

our streams, waterfowl is fully We have an- imported great from Russia. ality; but, ulti- habit of mixing weight. This cent. duty en- them cost ten domestic feathers. the importation

e the best com- d send for cir- t.

London, May 22. of the British corn country, although farmers much satis- mising crops, but on the idea that, the warm rain, the markets were almost last week. Trade in rable firmness and has improved a shil- export inquiry, and coast are taken for ased upon genuine ade have been com- dition to the inquiry o coast, the demand n the passage from

foregoing with the altered to the south- erated greatly, the showers have fallen ports more favorable growing crops. The not attain a much session with English

May 23, 12.30 p. m., were 7,000 quart-

New York, May 25. 80,000 barrels; sales, 75 to \$5.20 for super- receipts, 139,000 bush.; No. 3 Chicago; \$1.15 .21 for No. 2 Chicago; .30 to \$1.34 for No. 1 tern; \$1.22 to \$1.45 western, 130,000 bush.; sales, rn mixed. 0 bush.; sales, 29,000 and state; 41c to 47c

Pa. shippers during the considerable quantities of This price they pay o home trade 11 1/2c is ts of new are not very t of hard work man- reared up. Skins are dom, and range from here is very little old stock being of medium y shippers or buyers.

Utica, N. Y., May 22. were offered, of which 2 1/2c. A run caused an ce is 11 1/2c.

April and first half of 9 1/2c to 9 3/4c, as follows: 00 boxes whole month May at 9 1/2c; and 600 at 9 3/4c.

central, \$1 65 to \$1 84; \$1 55 to \$1 60; Spring eas \$1 18 to \$1 20; Oats eye 40c; Buckwheat 90c; eg 16c; Roll 14c to 20c; eggs 10c to 12c; Hay \$11 load; Potatoes, per bag Cordwood \$4 to \$5 per beef per 100 lbs \$6 to \$7; Cows, \$35 to \$50; Sheep to \$3 50; Oatmeal \$2 75

# FARMER'S ADVOCATE

PERSEVERE SUCCEED

VOL. XI.

LONDON, ONT., JULY, 1876.

NO. 7

## The Farmer's Advocate!

PUBLISHED MONTHLY BY WILLIAM WELD.  
OFFICE: RICHMOND STREET, EAST SIDE, BETWEEN THE MARKET AND G.W.R. STATION, LONDON, ONT.

**TO SUBSCRIBERS:**  
TERMS.—\$1 per annum, postage paid; \$1.25 when in arrears. Single copies 10 cents each.  
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Subscribers who do not give express notice to the contrary, are considered as wishing to continue their subscriptions.

**TO ADVERTISERS:**  
Our rates for single insertion are 20c. per line—\$2.40 per inch, space of nonpareil (a line consists on an average of eight words).  
Manufacturers and Stock Breeders' cards inserted in "Special List" at \$1 per line per annum.  
Condensed farmers' advertisements of agricultural implements, seeds, stock or farms for sale, or farms to let, not to exceed four lines, 50c., prepaid.  
Advertising accounts rendered quarterly.  
Advertisements, to secure insertion and required space, should be in by 20th of each month.

Letters enclosing remittances, &c., only acknowledged when specially requested. Our correspondence is very heavy, and must be abridged as much as possible.

### The Great Short Horn Sales.

As announced, a succession of Shorthorn sales took place in the second week in June. This is rather a new feature in Canada. It has its advantages, as gentlemen desirous of obtaining any can attend at many sales, and in shipping to a distance it is of importance that sufficient numbers can be had to make it an object. Messrs. Cochran, Beattie and Hope led the sales. They had many animals with fashionable pedigrees, which drew buyers from a long distance. Three of the sales took place in Toronto, at the Agricultural Grounds. A canvas awning was erected to protect the buyers from the sun's rays. Mr. Thornton, the celebrated English Auctioneer, at the request of those present, and with the consent of the appointed auctioneers, sold the first five animals, and gave a brisk and brief sketch of the English plan of stock sales. His manner and style of selling were much admired, and he showed himself a complete master of the Shorthorn family pedigree. He introduced the English system of selling by the use of a sand glass, which runs 15 seconds. If bidding ceases, the sand glass is held up, and if no one makes another bid before the sand is run down, the last bidder takes the animal. This plan appeared to give satisfaction. Mr. Thornton stated that the animals to be offered were considered no longer the property of the former owners when once in the ring, but were the property of the auctioneer and the attendance, and the highest offer would take the animal.

The two celebrated American auctioneers, Messrs. Page and Muir, were the other auctioneers, and all of these gentlemen are held in high esteem among Shorthorn men. They know how to speak of an animal or to the attend-

ance. Previous to the sales a substantial lunch was served, brief speeches were made, and toasts were drunk. The weather, stock and attendance were all that could be desired, except that none of the Kentucky breeders were there. Seats were placed a round the outside, and the animals were led into the ring in the centre. The two Duchesses were the great attractions, a cut of one of which appeared in the last issue of this paper. Mr. Thornton held bids of twenty thousand dollars each for them. His offer was for Lord Feversham. Other substantial bids were made, but they were both purchased by Mr. Albert Crane, of Durham Park, Kansas—Duchess 2 for Twenty-one thousand dollars, and Duchess 3 for Twenty-three thousand six hundred dollars. These enormous sums appear to many as fabulous, and that they never can pay. We all know such figures are far beyond the reach of ideas of the plain farmer, but fashion and blood will tell their own tale.

When in England and France two years ago, we were surprised to find so few Durham cattle throughout the country. Canada, for its wealth and population, now has a greater proportion of really good Durham cattle than any other country. We should feel proud that our stock is drawing the attention of the best breeders from all parts of the world. We were informed that Mr. A. Crane, the purchaser of these animals, is very wealthy; that he lives retired in Chicago, but has sixty thousand acres of land in Kansas. His son lives in Kansas, and has twenty thousand head of cattle, among which are two hundred head of Shorthorns. He is aiming to make his son one of the head cattle men in the West. There are many as wealthy gentlemen as he in the States, and thousands more wealthy in Europe. There are hundreds of thousands of farmers in America that have scarcely a sheep a pig or a horse that they find a pride in. We admire a farmer that aims to be at the top, to have the best, to make a mark. We by no means advise many of our farmers to go into thousand dollar animals, but there are farmers that have hoarded wealth that ought to be ashamed of the stock and appearance of their farms. There is room for all to improve. If you cannot get the best in the world get the best in your county, township or neighborhood, whether in cattle, horses, sheep, or pigs, and you will be more respected than by acting the part of a miserly, parsimonious person, and your expenditure will do your posterity more good than meanly-hoarded wealth. Money paid for good stock, high as the prices many seem, is not thrown away. High breeding is the surest way to command high prices, and to add to their wealth by the improvement of the country.

The prices received, we thought, should have been highly satisfactory, but some of the breeders complained about the prices attained. We do not know what a price Duchess may bring. Nearly all the principal breeders are aiming to get as pure Duchess blood as they can procure. There are

several other families which rival this family in merit, and each family has its admirers. The principal are the Booths, Bates, Princess; and numerous other families have each their merits, and are valued in a great measure according to the time that line breeding has been pursued. The plain farmer cannot see much value in a pedigree, but all those great breeders know what they are doing. The best pedigree is what is sought for. Many of the pedigrees held are of very little value; in fact many good grades will sell better than some animals that have short pedigrees the record not being of sufficient merit to enhance the value of the animal. The great breeders and importers are doing a good service to the country. We wish they may go on and prosper.

### Patent Rights.

We cannot caution our young farmers too often about purchasing patent rights, township rights, or county rights. The country swarms with fluent, plausible talkers, and thousands of farmers have been beat by these unprincipled scoundrels that run through our country, not for the country's good, but to fleece the innocent. There are many travellers that do good in educating the farmers to the use of some useful implement, but those that only want to sell the right without supplying the article, are, as a general thing, only a fraud. Manufacturers can purchase the patent right and make and supply you with anything that is worth having; such you may purchase from reliable manufacturers or dealers, but the township or county right that is offered to you and on which you expect to make money, you will in ninety-nine cases out of one hundred be sure to lose. When travelling last month we met a person from the United States selling the right of an adjustable plow point, said to last four common plow points; he, the vendor, only wanted to find green farmers to purchase the right of township or counties; if it were worth a cent some manufacturer would purchase it. You attend to the cultivation of your farms, leave the trading to manufacturers and traders. The more you interfere with other people's business, the more you neglect your own. To manage your farm right will take all your energy. Leave trade and patent rights to others, but purchase the best implement from reliable sources. Purchase no county or township right however great may be the inducement. Buy what you really require. You do not require the township or county right of anything.

AGRICULTURAL ADVERTISING AGENCY.—Mr. D. T. Moore, who established Moore's Rural New Yorker and made it such a popular paper, was obliged to give it up on account of his health. He is now recovered and is establishing an Agricultural Advertising Agency in New York. Mr. Moore has our good wishes and we believe the good wishes of all the agricultural editors.



**Millet for Soiling and Hay.**

It is not yet too late to sow millet. Though generally sowed before the first of July, any time within a fortnight is not too late, providing that the ground be in good order. It is better to sow thick than otherwise. If sown thin the stems are apt to grow coarse and be of less value for hay or soiling, while thick sowing will secure a thick, close braird that will grow up like luxuriant grass, and will be relished by cattle and eaten without leaving behind strong, coarse stalks. Millet has become generally known to farmers from its having been occasionally grown in the country for some years, but we doubt if its value for stock feeding is appreciated as it should be. There are few forage plants that give for a few months' growth so great a quantity of feed from the same area. If the ground be well prepared, it will produce two and a half to three tons of hay, and it has been known to produce five tons. In a course of soiling it may be grown on ground from which a crop of oats and peas has been cut for soiling, thus giving an opportunity of growing from the same plot two forage crops in a season. Fertile soil and thorough culture are required to produce a heavy crop.

Millet seed was in the early days of agriculture ranked among breadstuffs, and it is even now made into bread in Italy and Germany. As such it is very nutritious, though dark in color. In America the grain is used for feeding poultry, and many farmers grind it and feed it to their other live stock, considering it fully equal to corn for feeding purposes. The purpose for which we have sowed it and would recommend it to others is for feeding farm stock, either cut green for soiling or saved as hay. It is not suitable for sowing grass with, as it smothers any vegetation beneath or among it. This property has, however, its advantage, as it is very destructive to weeds.

Hungarian grass differs little from millet; it is fully as productive, and requires the same treatment. The seed is said to be somewhat darker than that of the millet, but both make a luxuriant growth under favorable circumstances, and both are valuable as forage crops. German millet is said to be superior to the variety we have been in the habit of using. Millet and Hungarian grass are easily saved for hay. They require to be cut when yet green, while they contain the succulency to which they owe much of their valuable properties for fodder.

**The Sherbrooke Meat Company—The Advantage of Feeding Well-bred Stock.**

The Sherbrooke Meat Company is doing a large business. They are at present slaughtering from 250 to 300 head weekly, and their expenditure in purchases and wages amounts to a considerable sum. They are expending at the rate of \$1,600,000 annually for cattle alone. They are not limiting their purchases to the immediate vicinity, or even to the Eastern Townships or the Province. The demand for fat cattle caused by the operations of the company has led the farmers there to increase the price of the animals, and the consequence has been that the purchasers have looked abroad for beeves in order to carry out their undertaking, and are importing them from Chicago. They have already imported some car loads, which are said to be superior to those raised in the townships—superior in quality, grades and well fed. It was rumored that they were importing Texas cattle, but this they deny most positively. They say, indeed, that Texas cattle would be wholly unfit for their trade—that the animals for their slaughtering and packing must be of prime quality, their shipments being to Europe, chiefly to France.

This is another demonstration of the advantage of feeding well-bred stock; they may be but grades, but they must be grades at least. Unless bred from pure-bred stock, their meat will be inferior in quality, and not suited for the highest paying markets. As is the case with the Sherbrooke Company, so must it be with all others preparing and shipping meat for Europe. The best bred and highest fed animals will command ready sale at the highest prices, while the old-time stock will be a mere drug in the market.

**Orchard and Garden.—No. 5.****HINTS FOR JULY, BY H. ORTL.**

**Summer Pruning.**—The early part of this month is a good time to thin out and prune trees that have been neglected in the spring. In fact we consider it almost the best time, as the sap is now thickening, and any cuts or incisions made in the tree rapidly heal over. The one objection to summer pruning is that the branches have fruit on and no one cares to cut it off.

**Crooked Trees** can be easily straightened, or a good deal towards it, by bending and tying up firmly to stakes for the purpose.

**Suckers** from the roots and on the trunk should be removed, especially on dwarf trees.

In the nurseries now the operation called healing will be going on or finished, according to locality. This consists in cutting back that part of the stock left on for the purpose of tying up the young buds when far enough grown, so as to make them grow straight and prevent the possible danger of being blown off by wind or rubbed off while weeding, cultivating, etc. This operation requires a little skill and care, so as not to cut off the young bud now about to be turned out on its own "hook," and yet make a smooth, even cut, that will leave no snag to dry up and prevent the bark from healing over evenly.

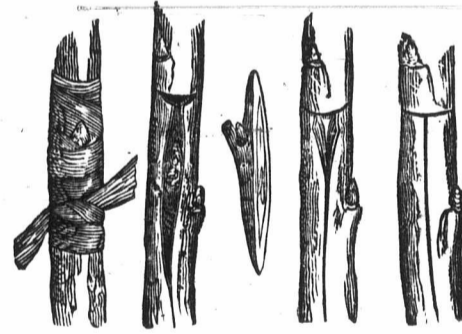


Fig. 5. Fig. 4. Fig. 1. Fig. 3. Fig. 2.

**Budding** is the best system for the propagation of all kinds of fruit trees, and is one of the most important operations in the nursery. Budded trees, as a rule, are straighter and more thrifty than those grown from grafts. The season for budding extends from the middle of July till September, or as long as the bark peels easily and without tearing. To succeed you must have the stock in the condition of completing its growth, but not too ripe, and your cion in the same medium condition, so that they will unite readily and the bud will mature plump and firm; sometimes the warm rains of September will start the bud to grow, which is very apt to be winter killed.

Cut the bud off as illustrated in fig. 1; it would be better to be a quarter of an inch longer at each end than that shown in the cut. Cut the bark on the stock in the T manner shown in fig. 2, and open the corner edges with end of your budding knife, as in fig. 3. Then evenly and gently insert your bud underneath the bark in the position of fig. 4. Finish with tying firmly with bassmatt, leaving bud exposed as in fig. 5, and the operation is over. From two to three weeks will be suffi-

ent to leave the string on, when it should be removed and all dead buds taken out and fresh ones inserted in another position.

**Roses, Chestnuts, Maples,** and a host of ornamental trees, may thus be indefinitely multiplied, and great pleasure and satisfaction may be derived from this method of propagating.

**Layering** should now be done, and is an easy method to propagate the general run of flowering shrubs, roses, gooseberries, grape vines, &c. Loosen the ground around the plant intended to be layered; bend down a shoot of this season's growth; make tongue with knife on the upper side of the shoot; lay it on the place hollowed out of the loosened soil; peg it down to keep it in position, and then cover over with from two to three inches of soil. The addition of a little sand materially helps the rooting. Plants of a hard wooded, pithy nature like the rose will require tonguing while the grape and others may simply be twisted or sharply bent, which will be quite sufficient to ensure their rooting, providing the ground is mellow and moist. Layers should be mulched. Insects will be troublesome this month, especially the pear slug. Sprinkling the foliage with Hellebore and water will prove efficacious.

**Cherries, Currants, Gooseberries and Raspberries** will be ripening this month, and parties having these growing, if not familiar with the names of the varieties they have, should make it a point to get posted. Also make notes of the qualities such, as their hardiness, productiveness, and how profitable for market purposes. This information collected and distributed, by the usual channels of information, over the country, would be of great value to the intending planter and the nurserymen, who would each, respectively, know what to plant and to grow. And this applies to every variety of fruit grown. Especially would this knowledge be valuable for localities north and east of Toronto, and away from water influence.

**Grape Vines** should be thinned out to allow of the proper ripening of the fruit; and lateral shoots pinched back within two or three buds of the fruit bunches; this greatly improves the size of the berry and induces earlier ripening.

Examine your plum trees for any indications of black-knot, which promptly remove with knife on first appearance. Red and blue kinds are the most troubled, while green and yellow almost enjoy exemption.

Fire blight on the pear should be removed on first appearance. Cut off an inch or two below the affected part, no matter how large the branch. Half a loaf is better than no bread.

**Flower Beds and Borders** will require frequent hoeings. The looser the soil, the greater the continuance and display of flower and foliage.

Seeds of herbaceous plants should be sown as soon as ripened in some favored spot. August will be time enough for the general sowing, and plants can be raised sufficiently large for transplanting either in October or in Spring.

Many of the Herbaceous plants, such as Phloxes, Delphiniums, &c., give quite a succession of bloom late in the season, if you will remove the original flower stalk a few inches below the bottom florets, as soon as it commences to fade. This will force a lateral growth, which will produce flowers; otherwise the plant would merely ripen its seeds as soon as the first flowers were off.

**Summer Culture of Root Crops.**

To the root crop we always look for a profit beside that directly derived from the crop itself. It is true it is a remunerative crop, even were there no additional gain from its cultivation, enabling us to bring our farm stock through the winter in the best condition and at the least cost. But

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were it otherwise: if the crop itself were of little value, the other profits derived from its culture would make it well worth all the expenses of seed, labor and occupation of land. In England, where every acre of land is rented at a high figure, and the farmer is most careful to make every acre pay, he considers the manure made by turnip feeding alone worth all the expenses. But it is to another source of the farmer's profit from the root crop we refer at present. The root crop is a fallow—not a bare fallow, such as was known to our fathers when the fallow field was debtor for at least twice as much to cover its expenses as any other part of the farm of equal area. The system of turnip culture has been well called a green fallow. Like the old, naked fallow, the preparatory culture serves to render the soil more mellow, fertile and free from weeds. But we must, if we are to realize all its benefits, follow up the work of the fallow. We must thoroughly cultivate the spaces between the rows. We must bear in mind that our labor is not merely for the present crop, but also for future crops of grain and the following crops of clover and grass in meadow and pasture. To effect this nothing will suffice less than thorough culture. The ground should have been plowed deep in the fall—the sod properly cut and the ridges so rounded as to receive the full influence of the frost, and the furrows, and, if needed, watercuts cleaned and opened, to prevent the lying of stagnant water. And now the good work is to be followed up. Not a weed must be allowed to strike a root in the turnip field. The earth must not be suffered to get baked and hard. Cultivator and horse-hoe should keep the ground in as good tilth as a well-cultivated garden. When this is done, the seed sown in the succeeding seasons of the course will have an early and continuous growth, and good crops will reward the farmer's labour.

#### July on the Farm.

A glorious time for the country is the bright, warm July. The sun has completed the half of his annual course, and in all his strength he pours down upon us light and heat in no measured quantity. Enjoying the shade of the remaining trees of the old forest, or the soft, pleasant air that breathes from creek or river, we pity the folks that are penned up within the narrow streets and the hot bricks and pavements of the large town. Now the country is in its glory. The dark earth is covered with the luxuriant vegetation of the growing crops. The woods and orchards seem one unlimited expanse of rich foliage. The blossoms of the fruit trees have, it is true, lost their brightness, but it is only to make way for the fruit. Later in the month we shall be plucking it from the well-laden boughs, and the emerald hue of the fields of grain will be changed for the golden hues of harvest.

But we must turn from the beauties of the country and the pleasures of country life to our work in the fields and meadows. There is work—plenty of work on the farm. Ever month has its labor—every hour its duty. Not that all our hours are for toil. Intervals of rest, converse with friends, a holiday when it can be enjoyed—all are duties as essential as the actual labors of the fields. The old proverb holds good for men as boys:—"All work and no play makes Jack a dull boy."

Of our farm work, first and continuous, is the care of the root crop. The horse hoe, the cultivator and, where needed, the hand hoe must not be allowed to rust. "Better to wear out than to rust out" is applicable to tools as well as to men. All our crops—all our crops that admit of frequent cultivation of the soil—are benefitted by it. Weeds are kept down, the fresh-stirred soil attracts and absorbs more plant food from the atmosphere,

and the land is always more mellow and fertile. The fallow of olden times was designed in part for the extirpation of weeds. The July sun is fatal to most weeds turned up to its scorching.

If there be any vacancies in your turnip or mangold fields, transplant from places that need thinning. To do this successfully you must take advantage of any coming shower. If there be none, plants put out late in the evening, with due care, may grow; but it is surer and better to resow, first tilling the places to be sowed. Seed germinates best in fresh turned-up soil. If too late for Swedes, sow a later variety—Aberdeen, White Globe or Red Norfolk. We found Dale's Hybrid a valuable turnip for this purpose. No turnip will keep through the winter as well as the Swede, but others will be found serviceable for early feeding. Mangolds bear transplanting better than turnips. It is well to have mangolds sown thick for this purpose: to fill up gaps in our root crops. Corn, for soiling, may be planted for a fortnight yet, though, as it is late, the sooner now the better. Whether used green for soiling, or dried in the shuck for winter fodder, it will be found valuable. Western Corn is generally sown for this purpose, as it yields a greater bulk of food, but quantity is not the only thing requisite to be thought of. The Sweet Corn, sometimes called Canada Sugar Corn, is much more nutritious. Plant in drills and not broadcast. Have the ground in good condition to force the growth, and make amends for the late planting.

In mowing, as in reaping, it is very important that it should be cut when the crop is in its prime condition, sufficiently matured to have obtained and to retain the greatest amount of nutriment. If allowed to stand longer before being cut, the hay has become hard and fibrous, and is of much less value for feeding. And, besides, the growth of the aftermath is seriously injured. Where rye grass is the grass mostly sown for upland meadows, this is especially the case. Not only is the hay of inferior quality—the vegetative powers of the plant have been weakened and exhausted, and where there might have been a luxuriant aftermath for grazing, or a second cutting of hay, we have little better than a worthless stubble. At the time of mowing, the majority of the varieties of grasses in the meadow should be in blossom.

For those who have not sowed Millet or Hungarian it is not yet wholly too late. Any of the first ten days of the month it may be sown with a fair prospect of a good crop. If the weather be at all favorable and the ground in good condition, we may look for a heavy addition to our hay-mows.

Buckwheat also may be sown up to the 10th. If a good crop, it is always a paying one and good tillage is almost sure to bring a good crop. Even to be plowed down for green manuring, a crop of buckwheat is always remunerative. It is not so great a fertilizer as clover, but the time it occupies the ground is short, and it grows well even where clover or other crops for the purpose might fail.

Look well to your live stock. Now we will know the value of an abundant supply of water and of soiling, and both it is in our power to secure.

#### Potato Crop of 1876.

Reports from different places throughout the country have reached us that potato planting has this season been on an unusually small scale, in consequence of the low market price of potatoes of the last crop; so that we find abundance succeeded by scarcity. We never could see any truly good policy in such a procedure. The low price was caused not by a more productive crop, and now farmers as if in dread that this year would be

as the last year was, have so ordered it as may diminish the supply.

Are potatoes really of no other value than that of the dollars they will bring in the market, if the price be even as it is now, a dollar for five bushels. Having had much experience in raising potatoes for stock feeding, we have no hesitation in saying that for feeding pigs, horned stock and horses, they are worth more than they have brought in this year's markets. In our system of agriculture some acres of cattle-potatoes as well as other roots for feeding stock, were always a part. And each succeeding year convinced us more fully of the advantages of such a system. While our crops of potatoes of superior quality brought good paying prices in the market for the table, we estimated the profits from the coarser varieties for feeding payed still better. While there is stock on the farm, roots of any kind need not be sold below paying prices.

#### Extensive Injury to Turnips and Other Manured Crops.

Every year brings to light new families of the insect tribes that so often injure the crops of farmers and gardeners. Sometimes they issue in countless hordes from their breeding places in moorasses or mountains untrodden by the foot of civilized man, as is the case with the locust and potato beetle. In other instances we had known the insects for years, but not such numbers as to commit very great havoc among our trees or the products of our fields; but the birds or other enemies of the voracious legions may have partially disappeared, and the insect tribes multiply so fast that it would seem as if the would soon devour every green thing from off the face of the earth.

The tiniest insect is sometimes enough to dash to the earth the expectations of the tiller of the soil. Within a week we saw a gentleman examining his vines with a microscope in search for insects too small to be seen by the naked eye. Small as they were, they would, if left undisturbed, have eaten up every leaf. Cabbage plants have had to be replanted this season, and, in some places, replanted again; small white grubs having eaten up the tender portion of the root of the plant, and made their way up into the stem. We have advised some of the sufferers by these ravages to apply a dressing of soot to the soil, or, if it could not be procured, to use salt as a substitute. The application of manure not sufficiently decomposed may have been a means of their increasing to such an extent this season. For some crops we would prefer the use of other manure than that of the farmyard. From the following extract of continental correspondence of the *Iowa Homestead*, we see that the disease known to gardeners as club foot, caused by the insects, is making sad havoc of the manured crops of other countries.

