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CONTENTS OF APRIL NUMBER.

EDITORIAL :	Page
Agricultural Politics	49
Rotation of Crops	50
Prize Essays on the Cultivation of the Carrot	50
Sulkey Horse Rakes	51
AGRICULTURAL :	
English Farming and American	51
Two and Four-rowed Barley	51
The Dairy Farm	51
Pastures	51
Deep Ploughing	51
Winter in the West	51
Meadows	52
Willow for Live Fence Posts	52
Clover	52
Corn in Hills and Drills	52
Deep Ploughing vs. Shallow Ploughing	53
Potato Disease	53
The Wheat Crop of 1873 in England	53
Unskilled Farming	53
Essential Qualifications of a Good Farmer	53
What Grovelly Thought of Plaster	54
When to Apply Fertilizers	54
Rural and Domestic, &c.	54
STOCK AND DAIRY :	
Importance of Feeding Regularly	54
Short Horns in the West	54
Ayrshire Cattle in Cold Climates	54
Diarrhoea in Calves	54
Ayrshires as Milkers	55
Best Keep for Dairy Cows	55
Turnip Flavor in Milk and Butter	55
Breaking Heifers to Milking	55
High Feeding only will Pay	55
Alderney Cattle	55
Long Wool Sheep	56
The Marengo Apple (illustrated), &c.	56
Ucle Tom's Column	57
The Kelmarnock Weeping Willow (illustrated), &c.	57
HORTICULTURAL :	
Horticultural Items	58
The Sambucus Ebulus and its Uses	58
GARDEN, ORCHARD AND FOREST :	
Injudicious Treatment of Trees	58
Propagating Roses with Cuttings	58
Manuring Orchards	58
Insects on Plants	58
THE HORSE :	
Corn Injurious to Horses	58
Barren Mares	59
Changing a Horse's Gait	59
GOOD HEALTH :	
Hoarseness—Simple Cure for Loss of Voice	59
Prescription for a Dyspeptic	59
Unbolted Flour Bread	59
Why not more Simple Food	59
CORRESPONDENCE :	
Whole or Cut Turnips	59
Prize Essay on Beans	59
Table of Vegetable Seeds	60
Opinions of the American Agricultural Press on Agr'l Colleges	60
Minnie May's Department	61
Markets, R. R. Time Tables, &c.	61
Advertisements	62, 63, 6

To the Honorable Members of the Council, and Gentlemen of the Legislature of Ontario :-

GENTLEMEN,--

On behalf of a very large number of the farmers of Canada, we deem it our duty to express our opinion regarding some important questions that will be brought before you affecting the prosperity and progress of the agricultural interests.

The establishment of an Agricultural, Educational, Experimental and Test Farm was not originated, devised, or suggested by any member of the Government, until the plan had been put into operation by private enterprise. No farmer or farmers have ever memorialized the Government or requested the Government to establish such an institution, previous to their being asked to do so by the Government through its supporters to give it an apparent justification for establishing such an institution.

We, on behalf of the farmers of Canada, most humbly request that you will not make any expenditure for the establishment of a Government Farm. We do not consider that such an institution, carried on by the Government, would be for our interest; we believe that such an institution, established by the Government, would be of greater injury than benefit to farmers. It must assuredly check, to a very great extent, the enterprise of private individuals; it most assuredly would be made entirely subservient to a few individuals, to the detriment of the majority of farmers.

The Government had previously established their Model Farm at Toronto, but it proved only an expensive failure, conferring benefit only on a very few who had the control, and of no use to the country. The Government previously attempted to establish an agricultural paper, the *Ontario Farmer*, by giving an order of \$1000 to commence with and subsequent aid, but the paper was not of any benefit to the farmers; they would not support it.

It must be the same with this contemplated institution; it cannot exist unless the farmers are heavily taxed every year for its support and the feeding and fattening of its few controllers. A grant is now given for Agricultural Education in the Province of Quebec, and it is with the utmost difficulty that the ten pupils can be obtained, required to enable the controllers to receive the grant that is appropriated to it, that being the least number that enables them to receive it, and no good appears to have resulted from the expenditure.

From reports received at this office we are led to the conclusion that the Government agricultural establishments in the

States are not considered beneficial by the farmers of the country, notwithstanding the many attempts to make them appear so by those interested in their maintenance.

A semblance to the justification for such an expenditure may perhaps be attempted by showing that the Board of Agriculture commends it. We would inform your honorable body that the suggestion originated not with the farmers who compose the Board, but with political members, the Hon. A. McKellar and the Hon. D. Christie. What farmer could be found to stand against such a powerful request? The very same persons who have supported the resolution, have, on more than one occasion, informed the writer that they did not believe the institution proposed by the Government would be of any benefit to the farmers, and that it would be more injurious than beneficial.

We would be extremely sorry to injure the Board of Agriculture and Arts, as it is composed of many gentlemen who wish for the prosperity of the agricultural interests of the country, but who could dare oppose a suggestion from the Minister of Agriculture and the Hon. D. Christie.

PROPOSED CHARTER FOR THE DAIRYMEN'S ASSOCIATION.

Another measure will probably be brought before your notice—the granting of a charter to the Dairymen's Association and a grant of money for its aid.

Having attended the Dairymen's Association for several years, we have always looked upon it as one of the most useful institutions in our country. It has progressed, and is now a successful institution. The request for a charter was brought forward by some of the leaders of this Association, but the question was not openly discussed. We have heard remarks from some, much interested in dairy matters, who have been in the habit of attending the meetings, questioning the advisability of such a course and condemning it. It is our opinion that granting a charter to the Association, and the granting of money towards it would not be of advantage to the general dairy interests of the country; the advantage would be to the favored few, to the injury and loss of others.

The Association and the interests of the dairy have succeeded, and without Government interference. Dissatisfaction with favoritism is creeping into it, and the fostering of the institution by Government will at once injure it, and less satisfaction and less good, we fear, will be the result if it should be made a Government institution.

We wish the Dairymen's Association success, but we believe your granting a

charter or money to it would tend rather to its injury than to its benefit.

There may be alterations required in the Agricultural Bill. The Board of Agriculture and Arts should be composed of gentlemen elected by the farmers of each electoral district, and they should be the persons to control the agricultural affairs of the country, and there should be enough of them for the purpose. It is already found that the Board is becoming too large; the Fruit Growers' Association, the Entomological Society and the Mechanics' Institutes now have their representatives there. No doubt they are good men, but for the benefit of farmers it would be better to have the Association untrammelled by any others than those elected by the farmers.

The members now having seats at the Board, who are not elected by the farmers, are, undoubtedly, worthy gentlemen. We do not wish to injure them, but the Board is now too large; this is admitted by many of its members.

It is proposed to allow the Dairymen's Association a voice at the Board. If this is granted, the stock men, the grain growers, the veterinary department, the seedsmen, the lumbermen and a host of others would be applying. We are quite satisfied that the interests of the country would be better served if the members of the Board were all elected by the farmers of the country.

Instead of adding to the Association, which is becoming too unwieldy now, it would be better to take off the names of those who are there without having been elected by the farmers.

It may be said that the opinions we have expressed are only those of an individual, and, consequently, of little importance. In reply, we state that as editor and publisher of an agricultural paper, having a much larger circulation than any other agricultural paper in the country, our opposition to measures relating to agriculture should have some weight. We are confident that our opinions on these subjects are the opinions of our subscribers. We have spoken to hundreds of farmers on these subjects and have received letters from all parts of the country, and they all agree with us. We therefore protest against such uses of the public money, under the guise of beneficial and necessary agricultural expenses.

We issued the foregoing article as a supplement during the last month, and sent one to every member of the Ontario Legislature previous to their adoption of the Guelph farm project. There was also a petition sent and laid before the Legislature, signed by real, practical and intelligent farmers, praying that the Govern-

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AN ESSAY ON THE CULTIVATION OF CARROTS.

The soil for carrots should be a deep, rich loam, free from weeds, if you have it; if not select a piece of land with a dry subsoil; if very weedy, summer fallow the year previous and pulverize the soil as deeply as possible. If the land is tolerably clear, or if it is impracticable to summer fallow it, as soon as you have removed the previous crop give it a heavy coating of manure as thoroughly decomposed as you can get it, and plough it under; after it has remained long enough for the weed seeds that are near the surface to sprout, give it a harrowing, and give it a cultivating or harrowing once or twice more during the autumn, to get as many seeds started as possible. If the land is at all heavy or wet, it will be beneficial to plough it in deep ridges just before the ground freezes up, and leave it in that state all winter. If the soil is a light dry loam the ridging in the fall may be dispensed with; in the spring, as soon as the land is dry enough to work nicely, level it with the cultivator or harrow, plough deeply, harrow it well, plough it in ridges about 24 to 30 inches apart, and it is ready for sowing. The objects to be aimed at in preparing the soil is to get it pulverized as deeply and thoroughly as possible, and get the manure well incorporated with the soil.

The seed should be sown immediately after the land is ridged, and as early in the spring as it is possible to get the land in good condition. As carrot seed takes a long time to germinate, and the seeds are very apt to get the start of the young plants, it will be advantageous to tie the seed in a bag, and soak it in warm water for some time; it may be soaked two days without injury. Then spread it in a warm place to dry for a few hours. It will expedite the sowing to mix the seed with a large proportion of clean, dry sand. It is always best to sow a liberal amount of seed, as the plants can be easily thinned out, and sometimes the seed will not all grow. If the seed is good, three lbs. to the acre is sufficient, but perhaps it would be as well to sow four to be sure. When the carrots are high enough to be seen easily, thin them out from four to six inches apart. Some people advocate thinning them from nine to ten inches; while others leave them very close together, but my experience teaches me that we can raise a larger tonnage per acre at a medium distance than by leaving them very thick or having them very thin. Of course we must be governed by the nature of the soil; if the land is strong and the carrots will grow large, they should be thinned farther apart than if the land is poor. The best kind to sow I think is the long orange carrot, although there are some white varieties of which you can raise a much larger crop, but the orange will more than make up in quality what it lacks in quantity.

In cultivating carrots the land should be kept perfectly clean from weeds, though not stirred to any great depth. For if the land has been properly prepared before the seed is sown, it will not require any further cultivating to pulverize the soil, and the small fibrous roots of the carrots will completely fill the ground between the rows and deep cultivation will destroy these roots and retard the growth of the carrots. The carrots should be harvested before there are very heavy frosts in the fall. If the land is light and white carrots are sown, which will grow a good deal above ground, and consequently, pull easily, a good plan to harvest them is to pull the carrots and lay them down on the side of the ridge in a row, with the necks just on top of the ridge; lay them down so that you will have two rows of carrots together and two rows of tops; then take an old piece of a hoe blade or some thin steel plate, take a stick about as long as a walking cane and saw a curve into one end, into which wedge the hoe blade or plate of steel. Grind it sharp, then take it into your hand, walk along and top your carrots; with an instrument like this a person can top as many carrots as three persons with knives.

But if you have the orange carrots, which grow almost entirely below the ground, the best plan is to plough a furrow from the row of carrots as close to the carrots as you can plow, pull them, throw them in heaps and top with a knife.

To store carrots you want a cool, dry, well ventilated cellar. If stored in large quantities in a damp, close cellar, they are apt to heat and grow; but if the cellar is well ventilated and is only just warm enough to keep them from freezing, there is no trouble in keeping them.

These suggestions are respectfully offered.

Castlebar, March, 1873.

YOUNG FARMER.

TO KILL RUST IN SEED WHEAT.

French farmers generally employ Glauber's salt along with quick lime to kill rust, &c., in seed wheat. About three ounces of the salt is dissolved in one quart of water, the grain after being steeped is rolled in lime—2 lbs. of the latter per each bushel of grain. Common salt often takes the place of Glauber's, and is invariably added to the seed-steep, when composed of blue vitriol.

Sulkey Horse Rakes.

These useful labor-saving implements are rapidly gaining favor. Many farmers who looked on these implements as superfluous three years ago will purchase them this year. We have introduced but very few into this section as yet, but we predict that in this county alone ten times as many more will be sold the present season than have ever been sold in one year previous. There are many kinds of Sulkey Horse Rakes; some are more difficult to work than others, and some do not work as efficiently as others, but every salesman sells the best, no matter of what pattern, make or material the rake may be.

We cannot positively inform you which is the best rake or who is the best maker, but at the last Exhibition we were more impressed with Mr. Howell's rake, which appeared to us to be deserving of commendation in its adapting itself to uneven ground, and the advantages of being arranged so as to attach a grass seed sower and plaster sower to the frame.

Mr. Howell makes no other implement. He believes in specialities; that one man can generally succeed better when his mind is confined to one purpose. To show the rapid increase in demand there is for his rakes, he has this season sold 50 of them to go to New Brunswick, and 50 more are sold to go to Manitoba.

We intend to keep this rake in stock this season. One may be seen at the Agricultural Emporium, together with the Grass-seed Sower, and Plaster Sower, at any time; if any one has a better one we should be pleased to find it out.

Agricultural.

ENGLISH FARMING AND AMERICAN.

Mr. Wall, in an address to the farmers of New Jersey, alluded to the fact that in England, in less than a century, the production of wheat had risen from 16,000,000 to 100,000,000 bushels. This enormous increase he attributes to systematic attention to all the requirements of good farming; to the skill and exactness with which all the operations are performed; to their careful selection of the best varieties of seed, and to the extensive and good use of their barnyard manure. Nothing is left to casualty or chance. No expectations are indulged in that an unusually favorable season will atone for short comings or neglect. He alluded to the business like liberality of the English farmers in restoring to the earth, by means of purchased manures, the elements of fertility exhausted by cultivation, and stated that in 1837, the first year in which bones came into general use as a fertilizer, the foreign bones imported were valued at the custom house at \$1,500,000, since which time it is estimated that the amount paid for imported bones alone amounted to \$150,000,000. Since 1841 upward of 500,000 tons of guano have been used.

Mr. Wall believes that the English farmer's rotation of root and grain crops comes nearly to perfection, and that the care which had been bestowed on root cultivation had been the salvation of England.

It is certainly true that the culture of root crops has been the salvation of English agriculture. The cultivation of these crops may as truly be the means of improving the soil in our Eastern States. We had once hoped that the manufacture of beet sugar would enable Western farmers to avail themselves of this root as a fallow crop, but we fear that this will prove not to be the case, just yet; perhaps time may give us cheaper labor by which it may be done. Fortunately, we have Indian corn, which enables our farmers to clean their land in an admirable manner, if properly attended to. Still, it can never take the place of tap rooted plants. The turnip crop will probably never be available in the West, even if we could afford to make it take the place of corn as a feeding crop, for the reason that our hot summers are not suited to the plant.

If beet sugar, however, could be made to pay the cost of cultivation and manufacture, the enhanced production of the wheat and barley with which it would be rotated, would ensure profits. We shall still look with interest to the future of beet sugar in the West. The great difficulty with our farmers is that they have neglected the breeding and

feeding of stock to eat up the coarse grains in which our prairie soils are so fertile. Thus we might establish a rotation in which clover would play an important part, and with its deep searching tap roots bring up the hidden fertility of the soil for the use of wheat and barley.

We reiterate that it is in diversified agriculture that our farmers must find the true solution of many of their troubles. It takes time, however, to work out agricultural problems, and as soon as we know just what classes of plants are suited to our climate and condition, we shall have solved one of the most important questions of the day.

TWO AND FOUR-ROWED BARLEY.

A glance at the market quotations will show that a difference of from ten to fifteen cents per bushel in price exists between the two and the four-rowed varieties of barley. Farmers generally prefer to raise the two-rowed, as it yields best and ripens at a more favorable time. For some years past the four-rowed invariably sells the quickest and for higher prices. The important thing for barley growers to know is, whether these conditions are likely to continue, and which variety will probably be most profitable to grow. Malsters prefer four-rowed barley because it is better adapted to make light ales, and especially lager beer, than the two-rowed. It gives a brighter and clearer color to the liquor than does the two-rowed barley, and this quality is highly essential, in making lager especially.

