run in debt for more.

2. Hire money to stock your farm.

3. Have no faith in your business, and be ever ready to sell out.

4. Buy mean cows, spavined horses, poor oxen and cheap tools.

5. Feed poor hay and mouldy corn stalks exclusively, in order to keep your stock tame; fiery cattle are terribly hard on rickety wagons and plows.

OVERFEEDING.—A correspondent of the *Country Gentleman* has this to say about overfeeding for exhibition:—"I think the leading breeders of shorthorns, as well as other breeds, begin to see the folly of pampering their breeding stock for show purposes. If an animal will not, on a whole summer's pasture, look well enough for the show ring, then the breed is scarcely worth owning. This is the keynote to successful rearing of stock for the masses, and the true reason why small breeders, with limited means, have not dared to bring their cattle to exhibitions of any sort, where they would have to compete with meal-fed animals."

RETAINING THE OLD COAT.—A sharp attack of disease, chronic indigestion, want of condition, with frequent exposure to cold, retard, and sometimes actually prevent the change of the coat which, in horses, naturally occurs in spring and autumn. Good food, regular grooming, and a comfortable stable usually hasten the natural process. Well bred horses and those foaled early in the season, change their coats earlier than their fellows. In dealers' and other stables, where at spring and fall it is desirable to hasten the growth of the new hair, and get the horse to look as smart as possible, a pint of boiled linseed or of steeped barley is daily given to hasten the slipping of the coat.—*N. B. Agriculturist.*

TO PREVENT FRUIT TREES FROM SPLITTING.—It frequently happens, in very fertile regions, that trees split limb from limb through sheer weight of fruit. We saw many instances of this wherever a small garden had been planted in the foothills of the Sierras in California. The common mode of prevention is to prop up weighty branches with a piece of shingle. Isaac Lewis, of Hopkinsville, Ky., gives in the *Prairie Farmer* another plan: "When I find a forked tree that is likely to split, I look for a small limb on each fork, and clean them of leaves and lateral branches for most of their length. I then carefully bring them together and wind them round each other, from one main branch to the other. In twelve months they will have united, and in two years the ends can be cut off. The brace will grow as fast as any other part of the tree, and is a perfect security from splitting. I have them now of all sizes, and I scarcely ever knew one fail to grow."

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

## Agricultural.

### Burning Soil for Manure.

Some years ago a friend of mine tried an experiment. Having a wagon load of weeds heaped in a lot, he burned it, and afterwards carefully scraped away every particle of the ashes. The oats that grew where the heap was burned were thicker and at least six inches taller than immediately around it. Next year he had wheat on the field, and over that spot the wheat was stronger and better than anywhere else. Since then he has seen no effect whatever from this burned heap, and the precise spot has long been undistinguishable. As the ashes were all removed, the only effect from the burned heap was by heating the soil, to make its dormant elements of fertility immediately available. Nothing was added to the soil, and as extra heavy crops were taken from this spot, it is necessarily less fertile than land surrounding it. This, however, is not in itself an objection. More than half the labor of the farmer in plowing, cultivating and pulverizing the soil in every way, is designed to make available the fertility in the land rather than to increase its amount. It would be an immense advantage to all sensible farmers, if they could make all the fertility of their farms immediately available. With such crops as they could grow, they could procure all the manure needed to keep up their farms, or if not, then farming is necessarily a bad business, which leads, however slowly, to bankruptcy and the poor-house.

Few farmers, however, would care to go to such an expensive process as burning over all their fields to extract the fertility more quickly. In the early settlement of the country, straw was worth little or nothing, and stubble was always left as long as possible, and generally burned over to get it out of the way of the plow. The surface of the soil was, by this means, slightly heated, and this, with the ashes of the burned stubble, made an excellent and well distributed top dressing for the following wheat crop. There was plenty of carbonaceous matter in the newly cleaned soil from decaying leaves, roots and stumps of trees, and burning over the stubble was probably the best way of disposing of it. The wheat crop in this burned ground was always good, and the straw stiff and bright, showing the effect of potash in the ashes. Straw is now, in Western New York, far too valuable to be burned, and potash can be procured much more cheaply from other sources.

Undoubtedly one cause of the good crops on heavily-timbered lands for a few years after clearing, was the burning of large heaps of logs over the surface. These burning logs would heat the soil to the depth of several inches, and the burned soil, mixed with ashes rich in potash, seemed inexhaustibly fertile. We long since learned our mistake in this; and yet many farmers would like to repeat the process, if they could readily do so. It is well worth trying whether we cannot profitably work up muck and peat from swamps with dry sods from the roadsides by burning them. Muck is largely used in its raw state, but it is too crude and sour, unless exposed for a year or two to the summer's heat and winter's cold outside its native beds; beside, muck is too bulky to warrant long transportation. Much of it may not be rich enough in potash and other mineral elements to be worth burning. In England a marly clay, filled with vegetable matter, is burned, or was forty years ago, quite extensively. The sod is pared to the depth of two or three inches, piled in heaps and burned. The mixed ashes and powdered clay are then applied to the land with excellent effect. Of course the value of the product will depend entirely on what was burned, and this is best tested by trying, which can be cheaply done at first, on a small scale to see whether it will pay.

Many people unthinkingly suppose that all ashes are alike in value. Nothing can be further from the truth. Ashes from some kinds of wood are almost valueless, and the same is true of soils. Some years ago a large heap of button-wood limbs was burned in one corner of a neighbor's field. The ashes were left on the ground. The next year the wheat grew so rank and heavy on this spot that everybody noticed it. "Yes," said I to a neighbor, "you will see when that wheat ripens, that the straw will be bright, and the heads well filled with the best of wheat." I argued from the known tendency of potash to form the silicates which gives straw its strength. Judge of my mortification when the wheat fell down before ripening, and the heads never half filled. The button-wood branches evidently furnished no potash, and the soil itself was deficient in that element.

## Success in Farming—No. 1.

*By J. E. Read.*

PERSEVERANCE.

This is one of the prominent elements which contribute to success in farming, and without which it never can be attained. No matter how great the advantage of the position in which a farmer may be placed, if he does not persevere he will find his hopes are blighted and the brightness of his prospects passed away. And the perseverance, which is an element of strength and power, is something very different from a blind and unreasoning acceptance of a given course. It presupposes an intelligent aim and an earnest purpose. It involves a definite choice of an occupation, and a firm resolve te achieve success in its pursuit. Two many of our farmers drift into their calling. They have no strong will in regard to the choice. They are farmers, not because they like farming, and prefer it to any other occupation, but because circumstances were such when they commenced business for themselves that they could follow this calling with less trouble than any other. And they keep on, year after year, working because they are obliged to work in order to obtain a livelihood, but having no love for their work, and accomplishing but little because they have no definite end which they wish to attain. They cannot be said to persevere, but merely float along with the current, making no effort to change their course. They keep on farming merely because it requires less effort than it would to enter some other business. They ought to regard it as a life work, in which the greatest possible degree of success is to be obtained. The man who intends to be a farmer, unless he can find something better to do, but who holds himself in readiness to change at a moment's warning, will not, and ought not to expect to be very successful in his business. His indecision is an element of weakness and will certainly prevent the accomplishment of any marked results.

In order that a man may be fully successful, there must not only be a definite choice of farming as an occupation to which the labor, skill and experience of passing years shall be devoted, but there must also be a determination to reach the highest possible position in the chosen calling. There must be a firm resolution not to be discouraged either by partial failures or by indifferent success. If a man is to become a successful lawyer he must devote himself to the study of law as the work of his life. If his first efforts in business are not successful, it will not do for him to conclude at once that he has no talents for his chosen profession, and commence studying for something else. Such a course will not only insure his failure in law, but will also go far toward preventing success in any other field of study. Having chosen his calling and been educated for it, he should consider that his chances for success in that profession are much greater than they can be in any other. For the amount of study which would fit him to begin in any business of which he knows nothing would, if added to what he has already learned, go very far toward making him successful in the practice of law. The same principle applies to the choice of farming as an occupation. After the choice has been made and considerable valuable experience obtained, it is a great waste to throw all this knowledge aside, and begin to learn some other business. Experience is not only one of the most expensive but also one of the most excellent teachers, and when a man has paid its price and obtained its benefits in any special calling he ought not to throw away all the advantages thus acquired. It is plain that if a man is constantly learning the elements of various sciences he can never master any one of them, and it would seem to be a wiser course to concentrate his efforts upon some particular department until he becomes proficient therein, than to be changing from one to another as soon as the first principles are acquired. To spend several years in learning a trade, and then go to work on a farm is certainly a waste of time and labor. The same is true in regard to a change from farming to other business. After a man has got fairly started on a farm his motto should be "onward," and there should be no thought of change.

But it is not merely perseverance in the main work of farming which is required to make that business a success. Many a man has been a farmer all his life and at its close little better off than he was when he began. He has continued in the business but has been constantly changing its details. He has really persevered in nothing except the general character of his work and a periodical change in the methods of conducting it. He has tried one thing, then another, shifted from one to the other, and been governed by his inclinations instead of his judgment. The measure of success which such men attain is small indeed. And it is not strange that this should be the case, for they have not stuck to anything long enough to give any reasonable hope of a successful issue. One year they grow corn to the almost entire exclusion of other crops. If corn sells for a low price, or their crops are light, they think it best to make a radical change in their system of operations, and, consequently, the next year they grow something else, to the almost entire neglect of the corn crop. Even if they are fairly successful in their efforts to grow nothing but corn, they are not satisfied with the result, but are fully persuaded that something else will pay a great deal better. So, whether success or failure crowns their efforts with any special crop, they are constantly trying something new. As a natural consequence, they are never very successful. They have a great deal of what they term "bad luck." Whatever crops they cultivate the price is always low. When they raise potatoes it seems as if every one else had grown the same crop. Prices are low, and it is hard to effect sales. The next year they will raise no potatoes but grow vegetables. Then they find the market overstocked with everything they raise, while potatoes are in good demand. A very large class of farmers may well be termed the "floating producers," who have no stability, but year after year change their crops, in the vain hope of doing better than they have done in the past. Such a course is a sure preventative of any great success. "A rolling stone gathers no moss," and a farmer who is constantly changing his crops gets little pay for his toil. It needs knowledge and experience to enable a man to grow any crop with the greatest success. And this knowledge and experience can only come with its practical cultivation. A man who has made the wheat crop a specialty twenty years will be much more successful in its culture than a new beginner. The same is true of other crops. When a man commences to grow them he works at a disadvantage. He does not understand their habits of growth, or the soil, or treatment required for their full development. This knowledge can only be obtained by persistent and intelligent culture during a series of years. In the first place a farmer should make an intelligent choice of the crops which he will make his main reliance, and then he should steadily persevere in their cultivation. If he grows corn he should not be discouraged by one unfavorable season or by a low price. If he grows it every year he will have the full advantage of good seasons and high prices whenever they can be had, while if he grows it "off and on" there is a strong probability that he will have a crop when, and only when, the price is low. And it may be regarded as a settled principle that steady, determined perseverance, not only in farming in general, but also in the special course which an intelligent judgment dictates, is, and ever must be, one of the great essentials to success upon the farm.—*Live Stock Journal.*

## Frost and Freezing.

Frost is both a firm friend and an inveterate foe to the farmer and gardener. As a friend it checks the growth of vegetation, causing plants and trees to rest and recuperate for the more vigorous growth during the ensuing season. It also penetrates the soil, and by separating its particles it divides and disintegrates the clods and lumps, leaving the surface mellow and friable. Without its ameliorating effects, the task of preparing the soil for our crops would be a very formidable one compared with what it is with the aid of this mighty auxiliary. So great is the expansive power of frost, that when water finds a crevice into which it can flow and is there frozen, it will often rend the most solid rock. Vast mountains have thus been burst assunder by this tremendous power. The expansion resulting from the freezing of liquids is largely the cause of the injury resulting from the freezing of the sap in plants. The expansion of the liquids in the cells of the living vegetable results in the disruption of the cell walls in rare cases, but in most cases there is no bursting of the cells perceptible. It is possible that the strain attending this expansion is injurious, even in cases where no disruption follows. But in most cases the injury results from other causes, to some of which I will now invite attention.