The turnips, colza, cabbage, etc., grown in the sandy soils of Belgium are every year more and more attacked by larvae, while alluvial and calcareous soil escape. Independently of the period at which any of the plants in question may be sown, as soon as the first leaves appear, the root, if examined, will present an excrecence that increases with time. If this swelling be opened, numerous white worms will be discovered. Untouched, the vine will enlarge, and the root cease to penetrate into the soil, becoming in time a simple gall, changing to a putrid mass, and bursting when the insects have attained their last stage of metamorphosis. It is conjectured that the malady is produced from the puncture of an insect and is more prevalent where the soil is well tilled and abundantly manured. Instead of having an average yield of twenty tons of turnips to the acre, not more than ten are attained. Among the remedies relied upon are, avoiding the use of fresh manure, preferring dissolved guano, urine, and four parts of superphosphate, with two of sulphate of ammonia, and one of sulphate of potash.



**Hints to Dairymen—No. 6.***Written for the Farmer's Advocate by J. Seabury.*

The dairyman's harvest is now at its height. A number of dairymen with whom I have conversed say that their pastures never were finer, nor their cows milking better than they are doing this season. All with whom I have talked say that they are getting one-fifth to one-quarter more milk than last season this time.

One dairyman with whom I was conversing the other day told me that for the week ending the 10th of June, his herd of 19 cows averaged 33 lbs. per day. This is a remarkably good average for that number of cows, and bears out my remarks in a former article, viz., that whatever you feed extra during the winter (provided you have the right kind of cows), they will give back in the course of the summer with interest in the shape of milk. This man told me that he commenced feeding his cows chop-stuff on the first of January and kept it up until they went out on the grass. Another told me that he was feeding his cows about three quarts of bran per day, with a tablespoonful of salt for each cow, that it paid him, and that he would continue doing so through the summer.

Taking everything into consideration, I do not think that the dairyman will have any very serious grounds for complaint this season, even if cheese and butter should rule low. It is true many are complaining, but then there is a certain class who will complain, no matter what the prices or prospects are. These people are always looking about and finding fault with everybody but themselves. He who complains and thinks he has good ground for doing so, let him look carefully into his case and he will find that it is his own fault more than any one else. Let him study up his case and investigate it thoroughly, let him devise ways and means to increase the product of his farm and dairy. He will thereby be enhancing the value of his products. He who increases the products of his farm and dairy, lessens the cost of production and so in that proportion he increases the price. He who takes this matter in hand will not have much time for grumbling, nor yet to think about it.

When we compare the average price of dairy products for a number of years past with other farm products, we find that they have ruled higher than any other, and the entire farming community have much less reason to complain than any other. There is no class of men in the country that are in as good a position, financially, to-day, as the dairyman and farmer. Their products have maintained a better average than any other and have found a ready market, even if prices have been rather low. Look at the dry goods trade, for instance, which is nearly one-half what it was three years ago. The same is the case with all other lines of commercial business. Men who three years ago were wealthy, are now insolvent, from no other cause than the depreciation in value of their goods, stocks and real estate.

Now that the hot weather is upon us it will be necessary for the dairyman to use every precaution in the handling and care of his milk. If he is not provided with ice, he will now see and feel the necessity and want of it; and what dairyman is there that need be without ice? I shall not go into details on the ice question, for I think there are few who do not know the importance and usefulness of ice; but I would say to every dairyman, spare no pains in having your milk properly handled and kept so that it may arrive at the factory in first-class condition. The cheese-maker has quite enough to contend with without being driven to his wit's end in trying to manipulate badly cared for milk. Let him be ever so careful there will be

some get into the vat that should not. Besides, it is not fair and I do not think it is honest either. The patron who is careless and indifferent with his milk, is doing his neighbor who takes all possible pains with his a very great injustice.

Mr. C. B. Lambert, a cheese-maker, has invented a small, cheap arrangement for using charcoal in deodorizing the milk while cooling, which, he claims, will keep the milk sweet for a reasonable length of time. It consists of a floater for putting in the milk can, in which a quantity of charcoal is kept floating on the top of the milk. If this little invention has the merits claimed for it, it will be a great boon both to the dairyman and the cheese-maker, and especially to him who delivers his milk but once per day.

It is a great pity that dairymen would not display a little more taste in erecting their milk stand at the road side in front of their houses, which position they occupy in the majority of cases. Many of them have nice front yards, nicely kept, with a nice fence and gates (I only wish there were more such), but with a most unsightly milk stand. Now, why not put it up with some finish and taste. Any carpenter would put up a pretty one in a day or two at the least, and a little paint would make it in keeping with the rest of the premises. Another thing I often regret when driving through the country is that farmers and dairymen do not take more pride in planting trees and ornamenting their farms. What a treat it is to come upon a nice, neat, well kept farm. The impression is formed at once that that man is a good farmer and understands his business. I certainly think that if they would but consider that they would be adding very much to the value of their farms by so doing farmers would give more attention to such things.

I had intended giving the readers of the FARMER'S ADVOCATE a few remarks on the Editorial which appeared in the last number—"A Great Dairy Enterprise"—but want of time compels me to defer until next month, when I shall do so, and also on the subject of making cheese and butter in the same factory.

**Crop Prospects.**

Haying is now commenced, and a finer crop of grass we never have seen. Old, poor and worn-out meadows have not much on them. This is to be attributed to injudicious management, not the season. On well-farmed lands the crop is all that could be desired. Those that have not a good crop of hay this year should make up their minds to leave their farms to others or improve their management. The winter wheat has been killed out on undrained land, and will not be profitable to the poor, careless, backward farmer. The progressive farmer has a good paying crop. Spring crops of all kinds are looking remarkably well. There may be a few exceptions. All undrained lands worked unusually tough in the spring. There is a very great difference to be seen on ground that worked well and that which was saturated with wet when being cultivated. There is a little complaint about the wire worm from some localities, but, with the proper use of salt and the roller, the damage need not be great. Barley, peas and oats will give a bountiful return. Stock of all kinds are thriving well. The dairymen are having a fine time in regard to the quantity of milk, as the pastures were never better. The fruit prospect was never better, although we hear of a blight in some parts, still the crop bids fair to be the largest ever taken in Canada. A blight destroyed all the first crop of peach leaves in this locality, but fruit set, and a second crop of leaves appeared on the trees, which will be sufficient to mature some of the fruit. This crop will not be heavy. Root crops

are thriving, as well as possible. The curculio codling moth and potato bug are having a lively time of it where people leave them alone. The thrifty, wide-awake culturist does not allow his crop to be affected by them. From our own observation, after passing through several localities, and from reports received, we believe Canada is to be blessed with the best crop this year that has ever been produced in our country. The wheat crop in California is very heavy this year.

**More Canadian Enterprise.**

Just as we go to press, Mr. A. A. McArthur, of Lobo, called at our office and asked us to go with him to the station and examine his imported hogs, just from England and the States. He has brought 7 head, 5 sows and 2 boars. They are the best that we have ever seen brought into this country. He has ordered two more for which he is to pay \$75 each at six weeks old. He purchased them from T. S. Cooper, of Coopersburg, Penn. Mr. Cooper is the largest importer of Berkshires in America. Mr. McArthur goes into this business with a determination to head the list of breeders in Canada. His stock cost him the price of a farm. He has not gone into the business hastily, but has for a long time been considering the feasibility of the step. We commend the spirit of progress, and feel satisfied that he will benefit himself and the country generally by his enterprise. We like to see a person aim at superiority. The best stock or seed will pay the best. Mr. McArthur's stock are descendants from Robin Hood, Sir Dorchester Cardiff and other fine animals. These pigs stand A 1 as the prize-taking stock in England. We give the following list of prices to show what was been paid for this class of hogs:—Sambo 10th, bred by Kepell Swanwick, of Chichester, England, was sold to N. C. Norton, of Allanville, Penn., for \$1,000. The celebrated boar Robin Hood was imported by T. S. Cooper, and \$1,400 was paid for him. Snipe the 5th, bred by Capt. Stewart, of Gloucestershire, Eng., was imported by T. S. Cooper—\$1,200 was paid for her. Mr. Norton paid \$4,000 for the four sows bred by Mr. Hever Humphrey. Many other higher prices have been paid.

**The Colorado Potato Beetle.**

A WORD TO OUR READERS IN THE EAST.

The striped bugs first appear, migrating the first season of their appearance from other places, and afterwards remaining with us, do what we can. They lay their yellow eggs on the under side of the leaves of the potato stalks, and sometimes on a blade of grass or anything green that is near them. The broods from these eggs soon appear in thousands, and it is those that devour the leaves. Paris green, properly applied, is the surest remedy. We first used it mixed with plaster, one part to thirty, and sprinkled dry on the leaves when moist. It is now generally used mixed in water and sprinkled on the potatoes with a watering pot, or even with a whisk and pail. The bugs, in eating the leaves, takes also the poison, and there is an end to them. Put a large spoonful of Paris green in a pail of water, and to make it adhere better to the leaves, add some wheat shorts, or middlings. One pound of Paris green will be enough for an acre of potatoes. If the work be properly done, no second application will be needed. As the Paris green is a strong poison, care must be taken in using.

STRAWBERRIES.—Dr. Francis, of Delaware, has placed on our table a basket of Col. Cheney strawberries. We have compared them with the strawberries offered for sale in the market and the imported fruit offered at the fruit stores, none of which are equal in size or quality to the fruit brought us by the Dr.

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## Correspondence.

**PROTECTION VS. FREE TRADE.**—In reply to our invitation for expression of their opinions on this question, so very important to farmers, as well as to all classes in our country, we have received up to June several communications, all of which we inserted in the *ADVOCATE*. We expected to have had more articles in favor of free trade, but as yet we have received but one, that from John Granger, whose letter appeared at first. Our columns are still open to farmers to express their opinions. We are now in receipt of two communications on the subject, both advocating protection. One we publish in this number of our paper. The other we hold over till next month, when we purpose it shall appear in our columns, taking the liberty of first paring from it some political expressions.—Ed.

**SIR.**—As a gentleman of acknowledged ability, an ex-Finance Minister of our Dominion, and one who is intimately acquainted with our finances, there are few men whose opinions on the financial and commercial position of our Dominion should command more attention than the opinions on the subject of protection of Sir A. T. Galt, as expressed in a public lecture lately delivered by him in Toronto. In my letter which appeared in the May No. of the *ADVOCATE*, I endeavored to prove, with what success I must leave your readers to judge, that free trade would prove prejudicial to the farmers of Canada. The great difficulty in the way of protection is so to adjust the tariff, as whilst affording a moderate degree of protection to the industrial interest of the different provinces of our Dominion, shall not press too hardly on any one of them. For instance, in Ontario we have no coal, but most of the coal used in this province is anthracite coal, which is not found in the maritime provinces, and if that were admitted free, a duty on bituminous coal would not enhance the price of coal now generally used in Ontario, whilst an import duty on American flour would, with our present means of communication, help to enrich our farmers at the expense of the maritime provinces, to which they would very naturally object; but although their coal cannot at present be profitably brought by sea any farther than Montreal, still if vessels from thence with cargoes of coal could be assured of return cargoes of flour, they might get Canadian flour cheaper than they do at present. At the same time their exportation of coal would be extended, and they would get flour of a superior quality to that which they now import from the United States. Besides, if they expect to get their share of the advantages of confederation, they must bear their share of its burdens. They cannot expect that the farmers of Ontario will always submit to be taxed to bear more than their fair share of the expenses of the Dominion. They require and should have protection for their mining and ship-building industries, and even the increased price of flour would benefit them in the end by encouraging agriculture, for which a much larger area of New Brunswick is well adapted than has as yet been brought into cultivation, but which has hitherto been kept out of cultivation by the cheapness of American flour, and that again has checked immigration; so with labor high and agricultural produce cheap, we cannot be surprised that the farming interest of New Brunswick has hitherto been so much depressed. Although Nova Scotia may never become a great agricultural country, yet there is no reason why she should not become a prosperous mining and manufacturing country, and only by the different provinces working together in harmony, and each contributing its own share to the general interest, can the great natural resources, metal and coal mines, inexhaustible fisheries, extensive forests of the finest lumber, and rich agricultural lands, be so fully developed as to enable Canada to take that rank amongst the nations of the world which these resources would, if fully developed, entitle her to occupy. The free trade vagaries of our present rulers would, if allowed to be carried out, shut up our oil wells, salt works and factories, and, as I have before observed, reduce us to the condition of a lumber producing and produce furnishing appendage to the United States, and in the end we should have to pay more for our coal, oil, salt and manufactured goods than we do at present.

One of my neighbors tells me that his ewes lost nearly half their wool last winter. Can you assign any cause for this? They were well fed with unthreshed pea straw; their lambs were strong and have done well. Are peas in the straw of too dry

and heating a nature, and do you think this was the cause of their losing their wool?

SARAWAK.

[We think the hot feed and sudden change of temperature may have caused the falling off of the wool. We consider peas to be of a heating nature.—Ed.]

**SIR.**—I wish to ask a little information about the White Swede turnip. We have noticed a few large white turnips among our yellow Swedes, that are large and sound, and have also noticed them in the root house in the spring; they keep as well as the others, if not better. Now, are these the same as yours? I think, if so, they will be better than the Yellow Swede, as they grow larger and more uniform. They have a light green leaf.

We have a high opinion of the *ADVOCATE*.

D. S. P., Cambray, Ont.

[The White Swede has been spoken highly of. It is a sure, good cropper, yielding large returns and growing to a large size. It is, however, considered coarse by some, who doubt if it is as nutritious as some of the improved Yellow Swedes.—Ed.]

**MANURING FALL WHEAT.**—In my communication in April last I endeavored to give you my experience in raising fall wheat from a five year's test, and as the time for preparing summer fallows has come, it may be of some benefit to some of my brother farmers that will try it, as I have done, if only on a small scale the first year. Now, Mr. Editor, in this section of the country it has been the custom of the farmers to plow their fallows three times, taking out their manure either before the first breaking up or before they cross plow, and of course I did the same with mine, but I never could get manure enough to go over my ground that I had laid out for my fallow, and as I always keep my horses in the stable all summer, I would make considerable manure between the time of my first taking out and the time of seeding, and then I would take out the manure that I had made in the summer, just before ridging up the same quantity as I put on the rest of the field, for I always put it on pretty plentiful as far as I go (15 or 20 loads to an acre), and leave the rest without any till another season, or give it a top dressing in the winter. Well, it was some three or four years before I noticed that the wheat was so very heavy and ripened some few days earlier on ground where I put the manure before ridging up, and I began to think of the time that I put on the manure last year. My fall wheat was badly killed out with all the rest of my neighbors, but where the manure was put on before ridging up, there was not any killed, and I do believe that had I cut that part and threshed it by itself, I would have had fully 50 bushels to the acre, and I do think that if the system was adopted, it would be just as easy to raise 40 bushels to the acre as it is to raise 20 or 25 to the acre from the other way, as it takes no more labor, only done at a different time, and that time of the year is a very busy time; but it will do just as well to be six or eight days later, it seems to grow so much faster and the plant so much stronger on the part of my fall wheat this year that was done so last fall. It is as thick and fully four inches higher now than where the other mode was adopted. I intend to do all my fallow with manure just before ridging up this season, if I should be ten days later, I am so convinced it will pay 20 per cent.

Now, Mr. Editor, if you think this is worth publishing, you may do so; if not, put it in the bottom of that basket that gets so many communications.

Yours truly,  
A. C., Campbell's Cross.

[No, Mr. C., your contribution shall not be committed to that Dead Letter Office of our sanctum—the waste paper basket. It is too valuable for that. We have decreed it shall take its place in the columns of the *ADVOCATE*, and we commend it to the attention of our readers. Such communications we are always glad to receive—plain, direct and practicable, from a practical man who knows what he is writing about, and tells what he himself has done and the results obtained. We will be well pleased to hear again from Mr. C.—Ed.]

The frost has done such damage to the fall wheat, rye and clover crops in the vicinity of Belleville that in some places it will be wisdom to plough in such small portions of the crop as have survived its effects.

## Notes on the Garden and Farm.

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

**TWO NEW APPLES.**—Suel Foster, of Muscatine, Iowa, informs us that for a few years two new apples have given high promise of value, namely: Alerson's Early and Goff. The first named takes the place of Early Harvest, ripening at the same time and equally or more tart, and melting in the pie with a very tart, tender, juicy flesh, and so far has proved a better bearer. "Goff," says Mr. Foster, "is the largest, handsomest and best cooking apple I ever saw. Tree a perfect beauty, very productive alternative years, which is very rare for so large an apple, oblate, smooth light yellow, sometimes almost white; some have a light pink blush, or touched with a delicate stripe on the cheek. Ripens in September."—*Country Gentleman*.

**TOMATO TRELLISES.**—A cheap and convenient trellis for tomatoes is a four square frame for every hill. It requires corner posts, each about two feet long and one inch square, and three pieces of lath, each one foot long, nailed on each of the four sides. Such trellises cost only a few cents, and save many times their cost in tomatoes. If such a trellis be placed around each hill before the plant has fully grown, the fruit will be kept off the ground. It may be made of durable wood and carefully stored during the winter, and thus will last a score of years—especially if dipped before using in a kettle of coal tar.—*Orchard and Garden*.

**TREES SPLITTING.**—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 bind them together and wind them around 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 to fail to grow.—*Cor. Prairie Farmer*.

**TOP-DRESSING FRUIT TREES.**—The *London Gardener* says: There is no operation in garden more recommended, or one which is of more general utility than top-dressing the soil as a means of enriching it for the benefit of the roots of trees. The richer the material used the more effectual it is for good. Top-dressing can be applied to orchard trees on grass with the perfect confidence that improved crops will follow, although the grass itself may be the first to show the benefit of top-dressing.

**GET YOUR MONEY READY.**—The last wrinkle in tubers is an improved sweet potato, the "Yellow Strasburg." It is claimed to be a cross between the Red Bermuda and the Yellow Mississippi—how this was effected we are not permitted to know. They are, however, just the "dandy." Everybody will want them; but the propagator declares that he has none to sell this year, but expects to have plenty next year. This is a south-western discovery.

ble. The curculio are having a lively time of it. The does not allow his several localities, and believe Canada is to be this year that has ever y. The wheat crop year.

## Enterprise.

A. A. McArthur, of asked us to go with his imported hogs. He has brought They are the best into this county, which he is to pay \$75 purchased them from Penn. Mr. Cooper shires in America, business with a determi- ders in Canada. His a farm. He has not y, but has for a long easibility of the step. f progress, and feel benefit himself and his enterprise. We periority. The best st. Mr. McArthur's bin Hood, Sir Dorches- als. These pigstand in England. We give to show what was ys:—Sambo 10th, bred chester, England, was Allanville, Penn., for ar Robin Hood was d \$1,400 was paid for by Capt. Stewart, of imported by T. S. her. Mr. Norton paid by Mr. Hever Hum- ices have been paid.

## Potato Beetle.

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## Stock and Dairy.

## Carbuncular Fever—Black Leg in Calves.

This is one of a group of blood diseases to which not only horned cattle, but sheep and hogs are liable. It occurs in calves generally under the age of eighteen months or two years, after that age it exhibits itself in other forms, either of congestion of the spleen, splenic apoplexy, or in an abdominal or enteric form, where there is excessive congestion and extravasation of blood in the intestines, kidneys, and other abdominal organs.

In sheep, the disease exhibits itself chiefly in the form of what in Scotland is termed braxy, chiefly involving the abdominal organs, where there is a rapid and fatal decomposition of the blood and other tissues of the body.

In the hog, the disease shows itself in the skin as well as other parts, and is termed red sickness, red measles, &c. The disease is often internally manifested, as in the ox, it then constitutes anthrax, the dreaded and fatal hog cholera of this continent.

The months of May and June are most fruitful of attacks of black leg although the writer has frequently seen it in the autumn months when there has been a rapid growth of grass after a long drouth.

The causes of the disease are briefly dietetic, occurring generally after a change from dry food to rich luxuriant pasture, inducing thereby a state of plethora or redundancy of rich blood in the system, more particularly when the change in condition has been preceded by previously stinting, or when the animal has been removed from a diet, poor and unnutritious material, to an abundance of food of a highly nutritious nature. The influence of these causes upon the animal economy induce within the blood certain changes, which tend to grave alteration in its composition and to its death and decomposition.

This disease is rapid in its course, sometimes fatal in a few hours. But there are generally some indications of its commencement. The animal, which previous to the attack, has most likely been thriving rapidly, and is probably the best of the herd, becomes dull and listless, is slightly lame in one or more of the legs, is tender about the loins, ribs, or flanks, rapid, feeble pulse, and the mouth hot and dry. In a short time swellings occur about the shoulders, back, loins, or other parts of the body. The appetite is lost, rumination suspended, the bowels constipated, and the urine scanty and high colored. The swellings at first tender, hot, and painful to the touch, become after a few hours cold and without feeling, and crepitate when handled. The symptoms increase rapidly, and death is the result.

Occasionally the disease will take on a sub-acute character, particularly as the animal acquires age, when the swelling will suppurate, leaving troublesome, ulcerated sores difficult to heal.

When the symptoms of the disease become fully developed, little or no good can be effected, but if recognized in the earliest stages some few cases may, however, be amendable to treatment, purgatives must be used in the first instance, with injections. Locally the swelling may be fomented with very hot water, and strong stimulating embrocation applied. If crepitation under the skin is felt free incisions with the lancet should be made and punctures dressed with turpentine to induce suppuration; later than this stage the chance of success in the treatment of this disease is so small, that practically speaking, it may be regarded as practically incurable.

Prevention, however, is greatly if not altogether in the power of the breeder, and at this season of the year it demands his most serious attention. The disease sometimes assumes the character of an epidemic, and hence has been wrongly regarded as contagious. The true explanation of the matter is that the same predisposing cause of disease will operate on all animals exposed to its influence. On the first appearance of disease, the breeder should at once remove his herd to a locality where the herbage is not so luxuriant, and reduce the plethora of the system by the administration of aperients and diuretics.—*Cor. Kentucky Live Stock Record.*

The Texas cattle drive for the coming season is estimated at 335,000 head.

## Hoven or Bloat in Cattle.

As this is the season when danger to cattle occurs from turning them upon fresh clover pasture, a few suggestions upon the subject may not be amiss.

A friend of ours tells us that as a preventative of this, he gives to his cattle early each morning a small bundle of oats to each animal, and if one should be attacked, if it will eat a few nubbins of corn or a sheaf of oats, that it will give immediate relief. Our plan is, and which we have practiced for many years with entire success, to thresh a part of the small-grain crop, stacking the straw in the clover fields, the cattle will each day eat some of the dry straw, which will entirely prevent them from becoming bloated.

Where persons may not have straw stacks in their clover pastures, they can either pursue the course of our friend, of feeding some dry food each morning, or they can build a low rack or pen and keep it filled with straw, hay or fodder.

If the animal is attacked and will eat a bundle of oats, it is as good a means as can be used, if they will not eat, the case is a very serious one and requires prompt action to save the life of the animal. One of two means must be resorted to at once, the one is to plunge a knife into the paunch at its most protruding point in front of the hip, the other is to place a gag of wood of the size of the wrist in the mouth of the animal, and confine it there with a string tied to one end, passing over the head back of the horns, and fasten securely to the other end; it may be described as a big bit in the animal's mouth, secured by a rope head-stall. We clip the following from an exchange on this latter point:

"Various remedies are constantly being prescribed for this—such as stabbing, pouring down oil, soda, etc. We once saved the life of a Short-Horn bull, which cost us near \$600, in three minutes, by twisting a whip of hay into a band, placing it in his mouth, and tying it up tightly behind the horns. The working of the jaws, to get rid of this encumbrance, liberates the gas in the stomach, and relief is immediate. We know by that trial ourselves, that this remedy is effectual, safe and simple. One of our best Chester county farmers, when his cows have hoven, tells us he uses a broom-handle in the same way, because quick action is necessary, and this is soonest at hand. Anything binding on the mouth, so as to excite the action of the jaws of the animal to get rid of it, will answer."

Cattle should never be turned on clover for the first time while they are hungry, allow them to graze on other grass until noon, then turn them in; it is better to keep them off when the clover is wet from either dew or rain.—*Ec.*

## Jersey Cows for the Cheese Dairy.

The opinion has been almost universal that the Jersey cow could not be profitably employed in the cheese dairy, but some recent experiments, together with the analysis of cheese made from the milk of thoroughbred Jerseys, seem to point otherwise.