For making heavy or dark-colored ales the two-rowed is better. In this country light ales and lager are far more popular and are consumed more extensively than heavy and dark ales—hence there is greater demand for the variety of barley which will best produce them.

In England the reverse is true, heavy and dark beer being most in demand, therefore the two-rowed barley sells much the best there. In view of these facts it is not probable that two-rowed barley will usually bring as high a price or sell as readily as the four-rowed, and it is wise for the grower to heed the demands of the market. It is more profitable always to raise the higher-priced grain, provided the aggregate sum it brings per acre does not fall below the lower priced, as it costs less to handle the lesser number of bushels than the greater.

THE DAIRY FARM.

The dairy farm is the home of the cow. Our study should be to make that home suited in its arrangements to the peculiar habits, inclinations and fancy. For any pains we may take for her health and comfort we will be amply repaid by an increased flow of milk. The cow is emphatically a domestic animal, naturally quiet, loving ease and rest when satisfied with food and drink. It is essential that this peculiarity of her nature be consulted in the arrangement of our pastures and watering-places.

PASTURES.

Cows should not only have a variety, but such a combination of grasses as will afford them some one or more kinds in maturity or approaching maturity continuously during as long a season as possible. This may be done by learning the nature of different grasses and sowing those which will mature in different parts of the season as we may wish.

If pastures be so arranged that they can be provided with shade, cows will show their appreciation of them by an appropriation of their cooling effects during a few hours of the sultry midsummer days.

DEEP PLOUGHING.

Some months since we wrote pretty fully on the subject of deep ploughing, the advantages of which we had proved for many years. We have reason to know that some of our readers resolved to profit by our remarks, being convinced that deeper ploughing and more thorough cultivation were absolutely necessary unless in exceptional cases, to the production of crops that would be remunerative. We hope deeper ploughing and more thorough culture will yet be as universal in Canada, as it is with the good farmers of the Old Country.

From the Iowa *Homestead* we give the views of an American farmer who has tried and proved its advantages.—Ass't. Ed.

WINTER IN THE WEST.

Never but once in the history of the West has such fearful cold been experienced as that which culminated at Chicago on the 23rd of December, carrying the mercury to 23°. Throughout the West and Northwest the cold was generally intense, and the wave passing eastward, spirit thermometers in some portions of New Hampshire are said to have indicated 50° below zero.

At Janesville, Wis., 37° below was indicated; at Clinton, Iowa, 26°; in the Michigan lake shore region the weather was unprecedented; at St. Joseph, directly in the fruit belt, 20° below zero was indicated, and at South Bend, Ind., 25°; at Springfield, Ill., 13°; at St. Louis, Mo., 14°; at Cairo, Ill., the latitude of Kentucky and Tennessee, 7° below. At Toledo, O., 15°; at Detroit, 14°; at Fort Garry, Manitoba, 42°; at St. Paul, Minn., 30°, and at Madison, Wis., 25° below.

An idea of the extent of this wave will be imparted by the figures above given from a mass of data in our office. The most serious apprehensions are felt for the fruit buds, and even for many varieties of fruit trees. There is one thing, however, that will go a great way in warding off fears in this direction. The preceding dry season, extending through the fall, and until winter set in, carried the trees and buds into winter quarters in the best possible condition; and except to the buds of the peach and other tender plants, we do not anticipate serious evil so far. Already we do not anticipate the wide spread disaster that followed the winter of 1857, when vast amounts of apple trees even were killed to the roots.

We may expect continued cold weather this winter, since the whole country and the mountains to the west are covered with snow. We may also expect continued snow this winter, and probably much rain next season, since we have now had nearly three years of extreme drouth.—Chicago Rural.

HORSES MORE PROFITABLE THAN HOGS OR CATTLE.

EDITOR WESTERN RURAL:—The greater number of farmers say, by their actions, that it pays better to sell grain to the shippers, while some say give it to the hogs, others feed it to cattle, and a few prefer feeding it to horses. Either of the three last mentioned are no doubt more profitable than the first.

Will not the raising of horses, if properly conducted, enable the farmer to realize the highest possible price? I say if properly conducted, for if the farmer, as well as every one else, does not conduct his affairs in an economical, systematic and advantageous manner, it makes but little difference what kind of stock he may raise, or whether any at all. There is one class of hogs and cattle, as well as horses, that never brings any profit, that will never pay for the grain they eat, while another class will bring a reasonable return for the labor and feed.

It is a good hog that weighs four hundred pounds; and four dollars per hundred, or sixteen dollars, is a good price at sixteen or eighteen months old, if fat. Again, fourteen hundred pounds is good weight for cattle, steers and heifers, four years old; and six dollars per one hundred pounds, or eighty-four dollars is a fair price for cattle. I claim that it does not cost any more to raise horses that will weigh fourteen hundred pounds and sell for two hundred dollars a-piece by the car-load, than it does to raise five hogs worth eighty dollars, or cattle worth eighty-four dollars. If this be true, we have a profit on the horse, over hogs, of one hundred and twenty dollars; and over cattle of one hundred and sixteen dollars.

Perhaps two hundred dollars may be considered too high for horses; but it is not more so than the calculation we have made on hogs and cattle. I am aware that we have a great many small, worthless horses, that will not pay for keeping twelve months. But this need not necessarily be so, and would not if proper attention was paid to breeding good and large horses such as are in the greatest demand. The breeding of fast horses has ruined our stock to such an extent that it will take years of the most strenuous efforts on the part of those engaged in this branch of business to overcome the evil.

I. D.

MEADOWS.

In regard to the arrangement of meadows but little need be said. Both pastures and meadows should be large enough, or rather the amount of stock should be small enough to give ample feed at all seasons. One rule we should aim to follow—give stock enough of what they like best. I think we have always overlooked the importance of a variety of feed—at least we are very much behind our English neighbors who have for very many years been noted for their fine pastures and meadows. I find in looking up the subject a little, that in England some 30 or 35 different kinds of grasses are in general use, many of them impart a desirable fragrance to their hay, causing it to be eaten by their cows with a peculiar relish. In this country not more than six or eight are common, and cows are often kept through an entire winter on one kind of hay alone, which should be avoided.

Roots have been too much neglected, perhaps, mainly on account of the amount of labor required in raising them. Most of them are most relished by stock in consequence of their freshness and furnishing a variety, and some of them rank high in nutritive virtues. The total nutritive percentage in 100 pounds, as given by good authority, is, of potatoes, 20; sugar beet, 14; mangold wurtzel, 13; while carrots are only 7, and common white turnips are only 4. Another reason for sowing a variety of grasses is, that individual plants of the same species will not thrive in close proximity to each other, but intermediate plants will soon decay, as all are drawing heavily upon the same elements of the soil. But if different kinds of grasses are sown, the roots will interlock and thrive close to each other, and thus we get a good turf, in which no weeds grow, and we have a clean crop of hay. The prevention of the growth of weeds is quite important, as many of them are eaten by the cows and a bad flavor given to butter and cheese.

WILLOW FOR LIVE FENCE POSTS.

In the year 1863, I bought and set nine thousand white willow cuttings. Many of them were very small, and as the summer was very dry, I lost about half of them. The next spring I cut back and filled up the vacant places, and that summer was very dry and I lost many more. The next spring I filled the gaps without cutting back, but they did not do well, and are yet very small, and I am now filling up with cuttings every spring, as I have time, from two to four inches in diameter and four or more feet long, and they are doing well, considering the dry summers we have had. When I use cuttings for live posts I take those that are four inches or more through, and from six to ten feet long, and set them one and a half feet deep; ram the first six inches hard, then cut a large circle the depth of the spade around the post, leaving the soil well pulverized for the roots, and mulch well. The first cuttings that I put out are now about thirty feet high, and from four to eight inches through, and will make about five thousand posts, and a large amount of fine wood and have my fence left. When I have cut for posts or wood I have had them make fifteen feet growth from the stump the first year, and the second growth is very straight. I bore holes through the posts and put on wires (No. 7 is the best), use five or more wires and strain with common posts. If the posts are four or more inches when set they will be firm enough for a fence in three years. Weave in strips of boards or sticks of wood taken from the wood pile, and you will have a fence which will be much cheaper and better than boards. I am aware that many will say that willow will not make a good fence, but they might as well tell me that I cannot raise a good crop of corn. Another objection to the willow hedge is that it shades too much ground. I get as good grass in the shade of my willows, and have for nine years, as I do anywhere else, and have fifteen feet to turn my farming implements on. From my wood land I get fire wood and nothing more, but with my hedge I get fence posts, good firewood, a good wind break and good shelter for my back. I now have thirty thousand trees from the years' growth down to three years, and all the cuttings I have used, taken from my hedges have done well. If live posts are used for pasture fences they should be ten feet long and the colts cannot reach the top.—*Prairie Farmer.*

CLOVER.

There are several of the many varieties of clover of great value to agriculturists. Red clover (*T. pratense*) is a biennial plant, having perennial qualities under special modes of cultivation; and is particularly adapted to the argillaceous soils. Small clover, or the rowen crop, is excellent for young stock; but animals should not be permitted to feed on clover lands in early spring, or late in autumn; in the latter case the crop is likely to be winter-killed for want of a mulch like protection, and in the former is not able to regain full vigor during the afterpart of the season, and this is especially true if sheep are the pasturing stock. Land may be seeded down to clover with any of the cereal crops, such as wheat, barley, rye, oats, and in special cases with buckwheat. It is very desirable that the seed should be sown sufficiently early to receive the full benefit of the spring rains. The dung of cattle fed on clover hay is often sufficient to seed land, if distributed evenly throughout the soil, the seed generally passing through the animal organism without having its germinating qualities impaired. The proportion of seed to be sown with timothy or other grass seeds must necessarily vary with the results desired. In order to secure even distribution, it should be sown in calm weather. Standing on one ridge while sowing on another, as is sometimes done, on a windy day, is unfavorable to the best performance of the work, even by the most skilful sower. If the soil be plowed in seven-pace lands or ridges, casting the seed with both hands after the Scotch system, will enable the operator to do his work better and go over twice as much ground in a given space of time. In dry weather, and on very clayey soil, it is well to bush-harrow, to insure full covering, and occasional rolling is very desirable. Every farmer should have plenty of clover of sowing in early spring for his working animals. After each cutting during the season, top-dress heavily with manures. Land becomes "clover sick" only in the absence of a proper succession of crops, and the elements of fertility necessary for the support of the plant. Many farmers have great faith in the power of clover, when ploughed in, to restore fertility to exhausted soils. It does so only by taking carbon from the atmosphere, and causing elements in the soil to assume organic forms, thus rendering them more available as food for other crops, and is therefore, very necessary in a rational system of husbandry; but if a soil be robbed of its fertility by excessive cropping, its equilibrium must be restored by adding deficient elements. Land is often too poor for the seed "to take." In this case it should be summer-fallowed, manured, sowed to winter grain, and to clover in the spring. Prof. Way found in 100 parts of the ash of clover, grown on a silicious sand, phosphoric acid 5.82, lime 35.02, potash 18.44, soda 2.79, sulphuric acid 3.91. As indicated by analytical research, plaster of Paris, which is sulphate of lime, the phosphates, wood ashes, and muck treated with the salt and lime mixture, are excellent top-dressings for clover. The use of plaster, sometimes called gypsum, is often of great value for top-dressing, even in the immediate vicinity of plaster beds. We have seen instances of this fact along the Grand River in Upper Canada, where the gypsum taken from the beds was ground and applied to the soil above them with the greatest advantage. The practice of ploughing in a clover crop preparatory to the growing of wheat is of much importance. There is a great similarity between the composition of the ashes of wheat and clover, especially if the latter be grown on soil replete with the necessary constituents. Analytical research has shown that the composition of clover or any other plant varies with the chemical condition of a soil; this truth has been often enough demonstrated. Clover crops should therefore be grown on soil containing sufficient pabulum, and in an available condition for their support. The growing of clover is equal to deep ploughing, because its long roots travel deeply in search of food for the stems and leaves, which, if ploughed into the land will undergo decomposition, and leave near the surface elements taken from the soil. Its leaves take carbonic acid from the atmosphere, and the ploughing in of the crop augments the carbon of a soil very materially, which changes its color, and gives it greater capacity to absorb solar heat and to retain manures and ammonia, whether resulting from their decomposition, or absorbed for the atmosphere. It is very doubtful whether in all cases clover is the most economical mode of furnishing carbon. If time be worth

much, it is not, because an immediate application in most cases may be made of muck treated with the salt and lime mixture, black mould from the woods, peat, river deposits, etc. Clover fields are sometimes infested by vegetable parasites of well developed structure, producing seed. The small broom (*orobanche minor*) is one of these. Its flowers are of a pale brownish color. Microscopic examinations show that when it infests clover there is an organic connection between the plants. This parasite is interesting to the agriculturist, not for its utility, but for its mischief. The dodder (*cuscu*) is another of these depredators, belonging to the family of the *convolvulaceae*, having small flowers resembling those of the convolvulus. It bears perfect seed which is shed upon the soil, and there germinates, pervading the ground by a wire-like process, doomed to a lingering death unless it finds a clover plant. In the commencement of its growth it gets its nourishment from the soil, but afterwards from the juices of the plant which it infests. The dodder will find the object of its destruction if within reach, and its papillae or peg-like processes, although delicate in structure, will sink into the stalk and feed upon the juices of the clover plant. The crimson clover (*T. incarnatum*) is now grown for soiling and hay, and is a beautiful Italian plant, sometimes cultivated as a border flower. Much attention is given at present to its cultivation in Scotland. Fulton's experiments in growing crimson clover attracted special attention from the members of the Highland Agricultural Society. A large crop was grown from seed sown by Mr. Fulton on land from which a crop of early potatoes had just been taken. Three months after it was sown, on Oct. 17, the yield was 2½ tons per imperial acre. He arrived at the following conclusions:—It is highly valuable as a secondary crop after early potatoes; it is an excellent crop to precede turnips; it will withstand severe weather if well established before frost; it produces an excellent crop of forage, much relished by all the live stock of the farm. If the land is not very clean, it will not answer so well as vetches, but it is of easy cultivation. Coming early to the scythe as a summer crop, 10 or 12 weeks after sowing, it may be produced very early in the season if wanted for stock. White clover (*T. repens*) is an excellent plant on all pasture lands, of great value in sheep husbandry, adapted to almost every kind of soil—loamy, rocky, sandy, or clayey—and its network of roots is all through the soil.—*American Cyclopaedia.*

POTATOES MIXING IN THE HILL.

It must not be supposed that because some vegetables originate from what is technically called a "sport," that this method of creation is not as natural and permanent as that of reproduction by seed. We are so accustomed to this latter mode of origination in new varieties that we are liable to imagine its nature's only mode; but the history of many things shows that good permanent varieties originate in this way sometimes. We have heard, for instance, of potatoes mixing in the hill. Some one plants a piece of white potatoes. He knows they were all white, yet on digging he finds a tuber, or set of tubers, all red. Therefore he fancies that bees have brought the pollen of the red variety from some distance to the white flower, and that in this way the pollen of the red became infused with the white, and that this infusion of pollen affected the sap so as to infuse the whole plant, even down to the tubers, and this is what is called "mixing in the hill."

It is clear from one circumstance that mixing cannot occur in that way, for if our observations are correct, as we believe they are, bees do not exhibit much partiality for the potato blossom. The chance, therefore, that pollen is carried backward and forward, and thus mixed by them, is small. But there is no occasion for inventing any such roundabout explanation. The sweet potato "mixes" in just the same way as the other potato. That is to say, the plant will occasionally produce a red tuber from a white stock, or a white one from a red stock, and yet the sweet potato in this part of the world produces no flower at all. It is believed that all the varieties of the sweet potato under culture were raised in this way, that is, that a tuber was found varying from the rest, and this one saved or "selected," originated a new variety or race.

The fact is there is an innate power in plants to change sometimes, without the invention of seed or the seed organs, and there would therefore seem to be no reason why varieties may not sometimes originate in this

way, and be permanent as if raised by what seems to us to be the more natural mode of seed.