The vegetable structure is made up largely of cellular passages and ducts. Between these are minute cavaties or passages called intercellular spaces. If is the office of the cells to convey liquids or sap; but the intercellular spaces contain only air. In the process of freezing, the expansion of the sap forces the air out of the spaces in which it is intended to exist, and water and air become mixed; air is admitted into organs not qualified for elaboration, thus resulting in the introduction of incipient decomposition, which, on the occurrence of a thaw, produces a chemical action destructive to vegetable life. The sap of plants is not pure water, but it is a compound of various mineral and organic ingredients either dissolved in or mixed with water. Freezing has a tendency to destroy the combination existing between these elements, thus rendering it unfit to sustain the vegetable life. But aside from all this, there is something differing from both mechanical and chemical forces in the vegetable organism. This is known as the vital principle, or life power. If we are asked what this mysterious power is, or how it seizes and controls the various atoms of matter that are the objects of its operations, we can only say we do not know. But we do know that there is such a principle existing and operating in the vegetable organism, as truly as in the animal system. The extinction of this specific vitality necessarily results in the death of the plant. That freezing cannot take place in a plant without the destruction of its vitality, is a doctrine held by many able physiologists. But to this conclusion there seems to be insuperable objections. Facts are more valuable than theories, and there are many facts bearing on this subject that show that sap does often freeze in vegetation without destroying its vitality. Indeed, the manner of thawing has about as much to do with the evil effects as the freezing has. When a plant that has been frozen is thawed very slowly and under favorable conditions, it may escape serious injury; while if brought into a high temperature and thawed very rapidly, its vitality will surely be destroyed. The best method of treating frozen plants so as to prevent, as far as possible, all injurious consequences from resulting from their freezing, is a question of much practical importance. The following plans may be adopted with more or less success:—

First.—Plants that have been exposed to a temperature low enough to freeze them, should, before being exposed to a temperature above the freezing point or to the sunshine, be placed in a dark room and surrounded by an atmosphere as near as possible at the freezing point, or one degree above it. Plants thawed under such conditions will often escape all injurious consequences of freezing.

Second.—A very good plan for preventing injury from following the freezing of vegetation, is to shower them with water. This sprinkling should be done just before the rays of the sun fall on them; or better, just at the instant the sun's rays reach them. The water should be but little above the freezing point. If sprinkled in the shade, both air and water should be raised above the freezing point to prevent the formation of ice on the leaves, which would probably result in further injury to the plant treated. Two or three showerings should be given at intervals before the plant is given over as lost.

Third.—Another method—and this is usually the only practical method for large trees—is to interpose a cloud of smoke between the rays of the sun and the object that has been frosted. If the tree or plant to be benefited can be enveloped directly in the smoke till it is fully thawed, the results generally will be more satisfactory.

A very slight protection is sufficient to prevent injury to plants and trees from any ordinary spring frosts. A light lattice work, or even a simple gauze covering, will generally prove a sufficient protection from late spring frosts. A general knowledge of the laws governing the freezing and thawing of vegetables, and a proper application of this knowledge, would result in the prevention of a vast amount of the losses resulting from this cause.—*L. J. T., in Ohio Farmer.*

WHAT IS IT?—Oregon has a new cereal which looks like wheat, rye and barley, and isn't either of them, and the "leading agriculturists" of the State are puzzling themselves about it. Its history is strange. About four years ago a farmer living in Tilamock County, Oregon, killed a wild goose, in whose crop he found a peculiar looking grain. He planted it; it multiplied wonderfully, and he subsequently raised 40 bushels on half an acre of land. Its growth is peculiar, from seven to ten stalks springing from one root. The kernel is very thin and compact, of a bright straw color and extremely hard.

## Better Farming Wanted.

Mr. Harris discourses on this subject as follows, in the *American Agriculturist*:—

I have great faith in good farming. And I feel sure that there is no country in the world where good farming, as compared with poor farming, is more profitable than in the United States. Our general agriculture is not of a high standard. There is very little "culture" about it. We plow and sow—and reap what nature gives us. Sometimes the seasons are favorable and we have good crops. But such crops rarely prove of much benefit to the farmer. They are good for the railroads and all interested in the carrying trade. I do not see any remedy for this state of things, except in better farming.

Better farming would not necessarily give us more wheat and corn for exportation, taking one year with another. But it would give us a steadier supply. We should not have corn at 25 cents a bushel in a favorable season, and 75 cents in an unfavorable one, for the simple reason that better farming requires us to consume more of our corn at home on the farm. Better farming would enable us to keep the millions of dollars which we now send out of the country for wool, barley and garden and vegetable seeds. We could export more pork, bacon, hams and lard. And it looks now as though we should be able to export live cattle and sheep to Great Britain. At any rate we could eat less pork and more beef and mutton at home. Our bacon and pork, as it improves in quality, will be in great demand at higher prices. It is clear to my mind that if we raised better crops and fed out more of our produce on the farm, it would be a great national blessing. But it is not necessary to discuss this point. We have to look at things as they are. What you and I want to know is how to make more money by farming. It is hardly worth while asking what would be the effect if everybody farmed in the best manner. As individual farmers we are competing with each other, and selling in a common market. Our aim must be to lessen the cost of production and to raise such articles as will command the best prices.

We can lower the cost of production by raising larger crops per acre, or by keeping such animals as give more milk and grow more rapidly in proportion to the food consumed. Prices depend on supply and demand. In feeding animals we can make close estimates as to the cost of our products, but in raising crops, the influence of the season, of mildew and frost, of rain and drouth and insects, must never be forgotten. Nothing we can do will ever make us indepen lent of the weather. But it is certainly true, as a rule, that the good farmer suffers less from adverse seasons, insects, etc., than the farmer whose land is undrained, poor and weedy. During Mr. Lawes' twenty years' experiments on barley, the least yield on the plot without manure was 15 bushels per acre. The same year the adjoining plot, dressed with barnyard manure, produced 48 bushels per acre. The largest yield of the unmanured plot during the twenty years was 44 bushels per acre, while the plot adjoining, with barnyard manure, produced 65 bushels. In the favorable season we have on this continuously unmanured plot 44 bushels per acre, and in the unfavorable season 15 bushels, the average of the 20 crops on the unmanured plot being 25 bushels per acre. In the unfavorable season we have 15 bushels without manure, and over 48 bushels with manure. In the favorable season we have 44 bushels without manure, and 65 bushels with manure.

Now, in talking to a man like the deacon, we are pretty sure to hear of some great crop that was raised with little labor and l s manure. If such a man had raised such a crop as the above, he would say, "I had a piece of land that had no manure for some years, that I sowed to barley, and got 44 bushels per acre and 2,520 pounds of straw." He would forget to tell that the very same field, with precisely the same treatment, only yielded 15 bushels on another occasion. He would keep on year after year, hoping to get 44 bushels again, overlooking the fact that when he had a large crop others had a large crop also, and the price was very low. Such an unusually favorable season in this country with our large area would send barley down to 50 cents a bushel, while an unfavorable season would be likely to send it up to $1.50 to $2. Assuming such to be the case, let us look how the matter would stand:—

NO MANURE.

| | | |
|---|---|---|
| Bad Season | 15 bushels at $1.50 | $22.50 |
| Good Season | 44 " 50 | 22.00 |

MANURED.

| | | |
|---|---|---|
| Bad Season | 48 bushels at $1.50 | $72.00 |
| Good Season | 65 " 50 | 32.50 |

Bad seasons, like bad things generally, are more plentiful than the good. What we call good seasons are the exception; bad seasons are the rule. After deducting the seed, the interest on the land, and the expense of plowing, harrowing, rolling, drilling and reaping, it will make a vast difference in the *profits*, whether we get in a bad season 15 bushels or 48 bushels per acre.

In this country there is even a greater difference between good and poor farming in a bad season than the figures taken from Mr. Lawes would indicate, for this reason: His unmanured land is as clean as he can make it, while in a poor season our poorly farmed land would be pretty certain to be infested with weeds, and these would reduce our yield to such an extent that the crop might be hardly worth harvesting.

Looking at the matter in this light, I hope to be excused for again and again urging the importance of better farming. I have not much patience with those who say it will not pay. If you farm at all, it will certainly pay to farm well. It is slow work improving a farm, but stick to it, and every year the work becomes easier, and the progress more rapid.

We must make more manure. Manure is the farmers' capital. Capital is accumulated earnings. If I work for $1,000 a year and spend $1,000, I am no better off at the end of the year than at the beginning. But if I can, by working a little harder, earn $1,200 a year, and, by practising a little economy, live on $800, I can lay up $400. This $400 is *capital*, and begins at once to earn money for itself. Capital is accumulated earnings. It is what is left of our profits or wages after deducting the expenses of living. Manure is accumulated plant-food. It is what is left after raising and disposing of a crop. If your land, as now worked, is capable of paying you 20 bushels of corn and a ton of stalks per acre every year, and you sell the whole, your land is no richer in available plant-food. You are making no manure. You spend all your wages. But if by extra cultivation, by setting free more plant-food from the soil, you can make your land pay you 40 bushels of corn and two tons of stalks, and instead of selling it you feed it out to your cows or sheep and pigs, and are careful to save all the manure, then your forty bushels of corn and two tons of stalks, less about 10 per cent. removed by the animals, becomes *capital*, and begins at once to earn money for itself.

It is worth while making a great effort to get a little capital, in the form of manure, and not always to be dependent on the yearly wages which the soil alone can pay us. How this can best be done, depends on circumstances. I think it will sometimes pay to gather leaves for bedding. I am sure it will pay to scrape up the barnyards, and not let the droppings of our animals lie exposed over a large surface, for the rains to leach out all the soluble matter. On my own farm I gather all the potato tops, and use them for bedding the store hogs. If not required for this purpose, I should put them in a heap and mix them with manure.

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MEASURING HAY IN BULK.—A. B. Allen, in the *Tribune*, says:—So many things have to be taken into consideration in calculating the weight of hay in bulk, it makes it difficult to get at it precisely. For example: fine, new mown hay, like red top or herd's grass, would require 500 cubic feet for the ton; timothy, 550; clover, 650; coarse meadow hay, 700 or more. After being stacked 30 days the bulk would be decreased from five to ten per cent., possibly more, according to the size of the stack and the pressure upon it. Again, hay will vary somewhat in measurement, according to the time it is cut. If this be done when it is just coming into blossom, as it always should, it will pack closer and weigh more per cubic foot than if left till the seed begins to ripen, and the stalks and leaves have grown coarser and become drier. Good judgment, and some experience in measuring and weighing are required to get at this correctly. A neighbor of mine informs me that he once had the curiosity to weigh his timothy hay as he put it into the barn in July. He sold it about nine months after, and on reweighing it as it came out of the barn he found, greatly to his surprise, that it had shrunk to within a fraction of 25 per cent.