The Winthrop cheese factory has been in operation two seasons, and the cows that furnish the milk average more than half blood Jerseys. During the season of 1874 it averaged one pound of cheese from each 8.07 pounds of milk, but the past season the record has not been quite as favorable, requiring 8.9 pounds of milk to make one pound of cheese; although, near the close of last September, six small cheese were made from pure blood Jersey milk, in which only 8.02 pounds of milk were required to make one pound of cheese. With an average requirement from common cows of ten pounds of milk to make a pound of cheese, we perceive a large increased profit in favor of the Jerseys.

Nor is the decreased amount of milk required to make a pound of cheese the only merit in the Jersey's favor, for, from an analysis made by Prof. L. E. Arnold, we learn that this Jersey cheese is very rich, fully equal to the famous Stilton cheese of England, and where, in order to produce this exceedingly rich cheese, the cream is taken off the night's milk and added to the morning's milk, thus giving a double allowance of milk to be incorporated into the cheese. This process of making Stilton cheese, which is the richest cheese known, should be a sufficient answer to one of the prominent objections urged against the advisability of keeping Jersey cows for the cheese dairy, namely, that there must be a large waste of cream in manufacturing the cheese.

Another objection has been that Jersey cows would not give a sufficient amount of milk to make them profitable for the cheese dairy, but it seems to us that the increased richness of the milk will fully make up for lesser quantity.

The average amount of fat in good whole cheese is twenty-five per cent., but Prof. Arnold finds forty per cent. of fat in the cheese made from pure blood Jersey milk. Again, here in Maine, where the cheese season will scarcely average four months, the value of a cow as a butter maker cannot be ignored. If the milk is carried to the cheese factory for four months, there should be at least four months more for butter making during the year. The advocates of cheese factories, when figuring up the income from their cows, usually allow as much for the butter made as for the cheese, and we know there is nothing equal to Jersey cows for making very nice butter; other breeds may make it just as nicely colored, but the solidity and texture are wanting.—*Massachusetts Ploverman.*

## Dogs as Sheep Protectors.

I used to breed cattle, but having natural fondness for sheep, and an opportunity to purchase a couple of Scotch colley shepherd dogs removing my fear on the score of destruction by mongrel curs, which deters so many from keeping sheep, I concluded to try the experiment which has resulted so satisfactorily.

In my stock of 100 ewes I have half a dozen bells, and in case of danger, the sheep all run to the dogs for protection. This familiarity between the dogs and sheep, with the watchful care exercised, is one of the prettiest sights in the world. These faithful guardians of the flock are ever on the alert day and night. The rapid tinkling of the bells at once arouses the dogs; and about three weeks ago, in the middle of the night, I heard an unusual disturbance among the sheep, but was so confident that the dogs would be equal to the emergency, that I did not come down stairs. In the morning I had the satisfaction of seeing one of the worthless curs which go prowling about at night, lying stone dead along the fence, with marks on him of a desperate fight. I should say, however, that I made one cross by putting my shepherd dog to a Newfoundland slut, and kept the choicest of the litter. He has proved a fine, large dog, about twice the weight of either of the shepherds, and though never interfering in what he seems to consider their special duty, is always on hand ready for service.

It is curious to observe how, when strange dogs cross the place, the two shepherd dogs will take a survey, and if they see much business (they are themselves great fighters), by a kind of silent understanding and arrangement, the three dogs go together; and although we in this country are overrun with all kinds of dogs, there seems to be a general fear of my three dogs, and we are seldom disturbed. I recommend the purchase of one or two good shepherd dogs as the very first step towards keeping sheep.—*Practical Farmer.*

## Devon Cattle for Butter and Beef.

The question—What would be the value of Devon cattle for a butter dairy, combined with beef raising, in northern sections of the country? is answered by the *Prairie Farmer* as follows:

Devons are medium milkers, generally, so far as quantity is concerned, but there are instances where individual cows are great milkers. So far as quality is concerned, they rank high for butter making. But our correspondent will bear in mind that beef and butter from one class of animals are not often met with; that is to say, in securing beef points in cattle the milk and butter points are sacrificed, and, *per contra*, when milk and butter is the prime object, beef qualities do not thrive. When bred solely for dairy purposes—selecting animals of superior milking qualities, for that object, this breed has been found highly valuable. The Devons are well fitted for the dairy on account of docility and easy keeping, and other characteristics. It is claimed for them, too, that when the flow of milk ceases, and it is desired to fit a cow for the shambles, the Devons take on flesh very readily under generous feed. It must be remembered, however, that the improvement of any breed for beef is done at a sacrifice of dairy characteristics in the animal, whatever the breed. If a choice of a single breed for general utility was to be made, we do not know that you could do better than to choose Devons.

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Laws of Breeding.

In the human family, character is the result of action, surrounding influences directly affecting the mind and manner, and becoming a part of the person so surrounded. According to Prof. Huxley, "An idea, or mental impression, passing to the brain, produces a change in the molecular particles of the brain substances. The way thus being broken, subsequent impressions of the same kind are more easily transmitted." There is an economy shown in nature, by which faculties not brought into use—that is, not developed—in time become extinct. Fish in the Mammoth Cave have no eyes. Dr. Joseph Thomas, speaking of Egypt, says: "Of all the trades pursued in this country, the most remarkable is hatching of eggs by the artificial heat of ovens, a peculiarity of Egypt handed down from ancient times. The poultry reared in this way are wholly without the instincts which relate to the care of offspring; the artificial method of hatching, therefore, when once resorted to, soon becomes necessary, and the natural system of incubation is totally superseded."

In an address before the Massachusetts Board of Agriculture, Prof. James Law, of Cornell University, set forth the following important principles for breeding animals:

1. A perfect development, and sound, vigorous health, constitutionally, especially in the generative organs, are conditions of fertility.

2. In the maintenance and improvement of a breed, the truth that "like produces like," that the reproductive germ will stamp upon the animal developed from it the characters of the parent organism, is the backbone of success.

3. We can, in a great degree, at will, produce variations and improvements, in breeds, as, by abundant feeding, a mild and salubrious climate, a rich and healthy soil, moderate use, education, stimulation, or selection of desirable qualities; by disease or rejection of undesirable characters and properties; by soliciting the weight of imagination in our favor; by allowing the breeding animals to mix only with those of the stamp desired; by crossing less improved breeds systematically with males of a better race; and by crossing animals faulty or deficient in some particular point with others in which this point is developed in excess.

4. The herding of pregnant high-class animals with low-bred ones, and the resulting attachments between the two races, are to be especially avoided, as occasionally affecting the progeny injuriously; strong impressions from a new or unusual condition of surrounding objects are to be equally guarded against.

5. If a valuable female is allowed to breed to an inferior male, she cannot be relied upon to produce pure-bred animals for several succeeding generations. Through a strong and retained impression, through the absorption into the system of living particles (germinal matter) from the fetus, or through some influence during pregnancy on the ova, then being most actively developed, the good or bad features of the first sire are perpetuated in the progeny of succeeding ones.

6. All breeds show a tendency to "breed back," or to produce offspring bearing the marks of their less improved and comparatively valueless ancestors; hence, individuals of this kind must be rejected from the best breeds, if we would maintain their excellence.

7. Certain races and individuals have their characters more fixed, and will transmit and perpetuate them in greater proportion than others with which they may be crossed. If their qualities are desirable, they prove highly valuable in raising other stock of greater excellence; if undesirable, they will depreciate the value of any stock crossed for many generations. That fixity of type, however, is, above all, a characteristic of those which have been carefully selected and bred up to a certain standard for many generations, so that, in our best, longest established and most esteemed breeds, we have a most valuable legacy left us by the successful breeders of the past, with which we may mould our inferior races almost at will.

8. While breeding continuously from the nearest relations tends to a weakened constitution, and the aggravation of any taint in the blood to sterility, these may be avoided by infusing, at intervals, fresh blood of the same family, which has been bred apart from this branch of it for several generations. Moreover, the highest excellence is sometimes attained only by breeding very close for a time.

9. Diseased or mutilated animals are generally to be discarded from breeding. Mutilations resulting from disease, existing during pregnancy, and disease with a constitutional morbid taint, are, above all others, the most injurious to good breeding.

10. There is some foundation for the opinion that the sire tends to contribute more to the locomotion and the external organs; so that, if we cannot obtain the greatest excellence in both, we should at least seek to have each unexceptionable in the parts and qualities attributed to it.—Spirit of the Times.

The Dairy Cow.

A writer in the English Agricultural Gazette says of dairy cows and their treatment, that, taking quantity and quality as the test of excellence, cows are most productive from their second to their fourth calf. The milk from old cows usually contains a greater percentage of water than that from cows in their prime. Old cows are held in light esteem for the purposes of the grazier, and when fat, the meat is of less value than that of younger cattle; hence, on the score of economy, it is a bad practice to retain cows in the dairy much beyond their prime. All inferior milkers, and any who may have lost a quarter, we would at once draft out of the herd. Depend upon it, the milk trade will gradually effect a great improvement in the cattle of this country. The quart-pot test daily lays bare all shortcomings and imperfections, and places them prominently before the notice of the farmer. Wherever practicable, cows drafted from the herd should be fattened off on the farm.

One important desideratum in the dairy economy of this country is an improvement of the farm buildings. The practice of storing large quantities of hay in the sheds or shippens prevails to a large extent. We cannot conceive anything more injurious to the health of cattle. We maintain that every animal requires a certain cubic area of free breathing space, in order that the ordinary functions of life may proceed unimpeded; a free circulation of air and an even temperature are conducive to health.

Cows in milk are particularly susceptible to atmospheric changes, hence the cow-house should be warm, but well ventilated. Low temperature reduces the flow of milk, hence cows in full profit should never be turned into the pastures during the winter months; gentle exercise and a very liberal supply of pure water is conducive to the health of all pregnant animals; we should therefore recommend that all in-calf cows have daily exercise, though not too many hours exposure during severe weather. No animal more readily resents harsh treatment than the cow. This is practically demonstrated by the yield of milk that can be obtained by different individuals from the same animal. It is a curious fact that all excitement, whether arising from the stings of gad flies, hunting with dogs, or racing to the milking old, considerably lessens the yield of milk. I have mentioned this to remind you that kind treatment is of pecuniary value.

Lung Worms in Sheep.

At a recent meeting of the Ohio Sheep Breeders' Convention, Dr. Townsend, of the Agricultural College, spoke of lung worms in sheep. He described these worms which infested the lungs of sheep in large numbers as follows:—

The females are white, and about as thick as No. 8 sewing cotton, and four inches in length and full of ova. The males are fewer in number, of a yellow color, and only about four inches long. This was a description of those worms as found in a sheep sent to the college some two years ago, that had died with them. He said he had not had an opportunity to observe these worms at other seasons, and could not fully state their natural history—so far as his examination went there were no young strongyli in the sheep, but all were matured. What might have been if the examination had been made at other seasons he could not tell. It is probable that the eggs or young worms are coughed out of the air passages in the spring, and live for a time on grass or in the water to which the sheep have access. In ponds and streams in early summer we may find immense numbers of little nematoid worms, evidently in an early stage, for they are sexually imperfect—who find what appears to be the same worms in the larva of several aquatic insects, such as Libellula, Agrion, Ephemera and Phryganea. We find the worm in fish and birds, and particularly in meadow larks.

Still, how they get out of the sheep and how they get in again, and where and how the balance of their life is spent, he could not tell, and said, so far as he was concerned, this is a missing link. That trouble from them in sheep was always at one season of the year. As a remedy he recommended first, fumigating in a close room by burning sulphur, which caused violent coughing, and then give turpentine in teaspoonful doses once a day for several days.

Chewing the Cud.

It is strange, but true, that among people who pass their lives with cattle there should be a doubt that the process known as chewing the cud is actually the mastication of the food previously swallowed. But so it is. Many persons believe that the chewing of the cud is done by ruminants for amusement only, and that it is possible for them to drop and lose their cud on the field as easily as a lady will occasionally lose her purse in the street.

The cow has four stomachs, the first one of which receives all the bulky food that is swallowed, and that gets partially chewed in the gathering. From the first stomach it passes to the second, and there it is moistened and rolled up into balls or ends.—When the animal arrives at the conclusion that it has a sufficient supply aboard, or when it has nothing better to do, it raises up one of these cuds, chews it carefully, and mixes it thoroughly with saliva. After mastication it passes into the third stomach without going through the ruminating process.

A common and homely treatment for a cow that has "lost her cud," that is, has ceased to ruminate, is to put a piece of fat down her throat. This may cure the trouble where only a slight ailment is the matter. But ceasing to ruminate may be a sign of some serious illness, and indeed it accompanies all inflammatory diseases; and it may also arise from general debility. It would be impossible to prescribe a remedy unless some details of the accompanying symptoms be given.

Ruminants begin to chew the cud as soon as they cease to live on milk, and begin to take bulky food.

Horn distemper, or "hollow horn," as it is called, may be known by the horns feeling cold and dead. The disease is misnamed "hollow horn," as the horns are no more hollow than they are when in a state of health. The horns, in fact, are always hollow to a certain extent. They contain veins, arteries and nerves, and a series of bony buttresses to strengthen and support the shell. If a cow's vitality is allowed to get very low the horns will get frozen and will die. Nothing can be done for it, except to prevent it by good feeding and warm shelter.

An Experiment with Grades.

We find the following report in the Michigan Farmer, of results in the hands of Mr. S. W. Hart, Michigan:—

The cattle were bred from fair native cows, and the bull was a full bred Shorthorn, so that we may consider them half bred grades. The cattle sold were as follows:—

Table with 2 columns: Animal type and weight. One pair oxen... 3,630 lbs. One cow... 1,450 "

The three year old steers bred and fed by Mr. Hart, are as follows:— One pair of three year old steers... 3,015 lbs. One pair of three year old steers... 2,794 "

Mr. Hart tells us that these three year olds were all skim milk calves, that they never eat at ton of hay, and no hay at all till three weeks ago, for the reason that he did not have the hay to feed. That this past season he has fed them corn stalks, turnips and grain, until about three weeks ago when he fed some hay. The drover who purchased them takes the whole lot, with an allowance for shrinkage of 91 pounds on their delivery in Detroit below their weights at Milton.

But we have a lesson here about feeding. Mr. Hart, by use of a good sire which gave him good stock to work with, and taking into consideration that he has been short of a hay crop, has fed a splendid lot of cattle making up in his attention to his stock for his want of hay. In this he has set a first rate example, and we are much pleased to present his report to our readers.

We ask, can any farmer that runs his cows on the road, and takes his chance of the bulls met with, show anything like this record?

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Protectors.

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Butter and Beef.

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**Chemistry—Wool.**

H. Hayward, in the *Bulletin*, says: Having been a farmer from youth up, and much interested in manufactures since 1849, I have found it indispensably necessary in either department that chemistry should walk hand in hand with practice. My memory carries me to Jonas Webb, of England, whose farm I visited about the year 1840, to view, with many others, the finest flock of Hampshire downs England has ever produced. These sheep, at that time, were grown more for mutton than for wool, but by analysis of the wool off the backs of these sheep, or any good breed properly fed, in comparison with the wool from an inferior animal, improperly fed, we have the following results: First, wool being a phosphate, like bone, must be stimulated and kept healthy by food containing phosphates, such as turnips and many other roots, which vary in phosphates. The fibre of wool from the properly fed animal is strong, though, fine and not split, and will consequently full and felt better than the wool from the half starved or inferior blooded animals, the wool of which, although containing fifteen to twenty per cent. less yolk or waste, has a weak coarse fibre; and frequently these small fibres (only to be seen by a microscope) are partially and irregularly destroyed. Thus, for fine cloth, they are altogether unfit, and in all manufactures they should be mixed, as they usually are—chiefly from knowledge gained by practice that they will not work advantageously alone.

Feed a flock of sheep on this side the fence on turnips and hay, and another flock of the same breed on the other side on oil-cake, malt-dust and hay. The former having received a larger amount of phosphates than the latter, the wool is more

healthy, though one pound lighter in fleece. It is well known to our manufacturers that wool from certain districts works better and makes finer goods than that from other parts, the grasses of some districts containing as they do seventy-five per cent. more of phosphates.

Phosphates are contained in various grasses, but not in all; and to keep pasture good for sheep feeding, bone dust or bone meal must be applied to the

extent of 500 pounds to the acre every three or four years, mixed with coal ashes or fine soil—coal ashes hold and wood ashes liberate ammonia. This phosphate is taken up by the grasses, and all animals wanting phosphate for support will pick out such grasses. For instance, a cow giving milk and fed on pasture containing but little phosphate, will frequently be seen gnawing a bone. Milk is the life of the bone, so the bone must give the life in like manner. The hen, when she cannot get lime to form the shell for the coming egg, will greedily devour egg shells; and the farmer in his ignorance orders his boy to "wring her neck."

Sheep imported into this country do, and always will, degenerate, unless strict attention is given to proper feeding, by pasture, culture, or otherwise. Nature arranges all things, and man has to be guided by matters and facts before him, of which he sees only one-half without the aid of chemistry.

**Rearing Calves Without Milk.**

We well recollect when it was considered a calf could not be raised properly without having for several weeks or months the whole milk of a cow. Indeed, a cow was often purchased for the express purpose of letting the calf run with it in the field, so as to suck whatever it wanted. This necessarily made a very fat calf, and just as surely ruined the cow. In our early farming days we practiced this expensive folly; and if the object is to raise an animal for dairy purposes, its tendency is to defeat the object. A growing animal should be kept thriving only, and such food should be given as will promote the growth of its bones, muscles and tissues (what may be called a normal growth), and not to make it fat for the butcher. There is no objection to having it thin, providing it is healthy

and in a growing condition. We clip the following without knowing where the credit for it belongs, but it strikes us as sound advice:—

With good pasture, hay, oilcake or fine oatmeal, and one cow, three calves may be kept successfully after they are ten days old, and all the cream from the milk of that one cow made into butter after the calves are four months old. We have seen it done. Recipe—Boil one pound of good timothy hay in six quarts of water under cover for one hour, and strain the tea into a bucket to cool. Stir three tablespoonfuls of oilcake or fine meal into a quart of boiling water slowly, as in making hasty pudding or mush, and when well cooked stir it into the hay tea, and to the whole stir in the milk of the cow. Feed warm at first, but after a few days it will be quite as good cold. Increase the quantity of oil or oatmeal, one tablespoonful for each calf every second week, and the calves will each look as well when three months old as those fed entirely on milk. When about four weeks old, if allowed to run in good, tender pasture, they will begin to feed until they will depend entirely on the grass. Add a very little salt to each feed, and if they should begin to scour, boil the milk and stir in a tablespoonful of flour before it is added to the tea. After the first week the danger from this cause will be over, unless they are fed to excess.—*American Practical Farmer.*

**Breed for Milk as Well as for Beef.**

Dr. Schneider, of Thionville, treats an important subject from a new point of view. He demands—why not encourage precocity in animals for milk as well as for meat? In the latter case, the object is to fatten an animal in thirty-six in-

stead of sixty months, by good feeding. On the contrary, the powers of reproduction—that is, the yielding of milk—are most active or precocious where the dietary is sober, if not miserable. Poor families are most prolific, and weeds most productive. Fecundity is the ally of humble rations, and fat, the emblem of opulence, is not an attribute of virility. Embonpoint is incompatible with the faculty of generation. If a sterile cow or an exact thirty-six months and good diet, to be precociously converted into meat, a heifer could in that period have produced, upon a modest regimen, one calf, perhaps two, and from twelve to fourteen months of milk. The production of milk is less costly than that of meat. It can be less expensively disposed of, and if meat has increased in price, so also have butter and cheese. The properties for fattening are but one and the same thing, and pre-exist in the animal, only both aptitudes cannot be developed at the same time. Thus in France, Dutch or Normal cows are kept for the express purpose of yielding milk to the calves of the Durham breed.—*Paris Cor. Lancaster Farmer.*

**Brine that Will Preserve Butter a Year.**

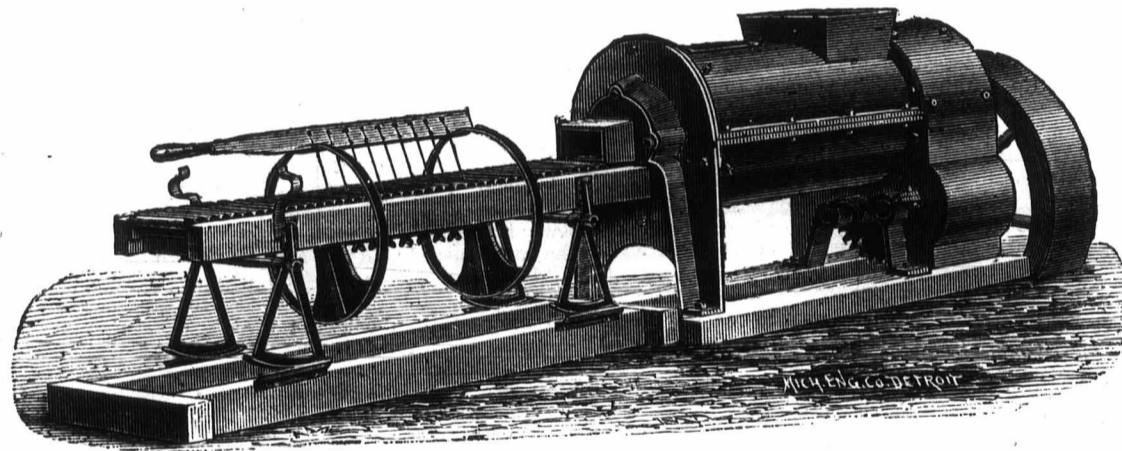
Among the many devices for keeping butter in a manner that will preserve the fresh, rosy flavor of the new, with all its sweetness, is the following, from the *Duchess Farmer*, which is said to be entirely successful:—To three gallons of brine, strong enough to bear an egg, add a quarter of a pound of nice white sugar and one tablespoonful of salt-petre. Boil the brine, and when it is cold strain carefully. Make your butter into rolls, and wrap each separately in a clean, white muslin cloth, ty-

**Hungarian for Cows.**

The following is the valuable and reliable 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 farm this year and last, I raised from seventy-five to one hundred tons of it, for the purpose of feeding to my milch cows during the winter.—*Ec.*

**Tiffany's Improved Combined Brick and Tile Machine.**

The accompanying illustration represents the machine which is named in the heading of this



TIFFANY'S IMPROVED COMBINED BRICK AND TILE MACHINE.

article. It is manufactured by the well known firm of E. Leonard & Sons, of this city. One of these machines has been sent to the Centennial for exhibition. Quite a large number of the machines are at work in Canada and the United States. From what we hear of it, we think it unequalled, and that it will tend very materially to cheapen draining tiles— that means larger crops and more profit to the country. We highly approve of every

improvement for our requirements, and give the following information regarding the machine: It is nearly all iron, and is very strong and durable.

It will make any form of brick or tile that may be made by forcing clay through a die.

It will make smoother bricks than pressed bricks. It will make smoother and stronger tiles than any other machine in the United States or Canada.

It will mould clay into bricks that is too stiff to make good bricks, or too soft to bear handling without the use of pallet boards.

It will work most kinds of clay directly from the bank.

It saves labor. One man can operate the cutting table and deliver 15,000 bricks on the barrows, and two men can put them in the hawk in ten hours.

The hopper is only thirty-seven inches from the foundation. The machine may be set low and bridged over, so that it may be driven over with horse and cart, and the clay dumped at and into the hopper.

There is no sanding or washing of moulds. There is no striking off. No emptying of dies or moulds. No pallet boards. No lubricating of dies or moulds. No water used about the cutting table. The work is clean, and may be done by common laborers.

It is the result of fifteen years' experience in the using and designing of clay-working machinery, and contains no essential feature that has not been proved to be good.

The following recipe will cure worms in hogs:—A dose of two quarts of milk and two tablespoonfuls of soft soap, stirred together, and given to the hog three times a day for two days, and once a day for four days.



Experiments in Feeding Pigs and Sheep.

Mr. Brown, of the Ontario School of Agriculture, has forwarded to us a report of the feeding of pigs and sheep on different kinds of food as an experiment.