In regard to the sweet potato, which never seem to flower with us, it takes this privilege in the South and thus produces seed. No attempt seems to have been made to raise these seeds until recently, when someone near New Orleans has taken the matter in hand, and report has it that he has raised many new and improved sorts, which are superior in some respects to the old ones. Now that attempts are found to succeed in this line of business, there will probably be no end to the new varieties of sweet potatoes.—*German Town Telegraph.*

CORN IN HILLS AND DRILLS.

At the Michigan Agricultural College, in 1868, two plots of land were set apart, substantially equal in character of soil, each measuring forty-eight rods in width. The ground was ploughed May 5th, and manure was spread evenly and worked in by cultivator and harrow. Yellow Dent corn was planted May 21st, in rows four feet apart; one of the plots being planted in hills and the other in drills. The plots were cultivated and hoed June 15th, and again July 7th; the plants being thinned so as to leave the same number of stalks on each plot, including the equal distribution of the plants throughout the subdivision of the plots. As near as possible each of the two plots received the same amount of cultivation. The stalks were cut at the bottom September 17th, and stacked in good order; three weeks afterward the corn was husked and weighed. The stalks then again carefully stacked, and were hauled and weighed in good condition, October 12th. The corn on the portion planted in hills was better in quality than on that planted in drills. But the drilled portion produced 74 1-6 bushels of shelled corn, and three tons of stalks to the acre, against 65½ bushels of shelled corn, and 2½ tons of stalks per acre produced by the portion in hills.—*Rural World.*

CROPS.

I shall not weary your patience by any details upon the subject of crops, only say that soil, location, and market value of grain and similar questions must decide particular crops to be raised. One thought might be mentioned. Aim to raise such crops as have a value both as cattle feed and in the market, with ready sale; we thus have the choice of two channels for disposing of our grain.

The influence of particular kinds of grasses, grain, and roots upon the question of quantity and quality of milk, and upon the flavor of butter and cheese, are subjects upon which constant experiments are being made, and by a little study and research we may avail ourselves of the results of those experiments.

There is one thought which seems to commend itself with peculiar force to the dairyman: What is worth having is worth taking care of, and what is worth doing at all is worth doing well.—*Prairie Farmer.*

POTATOES FOR SEED.

The following are the ideas of an old farmer in Maine on seed potatoes, as given in the *Lewiston Journal*:—We use too ripe seed when we propagate from tubers that have lain in the ground till dead ripe. Plants that are propagated by tubers require different treatment from those propagated by seeds. Our corns and grains that we use for seed we like to have stand a little longer than the main crop, and become perfectly matured. On the same principle our corn is selected from the ripest, best developed ears and kernals. But potatoes for seed should be dug and placed in a cool dark cellar, just as soon as a majority of them will slightly crack open in boiling. This is almost invariably while the tops are yet green and growing fast. The tubers are then in their most vigorous state. Disconnect them from the parent stock at that time and they retain their vigor. Instead of deteriorating, as most of us know the older sorts have, their vitality is increased, and they yield better, with less tendency to rot. As long ago as 1845, and subsequently, observations led him to make some experiments to test the theory, and he finds it the proper course to pursue. Is it not often said that the late planted potatoes are better for seed than those planted early? The lateness of their planting, presumably, prevents perfect ripening, hence the principle of the above reasoning would be in force.

DEEP PLOW.

EDITOR HOMER:—I have been reading your early part of the issue, and find a certain field in the field being sown was a wet was wet by the in the present course brought in regard to the one said that the corn was on the remarked that if you would keep, "and I be it was three-fold foggy, say t men of large a ted this theory it up by their satisfaction, an to convince oth lage for corn a Is it old foggy to be true?

In the spring corn with two putting the pl hard work en to draw it, tur daylight before was at the sam ing as most r not to hurt the fields (his and same time. A was up, the re farther westw interest in the two fields wer was alike in be son a marked d growth of the that the season the West, esp the fall when men who help there were two deep plowing we called it, a much out of t The following to wheat of th way, and as n The grain of t the same mac plowing aver that of the sh els to the acre difference in wheat in any e in the plo

Hardwicke's ses the potato evil is now w disorganization caused by a fu festans. This upper surface quite impervio originates in threads pass d reach the tub then rapidly r in an offensive growth of the will spread fr tract, giving t having been a causo of the d be found in the resembling in a human su ation or moist vented, and with moisture and leaves, th tissues. It is of aphid upon fected plant, to this minute tion of the evi of most of the primarily cau perfectly heal simply find an and agreeable be done to ar that the infec first intimatio destruction o Potatoes esca the neighbor is due possibl acid or other

raised by what natural mode of... which never takes this privilege... duces seed. No... made to raise... someone near... matter in hand... raised many... which are superior... Now that... in this line of... be no end to the... es.—*Germanstown*

DRILLS, Agricultural College, in set apart, sub- of soil, each mea- with. The ground and manure was in by cultivator corn was planted apart; one of the and the other in vated and hoed 7th; the plants the same number ending the equal throughout the sub- as possible each e cut at the bot- stacked in good rd the corn was stalks then again d and weighed 12th. The corn was better in drills. But 74 1-6 bushels of stalks to the shelled corn, and produced by the... d.

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DEEP PLOWING vs. SHALLOW PLOWING.

EDITOR HOMESTEAD:—I heard a man in the early part of this season say that if he did plant a certain field to corn he should plow it shallow; the field being a creek bottom, and as the season was a wet one, the land most of the time was wet by the frequent rains. This was said in the presence of several farmers, and of course brought out the expression of others in regard to the depth of plowing. All but one said that their experience in plowing for corn was on the side of shallow plowing. I remarked that the old motto was to "plow deep if you would have corn to sell and corn to keep," and I believe it to be as true to-day as it was three-fourths of a century ago. That's old foggy, say they. Can it be possible that men of large and long experience have adopted this theory of deep plowing, and backed it up by their practice, proving it to their own satisfaction, and it would seem that it ought to convince others of its truth that deep til- lage for corn at least was the true principle? Is it old foggy when practice proves theory to be true?

In the spring of 1860, I plowed a field for corn with two yoke of oxen to a 12 inch plow, putting the plow to such a depth that it was hard work enough for the two yoke of oxen to draw it, turning up dirt that never saw daylight before. In a field adjoining a renter, was at the same time plowing for corn; plow- ing as most renters do plow, in a way so as not to hurt their teams—not deep. The two fields (his and my own) were planted at the same time. About the time that our corn was up, the renter took a notion to migrate farther westward, and wanted to sell out his interest in the crop. I bought him out. The two fields were tended alike, as my interest was alike in both. Through the growing season a marked difference could be seen in the growth of the corn. It will be remembered that the season of 1860 was a very dry one in the West, especially in Western Iowa. In the fall when I came to gather the corn, men who helped me to do the work said that there were two bushels on the ground of the deep plowing to one on the rented ground, as we called it, and I thought they were not much out of the way.

The following spring both fields were sown to wheat of the same variety, put in the same way, and as near as possible at the same time. The grain of the two fields was thrashed by the same machine. The field of the deep plowing averaged 22½ bushels to the acre; that of the shallow plowed not quite 14 bush- els to the acre. I could never account for the difference in the yield of the corn and the wheat in any other way than from the differ- ence in the plowing.

POTATO DISEASE.

Hardwick's Science Gossip (London) discus- ses the potato disease. The true cause of the evil is now well ascertained to consist in the disorganization of the tissues of the plants, caused by a fungus known as *Peroospora in- festans*. This never develops itself on the upper surface of the leaf (which appears to be quite impervious to its attacks), and it seldom originates in the stems; but the mycelial threads pass down from the leaves and soon reach the tuber. The stem and the leaves then rapidly rot and fall off upon the earth, in an offensive mass. So rapid, indeed, is the growth of the fungus that in a few days it will spread from plant to plant over a large tract, giving to the field the appearance of having been attacked by frost. The prime cause of the death of the leaf is probably to be found in the choking of its breathing pores resembling in a measure the action of croup in a human subject. The omission of perspi- ration or moisture from the leaf is thus pre- vented, and the plant becomes surcharged with moisture, which rapidly rots the stems and leaves, the mycelium preying upon the tissues. It is very common to find a species of aphid upon the leaves and stems of the in- fected plant, and many persons have ascribed to this minute insect the origin and perpetua- tion of the evil. It is, however, the opinion of most of the authorities that the disease is primarily caused by the fungus, which attacks perfectly healthy plants, and that the aphides simply find in the resulting decay a suitable and agreeable resting place. Very little can be done to arrest the disease, from the fact that the infection spreads so rapidly that the first intimation of its presence may be the destruction of the crop in an entire field. Potatoes escape with little or no disease, in the neighborhood of chemical works; which is due possibly to the effect of the sulphurous acid or other gases which are noxious to the

fungus growth, without injuring the more highly organized potato plant. The applica- tion of finely divided sulphur is beneficial here as in other plant diseases. It is stated that, if as soon as the disease had attacked the fields, the stems be cut down close to the ground, the infection will not extend to the tubers; and when the crop is nearly ripe this may be a judicious application, but it neces- sarily has the effect to stop any further growth. Even in this case, however, the po- tatoes may be serviceable for seed for the coming year. After reviewing all that has been said on the subject, a writer comes to the conclusion that the only way in which there is any reasonable hope of relief from the scourge is in obtaining early maturing kinds. August, in England at least, is the month when the disease is worst, especially if the weather be both wet and warm. If the crop can be secured before this period the evil will be avoided. The production of early kinds, so as to cause a systematic improvement, is possible only with time united to skill and patience.

THE WHEAT CROP OF 1873 IN ENGLAND.

Mr. James Sanderson, the eminent valuer, writes: The continuous heavy rains during the last three weeks have not only suspended seeding operations but also have caused serious damage to sown wheat. A considerable area of land has been submerged and must be re- sown, while on a large breadth of strong clays the braird is thin and sickly, and a con- siderable portion of the seed has perished. Indeed, deep chalk soils, which are little affect- ed by either excessive rains or droughts—the chalk rapidly absorbing an excess of rain, and yet retaining sufficient moisture in dry seasons—are the only soils on which the wheat plants are healthy and promising. The au- tumn sown area is unusually short. In the counties of Sussex, Essex, Suffolk and Hunt- ington not more than one half the usual breadth of land has been seeded, and taking England generally not more than two-thirds of the average acreage has been sown. Nor is it possible that there can be an additional area sown in spring to balance the diminished autumn sown area. The soaked and pulpy state of the land must make a late seed-time, and unless there are severe naked frosts in January, a favorable seed bed will not be se- cured. Judging from present appearances the area under wheat in 1873 will prove one of the shortest on record, and this following the most inferior crop which has been harvested for many years, must awaken serious apprehensions on the part of consumers as well as producers. Perhaps a higher range of prices than those of the present would, by increasing the already liberal foreign supply, eventually prove the best policy.

THE SOILING SYSTEM AT COL. CROZIER'S FARM, NORTH PORT, L. I.

One of our correspondents writes us about his visit to the above farm, and the extensive operations carried on there on the high farm- ing system—that is, getting the heavier pro- ducts off the land and at the same time keep- ing up its fertility. Soiling seems to be practised on a very large scale. Our cor- respondent says: Twenty-five acres of mangold were grown the past season, yielding 1000 bushels per acre.—Samples of these were on exhibition at the Fair of American Institute. Twenty-five acres of fodder corn were grown, and cut with a mowing machine, which Col. Crozier believes to be the best machine for all purposes of the farm. This was cured in the field, and then stored in stacks made on ele- vated platforms to secure ventilation below and through the stacks; 250 bushels of rye were sown for feed; 20 acres of turnips and nine acres of rape, for late feeding, coming in after fodder corn, and an article which Ameri- can farmers and graziers seem to know little about.—*Philadelphia Practical Farmer*.

BET ROOT SUGAR IN CALIFORNIA.

The *Alta Californian* says: The Alvarado Beet Sugar Company has made arrangements for next year's planting, which will cover about 200 acres of its own land and 400 acres of land belonging to farmers in the vicinity. The Company undertakes to pay to outsiders \$4.50 per ton for good beets delivered. The yield near Alvarado ranges from 10 to 20 tons and the average about 15 tons. The area planted in 1873 will be about 10 per cent. greater than in 1872. The yield of last year was 8,000 tons, and one half of it has been worked up, and the beets on hand will keep the mill going till May 1st. The pulp is used while sweet for feeding 350 oxen, intended for the San Francisco market.

WATER.

It is perhaps unnecessary to say anything here of the necessity of providing cows with pure water. Yet it is so very impor- tant and so much neglected that this ap- pears to be one of the truths that need a frequent repetition. We consider that 87-100 of milk is water, and 34-100 of all good, soft, mellow cheese is water, we at once see the impossibility of the production of pure milk without pure water. It should not only be pure, but it should be in abun- dance, and in convenient places, to avoid to much exercise by the cow in obtaining it, as that tends to hurt the milk, and it comes into the hands of the dairyman carry- ing more animal heat and odor, which, if not destroyed, just so much helps the milk on in its decomposition.

WATERING STOCK.

Many persons are under the impression that it is wholly or quite unnecessary to water sheep more than once a day in winter, and not all in summer, when on pasture. There could not be a greater fallacy. It is true that sheep, and also horses, will manage to live, and even do tolerably well in dry pastures in summer, by feeding exclusively at night. But careful observation will show that if allowed, water will always be taken in small quan- tities, and usually at regular intervals, and this with advantage to themselves and profit to their owners. There can be no more vicious practice than that of watering but once a day, as many otherwise good farmers do.

It has been pretty well demonstrated that a large amount of water taken at one time is detrimental to health, and especially to fattening animals, as producing an un- necessary amount of carbonic acid. Besides in winter, sheep, as well as any other ani- mals, when they are watered regularly, will take so much that it chills them; or, if very cold, will not drink at all. But if allowed freedom to drink at will, they will consume only just enough, and that at regular intervals. Therefore, free access to water, both summer and winter, or water- ing regularly, not less than twice a day, ought to be regarded as indispensable by every flock-master. If there is a shepherd who is not aware of the difference there will be in the condition of sheep that have, and of those that have not, been thus wa- tered during the winter, he has but to try it to be convinced.—*Colonial Farmer*.

UNSKILLED FARMING.

What is applicable to the professional class is also to the laboring class, the mechanic, and the farmer, upon whom depends the prosperity of all classes, they should be such practically; but in order to succeed, theory and practice must go hand in hand. A far- mer ought to know the philosophy or princi- ple upon which every farming implement works, and also the condition of the soil, and judge the quality of the seed, yet with all this knowledge meet with poor success for want of that knowledge gained by practice. A city man in the East went on a farm; he had the theory and thought it sufficient; took farming tools, his stock, and two agricultural papers. His stock yard laid on the river side (the river fenced one side); in trying to drive a calf in the yard, it being contrary, he caught it by the tail; the calf took fright and ran around until at last it took for the river, the man hanging on, the calf jumped down the bank, man and all, the man got hung by his suspenders, but the calf swam across the river and was never heard of, and the gentle- man sold all out, and went back to the city, just as you might expect.—*Willamette Farmer, (Oregon)*.

MILK TO A POUND OF BUTTER.

Mr. Mackie writes George E. Waring, that 13 Jersey cows, from the 13th to the 20th of October last, (7 days) gave 1,631 pounds of milk; average per cow per day, 17.92 pounds; from which was 89½ pounds of butter, or one pound of butter to 18.22 pounds of milk; each cow yielding 6 7-8 pounds per week. Milk set in shallow pans. Cows at pasture, with no feed but grass.

ESSENTIAL QUALIFICATIONS OF A SUCCESSFUL FARMER.

Few persons imagine how much knowledge and especially what varied knowledge it is necessary a man should possess to be a suc- cessful farmer. There is scarcely a branch of science which is not intimately connected with agriculture. It is true a farmer may be the most ignorant of men and yet make good profits out of his holding; but this success is due to incidental circumstances beyond his control, and from which he profits ignorantly. Experience goes a long way, but study is ne- cessary, especially during youth. A theoretical farmer, without any practice or experience whatever, will probably lose his money; but a man who has experience and knowledge drawn from books, will, other things being equal, make \$250, where another who has experience only, without the assis- tance and hints given by the study of various subjects and sciences, will only make \$150.