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MR. M. G. CLEMENT, of West Amesbury, Mass., has planted two acres of land with chestnut and walnut trees, from which he expects to gather a crop in twelve years.

# Garden, Orchard and Forest.

## Seasonable Hints.

In getting ready for spring vegetables do not fear to pile on the manure. It is the rank rich growth which gives the agreeable tenderness to them, and without an abundance of manure this cannot be done. Deep soil is also a great element of success. Though we do not favor sub-soiling and underdraining for fruit trees, we regard it as very profitable in vegetable growing.

Asparagus beds may have the soil raked off them a little, if it was thrown up from the alleyway in the fall. It allows the sun to get to the roots earlier, and the crop is forwarded thereby. If the beds are poor, they may have a dressing of guano, or superphosphate, which has been very beneficial to this crop. It has become almost a stereotyped recommendation to have "salt applied," but there is a good deal of the humbug about it. In dry, sandy soils it does a little good, and a little in whatever manure it applied is acceptable to them, but more has been made of the salt theory with asparagus than it deserves. Asparagus beds may be got ready as soon as the ground is sufficiently dry to admit of working. A deep soil is all-important, two feet, at least, and a situation should be chosen that is warm, and yet not too dry. The roots should be set about four inches under the surface, twenty inches or two feet from each other, and the rows eighteen or twenty inches apart. Large, fine asparagus cannot be obtained by crowding the plants; strong two and three-year-old plants are the best, although, in good, rich soil, one year old plants will often bear a good crop the year after planting. The length of time asparagus requires to come into bearing depends much on the soil. It is useless to attempt raising it in poor ground.

This is generally supposed to be the pruning season. Orchard trees generally get too much pruning. In young trees only thin out so as not to have the main leaders crossing or interfering with one another. Or when a few shoots grow much such stronger than the rest, cut these away. Insist on all the branches in young trees growing only on a perfect equality. On older trees which have been in bearing a number of years, it will often benefit to cut away a large portion of the bearing limbs. By a long series of bearings, branches will often get bark bound and stunted, preventing the free passage of the sap to the leaves. In such cases the sap seems to revenge itself by forcing out vigorous young shoots a long way down from the top of the tree. It is down to these vigorous young shoots that we would cut the bearing branches away. One must use his own judgment as to the advisability of this. If the tree bears as fine and luscious fruit as ever, of course no such severe work need be done, but if not, then now is the time.

In young orchards some species of scale insects are likely to be troublesome. They should be killed by washing at this season. If the trees be very badly infested, cut back the young shoots, and the stouter branches can then be more thoroughly done. Some people use weak lye for washing, with good results; we do not object to some lime and sulphur going with it. Old trees are very much assisted by having the rough bark scraped off of the trunk and main branches, and then coated with a similar wash. Never mind what people say about stopping up the "breathing pores." Try it once, and you will always want to repeat the practice.

And above all look after the nutrition of the trees. Some people say that land which will raise good corn will grow good fruit trees, which is all right; but they should add that, like corn, they require regular and continuous manuring. There are some parts of the country where corn can be successively taken for a half a life time without manure; on these soils we need not manure fruit trees, but in all others we must, to have good results. This is particularly essential where trees are grown in grass, as both the trees and the grass require food. Where trees are grown in grass, we prefer top dressing in June or July, but if it has not been done then do it now. Where trees are kept under a clean surface culture, the manure is, of course, plowed or harrowed in with the crop in the spring of the year. To know whether trees require manure or not ask the leaves. If in July they are of a dark rich green, nothing need be done to them, but if they have a yellow cast, hunger is what is the matter. This, of course, is supposing they are not infested by borers, in which case they will be yellowish in the richest soil.

## Value of Timber.

In America, as well as in Europe, the destruction of forests has, for some time, been a subject of anxious consideration. In Europe, the value of timber has been better appreciated than in this Western World, where the great object was, until lately, to cut down the timber, and clear the ground for the plow. But extensive as were the forests, they have given way to the incessant clearing, and now great endeavors are made to clothe the naked ground with trees. From the *Western Farm Journal* we make the following extract of an article on "The Value of Timber":—

That the cultivation of timber is remunerative there is no longer reason to doubt. Any person can satisfy himself of this by visiting the many groves and belts now to be found in any of the older settled portions of the country, where the cost may be figured, and the cords of wood or cubic feet of timber per acre may be very easily estimated.

Where we live, cottonwoods planted sixteen years ago, along the street, will now measure from 16 to 22 inches in diameter near the ground, and will average nearly a cord per tree if felled. Had they been planted 16 feet apart, and kept free of weeds for three years, their average would have been about 16 inches each in diameter, and they would have made over one-half cord each of wood; certainly 80 cords per acre. Wild cherry, planted at the same time, are twelve inches through near the ground.

A row of balsam firs, planted eight feet apart for a wind-break, are from nine to fourteen inches through, about forty feet high, and so thickly clothed from the ground up that a man cannot separate the branches to break through them. A Norway Spruce, standing single, is thirty feet high, and fourteen inches through near the ground, the branches regular from the roots up, and of a circumference of sixty feet.

A black walnut of the same age is thirteen inches through near the ground, and a white walnut—butternut—is of the same diameter; both have borne regular crops—a half bushel each per year—for the last six years. Golden willow are twenty inches in diameter of trunk, and linden twelve years planted are eleven inches in diameter.

Thus we see that hard wooded timber will, in this time, be large enough for any of the ordinary uses of the farm, and that soft and fast-growing timber, will, in from twelve to sixteen years, become large trees, and will be worth for fuel, in any region where fuel is scarce, fully $350 per acre for cord word.

White willow will grow nearly as fast as cottonwood, and is an excellent substitute for hardwood for fuel and rails, until better can be grown.

A good deal has been said, first and last, about the nuisance of planting lines of trees along the road-side as wind-breaks; that thus they cause snow to lodge in the road, often rendering it impassable in winter, and keeping it wet and mirey for a long time in the spring.

Another objection, and in many cases a serious one, is, that crops suffer for three or four rods next them may be pasture or meadow. Grass will do fairly next trees where other crops will not. Why? Simply because there is generally moisture enough in the spring and fall for the grass, but the roots of trees in the summer absorb a large share of the moisture, to the detriment of crops of grain, and especially corn.

How, then, shall we obviate snow-drifts from roadside plantings?

Either by planting at such distance, and of such trees as create but little impediment to the wind, or else by planting lines of sufficient width to catch the snow within their own area.

Trees planted at a distance of from thirty to sixty feet, with the limbs sufficiently high to allow the passage of teams under them, do not collect drifts.

Lines of trees for wind-breaks should be sixty to one hundred feet in breadth; thus they will catch the snow-fall and drift within their own shade.

The great mistake made by railway companies in planting along the line of their roads is, the lines of trees have not been of sufficient width to catch the snow, but have, in many instances, allowed it to sift through and fill the very cuts they were intended to protect.

Now protection from drifts would have been certainly accomplished if either deciduous trees, or better, evergreens, had been planted in strips of sixty to one hundred and fifty feet wide, according to the annual snow-fall and experience, the latter width being sufficient for any climate except some mountainous districts.

## Verbenas from Seed.

Those who are limited for room in their greenhouses, and still like to make as good a show of bedding plants as possible during the summer months, will find it by far the best plan to raise their stock of verbenas from seed. This can be easily done in the following manner:—Take a few seed pans, and, if these be not at hand, a few shallow boxes will suffice quite as well (if the latter be selected, some holes must be made in the bottoms), cover over the bottom with some broken crocks, and fill it to within about half an inch of the top with a light mixture of rotten loam, leaf mould, and a good dash of silver sand; make the surface level, and press it a little, so that when watered it will not sink. On this surface the seeds should be evenly sown, and then covered over with a light mixture of the same soil that they are sown on; they should be watered with a pot that has fine holes, and then placed in the greenhouse close to the glass, and if put so they will receive a little bottom heat, so much the better. They should not be allowed to get dry, but still never over water them, as that would be much more fatal. When strong enough the plants should be potted off, and so grown on till it is time to stand them out to harden off before being put into the beds in which they are to bloom. When verbenas are about to be raised in this way the seed should always be purchased of some good seedsman to ensure the varieties being good. Petunias can also be raised in a similar manner.—*A. Hassard, in the Garden.*

## Value of Trees in Towns.

Mr. Griffiths, the Medical Officer of Health for Sheffield, in his report of the sanitary condition of that town during 1874, makes the following remarks in reference to street trees:—In the formation of new streets, and on the eve of the contemplated widening and alteration of old ones, it is to be hoped that an effort may be made to provide for the planting and establishment of trees wherever practicable. The pleasing appearance of verdure in summer, and the agreeableness of the shade afforded by the foliage to pedestrians, are benefits to the inhabitants well worth the effort and the cost. Whoever has visited the boulevards of continental towns, or even the squares of London can testify to the advantages of verdure as offering pleasure to the eye and gratification to the mind. Moreover, from a sanitary point of view, the benefits are of incalculable value. It has been asserted that the aggregate surfaces of the leaves of well grown elm, lime and sycamore trees, with their six to seven million leaves, equal to about 200,000 square feet, or about five acres; and these are almost constantly absorbing and digesting the carbonic acid and various exhalations given off by the putrefaction of animal and vegetable matter, and, as if grateful for such support, return into the air pure oxygen, which reinvigorates and renews animal life. Trees thus remove poison from our midst, and to be without them is an oversight. Trees can be had which will exist, with suitable attention, in any part of the city.

In reply to the request of "An Old Subscriber," we give two methods of removing stumps. Though our fields are becoming pretty well cleared up, there is much to be done yet in clearing land and removing stumps.

Removing Stumps.—A friend asks us what can be done to get rid of stumps in fields—whether crude oil would not cause the stumps to burn readily. In our experience, we have found it preferable to remove stumps with machines made for that purpose, and burn them afterwards, if desired. It is slow work burning isolated stumps in a field, and the same amount of time spent in uprooting them will be much more effective. A good team, horses or oxen, with a stump machine, will clear quite a space of ground in a day, and if the ground be stony, the work may be further progressed by filling the holes where the stumps came from with stones to within eighteen inches or two feet of the surface. Crude oil is not very inflammable, and unless used in large quantities, its only effect is to char the surface of the stump, and make it last even longer than it otherwise would. —*Rural New Yorker.*

# Poultry Yard.

## Crushed Bones for Poultry.

As hens, turkeys, geese and ducks are not provided with incisor, canine nor molar teeth, it is folly to fead bones to them unless the hard substances are first reduced to small fragments. Fresh bones are valuable feed for poultry of any sort, provided the fragments are so small that the birds can swallow them. Once in the crop of a fowl, bits of bone will soon be changed into soft and palatable food. Our own practice is to have a dish in the kitchen specially to receive the bones that are purchased with the beefsteak, mutton, and other meat. Then every day those pieces are taken to a chopping block and, with an old axe, having a sharp cutting edge, they are crushed with the head of the axe, and cut into pieces not larger than kernels of Indian corn. The fowls devour them with a ravenous appetite. Bones are worth more to feed fowls than the same number of pounds of prime grain. For a chopping block, a small log about two feet long, with square ends, is placed on one end, as the end of a block is far better for such a purpose than the side of a log. Bones are usually cast out of the back door or in a garbage barrel to feed worthless dogs. But, if prepared for fowls as suggested, every pound is worth two or three cents, which will be returned generously in the form of luscious eggs and juicy meat for the table.—*New York Herald.*

## White Dorkings.

This is a purely English breed of fowls, and have their great popularity. The ladies are said to fancy it more than any other breed, which may be accounted for on its beauty and great excellence as a table bird. This variety does not stand much in-and-in breeding, as they reduce rapidly in size by this treatment. Fresh blood must often be introduced. The White Dorking is supposed to be the original breed, and are somewhat smaller than the colored. A cross of a White Dorking cock with light-colored Gray Dorking pullets has a good effect upon size. The Dorking make excellent mothers, but are not good layers, except while young. They produce liberally up to two years old.