The three pens contained two animals each, which had been similarly fed on house refuse, for weeks previous; those in No. 1 weighed 252 lbs., or 126 lbs. per pig, on entry, and for the first stage of five weeks received 424 lbs. of dry peas, which added 95 lbs. to their weight or 1 1/2 lbs. per pig per day;

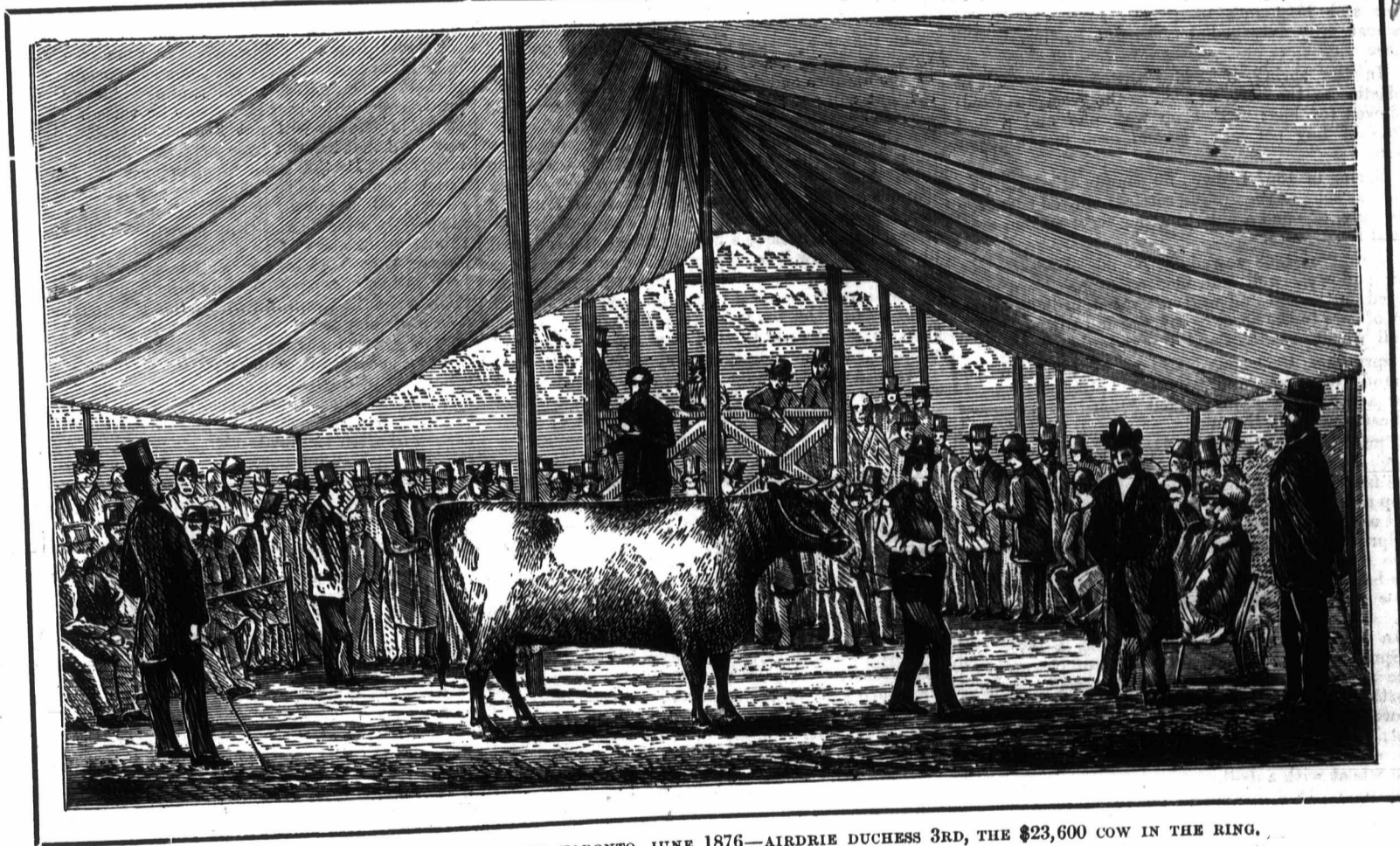
peas, instead of raw; pen two on swill and wheat middlings, in place of boiled peas, and pen three on raw peas, from refuse and middlings. In this stage, we observe that pen one shows 80 lbs.; pen two 111 lbs., and pen three added 80 lbs. to their weight—being respectively 1 1/7, 1 4/7 and 1 1/2 lbs. per head per day.

Before concluding, let us first examine into the results of the third stage, in which we have pen one changing from boiled peas to refuse, pen two from refuse to raw peas, and pen three from raw to

and there appears a profit of \$26.97 on the six animals—a sum that might have been made ten times more with almost the same labor, as trouble in feeding, &c., is about the same in fifteen as in three pens.

The Great Canadian Short Horn Sale, Toronto, June, 1876.

Duchess the Third, shown in the picture, is the animal that brought twenty-three thousand six hundred dollars. Our artist drew the animal first, the scene was drawn on the second day. The first day many ladies were on the platform at the back of the auctioneer. Col. Muir was officiating as auctioneer when our artist was there.



THE GREAT CANADIAN SHORTHORN SALES, TORONTO, JUNE 1876—AIRDRIE DUCHESS 3RD, THE \$23,600 COW IN THE RING.

the lead taken by house refuse and wheat middlings; animals that at the start stood 17 1/2 lbs. each less, made up so fast in five weeks as to come within 7 1/2 lbs. of those fed on raw peas, and in comparison with the others which got boiled peas, they began with 7 1/2 lbs. less weight, but over-reached them in the same time by no less than 14 lbs. each. The specially prepared food, i. e., boiled peas, stands in the third place as regards increase of weight, raw peas taking a second position. So much then for increase of flesh. What about quantity and value of food? The animals in pen one eat, we observe, something over 6 lbs. each of raw peas per day, at a cost of \$2.12; pen two consumed 5 1/2 lbs. of boiled peas each per day, at a cost of \$1.97; and pen three on house refuse, without stint, and 3 lbs. of wheat middlings each, per day, cost \$1.36 per head.

boiled peas. What is now the position of weights and costs? The increase of 78 lbs. of flesh on refuse cost 3 1/2 cents per lb., that of 64 lbs. of boiled peas 6 1/2 cents per lb., and that of 47 lbs. on raw peas cost nearly 8 cents per lb. In this we have raw peas taking the second place to boiled ones, but on reference to the notes of progress and detail, weekly weighing, we find that during this third stage one of the pigs of pen two was sick for nearly three weeks, only one pound additional weight being made from the 22nd to the 29th of February with both animals.

To briefly recapitulate the results of these experiments, therefore, it seems that pieces of fat, dish washings, sundry parings, bits of bread and various other nondescripts, kitchen refuse, which, by the way, may be somewhat richer at a public than a private house, are evidently at least one-third better as pig food than peas either raw or boiled, and that to boil peas is no gain, but rather a loss, both by reason of extra labor, consumption of fuel, and wear and tear of implements, as well as in possessing fewer nutritive properties.

These experimental pigs were sold to Mr. Satchell, of Ottawa, for 6 1/2 cents per lb., live weight,

Varieties of Grasses.

Orchard grass, Kentucky blue grass and white clover, and, if the ground is low or moist, add red-top, and you have the finest and most productive pasture known among extensive stock growers, as it requires no re-seeding, but improves in quantity and quality, carrying more stock each succeeding year—invaluable for woods and pastures, and should be extensively sown in the burnt forests. Leaving out the orchard grass (as it is too rank and rapid a grower), you have the best mixture that can be formed for lawns, yards, &c. Orchard grass alone makes the most profitable meadow, as it is immensely productive, makes excellent hay and twice as much of it as timothy, for a term of years. With us timothy and red clover cut only about two good crops, and frequently but one. The farmer needs reliable meadows. To sow corn, millet, Hungarian grass, or some other substitute, every year or two, to make up for his lost clover or timothy crop, is very discouraging, it being expensive as well as annoying. Orchard grass is the remedy, and is destined at no distant day to stand at the head of all grasses for pasture or hay.—Country Gentleman.



## Agriculture.

## The Benefits of Plaster Illustrated.

HOW TO ENRICH WORN OUT LAND.

From a Correspondent of the Michigan Farmer.

In the fall of 1860 I bought a piece of land on which was a field of six acres, bordering on a marsh; the six acres were oak opening land; a part was clay and a part was a gravelly, sandy soil. It had been cropped for over 20 years without manure, clover or plaster. At the time I bought, it would not produce over nine bushels of wheat to the acre under the treatment it had received from its former owner. In fact the land was supposed to be worn out.

In the spring of 1864, or as soon as the ground was settled, I sowed 50 pounds of plaster to the acre; by the middle of June there had a little grass started, which was not fed off but plowed under, to the depth of six or seven inches. The ground was well worked with a drag and cultivator. The 20th of September I sowed white Soules' wheat broadcast and dragged it in.

In the spring of 1865 I sowed 12 pounds of clover and 25 pounds of plaster to the acre; the wheat crop averaged twenty-five bushels to the acre.

In the spring of 1866 I sowed fifty pounds of plaster to the acre, as soon as the ground settled; mowed for hay; first crop was one and a half tons of hay per acre; second crop one ton per acre.

Spring of 1867 I sowed 50 pounds of plaster per acre as soon as the ground settled; mowed first crop for hay, one and a half tons per acre; second crop used for pasture.

Spring of 1868 sowed 50 pounds of plaster per acre; plowed well and planted even. Corn plastered on the hill and well cultivated; crop 80 bushels of ears to the acre; cultivated and sowed Treadwell wheat broadcast and dragged in.

Spring of 1869 sowed 25 pounds of plaster, 10 pounds of clover and 94 pounds of timothy seed per acre; wheat crop yielded 20 bushels per acre; wheat was badly shrunk.

Spring of 1870 sowed 40 pounds of plaster per acre as soon as the ground settled; cut two and one-fourth tons of hay per acre, first crop; second crop saved for seed, one and one-half tons of straw and one and one-half bushels of seed per acre.

Spring of 1871 sowed 50 pounds of plaster per acre as soon as the ground settled; cut two and one-half tons per acre first crop; second crop grew to full six inches and then was pastured off.

In 1872 treatment and crops same as in 1871.

Spring of 1873 sowed 50 pounds of plaster per acre as soon as ground settled; cut one and one-fourth tons of hay per acre; after hay was cut, plowed the ground for wheat, finishing before harvest; after harvest dragged and cultivated thoroughly; 28th day of September sowed Treadwell wheat with a drill.

Spring of 1874 sowed 25 pounds of plaster per acre, also clover seed, but it did not catch; harvested 30 bushels of wheat per acre. After allowing one-third of this crop for use of land, not counting straw, it cost me \$1 per bushel for labor, incidentals and drawing ten miles to market. Have not counted the cost of any other crop.

Spring of 1875 sowed fifty pounds of plaster per acre as soon as the ground settled; plaster and finished planting to corn the 28th day of May; corn was well tended but was not planted early enough; was cut by frost in the fall before it was ripe; harvested 90 bushels of ears per acre, with nearly one-half unsound. The hay and cornstalks have all been taken off the land and one half the wheat straw; the other one half has been eaten and wasted by cattle on the land.

No other manure of any kind except plaster; the plowing, dragging and cultivating has been thoroughly done in every instance; when a second crop of clover has been used for pasture, it has grown full size nearly and then fed off, but never fed close; this, with thorough tillage and the use of plaster, I claim to be the secret of success. What say you?

Let me urge every farmer to plant one-fourth of an acre, or more, of "sunflowers." The leaves are good for forage, green or dry; the seed for oil, horses, hogs and chickens. Plant and cultivate as you would corn.—*Cor. Ec.*

## Hen Manure.

Twenty years ago, when our fields were more productive than now, I tried the experiment of manuring corn in the hill with hen manure, in this way:—To one wagon load of hen manure I put two loads of fresh sheep manure, and, when well mixed; two hands, with a basket between them, put a handful in each hill. A hand followed with a hoe, and covered the manure about two inches deep, and another followed with the planter, and the work was done. The manure was sufficient for a five-acre field. The corn came up in fine style, and when from two to three feet high had outgrown the corn of the neighborhood by one-half, and the prospect was fine. But when the tassels and ears began to appear, the growth came to a stand-still, as if the strength of the manure had been exhausted, and there was nothing left to complete the crop. The result was a stunted growth of stalk, and a five-acre field of half-filled nubbins—a complete failure. Comparatively few of the stalks put out brace roots, and none had the hardy, flinty surface that gives strength to the stalk. The plants looked too much as though they had grown in the shade and were not well rooted in the ground outside of the manure. It seems that plants of any kind, with a store of rich manure to live on, will grow finely with perhaps one-third of the roots that the same plants will send out when seeking their food through the soil, and these few roots will cluster in the manure and form a mass of fibers and feeders, but will not spread into the soil beyond it. It was the want of the necessary quantity of roots, rightly distributed through the soil, when the manure failed, that made a failure of the corn crop inevitable. But I have since learned to use hen manure with profit. Sow broadcast, when well powdered, so there shall be no accumulation anywhere, from a peck to a half bushel to the rod, and plow or harrow it in, especially for corn and potatoes. If applied to hills of corn do it after the plants are well rooted and a foot high, and hoe it in of cover it up; the brace roots will find it. If applied to potatoes in the hill at planting, a handful of small, watery potatoes, and a wisp of dead tops in August will be the result; but if sowed when the plants are well started, and worked in while plowing and hoeing, the result will be good.

## Stick to the Farm.

A contributor to the *Germantown Telegraph* (H. G. Abbott) has the following to say in regard to the condition of the farmer and his prospects, in Maine:

The hard times, in my opinion, have been brought about by excessive extravagance in nearly every family, and the glowing advertisements to lure the young to run away from the farm and the trades, and all honorable pursuits, and look upon labor as dishonorable.

Those who have been able to survive the surf of this return tide, find themselves at the old farm again, but with less starch in their dickies than when they left. Many of this class are now wholly unfit for the honorable pursuits of life. But these times will set people back upon a firm bottom, and teach them to do with less and take upon themselves more.

The farming community of Maine are well to do; no suffering; they may take courage and apply themselves earnestly to their farms, and produce all they can, for they are sure of a sale at fair prices.

There never was so much encouragement for sheep husbandry as at the present time; good lambs sell in June and July for three and four dollars, and wool for forty cents a pound. Choice cows now sell for fifty and one hundred dollars at two years old; good horses at from two to five hundred dollars, and those that show speed have been sold for two and three thousand, according to the time they make. Hay sells for thirteen dollars a ton at the barn; oats sixty cents a bushel; potatoes from forty to forty-five; butter thirty to forty cents a pound. There is not much corn raised in Maine, but two bushels of potatoes will get one basket of corn, which is better than to raise the corn ourselves.

The Jersey now takes the lead here as a dairy cow, and sells for double the price, side by side with the Shorthorn. But this, however, does not apply to all sections of the State, as for stock purposes the larger breeds are preferable.

Let us now look at the market, in the way of exchange, for the farmer. Four years since a neighbor's wife told me that she always was satisfied when she could exchange one pound of butter for one yard of prints; butter then was twelve cents a pound, and prints twelve cents a yard.

Now see the difference in favor of the former, at present, when one pound of butter will bring in exchange eight yards of prints, which will make a woman's dress suitable to be worn on most occasions. Also, for one dozen of eggs you can get three yards of cotton cloth, or five yards of calico, or other goods in proportion.

Now, in looking over the productions of the farm, to say nothing of the small fruits and apples, and garden truck, which are very profitable in some locations, let me ask what has the farmer to complain of?

## Alyske Clover.

On the occasion of a recent discussion at the New York Farmers' Club, a member answered some objections raised by a writer in Texas, as to the value of the Alyske, by saying that in a great many localities, especially in some of the Western States, the Alyske clover has been denounced as a complete failure. But judging from what he has seen, heard and read in agricultural papers, the failure of the Alyske is attributable chiefly to the injudicious management of inefficient farmers who have attempted to raise clover where no sort of clover could be coaxed to grow. One thing he knows concerning the Alyske is that it will flourish satisfactory on any soil which is in a medium state of fertility and which is not too wet to produce remunerative crops of cereal grain. Alyske will grow where any other clover can be raised. Kentucky blue grass will not flourish luxuriantly on any land that has not been kept in a state of fair fertility. If the land consists chiefly of dry, sandy loam, unless the surface is clayey, or mucked or well manured, Kentucky blue grass will make only a feeble and thin growth. There are thousands of acres of land in New England, New Jersey, New York and other States, which have been so badly impoverished by injudicious management, that the proprietors cannot get a quarter of a crop of Alyske or any other clover, nor half a crop of grass of any sort, except where the soil receives a generous dressing of manure. As to the reliability of dealers in seeds at St. Louis, New Orleans, Chicago, or any other cities at the West, as at the East, this member said that seeds of all sorts will often fail for the simple reason that the soil is in such an impoverished condition that there is no fertility in the land to promote the growth of seeds after they have appeared in the seed leaf. Persons having trouble in getting good seed in their own localities, by writing to the postmaster of any city, inclosing a stamped and directed envelope, with the request that their letter may be placed in the hands of some reliable dealer in seeds, can as a rule, he thought, have the ends supplied. He does not think the seeds raised at the East are any more likely to germinate than similar sorts produced at the West.

An objection being raised to this reply, on the ground that the member was unacquainted with the peculiarities of the soil of Texas, and therefore unable to judge if the clover will thrive well there, the member answered that wheat is grown in that region successfully, and consequently Alyske clover will succeed, for it thrives well on soil that produces cereals.—*W. F. Journal.*

## Travelling Threshing Machines.

The travelling threshing machine seems to be indispensable just now, and yet it is the source of a great deal of vexation and trouble in farming operations. Very few farmers can afford to purchase and own a threshing machine for the sole purpose of threshing the amount of grain they alone grow, and they endure the infliction of a body of eight or ten men, and as many horses, for from one to fifteen days every year. The great evil, however, to which good farming is exposed by these travelling threshers is the carrying of foul seeds from place to place. There seems to be no means of averting this evil. If one farmer grows Canada thistle or red-root, the seeds are sure to be carried and deposited along the road sides and in the yards of other farmers by the threshing machines and clover hullers. The only remedy is for good, tidy farmers to club together and purchase such machines for their own use. The large, or what is termed the mammoth threshers, would not be needed, nor the cumbersome horse-powers that accompany such machines. As long as travelling machines are used from farm to farm they should be brushed and swept from top to bottom before moving from each station. This is the only precaution that can be taken to guard against the dissemination of foul seeds, except the plan above suggested.—*N. Y. Times.*



The above item from an American paper expresses forcibly the opinions we have heard given utterance to by some Canadian farmers on the same subject. It is felt as a hardship, by small farmers especially, who have to employ the large threshers and as many men and horses as the farmer who may have ten times as much, though the time occupied be less. In some of the maritime provinces they make a small thresher, requiring less power, and sold at a low price. We see in a report of the exhibition of the Royal Agricultural Society, held at Dublin, mention of modes of some small threshing machines which had obtained silver medals from the Highland Agricultural Society. A writer in the *Orilla Packet* says of them—

"They are strong, portable, durable and efficient, and can be driven either by steam, oxen or horses, or one horse or pony. There are several numbers and prices, of which the highest, No. 5, with steam engine and all complete, mounted on wheels, and capable of fifty bushels per hour, costs \$430. From this the capacity and prices decrease until a hand machine, fit to thresh ten bushels an hour, may be had for \$37.

#### Hay Clover Helps the Soil.

A few days ago a neighboring farmer, who is more than usually thoughtful and successful, called on me as I was spreading manure for corn. He wanted to ask a question and began at once.

"Is timothy poison to the soil?" I asked him how he came to think of such an idea. "Well," says he, "I have noticed for years that an old timothy sod will not produce so good corn or so good wheat, nor so good a crop of any kind as a clover ley. The soil turns up cold and heavy, and the corn does not get a fair start until July or August, when the cultivator will quicken and enliven it somewhat. On a clover ley the soil is light and mellow from the first, and corn starts as soon as planted, and grows right along. I have thought that may be the timothy poisoned the soil for other crops, and had about concluded never to sow any more, but thought I would get your idea on the subject."

There was plenty of both timothy and clover under our feet, and, pulling up a tuft of timothy, I found only a bulb about the size of a bean, and from that a few fine roots about an inch long. The ground was soft, and I got most of the root. Then taking hold of a clover plant of average size, I pulled at that, and slowly drew out fully sixteen inches length of vigorous tap-root, full ten times the weight of the timothy, and, unlike that, penetrating deeply into the subsoil, and probably considerably more was broken off and left in the ground. Holding the two plants, I said that they showed for themselves the defects of timothy and the advantages of clover for the soil.

No. Timothy does not poison the land. This little round bulb, lying within half an inch of the surface, does not impart any deleterious influence to the soil. It simply does not benefit it. A timothy sod furnishes only a trifling amount of plant food as compared with clover. Observe a farther difference. The long, deep root of clover strikes down and mellows the subsoil, bringing up the mineral elements of fertility in which the subsoil is often rich. It lets in light and air, making the fertility of the subsoil available. Besides, when the plow cuts this root of, it will only turn over about four and a half to five inches of the clover root. The much longer part will be left to decay in the subsoil, forming a vegetable mould which the roots of corn and wheat will follow and feed upon. These decayed roots open a drain for carrying down surplus water from the surface and storing it for need in time of drouth. They also open the subsoil to air, and thus make its fertility available. The timothy root does and can do none of these things. Timothy is a narrow-leaved plant, and so derives most of its growth from the soil, and its few fibrous roots exhaust the soil to the depth of 1 or 1½ inches from the surface. In a field of pure timothy the soil beneath this mat of fibrous roots is cold and lifeless. Water stagnates in it in wet weather, and the light and air cannot penetrate it at any time. Just as soon as the surface soil is exhausted, which will be in from one to three years, timothy will run out, and mosses and weeds, or June grass, will take its place. By plowing up you can secure a new surface and grow timothy on it until that also is exhausted; but in time this exhaustion of successive layers of earth will include the whole and leave the soil barren. The crop never does and never can benefit the soil as growing clover unquestionably does.

"Would you then sow no timothy?" continued my neighbor. On the contrary, I like to have a

little mixed with the clover. It is not that timothy injures land that makes it objectionable; it merely does not help it. In sowing plenty of clover, there will be occasional spots where clover will fail. In dry, hot seasons there may be pretty large spots. On these I had rather have some timothy than to leave the soil barren; in fact, where the soil is ever so poor, it will rarely be entirely bare. I much prefer a sprinkling of timothy than to have it grown up to weeds; or, for fields that are to be filled, with June grass. Besides, where fields are seeded with timothy and clover, it is often very convenient, in case the seeding fails, to save a field two, three or more years, which cannot be done with clover alone. I don't like to have wheat two years in succession, but it is better to have wheat the second year than to have the soil bare. There is nearly always a good clover catch with wheat following another wheat crop, and this is a great point to be considered.

"Does not such cropping exhaust the soil?" Not if you seed with clover as often as possible. A farmer who sows clover seed plentifully and uses plaster liberally, need not fear to grow as large crops as he can. Large crops enable him to make and use more manure, and thus increase the fertility of the soil. In the clover crop the large, broad leaf takes most of its growth from the atmosphere, and the root is mainly nourished by the subsoil. Thus, where clover is grown, the soil from five to six inches in depth is constantly tending to fertility, and where manure is carefully saved and used, the farmer who grows clover has observed the first requisite to success in his business.—*W. J. F., in Country Gentleman,*

#### Raising Clover Seed.

In regard to raising clover seed, this article from the *Register of Rural Affairs* is seasonable and sensible:—

The first requisite is to have a good field of clover, sown on clean land and clear of weeds. This will make all the difference between clean and foul seed. Some weeds are comparatively harmless, while others may take years of work to eradicate. The next year after seeding the field to clover, let it be cut down closely about the time of its first blossoming, which at the North is about the middle of June. It may be cut for hay, or it may be pastured closely. The first mow is rather the most reliable. A second growth will spring up and bear an abundant and even crop of blossoms, which will ripen seed early in Autumn. The proper season for cutting is indicated when most of the heads have become brown. There are different modes used for cutting. One is to cut the crop with a mowing machine, raking it into quite small cocks, the drying being assisted by occasionally turning them over, as examination may indicate. Another and more systematic way is to take a combined mowing and reaping machine, put on the platform, sharpen the knives well, and then with a good hand rake keep the crop on the platform until there is enough for a large bunch, when it is pushed off. At the next passing drop a bunch at the same place so as to make windrows. When partly dry, cook it and let the drying process be completed as already described. This plan obviates raking and leaves the crop in better condition. Draw it in on a dry day and thresh it at the proper time with a clover huller. When a mowing machine cannot be had, the crop may be cut slowly with a scythe. If a clover huller cannot be procured, let the hay become quite ripe, and if it has been wet, it will shell the better, and resort to the more imperfect mode of threshing and passing through the fanning mill. The threshing is of course most easily and perfectly performed in sharp, frosty weather.

#### Early Cut Grass Best.

The German papers publish details of a series of experiments carried on at the agricultural schools in that country for the purpose of testing the nutritive properties of grass and hay at various stages. By an elaborate series of analyses it is shown why young grass is more nutritious than mature grass. The physiological experiments show that it is more easily digestible. Thus grass 2½ inches high contains nearly 50 per cent. more of albumenoids than grass which is 6 inches high, and 10 more of "crude fat." The mature grass contains more woody fibre and less flesh-forming matter than the young grass, and, besides this, it is found that the nutritious albumenoids exist in a less soluble form in hay than in young grass. Hence the difference of nutritive value and digestibility. Autumnal hay was found to be more nutritious than summer hay.