FARMER'S CHILDREN.

Mrs. Howard writes in the *Lansing Repub- lican*: "Before their school days begin, the children of respectable farmers should know by daily participation how to feed and pet the small animals on the farm; should learn to tell by the look and action of an animal when it is sick and needs nursing. As soon as the child is old enough to be taught some- thing of its value, and of the process of its growth, he should at every proper season be allowed to help set a tree of some kind to be his own, and thus from the earliest recollec- tion learn to love the soil and products of his home. Children will doubtless acquire, by occasional visits to large towns, a love of more show and freedom than they can find on the farm. This is to be expected; but while acquiring these ideas, let them be taught the expense of all these desirable attainments, not in money merely but in many other ways."

EGGS.

Pack in barrels well hooped (not salt bar- rels). Use clean cut straw, not more than 70 to 75 dozen in a barrel. Straw weighs light and costs little, thus saving in freight; if you cannot get rye straw use wheat straw, but never use oat straw, dirty oats, hay dust, saw dust, or bran. If you use good oats, first lay a layer 1½ inches on the bottom, then a sheet of strong paper to prevent the eggs from working through to the bottom of the barrel; alternate eggs and oats to the top. Instead of the head top off with straw, and cover with canvas; they will then be taken care of by the railroad company in handling. Small boxes, from 20 to 30 dozen, sell best. Put a little straw on the bottom, leave the top so as they can be seen, only cover with pieces of far enough apart that the eggs cannot be taken out without lifting a lath; be correct in counting; mark the count on each package, when we know all will be right. Returns are made the day of sales.

BUTTER.

For each twelve pounds of butter, use one one pound of the following ingredients after they are properly incorporated with each other: Eleven pounds Ashton salt, 5 pounds loaf sugar, and three-fourths of a pound of salt petre. The firkins to be made of white oak timber, entirely free of sap, and must weigh 22 pounds, and be finished in every part in the most perfect manner. While packing the brine must not be allowed to touch the exterior of the package. The package should be kept scrupulously clean, and when full, with the head in, should be covered with coarse sackings, which should remain on while the package is in transit to market. Tubs should hold about fifty pounds, the cover fit tight—and the package be as small and smoothly made as the firkin, and well sacked to keep it clean. All packages should be soaked with brine for two days before receiving the butter.

ANOTHER MODE.

Butter is often shipped in a deplorable condi- tion, whereas, if the following instructions were adhered to those interested would be hand- somely rewarded for the pains taken. Solid packed butter, to command the best prices, must be put up uniform in color; small tubs sell best. Tubs should be soaked in brine tintured with salt petre, a tablespoonful to a bucket of brine. Cover butter with cloths saturated in this brine; this will keep it sweet. Roll butter—Each roll should be done up in a white muslin cloth, and packed in good oak half barrels, or in small white or basswood boxes, not to exceed 50 pounds each. Use no paper around butter packages

FERTILIZING PROPERTIES IN BONES.

The true value of bones, aside from their importance in the arts for handles, rings, paints, clarifying sugar, etc., is fast beginning to be appreciated in this country. People were horrified a few years since by the published account of the tons of human bones transported from the battle-field of Waterloo, to be ground and strewn over the worn-out lands of Europe. From time immemorial it has been known that vegetation, and particularly trees, thrive immensely in grave-yards. Now, it is neither the gelatine nor glue that holds the particles of bone together, nor the lime of which they are composed, which gives activity to vegetable growth alone, but the phosphorus in them, that inflammable material of which matches are manufactured, known in its combination as phosphate of lime, that plants seize upon with avidity as food. Nothing else within the range of agricultural experience so rapidly develops the cellular structure.

To be most useful the bones should be pulverized, and that enables water to make a quicker solution of the phosphate, which the minute rootlets immediately absorb and circulate through the shaft, leaves and fruit. Save the bones, therefore. Let nothing go to waste. There are actual treasures concealed in a dry bone, if the right course is pursued to extract them.

In the skeleton of a horse, an ox, or even a dog or cat, there are about from one to four pounds of phosphorus. The carcass of any of those animals, cut up, and distributed among fruit trees, instead of being buried out of the way as a nuisance, would be to them a rich entertainment of delicious food.—*Colonial Farmer.*

WHAT GREELEY THOUGHT OF PLASTER.

In one of his last agricultural addresses, Horace Greeley gave his testimony in favor of land plaster (gypsum) as follows:

As to a fertilizer, I place gypsum or plaster first on the list, without supposing it to be of equal value everywhere, even of any value under all conceivable circumstances. And yet I doubt that a hill or dry plain can be found inland on which a first application of plaster, to the extent of 200 pounds per acre, would not be repaid in the very next crop, more especially if that crop were clover.

Wherever ground plaster may be had for less than \$20 a ton (as it can be in some parts of the Union) I hold that each farmer who has not yet tried it should buy at least one ton, apply it to ten acres in strips of two rods width, alternating with a like breadth left unown, and carefully watch the result. If no benefit is realized he may safely conclude—not the plaster is a humbug—but that his land does not need it, or that he has not known how and when to apply it. In my own case I judge that I have bought no other fertilizer that paid so amply and speedily as plaster.

IS STRINGHALT HEREDITARY?

The North British *Agriculturalist*, in answer to a question asking if stringhalt is hereditary, states the case thus:—

The precise conditions on which stringhalt consists are yet unknown. Frequently it is traceable to tumors about the brain; sometimes spicule of bone have, after death, been found pressing upon the great nerve going down the hinder extremity. Probably any causes which interfere with the nutrition of the brain, spinal cord, or even of the large nerves, may induce the peculiar catching movement characteristically entitled stringhalt. In many cases it resembles chorea, or St. Vitus's dance. It may, indeed, be fittingly regarded as chorea affecting the extremities.

Although more common in the hind limbs, it occasionally effects one or both fore legs. The nervous way some horses carry their heads; the trembling muscular twitching and other fantastic movements of the head which are often excited while the bridle is being put on, appear to be manifestations of conditions very similar to stringhalt. All these defects are usually particularly apparent when the animal is first brought out of the stable, and when from any cause he is irritated or annoyed.

The slightest cases of stringhalt are readily enough made apparent by causing the animal to move backward, or to take a sharp turn, when for a few steps the natural symmetry of motion is disturbed, and the sudden catching up of the affected limb is particularly noticeable. The great majority of cases of stringhalt appear to be brought on by causes over which we have as yet but little control. Al-

though often born with the colt, or observable very soon after birth, it usually appears to be independent of hereditary transmission. In a few cases in which we have known it to reappear in the progeny of stringhalt parents, it has followed the sire rather than the dam. No treatment, either of pregnant mare or of her foal, can prevent its occurring. Violent exertion, undue excitement, unwonted sights and sounds, as in other animals, tell very prejudicially on the fetus in pregnant mares, and become a source of springhalt. Chorea and other disorders in children are often traceable to frights and violent nervous impressions sustained by the female while the child is *in utero*. In well established cases of stringhalt neither iron, arsenic, strychnia nor electricity are of any permanent value as a cure.

WHEN TO APPLY FERTILIZERS.

Prof. Voelcker, of the English Royal Agricultural Society, reports as follows on recent experiments:

A considerable percentage of the nitrate of soda was parried off in the drainage, when applied at a fertilizer. The soil did not retain the whole of the salt, nor of the assimilable nitrogen. Being readily dissolved in the soil, it should not be applied till late in the spring, according to the climate and season. The sulphate of ammonia lays in the ground better than the nitrate of soda, and should be sown two weeks earlier; potash, salt and soluble phosphates at the same time. All stable and yard manure is best applied in the fall or winter. Lime, marl and gypsum may be applied in January, February and March—the earlier the better.

Mr. J. B. Lawes, of England, has a plot of experimental meadow that has had fourteen tons of stable manure every year since 1843. Plants grown on this surface have absorbed all the rain water so that little or none has been discharged by underdrains. Similar drains under a part of the meadow not manured "have run freely several times a year." An acre of long manured lands holds within thirty-six inches of the surface 1,910 tons of water; while the same area and depth of a similar ground unmanured, holds only 191 tons. These facts show how largely manuring from 1843 to 1871 changes the character and constitution of a soil. An industrious, reading and scientific farmer may make his farm what he pleases.

RURAL AND DOMESTIC.

If worms infest your flower-pots apply water in which a little fresh lime has been dissolved.—A Minnesota dairy produced 27,434 lbs. of cheese last season, without putting itself out of the whey.—A pair of boots in Iowa costs just two loads of potatoes, and to raise the potatoes just wears out a pair of boots. A dairyman at Storrington, Frontenac county, Ont., kept careful accounts last year and found that his average receipts from each of his 56 cows was \$49.57.—There are 57 farmers in the Minnesota legislature, a fact which ought to insure to that State a fair share of attention to the agricultural interest.

—When a farmer loses a horse, a sheep, or any other animal, instead of throwing the carcass to the dogs and crows, or burying it, and in this manner losing it, let him throw over it a few handfuls of slaked lime, and then from eight to ten times the bulk of the animal of earth. By this means the fertilizing gases which are thrown off during the decomposition of the animal will be absorbed. He will then have one or two cartloads of manure, which will pay him five times over for his pains.

PRODUCE FOR MARKET. POTATOES

are one of the staples always saleable, because always consumed. We advise shipment in sacks; they are easier handled, have less waste, and can generally be sold to better advantage, whether in car lots or from store. The peach-blow is the popular variety for general use.

The report from the County of Dorset, England, respecting the foot and mouth disease, is again of a favorable character, while pleura-pneumonia has entirely disappeared from the county. In Somerset, however, the latter disease has broken out very severely. Foot and mouth disease is on the decline. From Cambridgeshire, Huntingdonshire and Norfolk, equally satisfactory accounts are received.

Stock and Dairy.

IMPORTANCE OF FEEDING REGULARLY.

Success in feeding operations does not depend altogether upon feeding liberally. The usual supply of food should be given with regularity; and when the time comes at which the stock should be fed, nothing should serve as an excuse for delay. And whether the practice of feeding two or three times a day is pursued, the farmer should see that the stock is fed promptly when the time comes.

The system becomes accustomed to the times at which food is taken; and if the food is not taken at these times, derangement and injury is sure to result. When the stock is not fed at the proper times, the animals are disappointed and thrown into a state of nervous excitement and anxiety, highly derogatory to their improvement. And any one who has seen a lot of cows lowing up and down the yard, or seen a lot of pigs squealing and rushing from one side of the pen to the other, because the hour at which they had become accustomed to receive their food had been suffered to pass without it, need not be told that such animals are not only not in the way of improvement, but that they are actually losing ground.

But this excitement and worry is not the only evil result which follows the delay in giving food, the appetite and digestive apparatus become deranged, and some animals will gorge themselves to such a degree as to become quite uncomfortable, even if not made actually sick, while others will not take as much as they require. "We know how it is ourselves" is a cant phrase which is often appropriate; and any one of our readers who has been called upon to make extended journeys by rail, has probably experienced the ill effects which result from irregular meals. To ride until ten o'clock in the morning for breakfast, or until three o'clock before arriving at the dinner station, is sure to try the patience and endurance of all. Many a person has become very uneasy from hunger, and when the eating-house was reached has found that his appetite had become so deranged that he scarcely cared to partake of a mouthful; while others, in whom the derangement was of a different character, would gormandize to such a degree as to be scarcely able to sit in comfort for hours after. And when men, with their ability to reason and to comprehend the cause and the necessity of the delay, experience these injurious results from this irregularity, the dumb brutes, who cannot comprehend the cause of the delay, and when the hour for feeding arrives are expecting it every minute until it comes, must sustain an injury much more serious. The successful farmer will never allow his stock to become hungry even for the shortest length of time, and finds it to his advantage to keep his stock comfortable, to preserve them from excitement of all descriptions, and to keep their digestive organs in a state of the highest health. To secure success, there should be stated intervals for feeding, and these intervals should be strictly observed.—*National Live Stock Journal.*

SHORT-HORNS IN THE WEST.

In England, this year, 1,882 head of short-horn cattle have been sold for about \$555,000. The average price was not far from \$300, and the highest \$8,250. In the home of the Short-horns we see that the number of sales is large, and the price a fair one; it is rather remarkable that the demand for this class of stock seems to be on the increase even in England; this cannot be accounted for in any other way than that of their superiority over every other strain.

We well recollect, in our boyhood's days hearing the prediction made, that the breeding of "Short-horns" would soon be overdone, yet our early breeders pursued this enterprise with great energy, from time to time importing at almost fabulous prices, animals, for the purpose of getting new blood infused into their herds. Since their day their sons and others have pursued the same course, and prosperity has attended their efforts. It is a remarkable phenomenon that the breeding of Short-horns, has been throughout its history a prosperous business; the exceptions are these few instances in which the parties engaging in it had no talents for the business. The effect of this enterprise on the part of the Short-horn breeders, has been, largely to enhance the value of cattle, wherever this blood has

been infused into our common or native stock. We have in our Western plains almost an empire in territory to populate; in the course of a few years it will be teeming with inhabitants; it is especially the home of the cattle kind; its hills and valleys furnish the succulent grasses upon which the buffalo and other animals fatten kindly; this must be in the nature of things peculiarly a grazing country, furnishing food to millions of our more Eastern people. It is important to these people that they make the right start in cattle raising, having for breeders those whose produce will command the highest price in the markets where they are to be consumed. This insures prosperity to our Short-horn breeders for many years to come.—*Lexington Home Journal.*

AYRSHIRE CATTLE IN COLD CLIMATES.

A farm near the city of Ogdensburg, N. Y., containing 170 acres, has now upon it 40 head of cattle, all either full-blood or high grades of Ayrshires, put into the stables on the 15th Nov. last—since which time we have had frequent snowstorms, with snow at least three feet deep in the woods, and extremely cold weather (down to 30 below, Dec. 26, and to 20 again Jan. 12), freezing the manure in the stable a great portion of the time—now half-wintered on the straw of 7½ acres of oats, barley and peas, with about 200 bushels of mangolds, and the fodder of 1½ acres of Western corn, planted in drills, and put away in the mow with the straw above mentioned, in alternate layers, *without any hay*. In this herd are several cows in milk, making an average of two pounds of butter daily. One dry two-year-old heifer was killed for beef Jan. 4th; and the same week a new milk grade cow was sold for \$75, showing the condition of this straw-fed herd.

If there is any other breed of cattle that can be kept in a thriving condition with the quantity and quality of feed supplied to this herd, it would be of vast importance to farmers and dairymen, particularly those who are relocated in the northern portions of the United States and Canada, where animals are housed and fed (as all should be) in the manger, say seven months in every twelve. It is to be hoped that such information may be published.—*Com. in Nat. L. S. Journal.*

DIARRHOEA IN CALVES.

A young breeder having had a case he could not control, asks for a remedy. This complaint is often caused by giving a calf too much milk at a time, or cold milk instead of that in the condition in which it would be drawn from the dam. This same correspondent, without stating what his practice has been, asks whether it is best to keep calves separate from their dams, or to let them run together. We think the calves do best when allowed to run with the cows, if the weather is favorable, and especially is this the case where there is any derangement of the bowels, because it is important that the calf should, if ailing in this way, have its food often, and but little at a time. But it is better for the cow to be separated from the calf, and to have it suck at stated periods—say twice a day, or three times for the first week or ten days.

The treatment of diarrhoea may be, three drachms of carbonate of soda in well-boiled wheat-flour gruel, once a day; or give a tablespoonful of common rennet after each meal of milk.

The old practice was, to give first a dose of castor oil say two ounces—or three ounces of salts, and then chalk, catechu and ginger, in the proportion of one ounce of chalk, four drachms of catechu, and two drachms of ginger, to be given in gruel.—*National Live Stock Journal.*

ECONOMIZING FOOD.