## Dust Baths for Poultry.

Cleanliness is important in fowl-houses, for experience shows that poultry are unfavorably affected by the emanations from filthy quarters, and, besides, working in places where roosts and floors are covered with the droppings, is decidedly unpleasant. Dry earth, in the form of powder, scattered everywhere, will absorb the bad odors, giving a wholesome atmosphere to the hen-house, and, at the same time, preserve the manure in the least offensive condition. Besides these purposes, a box of dry earth should be in a convenient corner of every fowl-house for the fowls to roll in. Dust from the highway is the most convenient. Replace the same by an equal quantity of good gravel, and the public will be the gainer.

## Beans as Poultry Food.

If you have any beans that you cannot market, you may make good use of them for your fowls. They will not eat them whole, however, as every boy knows, but they must be cooked. Boil them well, and, when done, stir in at once about one part corn meal to two of beans. The mixture can be kept several days, and the hens will be found to thrive well upon it.

## Warm Poultry Houses.

In clear winter weather, no matter how cold the air is, if the sun shines brightly, and the air inside the poultry house cannot escape, a surprising amount of solar heat may be collected in the house by having considerable glass on the south side.

Mr. Daniel H. Parker, of New Bedford, Mass., has 55 hens that have paid him $158.49 in ten months. He has paid for food for them $58.18, leaving himself a profit of $100.31.

The enormous crop of mangel, produced by aid of sewerage irrigation on Lord Warwick's farm in England, was referred to last year, but this season has produced even more surprising figures. At the cattle show, recently held at Bingley Hall, Birmingham, Messrs. Carter & Co., of Holborn, exhibited roots from a crop weighing 84 tons per acre. This is said to be the heaviest root crop ever recorded.

## A New Wheat.

That the varieties of wheat and of other cereals degenerate, no one need tell the farmers of Canada. This they know too well from experience. The varieties of wheat that were brought to our markets a few years ago are grown no longer by our farmers. Other varieties have taken their place; indeed the introduction of new kinds is now believed to be indispensible to successful farming. And though our seed grain was originally imported from Europe—not being indigenous in America—it is deemed better that the new varieties be first raised here and not imported. The very great difference existing between the climates of the Old World and the New makes this necessary. A variety of wheat that may be grown with the greatest profit in the mild, genial temperature of England, may be found not sufficiently hardy for our long winters or the excessive heat of our summers. Our grain is now of different varieties from that of England. Here we do not see the White Lammos or Golden Drop Wheat, or the Potato Oats, the White Holland, the Poland or the Sparrow Oats as on the old farms in the home country. The Chevalier Barley, though imported to Canada, and grown by the farmers in different parts of the country, has not been found profitable. Varieties of seeds of any kind, it is thought, can only do well after being acclimatized.

In the old country, also, varieties are apt to become deteriorated, though not to the same extent as here, nor in so short a time. The greater attention paid to every branch of agriculture tends, with the equal temperature of the climate, to prevent degeneracy. Yet there, too, from time to time, new varieties are introduced to take the place of the old. Below is a report from the *Farmer* (England), of a new variety of wheat:—

In making our annual tour of the Smithfield Club Cattle Show there is a danger of overlooking some objects of interest and value, either because they do not stand out very prominently or because no special notice has been directed to them. Such might have been the case with a very modest exhibition of a new variety of wheat called the "Mainstay," raised and propagated by the exhibitor, Captain Delf, Great Bentley.

Samples of this wheat were shown both in the straw and dressed grain. The bright, clear, stiff straw of this year of blighted corn called forth the admiration of all who examined the sheaves, and the grain was considered of first rate quality for any year, and, in comparison with any of this year's growth, it is superb.

It is readily admitted that great benefit is derived from a change of seed, from heavy to light land, or from chalk to clay, &c. If such be the case, what must be the advantage of obtaining a new variety of wheat possessing the valuable characteristics set forth in the circular of the grower. There is little doubt but that most wheats degenerate after a long cultivation, especially when grown without exchange in the same district; this remark being peculiarly applicable to our more delicate and valuable white wheats

We find that the "Mainstay" is a transparent white wheat, held in great esteem by the miller, producing a high per centage of flour of fine quality; but valuable as these properties are, it possesses qualities which will, in the eyes of practical farmers, be regarded as invaluable: the habit of the plant is very robust in all stages of growth, and so in maturity, the straw is red, of moderate length, very dense, large-jointed and stiff; the ear is formed of a "rough" chaff, is somewhat short but closely set, and is known to have the property of resisting blight and the frosts of early summer when the wheat is in blossom; being very healthy in the straw it does not fall down, and when the grain is ripe it may be left uncut with impunity, as it will bear as much knocking about as Rivett wheat without shedding the corn.

We know that the "Mainstay" has secured a reputation in Essex, in neighborhood of the grower, and it deserves that which it has gained.

When we remember the disastrous consequences of the weather of last July upon all ordinary white wheats, and then consider that this wheat, being a white wheat of very fine quality, growing with all the vigor of Rivett wheat, withstood successfully that stormy weather, standing erect while other wheats, grown under similar conditions, were laid prostrate, it is not to be wondered at that it is spoken of as an invaluable stock.

We are disposed to believe that this variety will prove itself eminently adapted for such counties as Lincolnshire and the fen country; in fact, in all free-growing soils. An inquiry has already set in for it for Belgium; and for those who practise the system of Messrs. Prout & Middleditch it supplies a deficiency, as having a strong development of roots, it is enabled to draw its nourishment from a greater depth than the weaker white wheats.

The discovery of this wheat was purely accidental in the year 1869, but it has been propagated and selected carefully since that time.

# The Apiary.

## Diseased Brood.

*Caution.*—As no part of the breeding season is exempt, the stocks should be carefully observed during spring and early part of summer, with reference to increase of bees. When any are much behind others in this respect, make an examination immediately. The movable comb-hive is readily examined by lifting out the comb, but the box-hive must be inverted, and the bees smoked out of the way.

*Examination.*—Attention must be directed to the breeding sells: with a sharp-pointed knife proceed to cut off the ends of some that appear to be the oldest, bearing in mind that young bees are always white until some time they assume a chrysalis form. Therefore, if a larvæ is found of a dark color, it is dead. Should a dozen or two such be found, the stock should be condemned at once, and all the bees driven into an empty hive. On no consideration put them into combs, as they would be likely to keep some of the honey for their brood. If it is desirable to put them into a home containing comb, they may be transferred to it after they have been in an empty one long enough to consume all the honey they have carried with them. If honey is scarce at the time, they should be fed. But if it is discovered too late for honey to be collected, it will hardly pay to feed them. The honey from the old hive may be used if the poison is first destroyed. This may be done by scalding. Add a quart of water to about ten pounds of honey, stir it well, heat it to the boiling point, and carefully remove all the scum.

Stocks in which the disease has not progressed too far, will generally swarm. Three weeks after the first swarm is the proper time to examine them. It is easily done, as about all the healthy broods, except drones, should be matured in that time. By perseverance in these rules, I allow no stocks to dwindle away until they are plundered by others. If all bee-keepers were equally careful, this disease would only occasionally be found.

# The Story.

## Queen Tita's Wager.

### CHAPTER V.

"GAB MIR EIN' RING DABEI."

Under the friendly instructions of Dr. Krumm, whom he no longer regarded as a possible rival, Charlie became a mighty hunter; and when he returned of an evening with sprigs of fir in his cap for the bucks he had slain, Franziska was not the last to come forward and shake hands with him, and congratulate him, as is the custom in these primitive parts. And then she was quite made one of the family when we sat down to dinner in the long, low-roofed room; and nearly every evening, indeed, Tita would have her to dine with us, and play cards with us.

You may suppose if these two young folk had any regard for each other, those evenings in the inn must have been a pleasant time for them. There never were two partners at whist who were so courteous to each other, so charitable to each other's blunders. Indeed, neither would ever admit that the other blundered. Charlie used to make some frightful mistakes occasionally, that would have driven any other player mad; but you should have seen the manner in which Franziska would explain that he had no alternative but to take her king with his ace; that he could not know this, and was right in chancing that. We played threepenny points, and Charlie paid for himself and his partner, in spite of her entreaties. Two of us found the game of whist a profitable thing.

One day a registered letter came for Charlie. He seized it, carried it to a window, and then called Tita to him. Why need he have made any secret about it? It was nothing but a ring—a plain hoop with a row of rubies.

"Do you think she would take this thing?" he said in a low voice.

"How can I tell?"

The young man blushed and stammered, and said,

"I don't want you to ask her to take the ring, but to get to know whether she would accept any present from me. And I would ask her myself, plainly, only you have been frightening me so much about being in a hurry. And what am I to do? three days hence we start."

Tita looked down with a smile, and said, rather timidly,

"I think, if I were you, I would speak to her myself—but very gently."

We were going off that morning to a little lake some dozen miles off, to try for a jack or two. Franziska was coming with us. She was, indeed, already outside, superintending the placing in the trap of our rods and bags. When Charlie went out she said that everything was ready, and presently our peasant-driver cracked his whip, and away we went.

Charlie was a little grave, and could only reply to Tita's fun with an effort. Franziska was mostly anxious about the fishing, and hoped that we might not go so far to find nothing.

We found few fish, anyhow. The water was as still as glass and as clear; the pike that would have taken our spinning bits of metal must have been very dull-eyed pike indeed.

Tita sat at the bow of the long punt reading, while our boatman steadily and slowly plied his single oar. Franziska was, for a time, eagerly engaged in watching the progress of our fishing, until she got tired of the excitement of rolling in an immense length of cord, only to find that our spinning bait had hooked a bit of floating wood or weed. At length Charlie proposed that he should go ashore and look out for a picturesque site for our picnic, and he hinted that perhaps Miss Francisca might also like a short walk, to relieve the monotony of the sailing. Miss Franciska said she would be very pleased to do that. We ran them in among the rushes, and put them ashore, and then once more started on our laborious career.

Tita laid down her book. She was a little anxious. Sometimes you could see Charlie and Franziska on the path by the side of the lake, at other times the thick trees by the water's side hid them.

The solitary oar dipped in the lake; the boat glided along the shores. Tita took up her book again. The space of time that passed may be inferred from the fact that, merely as an incident to it, we managed to catch a chub of four pounds. When the excitement over this event had passed, Tita said,

"We must go back to them. What do they mean by not coming on and telling us? it is most silly of them."

We went back by the same side of the lake, and we found both Franziska and her companion seated on the bank at the precise spot where we had left them. They said it was the best place for the picnic. They asked for the hamper in a business-like way. They pretended they had searched the shores of the lake for miles.

And while Tita and Franziska are unpacking the things, and laying the white cloth smoothly on the grass, and pulling out the bottles for Charlie to cool in the lake, I observe that the younger of the two ladies rather endeavors to keep her left hand out of sight. It is a paltry piece of deception. Are we moles, and blinder than moles, that we should continually be made the dupes of these women? I say to her,

"Franziska, what is the matter with your left hand?"