#### Large or Small Seeds Experiments.

The former superintendent of the Kansas Agricultural College reports an experiment with grasses. Timothy took well, but the most promising forage plant grown on the farm was Alfalfa, or Lucerne. Seed was sown the first week in April, at the rate of 20 pounds per acre. The seeds germinated perfectly and the plants made continuous growth for three months; the top roots measured 14 inches in length.

Among the experiments reported from abroad is one to determine how much difference there was in the product of large and small seeds or grains of different plants. Beans and peas were planted in the garden, small and large seeds being placed in adjacent plots. The crop was carefully watched during growth, and repeatedly measured, and at harvest carefully weighed. The plants from the large seed were healthier and grew more rapidly than the others, and the yield from them was much greater. There were on the one set of bean vines, July 31, 3,188 pods, and on the other 2,779 pods. When the crop was harvested, Aug. 5, the weight of vines and pods from large seeds was 219 pounds; of the small seed 183 pounds. The large seed gave 162 pounds of first quality, while the small seed gave 121 pounds beans of first quality, and 25 pounds second quality. The difference in peas was greater, the large seed producing 485 pounds peas of first quality and 19 pounds second quality. This experiment shows the importance of selecting perfect seed. Any man in planting corn, or anything else, is looking to the question of profit, and the time he gives to the selection of seed, or the extra expense he incurs in securing it, will be more than balanced in the larger yield and the higher degree of excellence.

#### India Wheat.

Of late some noise has been made about wheat purchased in Liverpool which was grown in India. Samples of wheat from Bombay have been received in this country, and been examined by some of the best judges of the New York Produce Exchange. One of these gentlemen, whose decision was asked, says:—"The sample submitted is commercially a soft wheat, probably raised from Spanish or Hungarian seed. American soft white wheat is raised in Michigan, Indiana, and, to a certain extent, in Wisconsin; but this wheat is not as soft as the production of those states. Soft white wheat is also raised in Kentucky, and is very similar to that of the before-named states. Soft white wheat is also raised in Virginia and Missouri; but while it is of the soft variety the production of these latter states is much harder than that of the former, and in addition to starch contains a large amount of gluten, which adds largely to its value. The Bombay wheat apparently resembles closely Virginia or Mississippi wheat. To decide whether it has gluten like those wheats requires a microscopic examination of a section of a grain, or an examination by an expert of the meal from it, combined with water. Growing in a warm climate, I should deem the presence of the desirable gluten highly probable.

#### The Effect of Ripe Hay on the Land.

You see this field of wheat we are now passing over. Well, last year was a peculiar year and the drouth came early in the season. I cut this field twice, as I do a great many of my fields now. I cut the first crop off this field the latter part of June, just when the head had grown, and before it showed symptoms of coming into bloom. I cut it again and took off the field, not very late in the season, the second crop and it was nearly one-half heavier than the first crop. Now does it look as if it had been cut very close or very late? We noticed that the field we were on had a strong, thick sod, into which the foot sunk, and with a strong, healthy growth of young grass. It seemed as if it had been cut in ample time to give a good growth before the frost set in. Now one of the great points of my success with grass is this system of cutting early. I know my practice is different from that of most men who grow grass, but it is the result of my observation, not only of my own land, but of all the farms that I have watched for years.—*Michigan Farmer.*

The *N. Y. Tribune*, May 16, says of the crop.—Reports from the North-west give sixty-nine counties where there is a small amount of wheat in farmers' hands, thirty-seven where there is a large quantity, 50 report a larger average than last year, and seventy are smaller; sixty-eight give the condition of the crop as good, and twenty-three give it as bad.



### Results of Mulching.

Some observations as to mulching convince me that its effects are not limited to a single season, nor to the crop for which it may have been specially designed. My experience with it has been in connection with strawberry growing, with a result as to that not entirely satisfactory, in view of the cost; but when I came to use the land for another purpose, as was the case last summer, I noticed a result not anticipated. The plowing after the crop was off in June (1873) was delayed a short time on account of a pressure of other work; but finally, when ready, the drouth had affected the land so seriously that plowing was next to impossible, as well as useless, indeed, for the time being, as corn (designed for fodder) would no more sprout in such a ground than in an ash heap. But near the close of July a nice shower changed the aspect somewhat. Part of the piece had been both mulched and manured; another part manured and not mulched; another strip mulched and not manured, and another part was without any recent application of either. The plowing was finished on or about July 31st, and on Aug. 1st the piece was planted for fodder corn in drills about four feet apart with no manure. The plowing was easy where the ground had been both mulched and manured the previous fall—the plow running beam deep, and turning up a moist and mellow soil. The part mulched, but without manure, was much the same, though less so, while that without any mulching was more or less lumpy, breaking up with considerable difficulty.

The corn on the mulched and manured part came up in five days, and made a rapid growth in spite of a further want of rain; while that on the part without mulching did not appear at all until moistened by a rain on Aug. 8th, so that it was not up until the 14th. Its growth then was very indifferent, and when cut in October it did not yield more than one-third as much as that on the mulched ground. The whole place was planted too late for the best result, as about Oct. 12th, when the best of it was just "topping out," we had to cut it to save it from an apprehended frost, which came on the night of Oct. 14th, killing nearly all fall vegetation; but though too green to cure thoroughly, my horse ate it with a good relish, and it supplied him with fodder for some six or seven weeks. The rank growth on the part mulched and manured in the fall (1873), coupled with the excellent texture of the ground, seemed to demonstrate that thorough mulching can be counted on to benefit succeeding crops as well as those for which it is directly applied; and I shall not be surprised to see far better clover on that part next summer than on the unmulched portions.

I ought to say, too, that the ground was bare of mulching during part or most of July, preparatory to plowing, during which time it was exposed to the full effect of a serious drouth. The mulching seemed to have increased its power to retain moisture, as well as its capacity to receive and hold it when the rains came. The material used was, in the main, salt hay in an advanced state of decomposition, having been in use elsewhere for three seasons, and the rest was mouldy cornstalks, potato tops, dead strawberry plants, weeds, and a few turnip tops. On the part mulched, but not manured, was sa't hay which had been in use only one season.—*Country Gentleman.*

### Growing Ruta Bagas.

C. T. Alvord says, in *Boston Cultivator*:—"There always has been, and probably always will be different views as to whether it pays to raise roots to feed to stock or not. Every intelligent person knows that the profit or loss in raising and feeding any crop depends on the favorable or unfavorable circumstances attending the raising and feeding of those crops. For nearly forty years I have raised roots to feed to farm stock, and I am satisfied that during this time roots have paid me as well as any other crop that I have raised. The ruta baga has been the kind chiefly raised, as I have had the best success with that than any that I have raised. I have never raised a crop that yielded less than at the rate of five hundred bushels per acre—the largest yield being three hundred bushels on one-fourth of an acre, and several crops have produced five hundred bushels on half an acre. The labor of raising and harvesting my turnips is no more per acre than raising potatoes. I feed roots raw to cattle and sheep, and boil them for hogs. I have frequently heard it said that turnips are comparatively worthless to fatten beef with, and also that if beef cattle be fed on turnips, the turnip

feed must be stopped for several weeks before they are killed, and meal or something else substituted, or the beef would taste of turnips. In numerous instances I have proved the falsity of this notion."

### Nature and Use of Plaster.

The question is often asked among farmers, of what use is plaster? When, where and how should it be used? And it is seldom a satisfactory answer is given them. Nearly every farmer who has made an application of plaster had made it serviceable at any time, without profitable returns at another. Not one in a hundred knows the reason for success or failure.

Most people found the application to clover attended generally with good results; some found it good sometimes for potatoes; but not a single one could tell, what is plaster good for? Chemistry solves the question: Plaster is a sulphate of lime. Sulphuric acid had an affinity for ammonia, and when it finds ammonia it breaks up its partnership with the lime and combines with the ammonia, forming sulphate of ammonia, and this not volatile. The lime finds a companion, when deserted by the acid, forming carbonite of lime.

Hence it will be seen that when the farmer has ammonia in his soil, put there by himself in manure, or in any other manner, liable to waste, the plaster will fix it there, and in all such cases it will be applied with profit. The odor about stables and manure heaps is escaping ammonia, and the farmer can judiciously use a little plaster in both cases, saving the ammonia for his land.

Plaster saves to the soil nitrogen, one of the chief mineral agents entering into the growth of plants, ammonia is three parts hydrogen and one part nitrogen. Ammonia escapes from decaying vegetation whenever it is found, and is suspended in the air, and when, after a long spell and considerable quantities of it has ascended, the first rain brings it to the earth, and if there is a little plaster in the clover field the ammonia never raises again.

From a good paper on hay making read before the Dublin Agricultural Society, by Mr. Baldwin, we take the following brief extract, well worthy our consideration:—As all grasses do not bloom at once, it is necessary so to time the mowing that the majority of the plants present in the swathe shall be at their best. The following rules are a sufficient guide: In the case of Italian rye grass, always mow on the appearance of the flowers, as this grass is such a fast grower that, if cut at this stage, a second cutting is obtained equal to the first, and on good land a third and fourth very little inferior. Ordinary rye grass may be allowed to produce the flowers. Clover is best cut when the heads are full in blossom. Mixed meadows should be mown when the bulk of the herbage is in full flower, or when the seeds of the earliest grasses are fully formed, such as sweet-scented vernal grass, meadow foxtail, and the late grasses, crested dogtail and meadow fescue, when they are just beginning to produce the floral organs. With us, timothy, Italian rye grass, perennial rye grass and cocksfoot flower during the latter days of June.

**CHEVALIER BARLEY IN FRANCE.**—The culture of the English chevalier barley, so admirable for malting purposes, has taken this season a great extension in the north and east of France; it yields well, and fetches a good price: two pounds of the barley produce about 1½ pounds of malt, the latter yielding 53½ per cent. of extractive matter, a result that brewers applaud. When more acclimated, the chevalier barley will be tried in Southern France and Algeria, it being the chief grain employed in these regions for feeding horses.—*W. F. Journal.*

**HEMP RAISING IN KENTUCKY.**—Mr. Blackgrave sold his hemp to R. H. Davenport at \$5.50 per cwt., the crop of fifty-four acres amounting to \$2,921. His profit, after deducting every item of expense, amounted to \$1,900. Last year the same land produced a crop, which he sold at \$7 per cwt., on which he realized \$300 less profit than on this season's crop, the latter crop being so much superior in quality.

**COLORADO BEETLE REMEDY.**—I have used dry hickory and apple tree wood-ashes, mixed about half and half, a handful on each hill of potatoes, for the Colorado potato beetle. The vines being wet, the ashes adhered, and since that time I cannot find a beetle on my potato patch.—*J. L. S.*

### Miscellaneous.

#### Canada at the Centennial.

The Dominion does remarkably well, occupying almost as much space as the Mother Country. There are articles from the Provinces of Quebec, Ontario, Manitoba, Nova Scotia, New Brunswick, and British Columbia. The goods are put up in plain uniform walnut cases, that give a very regular appearance to the department. This feature of uniformity arises from the fact that the collection is under the auspices of the Government itself, the Dominion treasury having contributed \$100,000, and the Provinces an additional amount for the display, the entire exhibit being in charge of three Commissioners from the Dominion, and one from each of the Provinces. One of the striking features of the Ontario display is the elaborateness with which the school system is brought out, and in this a great deal of pride is evidently felt. The exhibitors say that their educational system is the best in the world. The geological department is made a leading feature of the exhibition. The ores and petroleum are noticeable. The Commissioners point out a lump of plumbago, six feet by four, said to be the largest ever mined. Fine specimens of red granite from New Brunswick also attract attention. There are displays of furniture from Quebec and Toronto, tweeds, woollen goods and hosiery. The ship-building industry is represented by an interesting display of models from leading ship-yards on the sea coast. Specimens of stoneware; which are claimed to equal the celebrated Staffordshire ware, are shown. Marble mantelpieces, made in Montreal, are claimed by the exhibitors to equal in delicacy of finish and beauty of design the work of the Italian chisel. The boot and shoe interests, drugs and chemicals, sewing-machines, circular and other saws, pianos, and cigars have also fine samples in the collection. The furs are particularly noticeable, the Hudson Bay Company making a large exhibit. All kinds of articles of wearing apparel are profusely displayed. The extent and variety of Canadian industries, as represented here, will surprise English and American visitors who have thought that they were well informed about the manufactures of the Dominion.

The Canadian exhibit in the Agricultural Hall is particularly good in reapers, mowers, ploughs, harrows, roots and straw cutters, and horse-powers. The variety in ploughs is if anything greater than in our own show, although the number of ploughs is much smaller. The turnip-drill in the Canadian collection is evidence of a culture different from ours. With a poor climate for corn, they made turnips and peas stand them in good stead. Of the excellence and profusion of their wheat, barley, rye, oats, potatoes and grass, there is no need to speak. Canada has also portable engines, cider-presses, potato-diggers, snow-ploughs for breaking winter roads, grain-drills and hay-loaders.—*New York Tribune.*

#### Hints About Whitewashing.

If lime is slaked with skimmed milk instead of with water, it will not rub off, and will have a glossy appearance. Whitewash is the best coating for walls covered with common lime mortar, and kalsomine for those covered with hard finish. If the ceiling has been blackened with smoke, a little dissolved indigo added to the whitewash will hide the smoky surface. To make a stone color, take for half a bushel of lime four pounds of raw umber and two pounds of lamp black; for a light pink, stir in Spanish brown till the color is what is desired. A lemon-colored wash may be obtained by using chrome-yellow; a fawn-color by adding to half a bushel of lime one pound of Indian red, four pounds of umber, and one pound of lamp black. To make the whitewash, slake half a bushel of lime in a cask of hot water or milk; add half a pound of whiting, one pound of glue dissolved in hot water, and a peck of salt dissolved in water. Have a wire across the pail containing the wash, when used, so that the brush may be pressed against it when taken from the whitewash. This will keep drops and splatters from soiling the floor. Use only a little wash at a time, and dip the brush perpendicularly into the pail.—*Orillia Packet.*

Forty-two acres in every one hundred acres in England, and sixty-four in every one hundred acres in Ireland, are pasture.



### The Horse.

#### Production of Horses.

It is strange, but true, that the consumption of horses increases with every increase in the use of mechanical appliances which are intended as a substitute for the labor of horses. Many years ago the production of railroads and locomotive engines was dreaded by farmers as destructive of their business of horse-breeding. The demand for horses was expected to disappear, and the ordinary roads and canals were expected to become obsolete. But, contrary to this expected disastrous result, the demand for horses has grown steadily and as steadily grows, and the canal, at least in noteworthy instances, has become unable to accommodate the rapidly growing traffic. The wonderful expansion of industrial enterprise on every hand, made possible by the extension of railroads and the general use of the steam engine, both locomotive and stationary, has caused a necessity for horse labor that taxes to the utmost every source of supply. The new industrial formula, "Never use a man when you can use a horse, and never use a horse when you can use steam," is made operative in all mechanical pursuits, and in the business of agriculture it finds the least development, it is because the poverty and not the will of the farmer consents. The farmer raises horses for others, and still mows and reaps by hand, and threshes and grinds by horse-power, because, as yet, his necessities are greater than his capital. But the constantly growing use of steam, and, as we must admit, the constantly growing use of horse labor, is one of the signs of the times of the greatest interest for farmers to study and duly appreciate.

This growing demand for horses is not at all likely to lessen or to cease, but to continue, and its development is not at all unlikely to cause a brisk export trade from America before long. Germany finds it necessary to forbid the exportation of horses; France seeks in vain an adequate source of supply for her needs. England at the same time is in such a straight that the legislature discusses the question of the supply of horses for the army, without discovering any way out of the difficulty. The imports of horses into England in 1873 amounted to 17,722, of a value of nearly \$3,000,000. These animals were brought mainly from Germany, and now that this source of supply is cut off, the English journals are enquiring what shall be done about it. At a price of \$165, English farmers find it unprofitable to breed horses, and were the price to be advanced considerably it would not remove the difficulty, for if horse-breeding should take the place of grazing and fattening, the price of meat, the British staff of life, would be raised to an alarming extent. Either beef or horse-flesh must advance, or both together, unless a foreign supply of horses can be reached. The question now is, can we furnish this supply? Can farmers who complain that raising corn and wheat for shipment abroad does not pay, produce horses for a foreign market with profit by consuming their grain and hay at home? This question involves some interesting considerations. Every horse raised to four years of age represents six tons of hay and 100 bushels of corn, or its equivalent in other grain, allowing only for its consumption during the earlier unproductive portion of its life. On the average, the money value of this would amount to at least \$150. A farmer will be recompensed for all the necessary attention given to an animal by its manure, and this return to the farmer will prevent the rapid exhaustion of the soil which would result from the shipment abroad of grain. For many reasons, well understood by farmers, it is better to raise live stock than to ship grain, and much land that is worthless for the plow is profitable under pasture. It is undoubtedly possible for many farmers now making small profits by raising hay and grain to sell, to double their income by breeding horses. It is not a costly matter to ship horses across the Atlantic, and if, as seems very probable, the demand will soon make it profitable to do so, it will certainly be done. In the meantime the demand increases at home, and we know from experience that to sell a yearling colt of common farm stock for \$75 is more profitable than raising twenty-five sheep or three yearling heifers for the same money. But the demand is also for good stock at better prices, and as it costs no more to feed a colt of this class than a poor one, the profit is the greater. What is needed is enterprise and skill, and if the first exists the second is soon learned.—*N. Y. Times.*

#### Cause of Megrims in Horses.

A correspondent of the *Veterinarian* says that he has been in practice as a veterinary surgeon for thirty years, and he has taken pains to ascertain the cause of megrims. On examining the horse's eye immediately after or during the attack, he has found it exceedingly convulsed and acted upon by spasmodic affection of the muscles, a symptom that could not be present if the disease arose from distension of the arterial vessels of the brain. He has never seen a saddle horse affected with this complaint, and all the cases he has seen occurred when the sun was shining brightly, or by moonlight when snow was on the ground.

He had a favorite pony which was subject to megrims. He removed the blinkers from the bridle and the pony never showed any symptoms of them afterward. It occurred to him then that the reflecting of the sun upon the blinkers falling directly on the optic nerve, was the cause of this extraordinary complaint. Since that he has had many patients affected with megrims, and in every case he has ordered the blinkers to be removed, or if they were not to have the horse's eyes shaded with a piece of leather three or four inches wide, extending in front from one winker to the other. In every case this treatment proved successful. He feels satisfied, from the symptoms he has always observed in megrims, that the brain is not the seat of difficulty.

#### Galled Shoulders and Backs.

During the hard work of seed time, farm horses are, in some seasons more than in others—in wet and warm seasons—subject to galled shoulders and backs, which, when not attended to, are apt to produce troublesome sores. The skin is not only abraded by the collar and saddle, but irritated and inflamed; and if the irritation is kept up, an ichorous discharge takes place, which is difficult to heal without giving the horse rest. When a saddle-gall is observed, the harness should be looked to, and the pressing points which have caused the sore should be relieved. A lotion should then be used to anoint the bruised parts every night, after they have been washed with warm soap-suds, and dried with a soft cloth. The following is a useful application: Take hot lime shells of the bulk of two quarts, and pour upon them two quarts of cold water; and after they have intimately combined, pour off the liquid into a dish. Add to this liquid five wineglassfuls of linseed oil and two ounces of fine powdered sugar of lead, dissolved in a little water. Stir them together, and then bottle and cork up for use. After the bruises have been washed in the evening, anoint them with this liquid with a feather until the wounds heal.

#### Liniment for Horses.

R. S. Steele writes to the *American Farmer's Club*:—"Some time ago I was a good deal worried with a couple of horses which had sore backs. I tried various remedies without success, and was beginning to despair when the following receipt came to my notice:—"The inner bark of white oak bark boiled down in an iron kettle (never use a brass one) until it is as black as ink; while boiling drop in a piece of alum about the size of a hen's egg. This liniment is to be applied with a sponge, and is good for any sore or bruise; in fact it is a safe thing to keep in one's barn ready to use when occasion requires. As I found this so useful, I venture to send it for the benefit of others who may not be in the possession of anything as good. I think it is also an excellent plan in warm weather to clean the collars often with Castile soap."

#### Fish in Canada.

A great improvement has taken place within the past few years in Canadian fisheries. The trout streams have been kept free from impurities, and unlawful fishing has diminished. Through the enterprise of Mr. S. Wilmot, of Newcastle, Ont., the lakes and streams are now becoming plentifully supplied with fish. The Commissioners of Fisheries have recently suggested that the salmon in different rivers are too numerous, and that means should be taken to lessen them. Since 1868 the salmon fishing in the Province of Quebec has yielded an increase of nearly 300 per cent. The vast increase throughout the entire Dominion is simply due to wise inspection and discriminate fishing. Canada thus possesses a great source of wealth in rivers and lakes, and every year their value is increasing.

### The Apiary.

#### To Make Bees Swarm in a Particular Place.

When the apiary is where there are no natural conveniences, it is best to provide something for the bees to cluster on. Bushes six or eight feet high—evergreens are preferable—with the ends of the branches, except a few near the top, cut off, can be used with good effect. Secure the whole with strings, to prevent swaying in ordinary winds, and make a hole in the ground deep enough to hold them, and so large that they may be easily lifted out. The bees will be likely to cluster on some of these; they can be raised out and the swarm hived without difficulty. A branch of dry mullein tops, tied together on the end of a pole, also makes a very good place for clustering, as it resembles a swarm, and often deceives the bees themselves. I have known them to leave a branch where they had begun to cluster, and settle on the mullein tops when held near them. When bees cluster on high trees, where the branches cannot well be cut off, I have gone up a ladder and turned the hive bottom up, directly under the main part of the cluster, and then had an assistant shake the branch sufficiently to dislodge the bees. Most of them fall into the hive. Or, if one hesitates to go up the ladder, have ready two or three light poles of suitable length, with a branch or fork at the upper end, large enough to support a bushel basket. Raise the basket directly under the swarm, and with another pole dislodge all the bees. When you have secured nearly all, throw a sheet over them, to prevent their escape. They will soon become quiet, when they may be hived. A bag, if preferred, can also be set up among the branches in the same way. Swarms sometimes alight in places where it is impossible to jar them off, as on the trunk of a tree. In this case, I place the hive near, take a large tin dipper and dip it full of bees; with one hand turn back the hive, and with the other put the bees into it. Some of them will discover that a home is provided and set up a buzzing, when others will soon join them. Hives painted some dark color will become intolerably hot in the sun, and are often deserted. The smell of newly painted hives of any color often causes bees to leave for more pleasant quarters elsewhere. The question is often asked, which is best for bees, a wet or a dry season? I have studied this point closely, and come to the conclusion that a medium between the two extremes produces the most honey. Of the two extremes I think a wet season the worst. Another question of interest is, concerning the distance a bee will travel in search of honey. There is an old saying that bees go seven miles from home, but I think it difficult to prove that they will go three miles. From all the evidence I have, they certainly do no go further than that. I have my bee yards from two and a half to five miles apart. The largest apiaries should be separated at least four miles.

#### Bees and Bee Culture.

As soon as the workers find out that the queen or mother is gone, which will generally be in less than half an hour after her removal or death, they usually become very much excited, and run about the hive, as if they knew that some great calamity had befallen them. Some of them even take to the wing and fly out and in and about and leave no place unsearched, as if in the greatest distress. If there be no newly laid eggs in the hive, or bee worms less than three days old, the excitement soon ceases; for instinct tells them that they have the means to supply their loss by the production of a young queen, and they immediately calm down and go to work, as if nothing of material importance had happened. It will be seen, from what is here stated, that the loss of the queen from a hive is not necessarily fatal to the stock. Indeed, it is sometimes of very great importance to the welfare of the stock to remove the queen; and it sometimes happens that her accidental death is of service to the stock. But, if her removal should be effected when there are no eggs in the cells, or worms under three days old; or, if she should die at the season when there are no eggs; or, if eggs, no drones for the fertilization of the new queen, as may happen in the winter time, the colony is sure to go to ruin, unless the apiarian perceives and remedies the difficulty. These facts are all of the first importance to the practical apiarian, and should be carefully remembered by him.—*Rural World.*



## Garden, Orchard and Forest.

## Phylloxera.

What can be done with the Phylloxera, or grape louse insect? is one of the important questions of the day. I was an unbeliever in regard to the destructive effects of this insect until last summer, when the Committee of the Ohio State Horticultural Society went to Kelley's Island to investigate this subject, about the first of July. We then examined some strong growing roots of the Oporto and found all the new growth of root eaten up. When at work they are not visible to the naked eye, nor could we perceive them with a small glass; we could, however, see with the naked eye; the knots or bunches on the roots, which I suppose contained the young insect. They resemble the apple tree louse, which works on the roots and stalk of young trees. The Phylloxera also works on the leaves of the Clinton and Oporto; they do not appear to eat them, but form on the leaves what we call nut-galls, or little knots.