Much depends upon the warmth and comfortable accommodation of animals in this respect. It is the food that produces animal heat, or rather that tends to keep it up; and the farmer can economize that food and make one-half of it go about as far as the whole would, by keeping his stock in warm, comfortable winter quarters. The cold winds penetrate through every crevice of the barn. No matter how small that crevice the cold will find its way through. If you would economize your food look thoroughly to the warmth and condition of your barns and stables, for herein lies the great secret of success in saving food. "Stop out the cold and you can keep more stock upon the same amount of food," is the verdict of the past and present age.

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FARMER'S ADVOCATE

AYRSHIRES AS MILKERS.

I write to send you a statement of the yield of milk of my three Ayrshire cows. I have kept an exact account, and have ascertained their yield in pounds. I would say that my Ayrshire cows are only those whose ancestors either have been imported or whose pedigrees can be traced back to their progenitors in Scotland. My Ayrshires are mostly young stock, and include an imported bull and a heifer, Lady Essex, 1413, which has just dropped a fine bull calf, and which is a promising milker. The age given is taken on July 1st, 1872; the weights are those recorded March 23rd, 1872; and the number of days in milk are comprised between August 26th, 1871, and August 25th, 1872, inclusive:—

Name.	Age.	Weight of Cow.	No. days in milk.	Weight of milk.
Maud, 604,	8	1268 lbs.	320,	8159½ lbs
Lily Dale, 1475	4	975	283	7728½
Lassie, 1442	4	1151	200	5277½

My record was not commenced early enough to give more than one year's yield.—*Cor. Country Gentleman.*

TO PREVENT CATTLE JUMPING.

A correspondent of the *Vermont Farmer* thus describes an improved poke or jumping stick:—

"First put a piece across the horns. Then have a piece of hardwood board, one-half or three-fourths of an inch thick, and about three feet long. Have a hole inserted in the bar across the horns in such a way that when this hardwood strip is inserted in it, running out over the back, as the animal naturally carries his head, the rear end will be just free of the back. Drive three or four shingle nails, ground sharp, into this end, letting them come through three-fourths of an inch, so that as soon as the animal makes an effort to raise his head to jump the fence, the nails will soundly prick his back, and he will be apt to frisk his tail and start for some feed that is easier to be obtained. For cheapness and durability this arrangement is unequalled. It weighs less than three pounds; it is not in the way in travelling around, and when the animal lies down it is on one side, as it is natural for the animal to throw its head opposite to the side it lies on. When they are feeding, it is upright in the air.

BEST KEEP FOR DAIRY COWS.

For small farmers, be they wealthy amateurs or working men, the first step to success is a clean, well ventilated cow-house—a shed will not be sufficient; next, a dairy-house where the temperature can be kept uniform during the year; after these, convenient dairy utensils—not elaborate patent machines, but well made, simply constructed articles that admit of being kept clean, and strong enough to bear the wear and tear of dairy use. These having been provided, the next consideration is the breed of cattle. Wealthy men ought to own nothing save clear-bred cattle, and they may safely allow fancy to dictate between the rival merits of the Channel Island cattle and the two varieties of the Ayrshire, or the clear-bred Kerry cow. These various families are all noted milkers and first class butter makers. The working farmer can very seldom purchase clear-bred cows, but at least he can obtain grades, and grades of the above named animals are the best for him, as by having such, and then using clear-bred bulls, he can obtain gradually and inexpensively a nice herd of high-bred cows.

TURNIP FLAVOR IN MILK AND BUTTER.

A correspondent of the *American Agriculturist* states that last winter he fed turnips in the usual way at milking time to five cows, until the milk and butter became so strong that it could not be used. He then commenced feeding immediately after milking and found that "there was not a particle of turnip flavor in the milk or butter." After a time the taste returned. On investigation he found that one of the cows was nearly dry, and was milked only once a day, while she was fed with turnips twice a day. She gave but a pint of milk per day, so that when fed in the morning she could only have about half a pint of milk in her bag; yet this received so much taste from the turnips that it spoiled the milk of four other cows in full flow. To make the test complete he had her milked twice a day, when the difficulty at once ceased and did not recur. Evidently a very small amount of milk in the udder will suffice to do the mischief, and if drying-off cows are milked only once a day while on turnip feed, their milk should not be mixed with that from the rest of the herd.

THE BRITANNY COW.

The Brittany cow will average from thirty-six to forty-two inches high, from the hoof to the top of the shoulder. Mr. Flint has an imported cow, six years old, recently bought of Gen. Paine, that measured only about thirty-two inches high, but the average height is a little over three feet. The weight varies from three to five hundred pounds. A two year old heifer owned by the Massachusetts Agricultural College, full with calf and in high condition, weighed 445 pounds.

The milk varies, of course, like that of other cows, but it is usually from eight to ten quarts a day at the height of flow, and it holds out exceedingly well, and is of high quality. We know of no breed of cows so uniformly good temper as the Brittany. They are docile, and like to be petted and fondled. They are very easy and pretty milkers, the teats generally long enough, with a free and easy flow. So far as our observation has gone, they are easier milkers than the Ayrshires, and the teats, as a general rule, much better developed as to length and size.

As to the expense of keeping, we never saw cows of any breed more easily kept, and though no careful and exact experiments have been made so far as we know, we think they will not consume more than half as much as our larger cows to keep in the same condition. They come up full and satisfied, on short, rocky and hard pastures, which is more than the larger cows in the same herd do.—*Massachusetts Ploughman.*

BREAKING HEIFERS TO MILKING.

A correspondent writes as follows to the *Lewiston Journal* on this important subject:—

"All domestic animals require some training or education. The steer may require more training than the heifer, because the uses are varied to which he has to become accustomed to make his labor skilled and practicable. While the cow may not need to be schooled in these higher branches of practicable studies, she should be taught that to stand quietly while being milked, and to 'hoist' the right foot and place it back of the other, are virtues to be commended and rewarded (by kindness at least). No animals should ever be allowed to pass their first winter without being thoroughly 'halter broke,' so they can be led by the horn, or a rope around the neck, gently and peaceably. Doing this while they are young and easily handled saves a vast amount of subsequent hard work and perplexity, and may be, the animals kicks and blows. There is a great difference in teachers in this kind of science, as well as in the four-footed pupils. Some teachers I have seen did not evince half the sense of the cattle they undertook to train. On the other hand, there are some animals so perverse, or *non compos mentis*, that it seems almost impossible to teach them the first rudiments of good manners. But certainly, in most cases there is nothing gained by letting them grow up in these uncouth ways, thinking to take them in hand at a later day. 'Train while young' should be the motto of the barn-yard.

"Many an otherwise excellent milker has been spoiled for life by harsh treatment. It is better to govern by gentleness and kind treatment than by harsh means and fear of the master. A heifer, if well broke to the milk pail, is thereby made worth a least twenty-five per cent. more—an increase that will pay for much painstaking. The handling of the udder and the process of milking is a very unusual proceeding, and, in addition, the teats are often inflamed so as to be painful to the gentlest touch. How often in such a condition from pain and apprehended danger she almost unconsciously lifts her foot and knocks over the pail, and perhaps hits a well-deserved thwack over the pail, and then kicks and bruises are freely exchanged between the frightened brute and the irritated master.

"First teach all the animals to love rather than fear you. Teach them to welcome your coming by presents of a nubbin of corn, an apple, a little salt, &c., on all occasions when practicable. Handle them freely, and get them accustomed to your touch by rubbing and scratching them. Heifers thus accustomed to being handled will soon come to like the operation of milking. I once had a heifer that from having exceedingly sore teats contracted the habit of running away from me, when milked in the yard, before the milk was half down. All my endeavors to break the habit failed, till, as a last resort, when she started away from me I caught up the pail with one hand and seized one hind leg with the other, and held it firmly. After hopping a few steps and giving some pretty severe kicks and jerks to free herself, and

all to no purpose, she 'accepted the situation,' and calmly submitted to the process till milked clean. Two or three such lessons cured her entirely. Such usage would probably have frightened her and made the habit worse had she not been accustomed to being handled and petted. But a few lessons gave her an understanding of what was required, and subsequently any attempt of a repetition of the misdemeanor would be suddenly checked by merely placing my hand gently upon her leg.

"It is very important that cows of any age be milked clean; but more especially should this be practised with heifers. One of the secrets of butter-making lies just here. I need not tell those that are used to the care of cows and dairying that the last drawn milk is nearly all cream, and when one of these little measures of milk is left in the udders of several cows, as a careless milker will often do, no insignificant quantity of the richest milk is lost every day.

"But this is not all or perhaps the greatest loss. Leaving milk in a cow's bag has a most deleterious effect upon the cow. Undoubtedly many cases of garget may be traced to this neglect. And the habit, if persisted in to any length of time, will cause a gradual falling off of the milk, and the cow will be very unlikely to regain her full milking powers again. This matter is worth more than a casual thought. Heifers, the first year of their coming into the dairy, should be instructed to no inexperience or careless milkers. A good milker will draw the milk in silence and quickly. Never allow yourself to leave a cow half milked and then return and finish, thinking to get the full compliment that the cow would give. This habit is nearly as bad as the one spoken of above, and its practice brings about the same results. By such means heifers often contract the habit of withholding their milk; a most perplexing habit and often not easily cured. A good milker will attend to his work, and draw the milk clean as quickly as possible and establish the habit of giving down freely—a valuable item in a young cow."

RIGHT AND WRONG WAY TO MILK.

The *Irish Farmers' Gazette* publishes the following from Professor Dick, on the manner of milking:—The operation of milking is performed differently in various parts of the country. In some the dairy-maids dip her hands into a little milk, and by successfully stripping the teat between her fingers and thumb, unloads the udder. This plan, however, is attended with the disadvantage of irritating more or less the teat, and rendering it liable to creaks and chops, which are followed by inflammation extending to the rest of the quarter. These effects may be, and are, almost entirely avoided by the most scientific plan of milking adopted in other parts of the country, where instead of drawing down or stripping the teat between the thumb and fingers, as I have stated, the dairy-maid follows more closely the principle which instinct has taught the calf. She first takes a slight hold of the teats with her hand, by which she merely encircles it, then lifts her hand so as to press the body of the udder upwards, by which the milk escapes into the teat; or if, as is generally the case when some hours have elapsed between milking times, the teat is full, she rasps the teat close to its origin with her thumb and fore-finger, so as to prevent the milk which is in the teat from escaping upwards; then making the rest of the fingers close from above downwards in quick succession, forces out what milk may be contained in the teat through the opening of it. The hand is again pressed up and closed as before, and the milk drawn easily and freely, without the tugging inflicted by clumsy milkers.

BREEDING TOO YOUNG.

Ewes should not be permitted to breed at one year. The lambs of such young mothers will be of little use, always small, puny and unprofitable, and the mother will not grow much afterward. Besides, there is no profit in this early breeding, for the first fleece will be so much less and the young ewe of so much less value, as to quite overbalance the gain in the lamb. The ewe should not breed at less than two years old, and she should be fed most liberally the first winter to keep up that healthy growth made the first summer on her mother's milk and good pasture.

Green food seems even more necessary for sheep than cattle. Therefore a small quantity of turnips, beets, carrots or potatoes, should be provided for lambs. Let the young ewes be healthy and strong and the lambs will be like them and sell at high figures to the butcher. But early lambs always sell best, and sheep breeders should provide such warm quarters that lambs may be safely dropped in February.

WELL-FLAVORED BUTTER.

How can it be expected that butter of good flavor can be produced from pastures foul with every storg flavored weed? From early spring, when garlic abounds, up to fall, when the golden rod and ragweed cover the pastures and meadows, cows rarely get a bit of grass or clover free from admixture with weeds. And when it is known that these strong and often disagreeable flavors concentrate in the milk, and that every impurity in the milk seems to concentrate in the butter, how can it then be otherwise than that the great bulk of butter coming to market should be poor in quality, and poorer still in profitable returns to the farmer? Here is the strongest argument for clean pastures and meadows, and such farming as will raise feed and not weeds.—*Am. Agriculturist.*

HIGH FEEDING ONLY WILL PAY.

Our graziers are beginning to learn that they will soon be driven out of the field as feeders, if they continue to undertake to compete with the coarse Texas cattle of the South and the vagabond grass-fed steers of the Western plains. The best feeders in our State have already adopted the practice of buying grade Durhams, and the higher the grade the better, and if full blood, so much the better yet, and crowding into them all they can eat from the very start, and selling them at two, or between two and three years. In summer, blue grass and timothy, clover and standing corn; in the winter, corn in the shock and corn in the ear, cornmeal and oil-meal, sheaf oats, and the best hay the richest fields will yield—such is the bill of fare provided. Grade steers, so pushed, make a gross weight of from 1,300 to 1,600 at the age named, and sell for 7c. to 8c. while equally heavy but scrubby raw bone bring not more than 4c. As ordinary fed, our prairie cattle getting ready for market lose the fat and flesh, and everything but the mere bone and frame growth of two summers. The calf in good condition at the first of September is a skeleton at a year old. He gained flesh during the summer to be reduced again the second winter, and is finally sold, after he has gained 3 and lost 2 suits of fat and flesh. This style of feeding is about at an end; and so it is getting to be with hogs. It is recognized that in order to be profitable they must be sold at 9 and 12 months, instead of 18 and 24 months.

In Kentucky, I understand, about the only profitable business now pursued on their high-priced lands is feeding mules, and breeding fine cattle, horses, sheep and hogs. The mule colts are bought in the fall at home as largely as possible, and abroad across the river in Ohio and Indiana from \$40 to \$75 being paid for fair to best mule colts. These colts are placed on the highly cultivated, high-priced, rich lands, and are pushed with all the art and skill the experience of half a century has gained, until they are sold the spring they are two years old. These animals so fed are never allowed to get hungry, never wet, never athirst, and their appetite is never suffered to be cloyed. The market for them is on the cotton plantations of the South, where they bring from \$400 to \$600 the pair, according to the quality and the market. If we should feed cattle, hogs and mules as they ought to be fed, there would be few things better than corn and oats.—*B. F. J. in Country Gentleman.*

ALDERNEY CATTLE.

The Alderney cow gives a moderate amount of exceedingly rich milk, richer in cream than the milk of any other breed of cattle whatever. A cup of coffee is never so good as when flavored with Alderney cream. Butter is never the best unless made of the cream of the Alderney. It is second best when made in part of Alderney cream, and third when made from the cream of other breeds. Some dairymen claim that to incorporate the milk of one Alderney with that of half a dozen other cows, will improve the color and flavor of the butter very materially. One Alderney dairyman near Boston sells his butter regularly to families in the city at \$1.25 per pound. Another in the same vicinity, whose process of manufacture is not so perfect, sells at 75 cents, this latter price being about double the price of good common butter.

The Alderney was originally from Normandy, a province in the northwestern part of France. The British Channel Is-

lands, Alderney, Jersey and Guernsey are now the homes of these celebrated cattle, and they are known now under three distinct names, viz: Alderney, Jersey, and Guernsey. The latter are the larger cattle and not considered equal as cream producers to the Alderneys, neither are they so fine. Some claim that there is a difference between the Jerseys and Alderneys, but we imagine there is a distinction here without a difference.