"Leave Franziska's left hand alone," said Tita, severely.

"My dear," I reply, humbly, "I am afraid Franziska has hurt her left hand."

At this moment Charlie, having stuck the bottles among the reeds, comes back, and, hearing our talk, he says, in a loud and audacious way.

"Oh! do you mean the ring? It is a pretty little thing I had about me, and Franziska has been good enough to accept it. You can show it to them, Franziska."

Of course he had it about him. Young men always do carry a stock of ruby rings with them when they go fishing, to put in the noses of the fish. I have observed it frequently.

Franziska looks timidly at Tita, and then she raises her hand, that trembles a little. She is about to take the ring off to show it to us, when Charlie interposes,

"You needn't take it off, Franziska."

And with that, somehow, the girl slips away from among us, and Tita is with her, and we don't get a glimpse of either of them until the solitude resounds with our cries of luncheon.

In due time Charlie returned to London, and to Surrey with us in very good spirits. He used to come down very often to see us; and one evening, at dinner, he disclosed the fact that he was going over to the Black Forest in the following week, although ths November nights were chill just then."

"And how long do you remain?"

"A month," he says.

"Madam," I say to the small lady at the other end of the table, "a month from now will bring us to the 4th of December. You have lost the bet you made last Christmas morning; when will it please you to resign your authority.

"Oh, bother the bet!" says this unscrupulous person.

"But what do you mean?" says Charlie.

"Why," I say to him, "she laid a wager last Christmas Day that you would not be married within a year. And now you say you mean to bring Franziska over on the fourth of December next. Isn't it so?

"Oh, no!" he says; "we don't get married till the spring."

You should have heard the burst of low, delightful laughter with which Queen Tita welcomed this announcement. She had won her bet.

FINIS.

The attention of our readers is directed to the first of a series of articles on the dairy interest, by a Canadian gentleman who has had much experience in this matter. It will be seen in our columns.

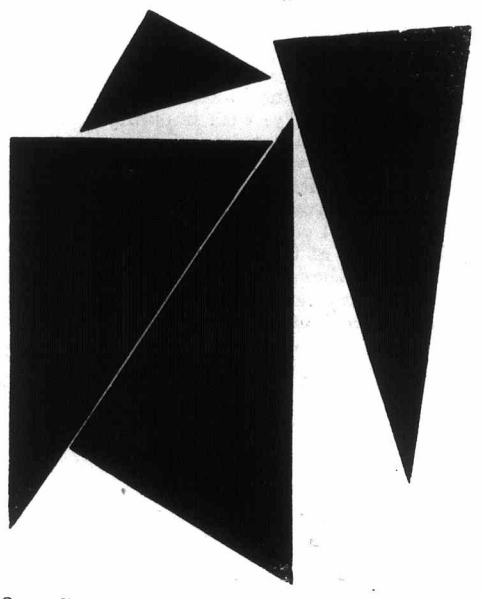
## Uncle Tom's Department.

DEAR NEPHEWS,—I propose to have a lively time through 1876 with every good thing you can send in to make our columns interesting and useful. I want father, and mother, and Uncle John and Aunt Mary to join in to help the little ones Grandfather will, of course. Send in your puzzels and I will do myself the pleasure of seasoning and dishing them to suit all parties. Perhaps you may think pleasing all parties is not the easiest thing in the world to do, but I am going to try it. Now for all the good things! and, boys and girls, I want all to send a puzzle, enigma, charade, conundrum, or something which has not appeared in our columns, and become a nephew or neice, which will afford us much pleasure.

UNCLE TOM.

N. B.—Contributions for the puzzles sent to Uncle Tom must always be accompanied by the answer, or we cannot insert it.

### Puzzles.



Our Cousin, S. E., has sent us the above good puzzle. Cut four pieces of paper the exact shape of the above, and place them so as to form an exact square.

9.—RIDDLE.

'Though I'm often found for the most of my life,
And serve my master well;
Yet feel as free as the rustling leaves,
Which oft of my presence tell.
And whether obscure or widely known,
At home or a worthless rover,
Among the titled I'm ever found,
With my faults all under cover.

10.—CROSS-WORD ENIGMA.

My first is in pudding, but is not in pie;
My next is in horizon, but not in the sky;
My third is in actor, but not in the play;
My fourth is in battle, but not in the fray;
My fifth is in kitten, but not in the cat;
My sixth is in bonnet, but not in a hat;
My seventh is in lion, but not in fox;
My eighth is in hamper, but not in box;
My ninth is in plater, but not in dish;
My tenth is in oyster, but not in fish;
And now what I tell you may greatly astound;
But my whole is a place where contentment is found.

11.—A man had three bushels of corn to grind by horse-power, and he had three horses; how could he arrange so that each horse would grind two bushels of corn?

12.—I am composed of 19 letters.

My 6, 5, 2 is a number;
My 9, 13, 16, 1, 11, 4 is a man's name;
My 19, 14, 17, 18, 15 is an English river,
My 12, 7, 15 is a domestic utensil;
My 3, 13, 6 is an animal;
My 4, 7, 18, 10, 7, 2 an English city;
My 8, 7, 2, 19, 14, 11, 13, 4 is a Canadian city:
My whole may be seen every month in the FARMER'S ADVOCATE. H. J.

13.—DIAMOND PUZZLE.

My 1st is a consonant,
My 2nd is a young animal,
My 3rd is an address to a woman,
My 4th is part of a store,
My 5th is a county in Ontario,
My 6th is a kind of pie,
My 8th is an inclosure
My 9th is a consonant.

JAS. H.

14.—PUZZLES.

Around, around, around,
Above I'm ever to be found;
Before, behind, across,
I'm never at a loss;
Within, without, above,
I'm constant in my love;
Beside, beyond, between,
I'm felt but never seen;
Into, out of, under,
I aid the giant thunder;
Sooner, later, ever,
You can't kill me, never!
Master of life, don't doubt me;
No man exists without me.

KATIE C.

15—Take fifty and five, place nothing between them and add a vowal. My whole means affection. F. L.

### The Naturalist.

THE HAWK—IV.

Of the falcon there are differe t varieties. The well-known American birds of this name are found genera'ly in the eastern parts of temperate North Ame ica. Tht flight of the hav k is very rapid and near the ground. It is very bold, attacking birds larger than itself; the ruffled grouse, quail, pigeons, and hares are its favorite food. The young of all the hawks differ greatly from the adults, having generally a much lighter and white mixed plumage. The keenness of vision of the birds, sweeping with great rapidity, and often at a considerable height above their prey is remarkable. To have "a sight like a hawk," has become a proverb. They usually fly low, irregularly, and with sudden changes of course, for which their short wings and long tails are well adapted. Hawks are almost always shot at when they come within range of a gun, without any particular reason except that they are of a ferocious disposition. The great mischief they do in stealing chickens, hares grouse and pidgeons, and their great slaughter of the smaller birds, deprive them of any sympathy they might have when they are unpityingly made the mark of the sportsman. They are, however, of positive advantage to the agriculturist, by destroying animals injurious to vegetation, and noxious reptiles.

### Answers to January Puzzles.

1.—Wash-ing [gin] ton. 2.—Waterloo. 3.—A happy new year. 4.—Elbe, Rhone, Shannon, Nile, Exe, Mersey, Trent, Tyne, Thames, Severn, Volga, Lena. 5.—Postal Cards. 7.—James Thompson, William Shakespeare, Robert Souther, Samuel Taylor, Coleridge, Thomas Campbell, Alfred Tennyson.

| | | |
|---|---|---|
| 6.—GROAN. | BLEST. | ERASE. |
| ROUSE. | LOVER. | REPEL. |
| OUNCE. | EVADE. | APRIL. |
| ASCOT. | SEDAN. | SEIZE. |
| TEETH. | TRENT. | ELLEN. |

8.—Let A B and C be but for the three men, and A B and C for their wives respectively. Then A A, B B, C C are all on this side.

| Parties on this side Jordan. | | Beyond Jordan |
|---|---|---|
| B B, C C | [1] A A crosses | A A |
| A, B B, C C | [2] A returns | A |
| A, B, C | [3] B C cross | A, B, C |
| A A, B C | [4] A recrosses | B, C |
| A A | [5] B C cross | B B, C C |
| A A, B B | [6] B B recross | C C |
| A, B | [7] A B cross | A, B, C C |
| A, B, C | [8] C recrosses | A, B, C |
| A | [9] B C cross | A, B B, C C |
| A A | [10] A recrosses | B B, C C |
| | [11] A A cross | A A, B B, C C |

Names of those who sent correct answers to puzzles:—S. Erb, Mary E. McO., Trueman Thomas Frank Lawson, J. U. Cross, Tom Ruston, M. McDonnell, James B. Towgood, Eliza Sherlock.

HE DIDN'T ASK SO MUCH.—"I wouldn't be a cook for the whole world," said a fashionable young lady to her betrothed husband. "Of course not," he replied. "If you were to cook for the whole world you would never get through your work, but you'll be able to manage it nicely for our little family."

"When travelling in Massachusetts some twenty years ago," said a traveller, I had a seat with the driver, who, on stopping at the Post Office, saluted an ill-looking fellow on the step with:

"'Good morning, Judge Sanders; I hope you're well, sir.'

"After leaving the office I asked the driver if the man he spoke to was really a judge.

"'Certainly, sir,' he replied. 'We had a cock fight last week, and he was made a judge on that occasion.'"

A milk peddler named Drew was yesterday at the police station to secure aid in tracing the whereabouts of a family who had changed locations between two days, owing him three dollars. "Well, I suppose there was twelve shillings' worth of water in that three dollar milk account," remarked the chief. "That's where it galls me—that's where it hurts!" replied the dealer. "They were new customers, and I hadn't commenced to water the milk yet!"

We heard a good story the other night of two persons engaged in a duel. After the first fire, one of the seconds proposed that they should shake hands and make up. The other second said he saw no particular necessity for that, for their hands had been shaking ever since they began!

A thick-headed squire being worsted by Sidney Smith in an argument, took his revenge by exclaiming: "If I had a son that was an idiot, by Jove, I'd make him a parson!" "Very probable," replied Sidney; "but I see your father was of a very different mind."

When a couple of young folks, writes an American critic, get so that they want to waltz all the time at a ball, and have no quadrilles, that's a sign that they are never going to stop until some man with furniture is made happy.