I was not satisfied with this investigation—did not leave with the committee—but laid over and visited an old reliable grape-grower, who declared that we would have trouble with the insect. I told him I had no faith in them, for I could not see any life in them. He said he would show me life enough. He put some Phylloxera under a good sized glass, and sure enough I saw the ugly looking "cuss" kicking away fast enough. Well, this convinced me. Now I have not much science or logic about me, nor much theory; am only a practical working man; but I want to state some facts from personal observation.

Twenty years ago there were many large, flourishing vineyards of Catawba grapes (which is our only reliable wine grape) on the banks of the Ohio river. Some of the Germans then called it the Rhine of America. These vineyards have all failed. By the way of contrast, I have seen vineyards in the south of France, said to be a hundred years old, bearing small crops every year, perfectly healthy.

For eighteen years the Catawba grape flourished on Kelley's Island, entirely free from disease, producing immense crops of splendid fruit under all circumstances, every year. The people then supposed there could be no failure of this crop, but during the last two or three years the leaf mildew and grape rot have done great damage on all the islands and along the lake shore. New localities in favorable situations succeed for a time, but sooner or later fail. Five or six miles inward from the lake, the Catawba vineyards bear two or three crops; then come the rot and leaf mildew and the vineyard is ruined.

Some twelve years ago I set out a vineyard of ten acres, mostly Catawbas, with Cincinnati vines; these vines had some knots on the roots, but I then did not know any better than to set them; now these Catawbas have all failed. From personal observation and experience I am forced to believe in the theory of some grape-growers of much experience, that the Phylloxera is the cause of leaf mildew and grape rot; for certainly, if during the summer the new grape roots are consumed, there is nothing to sustain and mature the leaf and fruit. It is very natural to suppose that this insect, like many others, after a certain period will disappear, but experience is against this theory.

The Phylloxera has also appeared in Europe and is slowly spreading in that country. It has alarmed the French Government, which sent an agent to this country. He visited Kelley's Island for observation and to ascertain whether they had some strong growing native grape which would resist the Phylloxera and could be used in France to graft on their varieties. The French Government has offered the large sum of \$300,000 for any practical method of destroying this insect. It is of course very difficult to get at them so deep under the ground.

The Phylloxera has also appeared in California. In that dry, hot country—the land of the vine—it may do immense damage. I have learned by observation and experience, several methods for the destruction of some of our insect enemies, but am no entomologist. I have written these few lines hoping to draw out some observations from persons who understand this subject, for grape-growing is a large and profitable business on our islands and lake shore.—D. C. R., in Ohio Farmer.

## Ashes and Iron for Flowers.

The observation of practical and experimental gardeners seems to confirm the fact that, to procure brilliant colors in flowers, it is necessary to supply the soil with an abundance of ferruginous constituents and silica. The latter supplies a material (says S. E. Todd in one of his foreign exchanges) which is of vast importance to the production of that brilliancy of the petals and the dark green luster of the leaves. That, if potash be added, or the ground be dressed round about the growing flowers with unleached wood ashes, an increased brilliancy will appear in every petal and leaf.

Any person who cultivates only a few flowers in pots, or on grassy lawns, or on spacious parterres, may readily satisfy himself of the exceedingly useful part the foregoing materials play in the production of beautiful flowers. Even white flowers, or roses that have petals nearly white, will be greatly improved in brilliancy by providing iron, sand and unleached ashes for the roots of growing plants. Ferruginous material may be applied to the soil where flowers are growing, or where they are to grow, by procuring a supply of oxide of iron, in the form of the dark-colored scales that fall from the heated bars of iron when the metal is hammered by the blacksmiths.

Iron turnings and iron filings, which may be obtained for a trifle at most machine shops, should be worked into the soil near flowers; and in a few years it will be perceived that all the minute fragments will have been dissolved, thus furnishing the choicest material for painting the gayest colors of the flower garden. When there is an excess of vegetable mold in the flower bed, and a deficiency of silica or sand, the flowers will never be so rich in color, nor so brilliant, as they would be were a liberal dressing of sand, or sandy loam, worked down into the bed, where the growing roots could reach it. If wood ashes can be obtained readily, let a dressing be spread over the surface of the ground, about half an inch deep, and raked in.

A dressing of quicklime will be found excellent for flowers of every description. It is also of eminent importance to improve the fertility of the soil where flowers are growing, in order to have mature, plump, ripe seed. Let the foregoing materials be spread around the flowers, and raked in at any convenient period of the year. When soil is prepared for flowers in plots, let some sand, some oxide of iron and ashes be mingled thoroughly with the leaf mold.

## Protecting Fruit and Seeds from Birds.

A correspondent of the *London Field* gives the following method as having proved, in his experience, entirely efficacious:—

And what, you will ask, is my talisman? Simply a ball of grey or whitey-brown linen thread. I take a ball of this in my hand, fasten the end of it to one of the twigs of the gooseberry or currant bush, and then cross the thread backwards and forwards from twig to twig in perhaps a dozen different directions, fasten off, and the thing is done; and it will last two years—the thread on the trees I mean. It is not necessary the thread should be white or coarse; it ought rather to be fine and dark, a thing to be felt, not seen. I have watched the birds after performing the operation; they come boldly to settle on the trees, and they strike against these, to them, invisible snares, for such no doubt they deem them to be; they fly off in a terrible hurry, and settle on the walls or trees round about, longing and getting hungry, till at last they disappear, and you will see them no more.

As regards peas and other seeds which I always sow in drills, I simply stretch a thread, sometimes two, along each drill, at about two inches from the ground, supporting it at that height by little forked sticks. If you put it much higher than this the birds do not seem to care for it—it does not touch them; that is the grand secret, something which touches them, something they do not well see nor know what it means.

I have seen people put thick white string with feathers tied to it, and perhaps two feet from the ground. The birds soon understand these, and care little for them; in short I know to my cost it sometimes acts as a lure, a notice to the birds that there is something to be had worth looking after. I will answer for it, anyone adopting the plan I recommend will never have cause to complain of the birds, however numerous they may be.

## An Insect Year.

The promise of a good yield of agricultural products generally in the United States is not without some attendant evils. If the season has been favorable to vegetation, it has also tended to the interest of the numbers of the innumerable hosts of rapacious insects that sometimes make the fields that had promised to fill the granaries with the necessaries and luxuries of life, become in a few days brown and barren as the great desert. The *Country Gentleman* speaking of the prospects of the season in this wise:

"The present season bids fair to be one of the worst insect years ever experienced. The Hessian fly has committed extensive depredations on wheat in Tennessee, Kentucky and Southern Indiana; scores of complaints of chinch bugs come from Illinois and Iowa, and some from other sections; in still other places immense swarms of black caterpillars and army worms (the true army worm that lives on grass and other vegetation on the ground) are doing great damage. But the worst of all is the Rocky Mountain potato bug; this pest, it appears, prevails much more extensively than ever before, at least so early in the season. They are also fast pushing their way east, having entered Ohio on the south line of march, and crossing the Detroit river in swarms on the north.

"The *Detroit Free Press* says, 'every chip, plank, stave, bark, board and floating thing, large or small, in shore or channel, in stream or eddy, was filled with a crew of potato bugs, calm, contented, and as much at home as if feasting on the potato.' Most of them were taken by the wind across to the Canadian shore; others 'struck boldly and rapidly down the rapid current, still eastward bound, via Lake Erie to Buffalo.' And it is said they will either disembark at Buffalo, or continue their course down the Erie canal. Now, leaving all pleasanties out of the question, it will not be at all strange if the potato bugs should make their appearance in the vicinity of Buffalo in the course of the season. Indeed, it would rather be surprising if they did not secure transportation on some of the passing propellers, and finally reach the potato fields of Western New York. Meantime, says the *Free Press*, 'the potato bug possesses the land. Farmers do not hope to save the crop at all. From all parts of the State (Michigan) the same cry comes up, and potatoes have greatly risen in price. Let the citizens of New York pray shipwreck of the fleet on Lake Erie.'

"There seem to be but two remedies for this pest; one is picking off the bugs, which, when they get so numerous, is impracticable; and the other is Paris green. The *Free Press* says:—'All sorts of remedies have been tried. Paris green seems to have the most reliance placed upon it. The druggists of Detroit have had their stock exhausted. One firm disposed of a ton in three days. Telegraph orders have been transmitted to New York to forward with all speed a new supply.'

"Thus it is seen that the present season for some cause—as a very early and in many sections dry spring, or perhaps in some other phase or phases in the weather—is very favorable for insect depredators, and that if no heavy storms, friendly insects, or other preventives come to the farmers' relief, they are likely to do immense damage during the season."

A farmer boy in Ohio, recently observing a small flock of quails in his father's corn field, resolved to watch their motions. They pursued a very regular course in their foraging, beginning on one side of the field, taking about five rows, and following them uniformly to the opposite end, returning in the same manner over the next five rows. They continued in this course until they had explored the greatest part of the field. The lad, believing that they were pulling up the corn, fired into the flock, killing but one of them, and examined the ground. In the whole space which they had traversed he found but one stalk of corn disturbed. This was nearly scratched out of the ground, but the earth still adhered to it. In the crop of the quail he found one cut worm, twenty-one striped vine bugs and one hundred chinch bugs, but not a single grain of corn.

A correspondent of the *Rural New Yorker* says: "Set a tomato plant into each hill of cucumbers or melons, and you will have no trouble from the striped bugs that are so destructive to these plants. The plants can be tied to stakes, and if well pruned when large, both subjects can proceed with their fruiting without detriment to one another."



### Rustic Garden Ornaments.

In many places in the country scarcely a flower garden or front yard is now seen without one or two rustic baskets or vases in which to grow plants. While many persons cannot afford the more costly and elegant ones, every farmer's wife and daughter can, by the aid of husband or brother, possess pretty rustic vases and baskets that will, when filled with suitable plants, richly repay all labor upon them. Sometimes when getting up the wood for the winter's use, the farmer may find something just the thing to use as a standard for one of these rustic vases. We have one formed of an oak stump about a foot in diameter, which at a certain distance from the ground branched out with three arms, or legs I should call them, as, when they were sawed off in the proper place, the stump was inverted, and as it stands in the garden it reminds me of my grand-mother's three-legged light stand. Upon this standard was placed a bushel box (such as farmers use to take their fruit to market). It is about nineteen inches long by eight inches deep, and is covered with rustic ornaments such as strips of wood with the bark left on, nailed upon the box to hide it, in any fanciful shape. They may be cut of different lengths so as to form points at the bottom. Several holes may be bored in the bottom of the box to secure drainage, and a few pieces of charcoal laid in the box before putting in the earth.

Use good soil and mix in a little sand, leaf mould and well rotted manure. Money-wort is nice to plant around the edge of the box, and so is the German ivy, as it grows luxuriantly and drapes prettily. Sometimes we plant a tall crimson *Dracena* in the centre, sometimes a tall variegated leaved *Abutilon* or a large General Grant geranium, surrounded by lower growing plants. *Vinca Variegata* is beautiful for garden baskets or vases, to droop over the edges, and a few plants of *Coleus* and *Tricolor geranium* always are pretty for the centre. I find petunias are also very good for this purpose. Pretty baskets to hang beneath the porch or piazza, may be made in the following manner: Take a wooden bowl and tack upon it the roots of the briar rose, or the roots and branches of the wild grape, the more gnarled and grotesque the better; for the handle, nail on two long rattans twisted together; give all a good coat of varnish. If it is to hang in a northern exposure it can be filled with ferns, tradescantia and English ivy; if in a sunny spot, use *coleus*, golden feather, centauria, variegated alyssum, and the different ivy geraniums. The scarlet bush nasturtium is also very pretty for baskets or vases. I have seen them growing in fig-drumms which were covered with cones and rustic ornaments, and when suspended from the trees were a blaze of beauty. Old tin two-quart basins may be covered with putty, first leaving an orifice for drainage; then crowd into the putty shells or pebbles, or even pretty stones of different colors pounded and broken into irregular pieces. Three holes should be made at equal distances apart, near the edge, to hold the cord in hanging it. One thing is very essential in the care of these baskets or vases—that is, they should be well watered every evening, and some small baskets may need it both morning and evening.—*Cor. Indiana Farmer.*

### The Flower Show—An English Florist at the Centennial.

The transition from fruit to flowers is so natural that I must give you some account of the special floral features as exhibited in the annex to the Horticultural Building. The *Rhododendron* is here a perfect blaze of glory. I have often wondered it was not as great a favorite in this country as it is in England. The reason is not creditable to this country. For while it is a native of America, it is a pet of England. It has been a neglected sprout here in its native wilds, and in England it has been cultured, hybridized, and coaxed until it has become the great flowering shrub of the spring season, with several hundred choice varieties to which are given pretty pet names and many in honor of the great names of the country. Even the Queen is honored by having a *Rhododendron* called the "Queen," and the beauty of the flower is such as would honor any other woman, however noble she may be. The neglect to cultivate the *Rhododendron* in this country is one of the mistakes of the country which this exposition will help to correct. Mr. Waterer, of London, is here himself. His nurseries are about a hundred years old and consist of two hundred acres. He has made the cultivation and improvement of American plants his specialty; the *Rhododendron* was introduced to the Waterer nurseries soon after its

exportation from this country, and has been crossed and re-crossed by hybridizing until the varieties of form and color are quite numerous. Mr. Waterer now publishes a list of them in his catalogue, containing nearly five hundred really different kinds. To walk through the annex of the Horticultural Hall and examine these varieties carefully is quite an interesting process, as there is a much greater difference than would have been thought possible in the same tree. But all appear in a healthy, vigorous condition, being perfectly hardy. Mr. Waterer said they had no difficulty in packing them so as to secure them safe transit; they all take a ball of earth with them. The climate of Michigan is wonderfully well adapted for the growth of this, as of all hardy evergreens. Its humidity makes it resemble, in many respects, the climate of England, and, consequently, the *Rhododendron* would flourish as well, or better, with us than in England. In the best parks and public gardens of England, the *Rhododendron* is the favorite spring flowering shrub. We have nothing in this country taking its place at this period of the year, and Mr. Waterer's care and thoughtfulness in bringing this display has entitled him to high credit. He has done in flowers what Michigan has done in winter apples, taken the first award.—*Michigan Farmer.*

### Poison Ivy.

Strange advice sometimes appears in our exchanges in regard to poisonous plants, and especially about "poison ivy." If what is called poison ivy (which, by the way, is not an ivy, but a species of sumac) was the only plant growing wild likely to poison a person by contact, we might excuse some of the mistakes made by writers upon this subject. But the facts are that the so-called "ivy" is the most harmless of the two virulent species found in all our moist woods and low grounds. Even so good an authority as Dr. James C. White writes to a Boston medical journal, advising "all who are unacquainted with the poisons of ivy to avoid any vine or bush growing by rocks, fences and woodsides, and having glossy leaves arranged in threes." Now, this climbing or trailing species of sumac, or poison ivy, is the *Rhus toxicodendron*, and ninety persons out of every hundred can handle it with impunity.

But, growing in similar localities, and frequently side by side with it, there is another species, known as poison elder. Poison sumac, or poison dogwood, is botanically the *Rhus venenata*, which few persons can handle without being poisoned. This virulent species is not, however, a "vine having three leaves," but a shrub, growing ten to twenty feet high, with long pinnate leaves of seven to thirteen ovate entire leaflets. Pinnate leaves are those which have small leaflets on each side of the mid-rib.

Now, when any of our readers are searching for wild plants or fruits, in moist grounds, we would warn them to give this plant a wide berth, if they are at all susceptible to sumac poison.—*Rural New Yorker.*

### Training Tomatoes.

Of course no gardener would ever think of trellising an acre of tomatoes, but we do not know of any one little thing that pays better in private gardens than that of giving the tomato vines some kind of a support. It makes but little practical difference what particular support is used; anything that will keep the vines from sprawling out of bounds and looking slovenly, that will keep the plant up, where one can see how to train out superfluous growth, is a great comfort. Besides these advantages, the fruit is less liable to rot, is in sight where malformed specimens can be cut out, and is always clean. Another consideration is the greater ease in "worming" or killing the voracious green caterpillar; indeed, if a trellis of some kind is once used, one will always be used thereafter.

Our present object is to remind the reader to have something in readiness. Set the trellis before the plants are put out, and begin to train it early. Just here we would remind those who like to amuse themselves in the garden, that a tomato vine with a good bit of manure at its roots, and trained against a barn, shed or other building, by means of loops of strong cloth and tacks, will make a display that will astonish those who have never seen a tomato thus treated, not only in the quantity of the fruit, but in the exceeding beauty of the whole plant.—*N. E. Farmer.*

### Hawthorn Hedges.

EDS. CO. GENTLEMAN.—Two instances have lately come within my notice which convince me that these fences might be made to answer as well in America as in England. One was by a roadside near St. George's, Delaware. Three-fourths of the fence was Osage orange, say 300 yards, and about 100 yards was hawthorn. The former was good for nothing, being thin and weak, while the latter was strong and thick, only neglected like the former; but if the hawthorn was cut and wattled, it would be a really good barrier, while the Osage orange would be naught but a fancy fence. The other hawthorn is near Baltimore, and was planted, cut and wattled, remaining good for twenty years, but it has been allowed to grow without any restraint, or being cut and wattled again, and the consequence is that it is going to ruin. These hedges require fresh cutting and layering, or wattling, every ten or twelve years in England, when they are not kept annually cropped off with shears; and in this climate, where all wood grows faster, they require to be attended to rather oftener.

G. G.

[To the above we would add that hedges of English hawthorn can be grown in America, and even in this northern part, Canada. The first hawthorn hedge we saw in America was in the State of Pennsylvania. It was neglected, and not as close and impenetrable as we knew them in the old country. Here in this city there is a short hedge of the English hawthorn. It is, we believe, not less than twenty years old, and is strong and healthy, though in a place not well suited to it. And we have seen, a mile from town, a very handsome hedge of that hawthorn, kept low and well trimmed. The American hawthorn would, however, we think, be more certain. It is very hardy, and well adapted to the climate, being indigenous. We have no experience of its growth in hedge rows, but growing in single bushes it makes a strong growth and is really handsome, often of graceful form, and, whether in blossom or bearing haws, is quite ornamental, though this would be of no additional worth for it as a hedge plant.—A. Ed. F. A.]

### Eucalyptus Globulus.

The influence of the eucalyptus globulus, or Australian blue gum tree, on malarious districts, has been well illustrated in the Roman Campagna. The locality chosen for the experiment was the most desolate part of the Campagna, about three miles from Rome, where tradition fixes the place of the execution of St. Paul. On that spot three magnificent churches and a monastery were erected, but toward the end of the last century they had to be abandoned by the fever-stricken monks, and the ruins had since become a show place for visitors in the winter. About six years ago some French Trappist monks planted eucalyptus trees in the cloisters, and they have already grown to a height of over thirty feet. During the first four years the monks did not venture to live on the spot altogether, but returned to the city to sleep every night during the summer and autumn months. For the last two years, however, all the monks have inhabited the hitherto fatal spot—the community sleep in the monastery, and remaining day and night all the year in the most fever-stricken spot of the whole Campagna. Notwithstanding this, the monks, most of them beyond the prime of life, have preserved their health. Whether the result has been due to the direct influence of the efficacy of a kind of liqueur which the monks prepare from the eucalyptus and take with their cup of black coffee every morning, is what sanitarians would like to find out.

### Salt for Cabbage.

A New Jersey gardener considers salt necessary to the development of cabbage, especially in places far from the coast. He finds them more crisp, of better flavor and to keep better when salt is used than without. He uses it as follows:—A few days after setting out the plants, and when they are damp, either after a rain, or when the dew is on, I take a small dish of fine salt, and walking among the rows, sprinkle a little pinch of salt on the centre of each plant. When the leaves begin to grow I repeat the salting, and when the centre of the leaves begin to form the head I apply salt again, scattering it over the leaves. After this I look them over occasionally and if I find plants that do not head well or appear diseased, I sprinkle the salt over freely. This will save all such plants. A quart of salt is sufficient for five hundred plants in a season, although more can be used with safety.



### The Culture of Tomatoes.

It is a mistake to suppose that tomatoes do best on poor soil. They are rank growers and great producers, and will do something in quite barren lands, but to produce abundantly large and luscious fruit the ground must be rich. A warm, sandy soil will give the earliest yield, but they will grow almost everywhere, and so far from its being true that they require nice cultivation, there are few vegetables that will bear neglect so well. We would not, however, advise neglecting them. Whatever is worth raising is worth raising in the best manner. We therefore append a few suggestions as to their cultivation.

In transplanting to the garden, cover the stem up nearly to the leaves, but not vertically, as this would place the roots too deep in the ground, when they would be too cold. By laying the stem of the plant nearly horizontal, a couple of inches below the surface, it will send out roots, and thus the plant will have an abundance of foragers actively employed in furnishing it with food, and moreover they will be near the surface, where they can receive stimulus from the sun and air. Most of our tropical plants, tomatoes among the number, want bottom heat.

For an early crop, trim closely, cutting off the shoots just above the blossom clusters. This will throw the juices of the plant into the fruit, and also let the sun in upon it. The crop will be less, of course, but a week or ten days earlier, and an early tomato is worth this amount of painstaking. We have sometimes hastened their maturity by placing a wide board edgewise on the north side of a row of tomatoes, which serve to keep off the cold winds and to radiate the sun's heat.

### The Elderberry.

L. M.—Your inquiry respecting this fruit is by no means out of place, and even if some think them of no use whatever, we, along with a few others, think differently. No fruit, when converted into wine or spirits, retains the original flavor more than the elderberry does. They make an excellent pie fresh, or when dried and put away for winter. As a jelly they are hard to beat, in a medical sense; one teaspoonful dissolved in a glassful of water, and drunk before going to bed, will relieve the most obstinate cough. The blossoms are often gathered and dried to make tea of for sweating purposes. Here they grow wild in great abundance, and we have observed that where they are plenty near a vineyard, the birds will feed upon them and let the grapes alone to a considerable extent.

There are several varieties here; the one with the purple stem is superior in quality. There is a cultivated variety about double the size of the wild ones and coarser in habit of tree, but for some cause or other it is not often seen; we presume because the wild ones are so plenty. We had a yellow one in the east, and brought plants with us, but lost them somehow. It was more of a novelty than of real value, however, as it had a dull sweet taste, nor near so lively as the black one. By all means would we cultivate it, if there were not plenty of volunteers around.

They should be kept in one place and left to grow as a tree. Where at liberty they sucker badly, and are a nuisance where cultivating other crops. A few cut off one fall and stuck in the ground as a mark at the end of a row of apple seeds, struck roots and made trees; and if we remember rightly, no suckers came up around them.

### Tomatoes.

Mr. James H. Clarke, of Canning, Queen's County, N. B., has brought to market some good specimens of this useful vegetable. The size is unusually large of the "General Grant" variety. Mr. Clarke devotes much attention to the raising of tomatoes, and last year his fine farm yielded upwards of twenty-six tons. Mr. Clarke is always first in the market, and his vegetables afford him a handsome revenue. His business in tomatoes alone amounted to \$2,000 last season, and his plants number 3,500.—*News.*

The farmers of Manitoba were at work seeding in the second week of April. A very large average will be put under crop—not less than 10,000 acres of wheat alone, and at least as much more barley and oats. The buds at that time were much swollen on the trees, and it was expected maple and poplar leaves would be out by the end of the month.

### The Story.

#### Ernestine.

A Story of the Little House in the Cloister House.

##### CHAPTER I.

The city of Utrecht may be classed amongst the quaintest of Dutch towns. During the blazing heat of summer, the snows of winter, or the dull fogs and damp of dreary autumn, alike does it preserve its aspect of having flourished in bygone ages. Its high pointed roofs and stagnant canals—as they are called there *grachten*—are at the present day just what they were a century and a half ago.

Of course, in the outskirts of the town are to be seen new and handsome mansions, especially on the Maaliban, or walk of lime trees, and along by the Catherine Straat; but the town proper is, as I have said, a city of other days.

Were it not for the students who attend the University, and during the term, at least, diffuse some of their own youthful vitality into the place, its quietude would be undisturbed, save for the rattle of the milk carts at stated periods, and the occasional patter of *klompen* or wooden shoes along drowsy, echoing streets. One of the first things which attracted my notice when I arrived in Utrecht, was the hollow sound of the roads. For some time I could not understand it; but I discovered that the kitchens extend under the streets to the edge of the canals, hence the peculiar hollow echoes for which Dutch cities are noted.