The Alderney cow has a dark nose, generally black, with a rim around the eye of the same color, a large full eye. The head is a good deal like that of the elk, is blood-like in appearance, the skin being thin, the hair soft and fine, and the bones of the head finely chiseled. In other words, the appearance of the head, and expression of the countenance is deer-like, not like any other breed of domestic cattle. The horns are small and tipped with black, the neck depressed but fine, the bosom tolerably deep but not wide, consequently the fore-quarters are pretty close together. The loins are not wide, the thighs are thin, the legs tapering and fine. The udder is of medium size, and covered with skin and hair of exceeding fineness, and soft to the touch. One of the leading traits of the Alderney is timidity. Like the deer, they are ever watchful for their safety, and if allowed to grow up without due domestication, are very shy, easily frightened, and if handled roughly by strangers, take on the appearance of an untamed deer or elk. But when accustomed to daily handling they are more domestic than the common cow, and become pets with the children and servants. For the yoke or for beef they are not valuable. Those inclined to invest in them may as well do so for the cream, and the cream only. In the Eastern States they are becoming quite common, and sell at various prices, the fancy markings having much to do with the prices. Pale white and red is perhaps the most common color of the Alderney, yet some are what is called "self colored," which means, when applied to an Alderney, all of one color. In the island of Jersey those all pale red are fancied and command the highest prices. Squirrel grey is not an uncommon color with them, and when this prevails over most of the body it constitutes a fancy color. On their native islands they sell at \$125 to \$250, according to the merits possessed by the family from which they have originated, and the markings. They are known only as the Jerseys, and when they reach England or the United States, they are generally called Alderneys. Dark brown, nearly black, prevails on some animals, varying in extent, combined with white, and many prefer the dark color to pale red as a matter of fancy. But as the most valuable trait of the breed is richness of milk and cream, all other considerations are secondary, and no points, either in color or form, be they ever so fanciful, will compensate for the highest excellence as cream givers.—*Iowa Homestead.*

LONG WOOL SHEEP.

H. L. Rudd, of Peoria, Linn county, writes us as follows, under date of June 15th, 1872: "I see by the last *Farmer* that you want to hear from some man owning long wool sheep. My sheep are pure-blood Cotswold, imported by myself from Canada. They were two years old last April. One of my bucks sheared seventeen pounds, and one fifteen pounds; the ewe eleven pounds. The ewe has raised two fine large lambs, and they have had nothing but ordinary keeping. The wool is clean and free from dirt. The gross weight of the bucks is, one, 319 pounds, the other 302½ pounds. If any one has larger sheep, I should like to hear from him."

During the past year the leading cheese factory, in Hillsdale county, Ind., has manufactured \$17,335.39 worth of cheese. The average profits over all expenses is \$36.50 per cow.

The Houston (Texas) *Union* says that more cattle have perished in that State this winter by cold and starvation, than in any former equal duration of cold weather.

The Marengo Apple.

It behooves us to notice any new seed, implement or plant that appears likely to be of advantage to us. There are many things brought under our notice that we deem it prudent not to mention, as there are so many humbugs; sometimes we may have been caught ourselves, and most probably may be again.

The accounts we see published about this apple are such as we think deserving of notice. We see a very large number of high testimonials regarding its value, signed by the leading nurserymen in the States. These gentlemen have a high reputation at stake and would not give their names to such commendations unless they had fully been convinced of the correctness of the assertions.

Novelties are scarce at first, and, consequently, they must be dear and can only be purchased in small quantities by the wealthy and enterprising. We would by all means caution any one against planting an orchard of this new fruit at the present price, and persons of limited means should wait a few years until larger stocks can be raised. It might be well to have a tree or

two in different parts of the country ready to raise grafts from, to raise the fruit when desired.

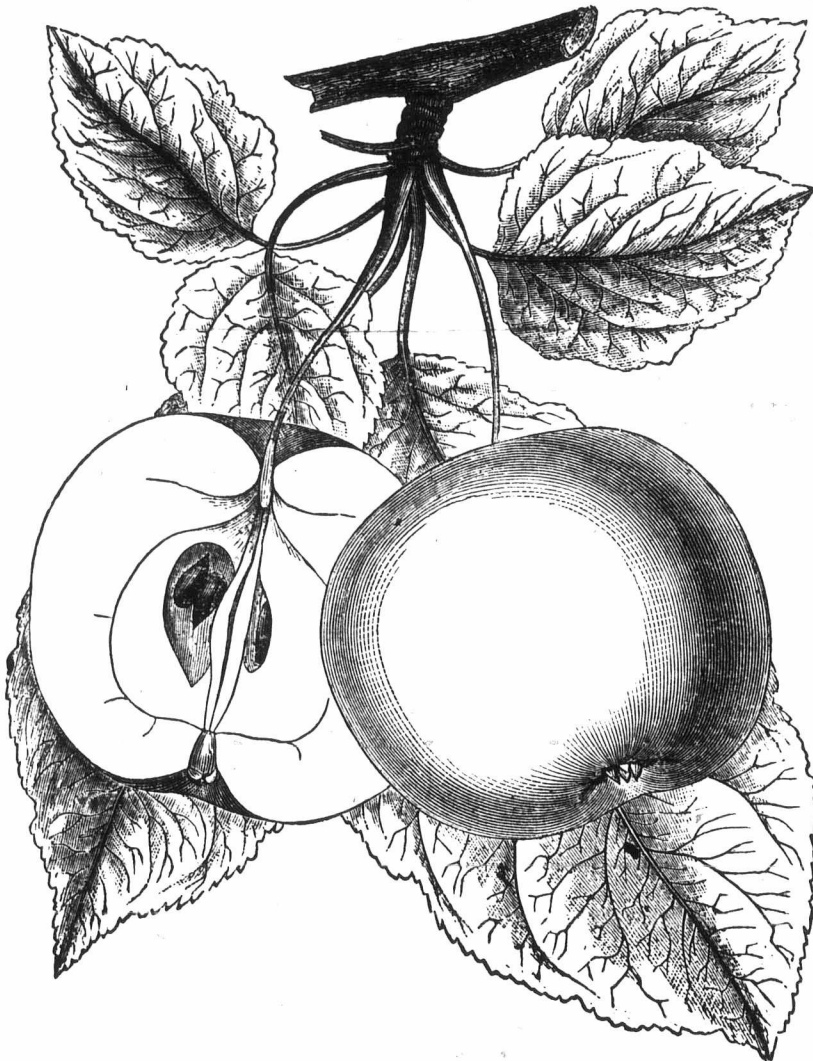
In the southern parts of Canada it may not be of so much consequence as in the northern parts, as the hardness of this variety must be an important consideration.

This variety is as yet procurable in Canada only from Messrs. Pontey & Taylor, of the St. James' Park Nurseries, near this city. We extract the following from their catalogue:

"We have made arrangements with the holders of the original stock of the above really valuable addition to the list of apples, and are enabled to offer it for the first time in Canada. A long list of testimonials, embracing many of the leading nurserymen and Pomologists in the United States, establishes the reputation of the Marengo Apples beyond a doubt, from which we give two or three.

"Standing well on the bleak prairies of Minnesota, within eighteen miles of St. Paul, it recommends itself for those sections of Canada where other varieties of apples are with difficulty grown.

"The remarkable productiveness of this species, amounting almost to a fault, together with the fact that the trees bear young



and annually, would indicate a near alliance to the crab, while its rich and delicate flavor has won for it the reputation of being a splendid dessert apple.

"The points that are claimed for it, and which we think are fully established by the views of practical men and leading Horticulturists, are:—

"1st.—That these Siberian Apples are an entire novelty in fruit culture.

"2nd.—They possess qualities of excellence not belonging to the common species, and are valuable for a great variety of uses.

"3rd.—They are specially demanded in the best fruit districts to fill a want now but imperfectly supplied, viz.: a small, rich, handsome and reliable apple for the table and fancy market.

"4th.—For northern sections they are indispensable on account of the superior hardness of the species."

These gentlemen are now among the leading nurserymen of Canada. We called at their grafting establishment the other day and were surprised to find seventeen employes in that building. They were just finishing their grafting, which many of our readers may not be aware, is

a winter occupation; the stems and roots are attached by waxed paper being wrapped round the joints. The plants are packed away, labelled and numbered, in large boxes ready for planting in the spring. They have now ready for planting 100,000 grafts, and their cutting scions and stocks will make this spring 200,000 more.

Mr. Alexander Pontey has the whole control of the grounds and plants. He has worked himself up to this position from a very humble commencement. He served his seven years apprenticeship to the business in England, went two years to the world-renowned Kew Gardens, the greatest botanical gardens in England. He emigrated to this country, employing himself at the principal gardens, nurseries and horticultural establishments in the States. He acted as Mr. Leslie's foreman and salesman for a series of years. When in Mr. Leslie's parlor one evening in company with the writer and Mr. Leslie, we gave him verbal encouragement to commence business in this vicinity. He con-

cluded to come, and has never regretted the step.

His partner, Mr. John Taylor's part of the business is to employ and look after their outside salesmen and attend to the delivery of trees. With the combined experience and ability of these two gentlemen, they are enabled to do an immense amount of business. They make shipments of trees of many car-loads in the spring and fall from this vicinity. Their grounds are in excellent order, their stock of young fruit trees is uncommonly healthy and vigorous; in fact, we never have seen a finer growth of young trees at any place. Their office, and some of their grounds are only ten minutes' walk from the G. W. R. R. station. If you are contemplating planting this spring call and examine for yourselves; if you are at too great a distance, send for their catalogue. You will see their advertisement in the paper.

Talks with Farmers and Gardeners.

We are always happy to see our subscribers at our office, and have a chat with them, and as many valuable hints are let free during the conversation, we will, from time to time, give you jottings from what is said.

One day last week, one of our friends, from near Exeter, was in.

"How is your stock?"
"I sold a lot of stock in the fall. One farmer bought five head, and I notice that he has since been obliged to buy hay and straw. I think it will trouble him to sell them this spring for cost. It is my impression that there will be a scarcity of grass fed beef this spring."

"Have you read the Prize Essays on the Turnip Question?"

"Yes, and I think it was a capital idea to offer prizes for practical essays on this subject."

"We knew you to be one of the believers in turnips, that is why we asked you."

"Yes, indeed, I do believe in turnips, and in fact, in all root crops. We Canadian farmers will have to pay more attention to this subject. When I was in here last time, you asked me what weight of green fodder we could raise to the acre, but I could not tell you. When I went home I measured off a quarter of a rod of Western Corn, which I was cutting green for fodder. I weighed what came off this fourth of a rod and got ninety-five pounds, that is about thirty tons to the acre. I think that is a pretty heavy yield."

"Yes, that is very good. Now, we were reading, a few days since, in an English farmers' paper, an article from a farmer, who said that cows do not improve the farm, and that a dairy farm will in time run out. He maintains that it is the fat cattle that enrich the ground, and the sheep."

"Well, I think he is right in a measure. There is no doubt but that the droppings of fat cattle are richer than those of milch cows, and I, myself, believe in sheep for enriching a farm. I will tell you something curious, which I have noticed in my grain crops; when my grain comes up delicate and yellow, I am sure of a good crop of straw and generally good grain. This may be attributed to the depth of the seed in the ground, but I am not sure. What is the general opinion about manure; is it better of being put out in the fall or spring?"

"Well, now, that is a question which we were ourselves examining. There is a great variety of opinion. You will see by our remarks on the Turnip Question, in the March number, what we think about it."

What do you think of the Winningstadt Cabbage, Mr. Gamage?

Well, it is a splendid head—very large, but I don't think the quality so fine as other. However, it is a good kind to raise. Now, last year I sowed *Canon Ball* on one side, *Jersey Wakefield* on the other, and *Winningstadt* in the middle. Well, the flies cut off the *Canon Ball* and Jerseys entirely, and left the *Winningstadt* untouched, and that is just how I find with the slugs,—they will eat all the other cabbages first.

Are you in favor of rotation of crops in gardening?

Well, not in all cases. I find that onions and tomatoes come forward a great deal earlier when sown year after year on the same ground. This has been my experience, and I am now over sixty years old, and have been all my life gardening.

Mr. L. G. Carling who last year, a acre from rather weak well, and w year deliver how he cam His reply w mine at a c it that I. His land is his fingers badly. I must chan ed with n from you; the fall. without th supply a cl graceful fo your ideas



tion of Fl For the the above I For best number one And now 1st—Ans 2nd—Wr 3rd—Say you are try 4th—Giv "FARMERS" 5th—Lea one cent p "Printers" about busin three cents Now, let t there are in let me know

I have so Mr. Weld ment to put to exami of my nice have been c

ANSWER 29.— F A F M 31.—Wh 32.— To 2 ir " 1 W " 1 W

So you se 33.—Bec 34.—Marri Because the evening of t

38.—The blacks— 1 1 0 1 1 0 39.—The Newmarket 44.—Noise.

47.—C A C C 2 T

48.— M M M

Mr. L. Gray, Nissouri, sowed some McCarling wheat and Fife on same ground, last year, and had 2½ bushels more to the acre from the McCarling. McCarling is rather weak in the straw, but he likes it well, and will sow again. Met a man last year delivering Soule wheat; asked him how he came to raise wheat that is played out. His reply was, "I know that, but a friend of mine at a distance reported so favorably of it that I thought I would try it again." His land is good, but he has been biting his fingers ever since, it has turned out so badly. I can see very plainly that we must change our seed often. Am well pleased with my Scott wheat, which I bought from you; it covered the ground well in the fall. I don't know what we would do without the Agricultural Emporium, to supply a change of seeds, and it was disgraceful for the government to have stolen your ideas without any remuneration.

UNCLE TOM'S COLUMN.

Now, my dear children, I am ready to tell you about—

PRIZES.

For the best 2 CONUNDRUMS, one of Vick's Splendid Chromos.

For the best 2 PUZZLES, our \$2.50 collection of Flower Seeds and Bulbs.

For the best Comical Story, your choice of the above Prizes.

For best lot of Answers to puzzles in this number one of Vick's Chromos.

And now remember,

1st—Answers must be in by the 19th of April.

2nd—Write only on one side of your paper.

3rd—Say at the top of each page what prize you are trying for.

4th—Give your full name; and address, "FARMER'S ADVOCATE" Office, London, Ontario.

5th—Leave your letter unsealed, and only pay one cent postage. Mark on the envelope "Printers' Manuscript." If you are writing about business, of course you will have to pay three cents postage.

Now, let me see how many nephews and nieces there are in my family. Let every one of you let me know if I am helping you to be happy.

YOUR LOVING UNCLE TOM.

I have so many correspondents this time that Mr. Weld has been compelled to issue a supplement to put their names in, so I want you all to examine the supplement, and read the names of my nieces and nephews and see what they all have been doing.

ANSWERS TO PUZZLES IN MARCH NO.

29.— F A R M 30.— S O I L
A R E A O G R E
R E A R I E O N
M A R Y L E N T

31.—Whiskey.

32.— John Stone to C. Speedy.
To 2 Iron Ploughs - - - - - \$80
" 1 Wooden do (I would not do) 40
" 1 Wood do (I would do) - 40

\$40

So you see he only bought the one plough.

33.—Because it stretches from pole to pole.
34.—Marriage. 35.—In the dictionary. 36.—Because the bed won't come to us. 37.—On the evening of the 16th day.

38.—The P's are the white men, the O's the blacks—
110111000001100111101000100110

39.—The letter M. 40.—Windsor. 41.—Newmarket. 42.—Berlin. 43.—The Moon. 44.—Noise. 45.—An egg. 46.—Your mother.

NEW PUZZLES.

47.—CAP 10 B B B B S E N T H I S C C
D D
C C 2 T H E D E A S T D A N D F E D
D D
Them
P O T O O O O O O O
THOS. A. NELSON.

48.— My first is part of company;
My second shuns company;
My third assembles a company;
My whole puzzles a company.

ROBERT ARMSTRONG.

DECAPITATIONS.

49.—Behead an animal and leave a preposition.
50.—Behead a vegetable and leave to crush.
51.—Behead me I am a lake, behead again I am a termination to a good many words which are pronounced differently, behead again and I am an exclamation of disgust—at first I was a farming implement. M. J. Mc.

52.—Place four threes so that they will make 34.
53.—How many peas are there in one pint? W. A. FURLONG.

CONUNDRUMS.

54.—Which are the three most forcible letters in the alphabet?
55.—Which two contain nothing?
56.—Which two are in a decline?
57.—Which four indicate exalted station?
58.—Which four express great corpulence? A. McCLURE.

59.—What word does this represent—
C
O
N

60.—If all the ladies went to China where would the men go?

WILD FLOWER ENIGMAS.

61.—A limb transposed, an article, a metal and a vowel.
62.—Precise, and a girl's name.
63.—One of the twelve tribes, a consonant, a vowel and a wild beast.
64.—A crafty animal and an article of clothing.
65.—M
E

66.—What is high in the middle and round at both ends?
67.—Three-fourths of a cross and a circle complete, One perpendicular and two parts of a circle meet, Two parts of triangle and a horizontal, Two semi-circles and a circle complete, My whole is called a weed. ELSIE CRAIG.