FUN AS PHYSIC.—Fun is the cheapest phizik that hez bin diskovered yet, and the eaziest to take. Fun pills are sugar coated, and no change ov diet is necessary while taking them. A little fun will sometimes go a grate ways. I have known men to live to a good old age on one joke, which they manage to tell az often az once a day, and do all the laffing themselves besides, that waz dun. But thare is lots of pholks who kant see eny fun in enything; yu couldn't fire a joke into them with a double barrel gun, ten paces off, they go through life az solemn az a kow. Menny people think it iz beneath their dignity to relish a joke; sutch people are simply fools, and don't seem to know it. The Billings family are alwuss on the lookout for fun; it iz sed of Dexter Billings, that he had to be kept under $500 bonds all the time, to keep him from laffing in church. According to all ackounts, this Dexter Billings was a cuss. Fun is the pepper and salt of life, and all the really wise men who have ever lived hev used it freely for seasoning. — *Josh Billings.*

# Minnie May's Department.

## A Few Words to Our Readers.

Next to neatness in person a young lady needs to pay careful attention to her manners. Gentleness of manner and strict propriety, without any affectation of prudery, are a letter of recommendation in any society. A rude way of running through the house, slamming doors, calling out of the window to people passing by, talking loud in the streets, slapping an acquaintance on the shoulder, doing foolish things, stamp a young lady's reputation for ever. There are many people who never forget them. However, you may improve. Not only is a low, sweet voice an excellent thing in a woman, but also a quiet gentleness of deportment—a modest, even diffident manner is far more pleasing than a bold style of behaviour. Every one almost can learn from the ordinary rules for observance in polite society, and it is of great advantage to any young person to do so—it will save them from many blunders and perplexities, which are very mortifying. Knowing just what to do under certain circumstances, gives ease of manner and freedom in conversation, which is the great social charm. But as politeness is something more than following strictly set rules, the highest culture of manners can not be reached without culture of the heart. One must sink self and live to make others better and happier. Be kind and careful not to give offence to any, even in small things, ever watchful to perform little deeds of kindness, and you will always be a pleasing member of society.

MINNIE MAY.

## Recipes.

PUMPKIN PRESERVES.

Take good, ripe pumpkins; peel and cut in small squares; half the weight in sugar and two lemons to each pumpkin; boil an hour. If the lemons cannot be had, the essence is cheaper, but should be added, as it is used, about a teaspoonful to a pint of the preserves.

R. DAVIES.

DEAR MINNIE MAY.—I am much pleased with your department, and think it a great benefit to farmers' wives and daughters. I have found many excellent recipes, and have been much aided by them; so I feel it my duty to send you some in return, which I know to be good. The first is

MINCE MEAT,

which may be a little out of season, but some may wish to make a second jar, so please try this:—

Carefully stone and cut, but not too small, three pounds raisins, three pounds currants, one pound lemon peel; mince finely twelve good apples; half a pound sweet almonds pounded to a paste; three nutmegs grated; half an ounce allspice, clove and a little cinnamon pounded; three pounds fresh beef suet minced finely; two pounds and a half good brown sugar; mix all these ingredients extremely well, and add one pint of brandy and one glass of wine. Pack it closely into small stone jars and tie white paper over them. When to be used, add a little more wine or cider.

GINGERBREAD PUDDING.

Three and one-half cups flour, one-half cup butter rubbed in the flour; one and a-half cups sweet milk, one cup molasses, one teaspoon saleratus. Steam three hours, with or without sauce.—MYRA.

WASHING FINE UNDERCLOTHING.

Perhaps many of our readers do not know the best mode for washing underclothing. The following directions for washing merino, lamb's wool and silk, are excellent:—Use one pound of dissolved soap in four gallons of water, in which rinse well the articles to be washed, changing them repeatedly through the hand; wring them as dry as possible to remove the soap; rinse them again briskly in clean, luke-warm water; wring and stretch them to a proper shape, and dry in the open air if possible. The only effects of rubbing are to shrink and destroy the material, therefore it should never be resorted to. The material used in manufacturing silk underwear being an animal product, it is absolutely necessary that nothing but the best quality of soap and warm water should be used. All kinds of washing compounds destroy the nature of the material, giving to the fabric the appearance of cotton.

BANBURY CAKES.

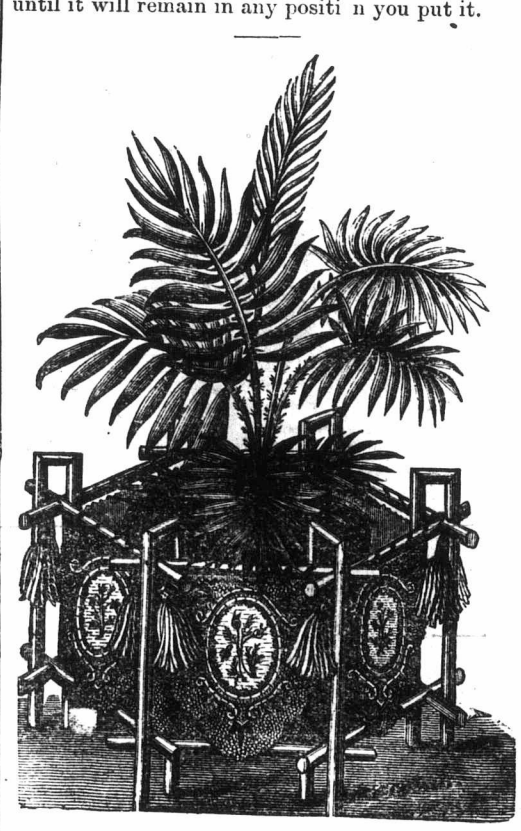
Roll out the paste about half an inch thick and cut it into pieces; then roll again till each piece becomes twice the size; put some banbury meat in the middle of one side, fold the other over it, and pinch it up into a somewhat oval shape; flatten it with your hand at the top, letting the seam be at the bottom; rub the tops over with the white of an egg, laid on with a brush, and dust loaf sugar over them; bake in a moderate oven. The meat for this cake is made thus:—Beat up a quarter of a pound of butter until it becomes the state of cream, then mix with it half a pound of candied lemon and orange peel; cut fine one pound of currants, a quarter of an ounce of ground cinnamon and a quarter of an ounce of allspice; mix all well together and keep in a stone jar till wanted for use.

CALIFORNIA CAKE.

Three eggs, one cup of sugar, half cup of milk, half teaspoon saleratus, four cups butter, one teaspoon cream tartar.

FROSTING.

Beat the whites of 2 eggs to a froth; then add quarter of a pound of sifted loaf sugar, then beat until it will remain in any position you put it.



## Flower-Stand with Embroidered Lambrequins.

The frame of this stand may be very easily constructed of white-cane rods. The two rods connected by a short piece at the top, at each corner, measure six and four-fifths inches in height, and are connected with rods—each six inches long, crossing each other at the corners, the ends projecting one inch in such a manner, with brass tacks, that the lower crossed rods enclose a hexagon bottom of thin wood, each of whose sides measure three and two-fifths inches, while the side-walls of the stand measure three and four-fifths inches in height. The rods that are connected at the top may, if desired, remain single, and be decorated with white or black headed pins, all the ends of the other rods being decorated in like manner. To make firm side-walls, a strip of card-board covered with red cloth is inserted between the double rods. The lambrequin on each part is of red cloth, decorated with an arabesque border of gold thread, fine black soutache, and herring-bone stitches of black silk. The oval—two inches high and one and two-fifths inches wide—cut away in the middle, is filled up by a medallion embroidered in various gay colors on white cloth. The upper crossed rods are wound about with red chenille. The tassels are made of fine strips of red cloth. If it is desired that the stand should be decorated with natural flowers, a tin dish must be placed in it. Handsome artificial flowers, however, make a very beautiful appearance, when tastefully arranged.

## Winter Clothing.

DEAR MINNIE MAY,—

I wish to talk to the readers of the FARMER'S ADVOCATE in regard to warm underclothing, and I know by experience whereof I speak. I have always disliked "coddling" myself, could never endure woollen next to me, and made my winter dresses the same size about the waist and shoulders that I did my summer ones. When I went out I required no end of wraps, and even then shivered and shook, and felt as though I had much rather be snug beside my stove than abroad in the wide, wintry waste.

Last winter from December till late spring I was never free from a cold. My throat was the seat of all the aches under the sun; my voice sounded like that of a superannuated mourning dove; and when you come to shoulders—why, I felt as though I was one great shoulder, and all it was fit for was to throb with neuralgia.

I think I've always had common sense, but somehow it took one winter of suffering to bring it into activity. Early this last fall I let out my winter dresses a trifle, not enough to spoil their "set," but enough to give room for a suit of merino underwear—white, soft, fleecy, close fitting, and oh! so warm! They are a delight to the eye, and to the flesh. There is no place left for the cold blast to enter. I have not had a cold this winter. I go out on all occasions and in all weather much less wrapped than formerly, with impunity. I never chill through—that most fatal of sensations—and I think my figure, when you come to that, looks quite as well with its extra size as it did last winter. I should have procured the "combination underclothing" if I could have got them somewhat nearer home than at Boston. I think if merchants would supply themselves with these, there wood soon be a large demand for them, not only in winter, but in lighter grades for summer.

I have never allowed my children to go without the warmest of under clothes. I was cruel only to myself; but I shall not in my lifetime forget the lesson I have learned.

SUBSCRIBER.

ECONOMICAL AND PURE.—Many persons injure their teeth by a free use of strong acids or alkalies, under the guise of some fancifully entitled dentifrice. Simple pulverized chalk, which is the principle ingredient in all good tooth powders, is the very best thing to use for keeping the teeth white and clean. See that the children are provided with a box of it, and a soft brush, and that they use it the last thing before going to bed; and no food is left in the mouth to do harm during sleep.

Ink stains may be removed from books by wetting the spot with a solution of oxalic acid 1 oz., water, half a pint.

To each bowl of starch, before boiling, add a teaspoonful of Epsom salts. Articles prepared with this will be stiffer and in a measure fireproof.

Hyposulphate of soda is better than common washing soda for laundry purposes.

A little black pepper in some cotton dipped in sweet oil, is one of the quickest remedies known for the earache.

Stone jars which have become offensive and unfit for use, may be rendered perfectly sweet by packing them full of earth and letting them stand two or three weeks.

THE ELASTIC EGG.—Take a good and sound egg, place it in strong vinegar, and allow it to remain 12 hours; it will then become soft and elastic. In this state it can be squeezed into a tolerably wide-mouthed bottle; when in, it must be covered with water having some soda dissolved in it. In a few hours this preparation will restore the egg nearly to its original solidity, after which the liquid should be poured off and the bottle dried, keeping it as a curiosity to puzzle one's friends for an explanation how the egg was laid in it.

TO PREVENT TIN RUSTING.—Rub fresh lard over every part of the dish, and then put it in a hot oven and heat it thoroughly. Thus treated any tinware may be used in water constantly, and remain bright and free from rust indefinitely.

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A correspondent from Pakenham, Ottawa District, writes to us as follows:—An old farmer of some experience sowed grass seed frequently on hard clay land, and could not get it to take until he summer-fallowed and sowed the seed in the month of July. Since then he has had no difficulty in getting it to grow well. Another gentleman, talking of raising onions, says that he has raised 400 bushels on half an acre.

## Patrons of Husbandry.

SIR,—Numerous communications have been received in the past month from the Provinces of Quebec, Nova Scotia and New Brunswick, asking for information about the Grange and how to proceed in the establishment of the Order. They have watched, they say, with interest the rapid spread of the Grange in Ontario, and the beneficial results already being obtained, and are anxious for information and assistance to extend the Order throughout their provinces. We have a foot-hold there, there being a number of Subordinate Granges in each province, and we welcome their desire for extension, believing that with judicious management on the part of the Dominion Grange, coupled with the generous efforts of members there, the Order will undoubtedly spread more rapidly in future. Incalculable benefits would undoubtedly accrue from a nearer relationship and a more enlightened understanding amongst the farmers in the several provinces of the Dominion.

"If we could only work together we could protect ourselves" has for years been the remark of all; every one has at least a dim idea that there is strength in numbers and virtue in co-operation. If we can succeed in uniting more closely the destinies of the farmers of the different provinces, by showing them that the interest of one is the common interest of all - that it is for the general welfare of each and every one we are working, we will have accomplished a great and good work. We in Ontario know but little concerning our brother farmers in the lower provinces, and they but little of us. By means of the Grange communication can be established amongst us, that will be the means of awakening new thoughts and energies and give us a more extended and enlightened knowledge of our duties and requirements as a class. Important questions of interest can be discussed, and a means thus formed for disseminating useful instruction and information.