The Cloister Court of Utrecht is an open square, situated between the old monastery and the cathedral. It is paved with small bricks of a bright red color, set edgewise, and inclining towards the centre, where are still the remains of a well, long since disused. Round the court is marked by massive pillars which support a groined roof of exceeding beauty. On one side is the Cathedral, or Dom Kirk, and wedged in between it and the cloister is the smallest of small houses, with low, sloping roof, and diamond shaped lattice windows. To the right of the cottage, on the upper story, is what once formed the hospital of the monastic building, which is now converted into a reading-room, for the use of the professors and students; whilst beneath are the apartments of the janitor and his wife, between whose domicile and the staircase leading to the reading-room is a broad archway, with huge doors, bearing above their portals the gilded star and motto of the students. This forms a short cut from the remnant of the old university to the chief club-house in the Line Maart. Here I may as well say that in Utrecht there is no grand college, such as are to be seen in our own universities in England. The portion that remains is only large enough for one professor to hold his class there. All the other classes are conducted at the private houses of the professors, except those for medicine, which are held at the hospital. The students are not in residence, and, like those in Edinburgh, are, after certain hours, quite free to follow their own devices.

Opposite to the Dom is the pile of buildings which composed the ancient monastery, now let off as chambers for the students. The remaining side of the square is formed by the offices of a private house, built so as to preserve the perfect outline of the arcade. On this side is a second archway, similar to the one already described, which leads to the east side of the city.

The whole of the Cloister Court makes a charming surprise to the tourist in Utrecht. Approaching from the heart of the town, through the disagreeable odors of the Fisch Maart, or Fish Market, towards the western archway, there is nothing particularly striking to the eye, save the gray old Dom, mended and patched here and there with red brick; its tower, five hundred yards away, across a paved square, which is all the more incongruous by being seen in juxtaposition with the reading-room, which is daubed with hideous yellow ochre.

Pleasant it is then, on passing through the arch, to find oneself in a cool, shady court, the perfect architecture of which, with its moss-covered stones, would delight a lover of antiquarian research. But whilst English tourists go into wild raptures over this little corner of Utrecht, its plegmatic inhabitants perceive not its beauties, and pass it day after day with no notice beyond the thought of how desirable a sight it would make for a dwelling-house or a shop, or a sneering laugh at "those mad English." Ah! how stolid, how dull, how unenthusiastic is the Dutch temperament!

But, though insensible to the architectural beauty of the Cloister Court, one portion of its population, at least, could appreciate beauty of a different kind. In that little house in the Cloister Court dwelt the fairest maiden in Utrecht; and as the students passed and repassed to the Professor's rooms, many anxious glances were thrown on its windows, to obtain a glimpse of the charming face within.

Pretty Ernestine! no wonder she proved such an attraction to them, for she was as unlike in appearance to the ponderous, awkward Dutch belles, as is the graceful Arab steed to the heavy Flanders horse. The reason is soon told. Ernestine van der Weide was not a Dutch girl but a Fries. There is a general idea that Dutch and Fries are one and the same, but it is a great mistake. There is as much difference, perhaps more, between the inhabitants of South and Central Holland, and those of Friesland, as there is between that of our own southern counties and the Highlanders of North Britain. They are a distinct race—distinct in manners, dress, speech, and physical appearance; and have, especially in the last particular, very considerable advantage over the Dutch.

Ernestine van der Weide was an orphan, descended from a good but impoverished family, and though but eighteen years old, had earned her bread for upwards of two years. Like most of her countrywomen, she was expert with the needle, and marvellously skillful in the production of fine embroidery work, which was much in vogue and highly prized by the great ladies of Utrecht, which is still, as it has ever been, the most aristocratic town in Holland. There you will find no merchant princes, no vulgar, bustling manufacturers, only well bred gentle people of noble family, who, with the professors and their families, and the military, form the society of the place.

Therefore, when Ernestine left her native village in Friesland, she selected Utrecht as her abiding place, and found a home with one Jan Smits, the verger of the Dom, who, with his wife, occupied the little house in the Cloister Court.

To the old couple Ernestine was more like a daughter than a lodger. At the time of her settlement in Utrecht they were

in great affliction, having just lost their only surviving child the last of a large family, all swept away in the first bloom of youth by that terrible scourge of the Netherlands, consumption.

By trying with her whole power, no slight one, to fill the dead girl's place, she endeared herself to them with a deep and earnest love. The gentle tenderness of her kind nature served to bind the well-nigh broken heart of the old couple so closely to her, that ere she had been many months in their dwelling they had given her their undivided affection.

She took her meals with the Smits, and read or sang to them in the evening; but during the daytime she sat at the window of her little chamber, singing blithely as she industriously worked at her embroidery, now pausing to pluck a leaf, faded and sere, from the plants which formed a leafy screen at the casements, now chirping to her bird in his cage above her, and sometimes glancing down into the court, as the loud voices of the students attracted her attention, when she would return their almost reverential salutations with a demure inclination of her bonny head, and then peep at the tiny mirror which hung on the opposite wall.

Yes—Ernestine knew she was lovely. What pretty girl does not? What did she see in the glass to bring such a complacent look into her bright eyes? A perfectly oval face, with a broad, white forehead above a pair of deep, clear grey eyes—eyes that at times would dilate and darken, until they seemed almost black—shaded by dark penciled brows and long curled lashes; a straight, delicate nose; a somewhat drooping mouth, which, when she smiled, disclosed a pair of pearly teeth, so rarely seen in Holland; a complexion like the inner leaf of a rose; and, most beautiful of all, a mass of golden hair, worn in two thick braids reaching far below her waist—I say, with such a picture before her, it was no wonder that she looked self satisfied. As she was only 16 at the time of her leaving Friesland, she had not adopted the ugly custom her country, nor had her hair been arranged in the abominable fashion customary to Fries women; so she always dressed in the simple black skirt and lilac kirtle, which is the usual week-day dress of the poorer classes in Holland.

The students came and went, and Ernestine embroidered and sang, and was happy. One brought her bon-bons, and another flowers, while a third presented her a kitten as his offering. She was friends with all, and favored none. Try as he would, no student could make any advance to her. She would take a trifling present, or his compliments up to a certain point; then would make him the most coquettish little bow in the world, and, "Good-day, mynheer!" leaving him more charmed because he was angry; more in love with her because she did not care in the least for him.

They quarrelled, and even fought about the "little cloister flower," as they called her; but she only sang more cheerily, and peeped more demurely from her screen of plants than she had done before.

I think the young students none so good as they might have been, liked her all the better for her purity of her whole life and actions. If, now and then, mistook one mistook the extent of his acquaintance with her, he never so transgressed again, but generally became one of her most jealous guardians. All loved Ernestine, all respected her; and therein lay her power.

Once Jans Smits observed to his wife:—"I like not these young fellows dangling after the maid."

To which the good wife made answer:—"Trust her, Jan—trust her; she is as pure as the angels!"

##### CHAPTER II.

By-and-by, there came to the university a young nobleman, named Gerard van Dorman von der Grethause. His father had been, in his time a celebrated statesman—a man of bad morals and unholy like, who had in his old age married a Portuguese Jewess, of great wealth and extreme beauty. This lady died in giving birth to Gerard, leaving him the legacy of her own voluptuous southern constitution, in addition to her passionate, vindictive southern temper, which had ever chafed at the old forms and phlegmatic nature of the people of her adopted country.

Her old Portuguese maid, who had nursed Gerard in infancy, and at the time of which I write, was the only person who had any influence over him, used to say that the chill, damp climate and cold hearth by which she was surrounded had been the means of killing her. These influences, together with the old superstitions which Nita had instilled into the boy's head, added to the reckless spirit with which he was endued, and at two-and-twenty, Gerard van der Grethause was as bad a character as could well be imagined. That he was strikingly handsome, perhaps, only furthered this state of things. He had inherited his mother's large, soft, liquid, black eyes, raven tresses, and Caucasian type of features, as well as her tall, graceful *physique*, combined with the courtly grace and manner for which his father had ever been noted.

Gerard had not been many days in Utrecht before he heard of Ernestine van der Weide. At first, he was incredulous to her beauty, and still more so to the pure mode of her life and the modesty of her demeanor. He doubted the one and openly laughed at the other; but when he came to know our little Ernestine, he felt as only a bad man can feel in the presence of a pure-minded woman. He could not laugh and joke with her, as did his fellow students; but he fell desperately in love with her, and determined to win her.

Then a change came over Ernestine herself. From the bright, *piquante* coquette she had been, she grew into a grave, shy, almost nervous maid, much given to blushing and starting at the nearest trifles.

Even the sight of her own shadow was enough to bring the hot flushes to her cheek, and the quick impetuous blood welling to her heart, till she could hardly breathe.

This state of things continued for some time—Gerard treating her with all the winning courtesy he could well assume, she believing him to be everything that was good, true and noble. Then, he avowed, in passionate language, his love for her, and drew from the happy, blushing girl the acknowledgment of her own affection.

Costly presents began to find their way to the little house in the Cloister Court; and Gerard began to speak of bright far off lands to which he would take her—of sunny Italian lakes—of grand Alpine scenery—of gay Parisian life—the rich jewels, the magnificent dresses, the elegant carriage he would give her; but no word did he say of marriage. He had promised to make her a hundred times greater and more beautiful than the greatest ladies of Utrecht; therefore, Ernestine took it as a matter of course. Did she not trust in his honor and love?

To be continued.



Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES:—

Holidays are coming, and that is good news. No doubt you will be anticipating great pleasure. I can remember, when I was a boy, how I looked forward to the holidays with as bright hopes as any of you, and enjoyed them too.

UNCLE TOM.

MY DEAR LITTLE FRIENDS,—Many thanks are due to all of you. I am very much pleased to receive so many letters from our young readers. The winning rebus has been sent to the engraver, and if it returns in time will appear in this issue, if not, it will be in August number.

UNCLE TOM.

75.—REBUS.

Intact is my foremost part, That ev'rybody knows full well; My second is an auction mart— And now my whole I'll briefly tell: Of letters nine I am composed, And, if the truth you'd have me say, I am a word that is opposed To trade that's in a pretty way. My 1, 2, 7, 8 and 5 Will name the largest thing alive; My 2 and 7, my 4 and 9 Will clearly health and strength define; My 3 and 1, likewise my 8, A bird of night will designate; My 1 and 9, my 7 and 4, The rich enjoy, but not the poor.

—L. W.

76.—ENIGMA.

We are five little airy creatures, All of different form and features; One of us in glass is set, A second will be found in jet; One of us is cased in tin, And a fourth a box within; If the fifth you would pursue, I can never fly from you.

—G. L.

77.—HIDDEN CHRISTIAN NAMES.

- 1. Did the inhabitants of Piscal acknowledge the King of Italy as their ruler.
2. How unpleasant it is to see a young lady simper and smirk at every thing that is said to her.
3. "Base thief," exclaimed the young man indignantly.
4. A truly benevolent man would not hesitate to give the last shilling in his possession to a really necessitous person.
5. Get help, threr's a gale on Aaden's point.

J. C. M.

78.—SQUARE WORDS.

- 1. A contest, to worship, a drunkard, a plume of feathers, an English country.
2. Illustrious, a body of water, a woman's name, part of the body (plurality), to cover a wound.

—H. O.

79.—CRYPTOGRAPH.

I ovle my ovnctry's ipen cadl ihls Hre sushnie adn ehr ostmsr Erh ourgh nad ugged orcks atht erar Teihr orahy eahds eligh ni eth rai Ni wdil anstaite orfms.

—B. B. H.

80.—DIAMOND PUZZLES.

My first is a consonant, My second is vice, My third is a gay young lady, My fourth is a kind of school, My fifth is a rebuke, My sixth is a man's name, My seventh signifies to go with, My eighth means betwixt, My ninth is to reform, My tenth is cunning, My eleventh is a consonant.

—A. S.

81.— Merry and droll my first is reckoned, Upon my whole you'll find my second; My whole is a bird on Britain's shore— Now guess its name without any more.

—J. C. S.

82.— One-third of mop, one third of pop, And then one-fourth of down, One-fourth of hare, one-fourth of care— My whole is a poet of renown.

—J. C. S.

83.— What pleases in the air, what a horse does not like, gives the name of a flower.



84.—GEOGRAPHICAL NAME—THE PRIZE REBUS. MAGGIE E. CLARKE, Blantyre, Ont.

85.—DECAPITATIONS. Whole, I am hard; behead and I am a sound; behead again and I am a number.

86.—NUMERICAL ENIGMA.

I am composed of eleven letters. My 2, 6, 5, 11 is what is sometimes taken. My 1, 6, 8 walk erect. My 11, 9, 5 is carried on the head. My 5, 7, 8 is made to take in. My 9, 1, 2, 3, 4, 5 is a sum. My whole is a certain tree.—J. E. L.

87.—

In the centre of the band, On one foot I do stand, With a pack of hounds around, To all of which I must be bound To turn to them when they come near. And I in the centre of the sphere, My foot must not be moved at all, For if it was I might chance to fall. With arms outstretched, and, in them, too, Spices for the happy crew Which round me sit and eat and drink What they much need or else they'll sink. Now, friends, tell me, if you will, What is this useful article; And when you know, I guess you'll see That you have seen one as well as me.



88.—STORY WITHOUT WORDS.

Answers to June Puzzles.

No. 62—Be it ever so humble, there is no place like home. No. 63—Rebus. No. 64—The letter I. No. 65—Hearth, heart, hear, ear, earth. No. 66—Brink, rink, ink, kin. No. 67—The letter O. No. 68—Mabel, Abel, Elbe. No. 69—If you love me as I love you, no knife could cut our love in two. No. 70—Ansg. No. 71—Mediterranean. No. 72—Montreal. No. 73—1110000011011101001000100110 (the straight strokes signify the white men). No. 74—Asia, Siam, Wales, Spain, Sweden. Canada, Italy, China, Arabia, India, Peru, Alaska, America. No. 75—Pol, ice, man.

Names of those who have sent correct answers to June puzzles. H. McLelland, Ira Mason, R. McCubbin, Mrs. J. Wisner, Annie Bothwell, James H. Cross, R. Gibson, J. H. Houser,

Josie Laware, Charles King, Janet Hartley, Owen Bowman, Janet Davidson, Annie L. Crippen, Isabella Laing, J. Enigh, A. C. D. J. Crouzier, Maria Clemens, H. Bell, Marianne Robertson, Havlock Bracham, M. Rankin, E. Elliott, E. Anderson, W. Broughton, Edith Cutten, W. H. Sutherland, Jamina Craig, V. D. Gantion, Mary Adams, Thos. M. Taylor, Andrew Spenser, Wm. Gorsline, Lizzie Shier, Albert Shier, Mary Howell, Albert E. Harvey, Jas. H. McMurtry, V. S. McCullum, W. H. Coulson, Olive Hubbell, Archy Taylor, C. Storey, Thomas Waugh Bill, J. E. Lovelock, M. E. Clarke, G. Johnstone, S. Jarvis, H. Todd, C. Wright, M. Marigault, Robt. McNair.

HUMOROUS.

A Too Gallant Conductor.

Conductor B— is always polite to the ladies, particularly so provided they are young and handsome.

Miss C— was handed on board at the station as carefully as though she was "glass—to be handled with care." An extra seat was turned over on the shady side of the car, and the conductor took a seat by her side to do the agreeable, having met Miss C— on the train before.

Presently, as matters were going along nicely, an old man in his shirt sleeves half threw himself into the seat in front, which the conductor had unlocked and turned over for the special benefit of the parties more immediately concerned. Mr. B— spoke up rather sharply:

"Go away from here." But the old man didn't go. Conductor says, still more sharply:

"Go away, or I'll make you." But still no go, while a vacant, provoking smile sat upon the face of the intruder. Whereupon Conductor B— grasped the old farmer by the nape of the neck. At the same time the young lady grasped the arm of the conductor, exclaiming:

"Please don't, Mr. B—. This is my father." Ever since, Conductor B— always asks young ladies if they are travelling alone.

"I've got a new machine," exclaimed a Yankee pedlar, "for picking bones out of fishes. Now, I tell you it is a little above anything you ever did see. All you have to do is to set it on the table and turn a crank, and the fish flies right down your throat and the bones right under the grate. Well, there was a country green-horn got hold of it the other day, and turned the crank the wrong way; and I tell you, the way the bones flew down his throat was awful; why, it stuck that feller so full of bones that he couldn't get his shirt off for a whole week."

At a party one evening, Sully, the distinguished painter, was speaking of a belle who was a great favorite. "Ah," said Sully, "she has a mouth like an elephant." "Oh, Mr. Sully, how can you be so rude?" "Rude, ladies! what do you mean? I say she has got a mouth like an elephant, because it is full of ivory."

"Come, Pete," said a merchant to a gentleman of the colored persuasion, "what'll you put that load of wood into the cellar for?" "In de fuss place, my name is Peter, sir; secondly, I se a profeshnal carpet cleaner and white-washer; furderno', I doesn't compete for sich jobs, sah!"

Some clever fellow has invented a new kind of ink, called "love letter ink." It is a sure preventative against all cases of "breach of promise," as the ink fades away and leaves the sheet blank in about four weeks after being written upon.

A lady had her dress trimmed with bugles before going to a ball. Her little daughter wanted to know if the bugles would blow when she danced. "Oh, no," said the mother; "papa will do that when he sees the bill."

"So you wouldn't take me to be twenty?" said a rich heiress to an Irish gentleman, while dancing the polka. "What would you take me for, then?" "For better or worse," replied the son of the Emerald Isle.

A Scotchman asked an Irishman—"Why were half farthings coined in England?" Pat's answer was, "To give Scotchmen an opportunity of subscribing to charitable institutions."

An Irishman who lived in an attic being asked what part of the house he occupied, answered: "If the house were turned topsy-turvy, I'd be livin' on the first flure."

A house without children is like a lantern and no candle, a garden and no flowers, a vine and no grapes, a brook with no water gurgling and rushing in its channel.



## Minnie May's Department.

I thank all my correspondents for their numerous little articles relating to house-keeping. It is not an easy matter to decide which deserves the prize, but I think our little niece, Sarah Sharpe, must be awarded it. I hope to hear from you all soon, and will be happy to receive anything in aid of this important department.

MINNIE MAY.

## TO WORK IN THE KITCHEN.

It is no disgrace to be able to wash in the kitchen. Dear nieces, consider you have a good mother if she instructs you thoroughly in general housekeeping. We should never have good bread, butter, puddings, pies, etc., if you were not taught to learn to cook and to work was a disgrace. What is a young lady fit for whose mother allows her to lie in bed till ten o'clock, and who, when she rises, sings a song or two and sits down to the last new novel. She may answer for the life of a miserable fop, and miserable indeed will she live. Far better for her, no matter what her condition in after life may be—whether she marries a fortune in gold or a fortune in real worth—if she is brought up to work. Her life, in comparison to one brought up in idleness and folly, would be a season of real enjoyment. What mother will be so unwise as to teach her daughter that to work is degrading, while lying in bed, dressing in fashion and reading the latest novel, is elevating, dignifying.

MINNIE MAY.

DEAR MINNIE MAY.—Among so many clever nephews and nieces as you have, no doubt you will get a great many better letters about housekeeping than mine, because I never kept house myself and so can't tell you very well how things are really done by practical housekeepers, but, at any rate, I can try to tell you the way I think housekeeping ought to be done, just as my aunty told me. Horace Greeley wrote "What I know about farming," and everybody laughed at his book, because, I guess, they thought they knew better themselves than he did. I think everybody, whether housekeeping or not, should have a place for everything and always put it back there when they get done using it, and these places should be as handy as possible, not out of the way places, so, by-and-bye, they would get into a habit of having their things in order without thinking any more about it; then if certain days of the week or month were set apart to do certain things in, they would be sure to have them done. Of course there is a lot of hard work to be done in any house, but folks should not try to do too much in one day, for I have read that it is not right to do more in one day than one night's sleep will rest a person from. And housekeepers should always try to have good, sweet bread and butter and set the table nicely with a clean cloth, for men folks are always cross when they don't get these things good; and then they ought to try to get their work done in time, so that there might be some spare time to read books in and to take a part in any amusement that may be going on, and not let it be always work, work, scrub, scrub, sew, sew, keeping up perpetual motion, putting things so as to be stiff, and awkward, and solemn, like some houses I go into, where, as soon as you get inside the door, something keeps saying "be quiet, don't laugh;" so I never stay there very long, for, after all, folks are not machines, and if they must not laugh and enjoy themselves the laugh should not have been put into them. And I think housekeepers should take time every day to dress up and make themselves look tidy. Why, even the trees dress up—indeed, last week they looked as gay with blossoms as if they had put on all the style in the fashion books, and it was only for a few days after all. But, Minnie May, likely this is half a column long, and some more too, so I won't write any more, for, most probably, this will go into the waste basket, and not into the FARMER'S ADVOCATE, for I never wrote you anything before but puzzles. So good-bye, Minnie May.

Your Niece,  
SARAH SHARPE.

## TO TAKE STAINS OF WINE OUT OF LINEN.

Hold the articles in the milk while it is boiling on the fire, and stains will soon disappear.

Sal.-volatile or hartshorn will restore colors taken out by acid. It may be dropped on any garment without doing any harm.

Feather beds should be opened every third year. The ticking well dusted, soaped and waxed, the feathers dressed and returned.

Green mint sauce is made by putting green mint chopped fine and parsley in vinegar. It is to be eaten with lamb.

DEAR MINNIE MAY.—It affords me much pleasure to offer a few recipes to add with your well selected ones which you always provide. I think when we succeed in doing anything well, it should be our duty as well as a pleasure to tell others just how we did it. I like to read good common sense letters from practical housekeepers; experience is the best teacher in the world. Enclosed are recipes for making pickled walnuts and a cement, which I hope will be of some use to your readers. From one of your first subscribers, BLANCHE P.

## PICKLED WALNUTS.

Procure the walnuts while young and prick them well with a fork. Prepare a strong brine of salt and water (four pounds of salt to each gallon of water), into which put the walnuts, letting them remain nine days, and changing the brine every third day. Drain them off; put them on a dish and place it in the sun until they become perfectly black, which will be in two or three days. Have ready dry jars, into which place the walnuts, and do not quite fill the jars. Boil sufficient vinegar to cover them for ten minutes; to every quart of vinegar allow two ounces of whole pepper, one ounce of allspice and one ounce of bruised ginger; pour it hot over the walnuts, which must be covered with the vinegar. Tie down with a bladder and keep in a dry place. They will be fit for use in a month, and will keep for years.

## CEMENT FOR BROKEN CHINA, GLASS, ETC.

Dissolve half an ounce of gum accacia in a wine glass of boiling water; add plaster of Paris sufficient to form a thick paste, and apply with a brush to the parts required to be cemented together. I have repaired several articles most effectively by this recipe.

## LEMONADE.

Powdered sugar four pounds, citric or tartaric acid one ounce, essence of lemon two drachms; mix well. Two or three teaspoonfuls make a very sweet and agreeable glass of extemporaneous lemonade. This recipe is from our little niece, Eva.

## FRECKLES.

To disperse them, take one ounce of lemon juice, a quarter of a drachm of powdered borax, and half a drachm of sugar; mix and let stand in a bottle till the liquor is ready for use, then rub it on the hands and face occasionally. HOUSE GIRL.

## APPLE FLOAT.

Take six large apples, pare, slice and stew them in as much water as will cover them; when well done press them through a sieve, and make very sweet with crushed or loaf sugar; while cooling beat the whites of four eggs to a stiff froth, and stir in the apples; flavor with vanilla or lemon. Serve with cream.

## WINE CAKES.

Half a pound of flour, quarter of a pound of butter, half a pound of sugar, ten drops of essence of lemon; make into a paste with well beaten eggs, roll out thin, cut in rounds and bake on tins.

## A FEW WORDS WITH OUR NIECES ABOUT COOKING GREEN PEAS AND POTATOES.

I know you will all have a taste for nice green peas and potatoes, though perhaps all do not understand cooking them.

The first point to be considered is—Why do some people always have peas looking a bright green, and others send them to the table a bad color? The secret is in cooking them. Have ready a saucepan of boiling water, into which put a tablespoonful of salt and a few leaves of mint. Strain the peas and throw them in gradually; do not cover the saucepan. Young peas do not require more than fifteen or twenty minutes' boiling; old peas will take half an hour. A good pinch of carbonate of soda may be put into the water to render the peas softer. New potatoes differ from old in this important respect: In cooking, the latter require cold water, the former boiling water. In both cases salt must be put into the water, about a tablespoonful to every two quarts. Like peas, new potatoes are best fresh from the garden. Great care should be taken not to allow them to boil too long, or they will get pappy. Let them dry in the saucepan, and when dry put them into a vegetable dish with either a lump of butter or a little good melted butter made with milk.