68.—A man without eyes saw apples on a tree. He did not take apples off, or he did not leave apples on, so what did he do? BELLA FINCH.

69.—

Place twenty-four matches as shown here; take away 8 matches and leave only two squares.

ELIZABETH ROBERTSON.

HIDDEN CITIES.

70.—Was the king stoned by him?
71.—Either George, Noah, Isaac or Kate may go (two answers.)
72.—That is a poor omen.
73.—That parcel is bonded. H. C. BROWN.

74.—500 begins it, 500 ends it, 5 in the middle is seen; the first of all letters, the first of all figures take up their station between; my whole is a king of great fame.
75.—How is it that a man with long legs cannot travel faster than one with short legs? RICHARD SHINER.



The Kilmarnock Weeping Willow.

This tree is best adapted to lawns. We have seen them make a fine appearance, but do not consider them as hands-me as some other kinds. We give it an insertion at the present time as an ornament, and to call attention to the planting of trees by those gentlemen that can afford it. Many very handsome trees will thrive with us, and to those wishing to plant a park, shrubbery, walk, drive or roadside, we would by all means give this advice:—Send for Ellwagner & Barry's catalogue of ornamental trees. Ellwagner & Barry are the largest nurserymen in America. Their grounds are at Rochester, N. Y. They have 650 acres devoted to the business. They issue three catalogues at 10 cents each—No. 1 on fruit; No. 2, ornamental trees; and No. 3, green-house plants. They give a full description and greater variety than any we have seen. You should also send for our Canadian nurserymen's catalogues and compare prices, &c. To the majority of our readers we would say, You are not in a position to go to large expense in ornamenting your grounds, but there are very few of you who cannot take one day and go to the pinery or cedar swamp or hemlock grove and bring home a few trees. If this is too much to ask of you, take a half day and go to the woods and bring home six maple trees; cut off the tops; plant them near the

road at your entrance, or along some fence in the fields that lack shade. Girls! some of you are equal to this task even, if the boys are too busy. In years to come, what pleasure you would have in pointing to or sitting under that fine old shade tree, and telling your grandson that you planted it. Now, boys and girls, let us hear if you're ready; which will excel? who will have the handsomest farm garden or grounds? If you cannot get six trees, plant one. Girls, to be able to point to a fine shade tree in five or ten years after this, that was planted by your own hands, will give you a deal more pleasure than your finest crochet work, or your finest piece of music. It will be a standing memorial of honor to you. We will give a present of a package of various kinds of seeds to the girl that sends us the best account of her planting trees—done during the first 15 days of April, and the account to be sent to us by the 20th of this month. Give a name to the tree or grove that you plant—call it Weld's tree, if you like. The little boy that plants his grove or tree or row, and sends in the best account, must also have a prize of seed. It is too soon to transplant evergreens yet, therefore this prize will be for planting the common forest tree, such as maples, chestnut hickory, elm, ash, &c., &c. This will cost you no money only little exertion, that must tend beneficially to your farm, your stock and the country

APRIL HINTS.

Do not let the stock on the clover fields. Let it get a good start—for saving it up in the spring, you will be amply repaid in the summer; but young clover plants eaten down too early, will be always weak. And do not let the cattle on pastures or meadows when they are wet. If does them no good, as the little they get of the young grass will only give them a disliking for their food, and the grass roots will be greatly injured. Nothing is more injurious to young grass than trampling down in the spring when wet.

If there are any bare spots in your newly laid down clover fields let them be seeded anew now, there is no time to be lost.

If there are any vermin on your calves apply the proper remedies. A little lard rubbed in behind the ears has been found an effectual cure, if they are not too badly affected. If calves have been properly cared for during the winter they are seldom affected with vermin.

Look well to your lambs, and guard them against any exposure to cold that can be avoided; Attend to the ewes. Let all your stock be well fed and kept clean. The good wintering of cows tells much on the profit they pay in the summer; and there is no time that good feeding is more needed than at the close of the winter season.

See to your manure heaps. Turn over your compost heaps, and have all ready for use.

See that your farm tools are in order. Repair your fences where needed, and see that your gates are all right.

Attend to your drains and watercourses; suffer no water to lie stagnant on your crops or grasses; repair your farm roads; and have all things ready before the hurried time is upon you.

This month the GARDEN will begin to claim your attention. Prepare your hot-bed in the beginning of April. This is early enough in this cold climate. Some people may need some directions for making the hot-bed. First, prepare the manure; take fresh manure from the stable, the horse droppings and litter well mixed, put it in a heap under cover for a few days. It will be much better if a large portion of it—one half—be leaves. Let the place for the hot-bed be well sheltered from the north winds; dig out a trench (as if for a potato pit) of the size you desire, and about a foot in depth. Prepare your frame, made of good plank. When the manure has been a few days prepared as directed, it will be heated; throw it over, to have it well mixed, then spread it evenly, forming the hot-bed, beating it down well with the fork. The manure in the bed should be about thirty inches in height, and should extend outside the frame sash, say about twelve inches. Place on the frame as soon as made; bank the bed outside the frame with earth, and cover the manure within it with fine garden mould, about six inches in depth, keeping it covered for a few days, if necessary, that it may acquire the desired heat. Then nicely loosen and level the soil. Open drills across the bed, the depth to suit the seeds to be sown.

The bed will need to be protected from the mid day sun by partial shading, and from the night frosts and cold, as long as the nights are cold. The glass will not be sufficient. A matting or light board covering will benesided. Instead of glass, good calico, well painted and oiled, may be used as a substitute. The hot-bed may be made on the surface of the ground instead of making an excavation for it.

A cold frame is preferred by many to a hot-bed, as the plants grown on it are hardier; they are not forced by the heat of manure, as in the hot-bed. For this the latter part of April is considered early enough.

Other gardening operations for the month: Remove the covering from strawberries, grapes, etc.; rake off the litter from asparagus beds; fork in fine manure and salt. Plant out strawberries as soon as the ground is in suitable condition. Plant out cuttings of gooseberries, and currants. Make every preparation for the busy season now at hand.

Have your horses well cared for. Spare not good feeding and grooming—they will pay you for it all.

Horticultural.

HORTICULTURAL ITEMS.

Early Pears.—The Doyenne d'Ete pear ripens at Norfolk, Va., in the latter part of June, or about the time or soon after our northern strawberries. A few thousand bushels would be acceptable to the people of the North about that time.

Greenhouses.—The Rural New-Yorker objects to connecting greenhouses with dwellings, on account of safety from fire, the unpleasant odors of fumigation with sulphur, tobacco, &c., and the dust and annoyance of workmen.

Strawberries.—At the discussions of the Illinois Horticultural Society, two cultivators of the strawberry pronounced the Wilson and Green Prolific as the two best and most productive sorts. Others objected to the Green Prolific as being too soft. It was stated that the Colfax is so rampant a grower that it kills all the weeds and takes care of itself.

Mulching Pear Trees.—A writer in the Tribune mulches his pear orchard over the whole surface with salt hay, in June, and rakes it up in November. This gives fine crops and protects the fallen fruit.

Canker Worm.—A correspondent of the Fruit Recorder gives additional evidence of the value of printer's ink to keep the canker worm from crawling up the tree. It is put on belts of sheathing paper. But the best remedy of all is the square box, described in the Illustrated Annual Register for 1872.

Dwarf Pears sometimes succeed finely at the west. A correspondent of the Agriculturist describes an orchard of 300 trees, 10 years old, which bears annually "splendid" crops, in Lincoln County, Ky.

Roses.—The Editor of the Fruit Recorder says he has grown the Washington Noisette and the Caroline Mariesse in exposed places without any injury from winters. Doubtless the exposed places favored the early ripening of the wood, and thus rendered them hardier.

Large Pears.—The Horticulturist says that one bushel of pears raised at Norfolk, Va., sold in New York for 12 dollars. They were so large that 48 specimens made the bushel—25 cents each.

THE SAMBUCUS EBULUS AND ITS USES.

Among the homely shrubs usually considered a weedy nuisance by farmers, is the "Sambucus ebulus," or elder, indigenous throughout the Eastern and Middle States; it grows mostly along fences and roadsides, but the elder, like many other despised and discarded things, can be made really useful to housekeepers.

The berries of the elder, which ripen the latter part of August and 1st of September, lasting till the heaviest frosts, are very nice when dried, answering the same purpose for cake and mince pies as Zante currants; they have the merits of costing nothing but the slight labor of drying, which can be done by hanging the stems of the berry clusters on lines in a dry warm room, or laying the berries on plates in the sun, or near a hot stove. Elderberries also make a nice jelly, requiring only a quarter of a pound of sugar to a pound of juice, with a little lemon juice added, and the steeped lemon peel for flavoring.

A very good wine is also made from elderberries, useful in sickness, and palatable pies can be made from those berries, either in a dried or fresh state, with a couple of table-spoonfuls of boiled cider, and the same amount of molasses or sugar, according to taste, and a little flour to each pie; one table-spoonful of vinegar will do, if cider is not to be had.

The blossoms of the elder in infusion, are useful as a medicine for constipation of the bowels in young children, and the bark steeped in cider is said to be the only discovered remedy for that fatal malady known as Bright's disease of the kidneys.—*Com. in Country Gent.*

An English farmer, who has kept sheep for forty years, says he has found rock salt a valuable antidote for liver rot, and that these animals cannot be too liberally supplied with this saving substance. He further declares that in cases of congestion of the liver or rot he has found two table-spoonfuls of turpentine shaken up in half a pint of water and given to the sufferer a frequent cure, unless the disease has made very great progress.

Garden, Orchard & Forest.

INJUDICIOUS TREATMENT OF TREES.

"It is a matter of universal regret that the magnificent chestnut trees in the Tuilleries gardens are dying out, not, says a French paper, owing to injuries received during the siege, though a few small ones have had their bark torn off by the horses kept there at that time, but on account of the mistaken treatment they have received from the engineers in whose charge the trees of the French metropolis are placed. They are accused of two great errors in forest management; one is the neglect of lightening the earth sufficiently above the superficial roots, by means of which a tree lives and breathes as much as by its branches. The other consists in the violent remedial efforts employed to restore the vigor of unhealthy trees. Trenches are made round them and filled with fresh soil, but the most important roots are cut in the process."

We are indebted for the above extract to an English paper, the *Pall Mall Gazette*. The writer very judiciously points out the mistakes in the treatment of the trees. Those roots that, coming near the surface, inhale from the atmosphere those elements which are necessary to the existence, the health, and even life of the tree, should not be too heavily covered. And care should always be taken, not only in the removal of trees, but also in the culture of the soil, to preserve the roots from being injured.—*As'st Ed.*

PROPAGATING ROSES WITH CUTTINGS.

Roses are very easily grown from cuttings. The shoot should not be too young, nor yet so old as to be woody. Peter Henderson says:—"If a cutting will break readily it is in the best condition to grow; but if it bends it will not root as quickly, if at all." It should be cut off just below a joint, trimming off the leaves at the bottom, and leaving not more than two buds with leaves at the top, and if these are large it is better to cut off one or two of them, for if there are too many leaves they will surely wilt.

Clear sand is the best to make all kinds of cuttings grow, but it must be thoroughly soaked with water all the time, for if allowed to dry, the cuttings will surely die. Bottom heat is also essential to the successful growth of all kinds of cuttings, and if a hot-bed or hot water tank is not to be had, we must improvise one with a pan of hot water, placing the pots into it and changing it two or three times each day. The great secret in growing cuttings is in the evenness of the temperature, which should not vary more than from 65 to 70 degrees; if allowed to vary from 50 to 80 degrees they will rarely live. So, if possible, cover the cuttings with a glass, and remove it when it is very warm. If a large pot is only half full of sand and kept in warm water, and covered with a piece of window glass, a very good tiny hot bed is procured.

In summer it is well to plant cuttings out of doors in sand, with a partial shade from the sun, and enclose them in glass-shades night and day. As soon as a few tiny leaves show that the rootlets are formed, the cuttings must be transplanted into the richest soil, for although sand is the best medium to force the roots, it will not nourish them sufficiently to form many leaves.—*Springfield Republican.*

MANURING ORCHARDS.

In efforts to keep orchards in bearing, mistakes are often made in the place for applying the manure. It should not be in contact with the trunk, unless for the purpose of a mulch, and to be removed early in spring. The terminal roots of an apple tree fifteen years old, in a good soil, are twelve to sixteen feet from the trunk, and still farther in older trees. These fine, hair-like roots take from the soil all, or nearly all, the nutriment for the fruit. Consequently, the manure should be applied where they are—for a tree fifteen years old, twelve to sixteen feet from the trunk; for one of twenty to twenty-five years' growth, eighteen to twenty-three feet; and for a very large, full grown tree, still farther. But in all cases we would commence the dressing as much as three to six feet from the trunk, thickening it outward, and then tapering outward so as to make the dressing very heavy about where we suppose the finest roots end, but much reduced both inside and outside of that ring.

If the object were to smother the tree in grass and weeds we would pile the manure against the trunk, for the rains would wash it outwards and would surely produce growths of some kind, but not of apples. Why do we see everywhere so many orchards with trees looking somewhat thrifty, bearing abundant leaves but no fruit? It is not because the soil is exhausted; the soil, in many cases, if plowed up and cultivated, would give forty bushels of corn, and then, if seeded down, two tons of hay to the acre. Extreme poverty of soil is not always the cause of failure. They fail to bear because the growth and former fruiting of the orchard have exhausted the peculiar substances required for the apple tree and its

fruit. The tree gets enough of its peculiar food to keep it alive and thriving moderately, but nothing to spare for making fruit; and so the tree lives as long as it can, by appropriating all the food it can get to sustain its own life, but yields no more fruit till the lost ingredients are restored.

As to how these can best be returned to the soil, lack of space forbids now to enlarge; but we will say here that for large old trees, bearing less and less every year, the following compost could hardly fail to bear well:—

Two cart loads of fresh virgin soil, on which no fruit trees had ever grown; two bushels of lime, two of wood-ashes, and one of common salt for each tree; less of the same for smaller trees.

If apple tree wood is ever burned as fuel or otherwise, its ash may well be preserved and applied to the orchard, as it of course abounds in the minerals required. Instead of the fresh virgin soil above mentioned, peat, black vegetable mold of any kind, and decayed leaves, grass or weeds may be used. A mixture of all or any part of these, is good.

We think barn manure is not the right thing. If green it may prove injurious; if well rotted it is worth more for other purposes. Soap suds, refuse lime after plastering or white-washing, and the lime from old buildings torn down, are all good, especially the suds. Throw it up among the lower limbs and let it trickle down the trunk. The youngest trees may be treated in this way with advantage, whenever any roughness of the bark appears, provided the suds be not over strong. As it usually comes from the laundry it is safe.—*Observer.*

INSECTS ON PLANTS.

A lady of Illinois writes to the *Germantown Telegraph* that she is opposed to smoking plants to destroy insects, but tells how she does it by watering:—

"My plan is simple and costs nothing but time and water, yet it has saved us plants which might otherwise have perished. When you first notice insects on a plant, prepare a vessel of lukewarm water and give it a thorough sprinkling. If this does not remove them you may use your fingers or a straw and push them off into the water, which is sure destruction. In vain they try to reach the vessel's brim. The hapless insects never learned to swim. It is but seldom that more than one such bath is needed.

Plants want to be kept clean and free from dust to thrive, and as nearly all insects are opposed to cleanliness, they will not be very troublesome where proper attention is paid to the comfort of the plant. Of course where there are a great many plants in a small room, they are more liable to be troubled.

I will mention two instances with their results. In one smoke was the agent, in the other pure water. A lady had a fine tree of carnation pink which became infested with insects. Believing as she did in the smoke theory, she subjected it to a thorough fumigation; expecting to find her efforts successful when the smoking process was over, she examined the pink. The insects were apparently killed—only apparently, as she afterwards found—and her pink also. We had a large plant of the same variety, gave it frequent showerings, and never but once have seen these insects upon it when we treated it as I have described. The pests die, the pink lives, and I think that smoke, as a general thing, is death to the plant. Though many uphold the theory I have never seen the plant that had suffered a thorough fumigation, that looked well or was freed from insects. To be sure, my plan takes time and patience, but there is nothing that we can do which does not require both.