The science of co-operation must be first taught and then practiced. The vitality of the Order consists in fulfilling its mission as an educator and as a protector to the business interests of the members by co-operation and mutual support.

Our numbers are rapidly increasing, and everywhere farmers are enlisting under our banner as a sure protector of their interests and mutual preservation. Our object is not to better our condition by robbing others, but by taking care that nobody robs us to see that the man who hands our grain over to the consumer does not get the grist, leaving him whose sweat produced the crop only the toll.

W. PEMBERTON PAGE,
Sec'y Dom. Grange.

### New Granges.

297. Adelaide Excelsior—Wm. Brock, Master, Strathroy P.O.; John Chorthy, Secretary, Strathroy.

298. Oak Grove—Wm. Clement, Master, Mount Brydges; John Band, Secretary, Mount Brydges.

299. Shirley—John Mobray, Master, Shirley; Wm. McGill, Secretary, Prince Albert.

300. Elgin—John Ferguson, Master, West Lorne; D. McKillop, Secretary, Eagle.

301. Carrick—John Buchard, Master, Clifford; James Johnson, Secretary, Middemay.

302. Oro—L. Pearsall, Master, Mitchell Square; W. H, Rathborne, Secretary, Mitchell Square.

303. Rugby—Duncan Anderson, Master, Rugby; H. G. Lester, Secretary, Rugby.

304. Mitchell—George Johnson, Master, Mitchell; E. Boardhouse, Secretary, Mitchell.

305 Silver Creek—Dugald Currie, Master, Collingwood; Charles Clarke, Secretary, Collingwood.

306. Pretty River—James Taylor, Master, Nottawa; A. Jardine, Secretary, Nottawa.

307. Rising Star—E. Williams, Master Mitchell; W. J. McLagan, Secretary, Mitchell.

308. Centreville—D. A. Lucas, Master, Centreville; C. A. Corscallen, Secretary, Centreville.

309. Moscow—James Switzer, Master, Camden East; C. M. Lucas, Secretary, Moscow.

310. Colborne—Alex Glen, Master, Carlow; John Karce, Secretary, Carlow.

311. East York—Henry Johnson, Master, Samoroux; W. Clark, Secretary, Lansing.

312. New England—D. K. Ellis, Master, Kimberly; John Wiley, Secretary.

313. Farmers' Relief—Thomas Clarke, Master, Watford; Wm. Fuller, Secretary, Watford

314. Harriston—Wm. Arnold, Master, Harriston P. O.; T. Carscaddin, Secretary, Harriston P. O.

315. Unity—James Rushton, Master, Ridgetown; R. Mallice, Secretary, Ridgetown.

316. Avon—Lorenzo Moses, Master, Avonton; T. Armstring, Secretary, Avonton.

317. Balmoral—S. Climes, Master, Balmoral; T. H. Best, Secretary, Balmoral.

318. Brock—Adam Shire, Master, Cannington; Charles Junkin, Secretary, Cunnington.

319. Kippen—R. McMindio, Master, Kippen; T. Smille, Secretary, Kippen.

320. Union—Hugh Clark, Master, Janet's Corners; D. McLean, Secretary, Janet's Corners.

321. Erie—John Caldwell, Master, Erie; James Fleming, Secretary, Erie.

322. Innisfil—Joseph Goodfellow, Master, Bramley; Robert Leonard, Secretary, Craigvale.

323. Middleton—John Ogilvie, Master, Longwood Station; W. Harrison, Secretary, Longwood Station.

324 Perrytown—James Dunbar, Master, Perrytown; Joseph S. Wilson, Secretary, Perrytown.

325. Rainham.—Leonard Zager, Master, Rainham Centre; J. Foster, Secretary, Rainham Centre.

326 Orange Valley—John Ford, Master, Markdale; Henry D. Irwin, Secretary.

327. Maple Leaf—Wm. Glover, Master, Mono Centre; James Kenn Secretary, Mono Centre.

328. Pearl, Nelson Haney, Master, Shelburne; Thomas Doyle, Secretary, Shelburne.

329. Rosemont—Samuel Ervin, Master, Rosemont; Wm. Irwin, Secretary, Rosemont.

330. Farmers' Hope—Joseph Crone, Master, Arkona; Robert McFarlin, Secretary, Forest.

331. Malahide—Nicholas, C. Brown, Master, Aylmer P. O.; Clinton Van Patter, Secretary, Aylmer P. O.

332. Victoria Square—Francis Walker, Master, Cashel; Milton Fierheller, Secretary, Victoria Square.

DIVISION GRANGES.

25. Ontario—Andrew Orvis, Master, Whitby P. O.; W. V. Richardson, Secretary, Pickering.

26. Wentworth—Moses J. Olmstead, Master, Ancaster; F. M. Carpenter, Secretary, Stoney Creek.

### The Cultivation of Our Social Relations.

A LECTURE TO THE PATRONS OF OHIO, BY A. S. PLATT.

"Why do those cliffs of shadowy tint appear
More sweet than all the landscapes smiling near?
'Tis distance lends enchantment to the view,
And robes the mountain in its azure blue."

Is it thus that hope is all that life can afford—is there nothing more than the shadowy tint that distance gives a robe of promise, to be lost as we approach—to leave only the rugged rocks to meet our gaze? Ever eluding, yet ever feeding us on false promises; certainly not—happiness is not distant, it lies close about our way. At the same time its opposite, the rugged points, crop out plainly about us, and beset each step we take. With all they serve a valuable purpose; they give to us a measure of the blessings that we have, and show by contrast how much of the good we possess.

Without the evil we have to contend against, we would not be able to appreciate the good. Without the contrast we could not draw the line and make up the balance. Herein is summed up the relations of life. Here is marked the connection between the animate and inanimate. So closely are they knit together that they cannot be separated; to do so would be to destroy the whole. Accepting this relation, it becomes necessary to make the most of life, by fully appreciating and using to the best advantage our surroundings.

How can this be done? By accepting their true measure and giving to each its place. Thus to perfect social happiness, the house we live in, the path we tread in our daily walk, may be pleasant or distasteful, by the means we use or the measures we take. Without the house we would be at the mercy of the elements; without the path life would be a void; with the house it may be made, according to the culture, pleasant or miserable, the paths prosperous or ruinous. The measure is with us; as we mete it out the reward shall be. If we cultivate flowers we shall have and enjoy them; as we cultivate sharp points we shall be tormented with them. One is filled with beauty and fragrance that nature has fitted us to enjoy—the others with properties intended only to harrass.

If so much depends upon our use of the animate and the inanimate surroundings, how much more depends upon the social relation of life with our kindred natures—the mother, father, sister, brother, neighbor and friend, which, combined, make up the most tender relations of our nature.

What is more pleasurable than the social relation of all of these? Like the flowers, they hold all the beauties of life that go to make up the seed of happiness in this life. So true is this that it does not require proof. Mankind in the aggregate is but one great family, divided into lesser families, until you come down to the home circle, containing the most cherished forms of existence. One step from this we have the circle bound together by a common object, such as the occupation that we follow, which brings in the daily supply.

The ties formed by occupation are or should be almost as tender as the relations of home. The protection of one by the other, a natural leaning and dependence for our daily bread and clothing, knit us together, until we find class after class bound together by rules and regulations governing them as strictly as the law of the land binds the citizen. Thus bound, we find them enjoying in the close circle of trade and communion they live in, all the social relations of life.

"One place—one roof—one name—their daily bread
One daily sacrifice to break;
To gather and together take
Perpetual council such as use has fed
The habit of, in words that make no lie"

Where these circles run in harmony, happiness is the result. Hence it is necessary to have union in order to secure the end desired.

"From nature's chain whatever link you strike,
Tenth, or ten-thousandth, breaks the chain alike"

That classes harmonize on account of occupation is no reason that there should be division between classes. Occupation draws us together—gives us similarity of tastes and of habit, which sums up life's relations, and we are linked together as a chain. Because we cultivate the earth and grow the bread to feed the world, is no reason that we should be at war with others who are engaged in different pursuits.

### In What Strength Consists.

The strength and vitality of the Order can be put to no severer test than to have those who occupy its places of trust to use the influence of place to further personal ends. The vitality of the human system is not proved so well in any other way as through its power to resist and throw off disease. From Adam's time to the present, every living thing has enjoyed this immunity from disintegration and extinction. The Order of Patrons has the same innate vital power, and will never fully know its strength until it can look back to what it has overcome.

A goal that is easily reached does not inspire the one who strides after it with a very lofty estimate of his own powers. This applies to everything that a man puts his hand or his mind to. The Order of Patrons will be lasting and useful to those who need its aid, in proportion to the vitality shown by the subordinate membership. A vague idea in the mind that obstacles have been overcome, these only having been based upon surmise, or suspicion of the existence of detrimental influences, gives no rebounding power, but if the membership can look back to triumphs actually won, there can be no incentive to onward movement so great as this.—*Ex.*

TO THE SECRETARIES OF SUBORDINATE GRANGES.—We would prefer your sending the lists of officers to the Secretary of the Dominion Grange, from whom we receive the regular lists. This will avoid confusion.

Since our last issue the Oak Leaf Grange, of Brantford, held a social, open meeting. Music and songs enlivened the attendance. Addresses were given and a generous repast was provided by the ladies.

Hyde Park Grange also held a social. Several masters of other Granges attended. The entertainment was pleasing. Various speakers advanced different suggestions that they thought would be beneficial.

Open discussions and Grange discussions have been held in regard to the signing of a petition for a protective duty. Some Granges have had balls and suppers, and thus the Order moves.

TO OUR CORRESPONDENTS.—We have been obliged from press of matter to hold over till our next issue several communications, among others the contribution signed "John Granger."

## Pedlar's Licenses.

SIR,—Enclosed I send you some sections of the Municipal Act, by which you will see that all councils, except township councils, may pass by-laws to license pedlars of every description, and county councils are imperatively required to pass by-laws offering a reward of $20 for the apprehension of horse thieves. The township reeves who compose the county councils ought to endeavor to get these by-laws passed. Laws may be placed on the Statute Book, but, unless they are enforced, they are useless. Perhaps you could find room for them in the February number of the ADVOCATE, as I believe they are not generally known. Probably few township reeves have taken the trouble to look into the Municipal Act to see what powers they have. J. S.

WHEN TO CUT TIMBER.

The best time to cut fencing, whether posts or rails, is in July or August. When the trees are felled let them remain on the ground until the leaves are withered, this will draw out all the sap; then cross-cut the trees, split the logs, and draw the stuff out of the woods as soon as possible, and pile them in the sun so that they may dry quickly. Bass wood rails, if cut in the winter, will last only five or six years; but cut as above recommended, the wood will harden at once and last many years longer. Set the posts small end downwards and they will last several years longer than if the butt ends are placed in the ground. J. S.

## Diseased Fowls.

Just when going to press, we received the following correspondence:—

SIR,—My fowls last winter swelled up about the head. Some of them were totally blind in one eye, and a few of them in both, and some of them died. They have a good warm house. and are well fed and watered. I notice one of them the same this winter.

If you or any of your numerous readers can tell the cause or remedy, you will oblige,

RICHARD WEBB, SR.
Sunbury.