MINNIE MAY.

## CHEAP AND GOOD VINEGAR.

To eight gallons of clear rain water add three quarts of molasses; turn the mixture into a clean, tight cask, shake well two or three times and add three spoonfuls of good yeast, or two or three yeast cakes. Let stand in a warm place, and in ten or fifteen days add a sheet of common wrapping paper, smeared with molasses and torn into narrow strips; the paper is necessary to form the "mother," or life of the vinegar. This recipe is from a subscriber who highly recommends it.

L. SIFTON.

## POTTED HAM.

Chop the ham as fine as powder; put a layer of ham in a jar, sprinkle pepper, cloves and vinegar over it; then a layer of ham, continuing until the jar is nearly full; finish with spices, and cover with vinegar an inch in depth; let it stand two or three days. Cold meat may be prepared in the same way.

## COLD BOILED HAM.

Chop the ham and add to it milk sufficient to soak the required quantity of toast. When boiling hot, dip nicely toasted slices of bread in the milk, and as each piece is laid upon the platter, spread with a little butter. When all the toast is moistened, add to the milk and ham that remains, two or more eggs; stir constantly, and as soon as it thickens, pour over the toast and serve.

Felons usually follow a bruise or other injury to the hand which does not cause bleeding. As soon as pain begins to be felt, take a small quantity of salt, apply it to the bruise, and pour on enough spirits of turpentine to make it moist. This will usually drive the felon away without pain. If the felon has progressed so far as to become inevitable, wrap it in sassafras root, pounded fine, and moistened with water. This draws the felon to a head, with but little pain. A third remedy is to make a salve by dissolving a piece of saltpetre the size of a bean in a cup of sweet cream. Then bruise the inner bark of sweet alder in the cream, and simmer slowly until it makes a thick salve. Apply to the felon, and it will give almost immediate relief.

If you want enemies, excel others; if you want friends, let others excel you.

The sweet light of friendship is like the light of phosphorous, seen plainly when all around is dark.

A dandy, getting measured for a pair of riding boots, observed, "Make them cover the calf." "Heavens!" exclaimed the shoemaker, astounded, surveying his customer; "I have not leather enough."

"How one thing brings up another!" said a lady, absorbed in pleasing retrospection. "Yes," replied the practical Dobbs, "an emetic, for instance."

"Mamma," said little Nell, "ought governess to flog me for what I've not done?" "No, my dear; why do you ask?" "Cause she flogged me to-day when I didn't do my sums."

A young man asked his bachelor uncle: "What advice would you give a young man who was contemplating matrimony?" "I should advise him to keep on contemplating it."

TRUE AND FALSE MODESTY.—Nothing is more amiable than true modesty, and nothing more contemptible than that which is false; the one guards virtue, the other betrays it. True modesty is ashamed to do anything that is repugnant to right reason; false modesty is ashamed to do anything that is opposite to the humor of those with whom the party converses. True modesty avoids everything that is animal; false modesty everything that is unfashionable. The latter is only a general, undetermined instinct; the former is that instinct limited and circumscribed by the rules of prudence.

A BIRD VILLAGE.—Isn't this cunning, a dozen nests hanging in a row from the midrib of one leaf? These trees are bananas, and the banana-leaf, you know, has a long mid-rib edged by coarse fibres. Well, the birds tear out the soft portion of the leaf, setting these fibres free; and then, selecting several, a bird braids and weaves and "felts" them together into a pretty little pouch. One leaf has fibres enough for a dozen nests, and so see birds build in village.

When, refused to or date, there are form any Some ele with a c Eleven c up. F One cool showing wing-bo legs. T blood. poor lay comb di layer. that he to be p marked. These l death, disposi did.

I mu direct o in ques winter Last s placed hen b One da clucki them u summe them, day, h part o when the ot Biddy would as so moult end o follow Th will lieve shad allow out i cuba tenn vanc to ru they are a na eggs guic you ma sele mar and it h of gre atic set Bra req of fee ner a c rer wh ma no wh fe m st sp he th If w fo m in



Poultry Ward.

Non-Setting Hens.

When, where, and by whom the first hen that refused to set was bred, no record of time, name, or date, has yet been discovered. Certain it is, there are hens that utterly refuse to set, or perform any duties whatever towards their young. Some eleven years ago, the writer was presented with a dozen of eggs said to be Black Spanish. Eleven out of the twelve hatched, and seven grew up. Five proved to be cocks and two pullets. One cock had a pea comb and a spangled plumage, showing little or no Spanish blood. One had red wing-bows and double comb, and a third yellow legs. Two, however, showed pretty good Spanish blood. One pullet had a crest, and proved to be a poor layer. The other was plain, with a large comb drooping to the left, and proved a first-rate layer. (I have a fancy, it may be only a fancy, that hens with combs turning over the left eye are to be preferred for layers.) All her progeny was marked like her, and proved to be good layers. These hens were kept until they died a natural death, and neither of them ever manifested any disposition to set, although some of their chicks did.

I must relate a curious incident concerning a direct descendent from the crested hen. The hen in question had always been a remarkably good winter layer, never showing any inclination to set. Last summer, a brood of Leghorn chicks was placed in a small yard, to run at large—the mother hen being confined in a small coop adjoining. One day this Spanish hen was discovered to be clucking to these chicks, scratching and calling them up, and continued to do so to my surprise all summer. She mothered the chicks, protecting them, and searching for food for them during the day, but she never offered to hover them. She appeared entirely at a loss when she came to that part of maternity. Her duties ceased at night, when she would go to roost in the hen-house with the other hens, but bright and early, poor old Biddy, with her eight years' moult on her back, would be at her post ready to accept her charge, as soon as allowed to go abroad. In the fall she moulted, and laid a clutch of eggs, but towards the end of winter she began to droop, and died the following spring.

Thoroughbred non-setting hens I do not believe will ever set, although there are numbers who believe to the contrary. Of course they have the shadow of reason on their side for support, and allow that their species cannot be propagated without incubation, and hens are the most natural incubators and mothers; but we must in this centennial year of our existence allow room for advancement and improvement. If fowls are allowed to run down and run out, like everything else, they return to a normal condition. Non-setters are bred. No one supposes for an instant that in a natural state the mother hen leaves her nest of eggs to chance. Each one follows an instinct that guides her, after her kind, to have a care over her young, to protect and rear them. Non-setters are made by judicious breeding and care. By selecting eggs for hatching from these breeds that manifest the smallest inclination to broodiness, and by forcing feed that increases a growth of eggs it has been done. We have several distinct breeds of the non-setting varieties. High feed tends greatly to eradicate the broodiness from the Asiatics, so noted for their frequent inclinations to set. It is with difficulty the writer can procure Brahmas that will serve as incubators, as fast as required. Those persons who complain so bitterly of the persistent setting of the Brahmas are poor feeders. There is little difficulty in making them nearly constant layers. As soon as one manifests a desire to set by remaining on the nest over night, remove her to a tight place of confinement, from which she cannot escape, and feed well. A Brahma cannot resist the temptation to eat, and will not wait for a second invitation. Do not give her whole corn that fattens and only increases the fever to set, but prepare a nice dish of Indian meal, (and do not stint her, for she has a capacious stomach,) soft, like mush, with a pretty liberal sprinkling of Cayenne pepper, and place it before her. Leave it with her. You can return within the course of a few hours to find the dish clean. If the bird be infested with vermin, shoot her with the Persian insect powder gun, and my word for it Biddy will be ready soon to give you a dozen more eggs. Patience is always a redeeming virtue in the poultry business. Filth and poor feeding

cause many birds to retrograde. There is little profit in procuring fine fowls of fine breeds, and neglecting them, and then condemning the breed. Country Gentleman.

Nests.

The nest-boxes of hens should be moveable, so that, after hatching, and occasionally when used only for laying, they may be conveniently cleaned. One way is to whitewash them; but another, preferred by some, is to kindle a fire inside and char them. This process will effectually destroy vermin and their larvae, and will thoroughly purify the nests by leaving a coating of charcoal inside. This substance is one of the best antiseptics, and a perfect deodorizer. Boxes made of seven-eighths stuff—pine, hemlock or spruce—will outlast a number of the purifications by fire, as the process tends to preserve the wood, and by using carbolic acid freely about nests and the building generally, there will be little trouble from hen lice or other vermin.

Stock Notes.

Shorthorn Sales.

TORONTO, June 14, 15 and 16.

MESSRS. COCHRANE, BEATTIE AND HOPE'S HERD.

Cows and Heifers.

Table listing various cows and heifers with their owners and prices. Includes entries like Sonata, S. R. Streater, Cleveland, O. \$900; Sonata 2nd, \$500; Oxford Queen, A. L. Stebbin, Port Huron, Mich. \$480; etc.

Bulls.

Table listing various bulls with their owners and prices. Includes entries like Baron Siddington, W. W. Pickrell, Illinois. \$2,200; Lord Hillhurst, H. N. Moore. \$1,025; etc.

After the above sale, Mr. Holderness, of Toronto, sold several good imported improved Berkshires. The sows did not realize high prices; the pigs sold from \$11 to \$25 each. A few Shropshire Downs were sold, realizing about \$60 per ewe and lamb.

THE BOW PARK HERD.

Cows and Heifers.

Table listing various cows and heifers from The Bow Park Herd. Includes entries like Imp. Waterloo Cherry Duchess and calf, Mr. S. R. Streater, Cleveland, Ohio. \$640; Mazurka 10th, Mr. S. W. Jacobs, West Liberty, Iowa. \$1,020; etc.

Table listing various cows and heifers with their owners and prices. Includes entries like Roan Duchess 6th and bull calf, Mr. S. W. Jacobs. \$500; Belle of Oneida and bull calf, Mr. S. W. Jacobs. \$600; etc.

Summary.

Summary table showing totals for cows and bulls. 26 cows, average \$337. Total \$8,762. 9 bulls, average \$152. Total \$1,368. Grand total \$11,433.

JOHN SNEEL'S SONS HERD.

Cows and Heifers.

Table listing various cows and heifers from John Snell's Sons Herd. Includes entries like Lady Seraphina 6th, W. W. Williams, Everett, Mass. \$1,520; Annie Gwynne 2nd, Dr. Sumner, Woodstock, Conn. \$400; etc.

Bulls.

Table listing various bulls from John Snell's Sons Herd. Includes entries like Imp. Knight of the Rose, C. L. Davidson, Kettleby. \$25; Aldrie 9th, W. C. Kent, Chicago. \$500; etc.

Summary.

Summary table showing totals for cows and bulls. 20 cows, average \$444.50. Total \$8,890. 4 bulls, average \$222.50. Total \$890. Grand total \$9,780.

MR. BENSON'S HERD.

Cows and Heifers.

Table listing various cows and heifers from Mr. Benson's Herd. Includes entries like Grace Hamilton, George Meredith & Sons, Cambridge City, Ind. \$170; Matilda, H. N. Moore, Red Oak Junction, Iowa. \$115; etc.

Bulls.

Table listing various bulls from Mr. Benson's Herd. Includes entries like Prince Cardinal, H. N. Moore, Red Oak Junction, Iowa. \$55; Sir Edward, H. N. Moore, Red Oak Junction, Iowa. \$45; etc.

Summary.

Summary table showing totals for cows and bulls. 29 cows, average \$143. Total \$4,150. 3 bulls, average \$58.33. Total \$175. Grand total \$4,310.

MESSRS. THOMPSON AND LATO'S HERD.

ST. MARY'S, June 17.

Cows and Heifers.

Table listing various cows and heifers from Messrs. Thompson and Lato's Herd. Includes entries like Minnie of Willowdale and calf, J. Jobling, St. Mary's. \$340; Minnie of Annandale 2nd, S. W. Jacobs, W. Liberty, Iowa. \$200; etc.



Mysie of Kinellar, J. A. Thompson, Masonville, Ont.	290
Rose and bull calf, Wm. Bell, Shakespeare, Ont.	235
Rose 2nd, Joseph Atkinson, Egmonville, Ont.	160
Geneva 2nd, F. Hardy & Co., Emporia, Kan.	190
Matchless 17th and calf, S. W. Jacobs, West Liberty.	510
Matchless 19th and heifer calf, W. J. Biggins, Clinton.	355
Matchless of Kinellar, S. W. Jacobs, West Liberty, Iowa	305
Mary 4th, F. McHardy & Co., Emporia, Kansas.	300
Mary 5th and bull calf, Joseph Atkinson, Egmonville.	265
May Rose and bull calf, John Sutherland, St. Mary's.	250
Fairview Lady, F. McHardy & Co., Emporia, Kan.	135
Imp. Orange Blossom 20th, A. E. Kimberly W. Liberty.	900
Imp. Golden Drop 6th, A. E. Kimberly, West Liberty.	270
Lily Dale and bull calf, T. B. Guest, St. Mary's.	155
Mary Hill, F. McHardy & Co., Emporia, Kan.	155
Imp. Village Lass, J. Whetstone, Lakeside, Ont.	700
Britomarte 2nd and bull calf, T. B. Guest, St. Mary's.	140
Pearlette Butterfly, John Sutherland, St. Mary's.	60
Dahlia 2nd and heifer calf, A. Thompson, Masonville.	430
Imp. Crimson Flower 2nd and heifer calf, K. Lee, Downie.	280
Bonnie Lass 2nd, S. Rounds, Harrington, Ont.	400
Imp. Alexandria 6th and calf, A. E. Kimberly, W. Liberty.	705
Miss Bedford 2nd, Alex. Innis, Harrington, Ont.	210
Lady Lisgar, A. Stewart, Lobo, Ont.	125
Laura Languish, Alexander Innes, Harrington, Ont.	510
Eva, W. Sinks, Harrington, Ont.	195
Rosedale, Purvis Thompson, Whitby, Ont.	60
<b>Bulls.</b>	
Cambridge Duke 2nd, A. Stewart, Lobo, Ont.	200
Gwynne Duke, John Shearer, Listowel, Ont.	160
Young Annandale, James Fullerton, Ont.	130
Rip Van Winkle, Alex. Innes, Harrington, Ont.	40
<b>Summary.</b>	
30 cows, average.....\$316 1/2 Total.....	\$9485
4 bulls.....132 50 Total.....	530
34.....	\$294.55 15-17 \$10015

E. W. Chambers' sale of shorthorns took place near Woodstock, County of Oxford, on Tuesday, the 13th June. The stock did not realize very high prices, as no Americans were present, and but very little of the stock left the County. The following are some of the prices paid:—Mr. John Craig, of East Zorra, paid \$210 for a three old cow, \$126 for a second, and \$115 for a third. Capt. Munro, W. Zorra, purchased a cow for \$207, and Mr. Ficht another at \$173; the latter also paid \$36 for a bull calf. One pair of Cotswold sheep sold for \$75, the others for descending prices.

Mr. G. Lees, of Guelph, is purchasing a lot of good horses to ship to England. We hope he may make it profitable as it will be of great advantage to Canada to export horses to England.

**Western Ontario Live Stock Dealers in Convention.**

A large and influential meeting of live stock dealers was held in Stratford on the 7th inst., and formed itself into an association, to be known as the "Association of Live Stock Dealers of Western Ontario." Mr. George Casey, of Seaforth, was elected President; Mr. T. O. Robson, of St. Mary's, Vice-President; and Mr. Wm. Wales, of Stratford, Secretary-Treasurer.

The following gentlemen were elected a Board of Directors for this year, viz.:—A. Rowlings, Forest; Chas. McRoberts, Lucan; J. Willis, Exeter; George Rice, Stratford; William Pridham, Mitchell; James Shaw, Seaforth; Neal Matheson, Clinton; Thomas Smith, Bright; Wm. McClain, Goderich; Robert Armstrong, Milbank; A. J. Couse, Wyoming.

The objects of this Association are to discuss the various questions affecting the live stock trade and adopt such rules and regulations as may seem from time to time to be for the benefit of the trade, and cultivate a more friendly feeling and uniformity of action among stock dealers generally; also to endeavor to stimulate farmers to still further improve their stock so as to make it fit for export to Europe, if that branch of the business should continue to improve, as the low price of stock in the American markets compels us to look for some other outlet for our surplus stock. As the sheep and lamb trade is the branch of the business more immediately engaging the attention of dealers at this season of the year, it was taken up and discussed in its various aspects and a number of improvements suggested. It was the general opinion of the Convention that, owing to the low price of wool, the general depression in trade, the low price of other meats, and the fact that sheep and lambs are now selling in the American markets for one-third less than this time last year, that they will not be worth near the price that they have been bringing for several years past, and that it would be wise on the part of dealers to be cautious this season, and not contract their stock ahead, but buy it when it is fit to ship, when they can have a better idea of what it is worth. After some further friendly conversation, the meeting separated to meet again in Stratford the first week in December next.

**Patrons of Husbandry.**

**New Granges.**

507, Elmwood—Walter Laidlaw, M. Elmwood; John Dirstein, S. Elmwood. 508, Duke of York—Samuel Graham, M. Wheatly; Wm. Rice, S. Wheatly. 509, Caverhill—John Caverhill, M. Upper Caverhill, N. B.; Geo. D. Steep, S. Upper Caverhill, N. B. 510, Bear Spring—Peter O'Sullivan, M. Seaforth; Michael McCann, S. Seaforth. 511, Morris Centre—Sumuel Love, M. Brussels; W. Michie, S. Box 29, Brussels. 512, Proton—Robert Kinell, M. Dromore; J. Campbell, Jr. S. Hoperville. 513, Chesley—A. J. McDonald, M. Chesley; Wm. Cannon, Chesley. 514, West Brome—C. C. Shufelt, M. Brome Corner, Quebec; James C. Pettes, S. West Brome, Quebec.

**DIVISION GRANGE.**

Wellington Division—John McGowan, M., Alma; Robert Cromar, S., Salem.

**Grangers' Anniversary Picnics.**

We regret very much we were unable to attend any of the Anniversary Picnics of our brethren, the Grangers. At the time they were held we were confined to bed, and attended by a physician. This is our apology for being absent—a sufficient one it will be allowed. While they were enjoying their holiday and speaking of the advantages and the progress of the Order, we were suffering at home. We give a brief account of the picnics held:

**Bradford, June 2.**

The second of June was the anniversary of the organization of the Dominion Grange. The Division Granges of York and South Simcoe united in celebrating it by a picnic at Bradford. The Agricultural Grounds, in which the picnic was held, were tastefully decorated with evergreens and flags, and stands were erected on the end, two for the bands and one for the speakers. A long shed was erected, extending the whole length of the grounds, in which was the table for refreshments. Three bands were in attendance, and discoursed excellent music.

After discussing the ample spread prepared by the ladies, the assembly, about 1,500 in number, gathered around the speaker's stand. Mr. Strangway, Master of Simcoe Grange, was voted to the chair.

The speakers on the occasion were Messrs. Strangway, John Duncan, Geo. Dinwoodie, Robt. Clarke, J. P. Bull, Wm. McDermott, Wm. Lukes, Thomas Smith, A. J. Hughes, Thomas W. Dyas and Dr. Widdifield.

**DURHAM DISTRICT.**

**Port Hope, June 3.**

Port Hops has all day presented an unusually lively appearance, owing to the large number of visitors who poured into it from stations for a considerable distance along the Grand Trunk, east and west, from the various towns and villages to the north along the Midland, and others along the Whitby and Port Perry Railway. About ten o'clock, on the arrival of the Grand Trunk express from the west, a large procession was formed at the station, headed by the band of the 46th Battalion, and marched to the picnic ground, which is on the west side of the town.

The Chairman made a few remarks upon the importance of the Grange movement, its objects, and the manner in which they should be worked out, and to the very rapid rate at which the Order had increased since its institution in the country three years ago.

Mr. Wilkinson spoke at some length on the benefits, material and intellectual, which the farmers are likely to obtain by carrying out the constitution of the Grange. Their association, pertains to agriculture and to educate them to public speaking, so that they would be able to make themselves heard in the legislative halls of the country.

**BRANT.**

**Brantford, June 22.**

To-day the Grangers in this section held their second annual picnic in the grounds, West Brantford. About five hundred were present. After partaking of lunch, Mr. Strickland took the chair, and, after music by the band, speeches were proceeded with. It is much regretted that a heavy rain commenced, which spoiled the proceedings of the afternoon, many having to leave the ground on account of the rain.

**GREY.**

**Flesherton, June 22.**

The Grangers' picnic at this place to-day was a most successful affair. There were representatives from twenty-two Granges, members and their friends. The gathering passed off harmoniously, and without any disorder. There seems to be a

probability of the Grangers and merchants getting to understand each other. Several merchants were among the speakers of to-day.

The assembling of the Grangers took place on the outskirts of the village, and here, by two o'clock, there were estimated to be gathered at least 1,400 people, Patrons of Husbandry and their friends and others, bent on making a holiday.

**NORTH MIDDLESEX.**

The North Middlesex Division Grange, the Patrons of Husbandry, celebrated their second anniversary by a picnic on the Fair Grounds at Ailsa Craig, on Friday, the 2nd ult. The following were represented:

Star, Adelaide; True Blue, Sable; Glasgow Grange; Farmers' Pride, East Williams; East Williams Grange, East Williams; Excelsior Grange, Adelaide; Sylvan Lodge, Sylvan; McGillivray, West McGillivray; Adelaide Grange, Adelaide; Ailsa Craig.

Mr. W. J. Anderson, Master, and Mr. Campbell, Secretary, both of the Division Grange, were also present.

Shortly after two o'clock, adjournment was made to the pavilion, where addresses were delivered by several gentlemen, members of the organization, as well as by a few that are not connected with it. Mr. W. Murdoch, of Adelaide, was called to the chair.

**ELGIN AND MIDDLESEX.**

**Port Stanley, June 2, 1876.**

The Grangers of the Elgin and Middlesex divisions held their annual picnic here to-day. In the morning the farmers in this vicinity arrived in the village with their wives, daughters and sons, in hundreds. The train on the London and Port Stanley Railroad brought over a thousand people from London, Westminster, Yarmouth, St. Thomas and other places along the line; and altogether there must have been about two thousand of the Grange fraternity and their friends congregated here.

Dinner having been partaken of, the elder and more enthusiastic promoters of the Patrons of Husbandry, announced the business of the day by electing a chairman in the person of Mr. James Armstrong, Warden of Middlesex. Addresses on the objects of the Grange and its benefits to the farming community, were delivered by Judge Hughes, of St. Thomas; Mayor Macdonald, of London; George W. Casey, M. P.; R. Tooley, M. P. P.

Shortly after six o'clock the crowd assembled at the station; "good-byes" were said, and the majority departed as they had come, by train, while the rest prepared to drive to their homes.

Thos. Richardson Implement Manufacturer, of Fergus, complains that he gave Mr. Levi Cossitt, of Guelph, too much credit regarding the gang plow spoken of in last issue. He says the plow is quite as good as we represent it, but that it is not a Yankee invention, but that he is the patentee, and holds the patent for both Canada and the States.

**Commercial.**

**ENGLISH MARKETS.**

June 24.—Floating Cargoes.—Wheat, quiet; corn, steady, little business doing—little demand.

**LIVERPOOL MARKET.**

Flour, 24s to 24s 6d; wheat, 9s 6d to 10s; corn, 26s; barley 3s 6d; oats, 3s 6d; peas, 36s; bacon, 5s; cheese, 5s.

**TORONTO MARKET.**

June 26.—Though English quotations remain unchanged, this market was more active and prices firmer. Flour, extra, \$4.35; fancy \$4.60; wheat, unsettled in value, sold for \$1.06 to \$1.13; oats dull and inactive, 31c; barley, 55c; wool firm at 27 to 28c; butter, 20c to 22c for pound rolls, 17c to 18c for large rolls.

**MONTREAL MARKET.**

Dull and drooping; flour, \$4.30 to \$5.35; grain unchanged.

**NEW YORK MARKET.**

Flour dull, prices in buyers' favor; wheat quiet, without change, \$1.02 to \$1.20; corn firm and moderately active, at 54c to 60c; butter, 15c to 27c; cheese, 4c to 10c.

**CHICAGO MARKET.**

Hogs, market quiet, \$5.70 to \$5.90.

**LONDON MARKET.**

The feeling in wheat, though weaker, continues without change in price. Wheat, \$1.60 to \$1.80; barley, 90c to \$1; peas, \$1.10 to \$1.13; oats, 53c to 55c; corn, \$1.10 to \$1.15; beans, 90c to \$1.20; rye, 40c; buckwheat, 80c to \$1; butter, keg, 34c to 15c; roll, 13c to 20c; cheese, 10c; fleece wool, 30c to 31c; hay, \$8 to \$10; potatoes, bag, 80c to 40c; dressed hogs, \$7.75 to \$8.25.