[Your fowls have got the disease known as roup, which appears in a discharge from the nostrils and eyes, swelling of the head by reason of an accumulation of matter which cannot find escape. A cure is difficult, and, as the disease is contageous, it is better to kill the affected ones unless they are some very valuable hens. Washing the head with warm water, and injecting into the nostrils a solution of 10 grains of sulphate of copper in an ounce of water with a syringe, will often effect a cure.]

## Canadian Herd Book.

SIR,—Would you inform me positively if the Canadian Herd Book is to be discountenanced at the Centennial. ? N. E.

[By the Circular No. 141, sent out by the U. S. Bureau of Agriculture, it is rejected, and animals registered in it will not be admitted, unless entered in other Herd Books.]

The celebrated horse, Prince of the West, of which we gave an illustration last month, is to be exhibited at the Centennial Exhibition. Mr. J. D. Smith, of Newtonbrook, has a half interest in him.

On Jan 6, a meeting of the Executive Committee of the Ontario Poultry Society was held in the Wellington Hotel, Guelph. Among other business, the prize list was revised, and arrangements made for the show, which is to be held at Guelph, commencing on Tuesday, Feb. 29th, and continuing till noon on Friday, March 3rd. Over $1,000 is to be offered in prizes. The indications are that the show will be a very large one. Several poultry fanciers, &c., from the United States have signified their intention of being present.

Attention is directed to the advertisement of Ellwanger & Barry, Nurserymen, Rochester, N. Y. They are well known, and acknowledged to be the most successful growers of fruit and ornamental trees, shrubs and plants, in the United States.

George Leslie & Sons, of Toronto, have the largest stock of trees and shrubs to be found in Canada.

## Notice.

The undermentioned letters have been received at this office, but from want of name or post office the money enclosed remains not credited to proper party. We will thank our subscribers to always write their names and post office address plain. If they have moved, or which to have their address changed, give old and new address:—

Dec. 7.—No name.....Woodstock, Ont
" 10.—Wm. Midland (appears like). No P. O. (Can't be made out.)
" 11.—J. Hindee, Sommerville Temperance Hotel .....No P. O
" 14.—No name (a registered letter) Ottawa, Ont.
" 15.— " " " Ottawa, Ont.
" 17.— " " " Sheffield, Ont.
" 29.— " " " Amherstburg, Ont.
Jan. 3.—No name (a registered letter) Fenwick, Ont
" 3.— " " " Hawkesburg, Ont.

Persons who can identify above remittances will please write at once, referring to this list, and giving amount enclosed and any other particulars.

## Dairymen's Convention.

The annual convention of the Dairymen's Association of Ontario, to be held at Ingersoll, on the 9th, 10th, and 11th of February, will be addressed by Prof. Arnold, of Rochester, N. Y., "Gilt Edged Butter Making," and "Fancy Cheese Making;" Prof. Bell, of Albert University, "Dairymen's Conventions, their object and effect;" L. S. Hardin, of Kentucky, "Sweedish method of Butter Making;" Prof. Wetheral, of Boston, "Dairy Stock;" Hon Harris Lewis, of New York, "Food and care of Dairy Stock;" and J. H. Reall, of Philadelphia, "Influences affecting our Cheese interests." The following gentlemen are also expected to be present:—Hon. O. Mowat, Hon. Adam Crooks, Hon. S. C. Wood, Hon. H. M. Cochrane of Montreal, and Thos Ballantyne, M. P. P.

## Sale of High-bred Stock.

Mr. J. T. Ireland reports the purchase of the shorthorn bull Pickering lad, bred by John Miller, of Pickering, and the sale of a Berkshire boar to John Ireland, of Nelson.

Mr. L. Mashell, of King, has sold his young bull Mambrino Chief to Mr. Thos. Lloyd, Whitchurch, Co. of York, and the young bull Lord Asher to Mr. W. W. Harman, of Oak Ridge—two fine animals, respectively 13 and 9 months old.

Mr. Dan'l Reesor, of Markham, has sold one of his valuable herd, Duke of Brockton, to Mr. W. Kenny, Paris, Ky., for $900 in gold. Mr. T. A. Milne, of Markham, has sold 20 head of choice Southdown sheep, many of them from imported stock.

Mr. G. M. Coulter, Reesville, has purchased from Mr. Cochrane the fine young bull 2nd Star of the West.

Mr. John Holderness has purchased from Mr. Lemon Beattie, Toronto, his entire herd of Berkshires.

Messrs. Snell, Edmonton, have purchased from Mr. Rankin, Illinois, the Berkshire boar Lord Liverpool, jr., and from Mr. Richards the boar Royal Prince, bred by Mr. Humfrey, England.

FORTHCOMING CATTLE SALES.

June 14—At Bow Park, Brantford, shorthorns, the property of the Hon. George Brown.

June 15—A public sale at Toronto, property of Hon. M. H. Cochrane, Compton, P. Q.; Simon Beattie, Toronto; and John Hope, Markham.

ICE HOUSES.—Get the four walls up of slabs, logs or boards, with a good thick lining of sawdust and a roof to shed rain, covering the top layer of ice with sawdust, the same as protects the sides. Other materials, such as tan bark, chopped straw or chaff, will do quite as well. About ten or twelve inches of sawdust will answer the purpose. It is not necessary to have double walls, though they are convenient for filling. Drainage is necessary. Have the floor loosely laid upon sleepers, so as to raise it a few inches from the ground. And be sure to build the house on a well drained site—a gravely soil being best. Pack the ice blocks in well and have ventilation or a free circulation of air over the top of the mass.

HEARING RESTORED.—Great invention. Book free. G. J. WOOD, Madison, Ind.

## Agricultural Societies.

Agricultural Societies can have the names of their officers for 1876 published as below. Also any items of special note from the Secretary will be appreciated.

East Middlesex—President, Mr. George Douglas; Vice-President, Mr. R. Whitter; Secretary, Mr. H. Anderson; Treasurer, Mr. J. B. Lane.

West Middlesex Agricultural Society—President, Mr. R. Cade; Vice President, Mr. George Buttery; Secretary-Treasurer, Mr. H. McColl.

Winchester Agricultural Society—President, Mr. Wm. McLean; Vice-President, Mr. Thomas Hamilton; Secretary-Treasurer, Mr. James L. Holmes.

Markham Agricultural Society—President, Mr. Robert Marsh; Vice-President, Mr. Henry Jennings; Secretary-Treasurer, Mr. Wm. Braithwaite.

Hamilton Electoral Division Agricultural Society—President Mr. J. A. Bruce; Vice-President, Mr. Robert Grant; 2nd Vice-President, Mr. J. Ford.

South Wentworth—President, Mr. F. M. Carpenter; Vice-President, Mr. J. V. Spohn; Secretary-Treasurer, Mr. Jonathon Davis.

Barton & Glandford Agricultural Society—President, Mr. Henry Reid; Vice-President, Mr. Thomas Markham; Secretary-Treasurer, Mr. Wm Calder.

Puslinch Agricultural Society—President, J. Mason; Vice-President, J. A. Anderson; Secretary-Treasurer, Mr. J. Grant.

Delaware Agricultural Society—President, Mr. Bruen Cornish; Vice-President, Mr. C. J. Fox; Secretary-Treasurer, Mr. D. Francis.

Eramosa Agricultural Society—President, Mr. Alfred Anster, Vice-President, Mr Chas. McDougall; Secretary-Treasurer, Mr. Thomas Harris.

Carleton Co., N. B., Agricultural Society—President, Mr. U. E. Dibblee; Vice-Presidents, Mr. T. W. Longstaff and Anthony Kerney.

Plympton Agricultural Society—President, Mr. John Paul, Vice-President, Mr. Joseph Kennedy; Secretary, Mr. D. S. Robertson; Treasurer, Mr. A. Y. Anderson.

Southern Ontario Poultry Association—President, Dr. J. W. Digby, Mayor, Brantford; Vice-President, Mr. C. Edmondson; Secretary, W. Sanderson, Hamilton; Treasurer, Mr. J. W. Burk, Brantford.

Ekfrid Agricultural Society—President, Mr. Philip Corneil; Vice-President, Mr. James Poole; Secretary-Treasurer, Mr. Alex Dougal.

Stanstead Co. Agricultural Society—President, Mr. A. H. Moon; Vice-President, Mr. T. C. Moon; Secretary-Treasurer, Mr. E. N. Le Baron.

Hullett Branch Agricultural Society—President, Mr. Jas. Higgins; Vice-President, Mr. John Mason; Secretary, Mr. J. A. Nellis; Treasurer, Mr. Thos. Cooper.

Oxford Agricultural Society—President, Mr. John Mann; Vice-President, Mr. A J. McDonald; Secretary-Treasurer, Mr. Robt. C. Scott.

York Co., N. B., Agricultural Society—President, Mr. John H. Reid; Vice-President, Mr. John Pickard, Secretary, Mr. J. A. Beckwith.

Kincardine Horticultural Society—President, Mr. M. Macpherson; Vice-President, Mr R. Baird; Secretary, Mr. A. M. Williamson; Treasurer, Dr. Martin.

Belleville Horticultural Society—President, Mr. W. J. Palmer; Vice-President, Mr. Peter C. Dempsey; Secretary-Treasurer, Mr. J. H. Peck.

# Commercial.

THE ENGLISH MARKETS.

Though the prices of breadstuffs have undergone but little change, the tendency, by our last advices, has been downwards. The London *Economist* says:—"The wheat trade continues dull and inactive, and the more winter like weather has not had any appreciable effect. The supplies of English wheat have been light, but the arrivals of foreign, both at distant ports and off the coast, have been largely increased, and have tended to effect quotations adversely. On the spot, however, no especial change in value has occurred, but coast cargoes have in some instances given away 1s per quarter. As had been expected, the quantity of wheat on passage is at length sensibly diminishing, and has already been reduced by some 500,000 quarters. On the other hand, the stocks in the principal parts of the United Kingdom, show on the aggregate a large increase as compared with the light stock held at this time last year.

LIVERPOOL MARKETS.

Liverpool, Jan. 21.

Flour, 24s 6d; wheat, 9s 10d to 10s 5d; corn, 28s 9d; barley, 3s 6d; oats, 3s 4d; peas, 40s; cheese, 56s; pork, 82s 6d.

TORONTO MARKETS.

Whste wheat, $1 to $1.02; treadwell, $1; spring wheat, 90c; barley, 70c to 78c; oats, 35c; peas, 74c; hay, $12 to $17.

MONTREAL MARKETS.

Flour, $4.10 to $5.15 per barrel.

DETROIT MARKETS.

Wheat dull, at $1.16½ to $1.19½; corn, 53c; oats, 87½.

CHICAGO MARKETS.

Wheat, $1 to $1.10; barley, 78c to $1½c; oats, 31c.

LONDON, ONT., MARKETS.

Wheat, per 100 lbs, $1.50 to $1.65; barley, $1.10 to $1.60; peas, $1.12 to $1.15; oats, 90c to 91c; corn, $1.05 to $1.10; beans, 90c to $1.21; rye, $1.05 to $1.10; buckwheat, $1 to $1.29; butter, roll, 20c to 22c; in crocks, 18c to 20c; tub butter, 18c to 19c; cheese, 11c to 11½c; hay, $10 to $12; clover seed, $5 to $5.40; potatoes, per bag, 40c to 45c; apples, 40c to 75c, per bushel; cordwood, $3.75 to $4.50; dressed hogs, $6.75 to $7.