Nevertheless smoking is a good thing. Good florists smoke their green-houses twice or three times a week, filling them with tobacco smoke and shutting them up all night, not only as a cure, but also as a preventive. Smoking stupefies the plant lice, and then they are easily washed off by sprinkling, and drowned in a pan of water if you wish.

The red spider is the worst enemy to contend with, for it is so small as to be scarcely seen with the naked eye, and its ravages can only be known by the brown, discolored and withering leaves. Frequent syringing over and under the foliage, and maintaining a moist atmosphere, will drive off, not destroy, this pest: it can't endure wet.

Perhaps the lady referred to above smoked her plants too much. The writer has done so with plants. I once had a pot of pinks badly infested with green flies: the pot, plant and all were soaked in a vessel of water until every insect was destroyed. With large plants this is not convenient. Have had small rose bushes and carnations infested the present season, which were smothered by turning a box over them and putting under it a pot containing tobacco and a few live coals. A few minutes done the work, and the plants were not destroyed.

BARBERRIES.

We are not specially called on to give "an opinion" of the Barberry, but we can furnish information that will be new to many. The Barberry is a native of the mountains of New

Hampshire and other New England States, and is a shrubby plant. It is perfectly hardy and well adapted to our soil and climate; a good grower, is emphatically a hedge plant, and is furnished with an abundance of thorns. Unlike the Osage, it needs no trimming, sending up shoots from the main root, and close to it; on one we have just counted forty-seven sprouts where six years ago there were but three.

In a hedge it need not be planted nearer than three or four feet, as these shoots will soon make it impassable to all small animals, while the dense top will prove an effectual barrier to cattle and horses. The roots do not extend so far as many other hedge plants, and it can be propagated with ease and certainty by the seed and cutting. We can attest with "Little Woman" the virtues of Barberry jelly or jam, and no New England housekeeper of the old school ever thought her stock of preserves complete without it. The bark is often used in coloring a fine shade of yellow. The shrub is ornamental—the first plants on our grounds that put on their dress of green is the Barberry, and it is the last to lay it off in compliance with stern winter's demands.—*Iowa Homestead.*

The Horse.

CORN INJURIOUS TO HORSES.

I am much interested in the welfare of dumb creatures, and especially of that noble animal, the horse, which suffers, in my opinion, more than all the rest.

I most earnestly believe, for years, we have been feeding our horses on unnatural food, which has developed pain, disease and suffering beyond all calculations. Furthermore, I have no doubt but this is the cause of the prevailing disease.

I may be too positive, but I have carefully watched the effects of corn upon the system of horses, until I am convinced that it is not only bad policy for owners in view of strength, health, and life of their horses, but that it is downright cruelty. I think the race is degenerating rapidly, and that we shall lose it entirely if we keep on many generations more.

Compare the number of foundered horses to-day with those of fifty years ago, when in the country no one but the doctor "kept his horse up." Take into consideration the countless cases of colds, fevers, and like diseases among horses, and the incalculable number of foundered, broken-down beasts, just when they ought to be the strongest, and most serviceable, and must we not conclude there is some wide-spread and prominent cause? It is not all from over-driving; for we have many cases where family horses, receiving, as their owners suppose, the kindest care, shortly turn out to be broken-down beasts, from some unknown and mysterious cause.

In regard to this disease: I believe corn, which has been fed for years past, has engendered heat and disease in the blood of horses, until they are keenly susceptible to the sudden changes of our climate, and that, and no other, is the cause of all this suffering and trouble. We have had a season of frequent and remarkable changes. The disease was in the blood, and ripe for development; and we have reaped the reward for past ignorance.

That horses should eat no corn at all I do not believe. A change of feed is desirable. As the cold winter comes on, I begin to prepare my horses for that event by mixing enough corn to keep them warm. Doubtless our winters are colder than the natural climate for our race of horses; and a little corn is beneficial in assisting their natures to resist the cold.

If any one wishes to learn the most natural food for a horse, let him try the experiment by turning the horse out to grass until all grain is out of his system, and then give him free access to all kinds, and see which he will choose. Ever after, let him have that as a staple. It will prove to be oats.—*M. C. in "Our Dumb Animals."*

MORTALITY AMONG JACKS.

There appears to be great mortality among the jack stock in Iowa, Illinois, Michigan, Tennessee and Kentucky, by the ravages of the epizootic influenza. In Kentucky the disease was terribly fatal, fully three-fourths of the jack stock in that State having died from its effects. Although the jennies suffered less than the jacks, the mortality among them was greater than among the horses.

BARREN MARES.

A correspondent of the Irish Sportsman & Farmer writes as follows:—

"I have now in my possession a half-bred mare that, after producing one foal when put to the stud, some eight years ago, has remained barren until this season, but is now within a few weeks of foaling. The summer she was suckling she was put to the horse, but has been served every year since, and by every variety of stallion, from the thoroughbred to the pony. She was during all this time in what is considered a natural state—i. e., on grass—and was sometimes in high flesh, at others in opposite condition. Mechanical means were likewise resorted to by experienced hands, but in vain.

At length a bright idea struck me. I remembered those lines in Virgil, where he advises that the mare, before being introduced to the sire, should be violently exercised.—Forthwith I changed my tactics; I took the mare off grass, and I gave her a season's hunting; I put her into training, and a couple of days after she had won a private steeplechase, I gave her the horse.

As I had her in condition, and as, notwithstanding her age, she was remarkably fresh, I thought I might as well enter her for a couple of small stakes; but now her very nature appeared to have undergone a change, and though very game, and a stayer to boot, she was completely pumped out before she had gone a mile, and was easily bowled over by an animal that she had 'lost' a short time before. From being an extremely hot and irritable temperment, she now became so cool and indifferent that Lanercost himself might have envied her; and this change, coupled with a defeat she sustained from rubbish that at another time she could have distanced, at last opened my eyes to the fact that she was in an interesting condition. I have my own ideas on the matter, but leave your readers to draw their own conclusions."

CHANGING A HORSE'S GAIT.

In Barbary pacing horses are held in such high estimation that the method of making a spirited trotter shackle like a boat in a chop sea is reduced to a science. To make him rack easily, a ring of lead covered with leather is put around each hoof; a cord from each weight ascends and is fastened to the saddle, front and rear; next, a strap runs horizontally from the fore to the hind foot on both sides. Being rather short, it is impossible to make a long step. Restraint compels the animal to practice a new gait to progress at all. As soon as a habit is established of going ahead thus tethered, the desirable amble is fully and permanently accomplished.—*Spirit.*

VALUE OF DOMESTIC ANIMALS.

The value of domestic animals is not fairly appreciated by the community. They never will see till famine or some other calamity reminds them of their dependence. When an epidemic sweeps over the land prostrating the noble horse, internal commerce is paralyzed, domestic intercourse is stopped, and a stagnation in business follows the loss of the services of the faithful horse. Man is dependent upon the brute creation. Nations can only become independent by developing their agricultural, animal and mineral resources. It is the productive power of land and labour that feeds and clothes mankind. Governments to be strong must encourage their subjects in agriculture, and protect their animal and cereal productions. Stock raising is a source of national wealth. It constitutes the strength of a nation. It contributes to the public defence by feeling and clothing armies. It is the fulcrum that holds the balance of power. The animal kingdom was created to perpetuate their kind and preserve the human race. They are indispensable to human existence and national progress.

The small birds question receives an illustration from the case of St. Helena. Bishop Piers Claughton states "the island has the most wonderfully fertile soil, and the climate is most favorable to the growth of both tropical and European productions. But these were of no avail for many years, from the incursions of various insects, and it was not until the assistance of various Indian and African birds had been obtained that the people were able to cultivate their gardens with success. This they are now able to do. The same thing is true of Arcension Island."

Good Health.

HOARSENESS—SIMPLE REMEDY FOR "LOSS OF VOICE."

Dr. John W. Corson, of Orange, N. J., furnishes the *Medical Record* with a valuable paper on "Borak and Nitrate of Potassa, in the Loss of Voice from Colds in Public Speakers and Singers;" and we have no doubt our readers will thank us for reproducing some of his practical hints.

Dr. Corson says that some years ago, while in charge of the class of "Diseases of the chest and throat," in connection with the New York Dispensary, at the suggestion of a non-professional friend engaged in teaching elocution, he was led to test the efficacy of the Borak, or the bicarbonate of soda, in many cases of sudden hoarseness from cold, which he at once found in mild attacks acted like magic. Ten minutes before any continuous effort at speaking or singing, a lump of borak the size of a garden pea, or about three or four grains, is to be held in the mouth until it is slowly dissolved and partially swallowed—distilling, as it were, down the throat. For an hour or so it renders the voice quite silvery and clear. For this purpose it possessed three special advantages. It is easily obtained, convenient to carry in the vest pocket, and is perfectly harmless.

Borak thus used, as one may readily prove, stimulates the secretion of saliva and makes the whole mouth and throat "water" profusely. Dr. Corson is careful not to claim too much for borak, and he remarks that neither in chronic affections of the throat, nor in acute inflammation, nor in "tonsillitis," once established, has he found borak of any special efficacy as a curative.

The use of the other remedy named, "Nitrate of Potassa," is thus introduced:—

An early friend and patient of ours, since deceased, a New York dock builder, much exposed to the weather, claimed to have a secret remedy for "colds." But he was too generous to bury anything useful. At length he confessed that it consisted in covering up warmly in bed, drinking a glass of water and sucking a piece of the nitrate of potassa—or "saltpetre," as he preferred to call it—the size of a garden pea, or a little larger, till it was slowly dissolved or swallowed. We think we improved his prescription by sweetening the water, to cover the mawkish taste of the saltpetre, mixing them and swallowing both together. We also increased the dose, from gratifying personal experience, to five grains. As a courtesy from our profession to clergymen and singers, we may suggest that they will find it very convenient, in travelling, to carry a few five grain powders of the nitrate of potassa prepared by druggists, for ready use. Like the borak, it relieves the dryness of the vocal cords. It is also easily obtained in every household, and, taken in the dose recommended, is quite harmless.

With the help of the extra clothing and the glass of water, it excites for a while a night a gentle perspiration, and thus, if taken at the very commencement, breaks up the cold. It accomplishes this as do warm foot baths, if used early, by opening those millions of pores of the skin which Erasmus Wilson counted through his microscope. As the aching, the weariness, and the headache of a severe cold tell us the blood is slightly poisoned by suppressed perspiration. And the simple lesson of cure is promptly to open these pores. We may add, that the efficiency of any of these remedies is much increased by putting on a warm shawl or great coat and throwing the arms about, and walking the floor rapidly till the hands and feet are in perfect glow before retiring to bed.

PRESCRIPTION FOR A DYSPYPTIC.

Mr. A. had been for years a hearty laboring man, and as he advanced in life, very naturally turned over the hardest of his work to his grown up boys. But now that he expected to lead an easy life his trouble increased. He suffered untold miseries from dyspepsia.

"I have such dreadful nights," he said to a friend. "If I sleep, I dream more than a malefactor might be supposed to, and if I am awake, I am always in great distress. It seems almost as though I had an iron wedge in my stomach. I've taken a power of medicine, but nothing seems to help me."

"You live pretty well at your house, don't you?" inquired his friend.

"Well, middling; my wife is as good a cook as there is about."

"What do you generally have for supper?"

"Last night, for example. As the weather was so cold, we had sausage and fried potatoes and pumpkin pie, besides the common fixings of hot biscuit, pickles and such like."

"I suppose you made a good meal?"

"Well, middling. I didn't feel much appetite before I sat down, but I kind of nibbled round till I got up one, and finished off the last slice of mother's pie myself."

"So you could not sleep well last night?"

"I heard the clock strike every hour."

"Would you like a prescription that would take away this iron wedge in your chest, and remove all your bad symptoms? I can give you one that you can find great benefit from in one day, and I don't doubt but a few days would cure you. For breakfast take a cup of weak tea and a slice of stale bread and excellent butter, for dinner a bowl of broth with bread crumbed in it, and for supper a cup of tea, only."

"Why, a fellow would starve to death on that."

"Not quite, but he will die of over-eating very speedily if he keeps on long in your present course, with your present symptoms. Be persuaded to save your life for a dozen years longer, my friend. It is sinful to commit suicide as you are doing."

Mr. A. was at last induced to follow the spirit, if not the letter, of his friend's directions, and a month after declared that he felt like a new man, mentally and physically.—There are a great many who could follow the same prescription with great profit.

UNBOLTED FLOUR BREAD.

I have had nearly eight years' experience in making unbolted flour bread, and having used it almost exclusively in my family I believe it to be the most delicious and wholesome bread in use.

The unbolted bread which I consider so wholesome is unleavened bread, generally known by the name of "gens." It is made perfectly light, without fermentation. The following is the recipe:—

Stir together unbolted flour and cold water, or two-thirds water or one-third sweet milk or cream, to about the consistency of cake batter. Bake in a hot oven fifteen to twenty minutes in small pans, not larger than two and a half inches square, and one inch deep. If larger pans are used the bread will be heavy; if much smaller, it will be dry and hard. Cast iron pans can be procured at almost any tin or stove store. The pans should first be heated hot, and then well greased; now fill even full and bake until the gens are of a light brown. They will then be as light and porous as sponge cake, and much more wholesome than fermented bread.

Fermented bread or biscuit made with yeast can be made with unbolted flour as light as with bolted flour, and is much more wholesome. This, however, is not to be compared with the above unfermented bread called gens.—*Ec.*

WHY NOT MORE SIMPLE FOOD?

Many ladies who agree in thinking that rich cakes and pies are unwholesome, remark that their husbands feel that their comfort is not properly cared for if such things are not provided in profusion. To such I would say, try if your husbands would not be equally contented with plainer cakes and with simple and delicate puddings for desserts. If you do not mention the absence of pastry, my word for it, they will never notice the difference.

It appears to me that the main secret of the supposed attachment of the masculine gender to such articles of diet is, that our housekeepers far too generally leave what they consider the coarser forms of cookery to the uneducated daughters of Erin, and devote their own clearer perceptions to the more substantial and less necessary viands, so that really the best cooked eatables in the houses are those which are too rich to satisfy a vigorous appetite, without serious injury to the stomach. If the beef is outwardly but a cinder, and inwardly but raw flesh; if the potatoes are watery; the beets hard, the beans blackened, the peas cooked to a mash, and the bread heavy or clammy, or sour, while the pies are light, crisp and delicately palatable, what can be expected but that the latter should be preferred.

If ladies turned their brighter wits and more dexterous hands to the bread, meats and vegetables, leaving to Biddy the pastry and sweet cakes, would not the case be reversed? Would Paterfamilias send away a nice juicy steak to take in exchange a piece of greasy or s-l-leather pie crust, think you? If you set before him on the table delicious bread, some finely shaved smoked beef, or thinly sliced tongue, or cold boiled ham or chicken, or a bit of nicely broiled fish, with plenty of fruit, either fresh or canned, or even dried and stewed, will he be likely to scold? Will he not be better pleased than with uneatable bread and unappetizing meat, while the cake basket is piled with many varieties of rich cake? The trouble of preparation is about equal either way, but the after troubles of chronic dyspepsia or periodical sick head aches, make the balance very unequal.—*Health and Home.*

CHARCOAL AND BRIMSTONE FOR SWINE.

In every hog pen there should be deposited weekly a quantity of charcoal. The hog acquires by its use a substance, and is greatly benefited and strengthened by its use. It prevents many unpleasant diseases, and contributes largely to the fatty secretions. A few spoonfuls of pulverized brimstone or flour of sulphur, in a little dough, should be administered as often as once a fortnight to swine while fattening.

Correspondence.

WHOLE OR CUT TURNIPS.

SIR.—As I am quite a novice in stall feeding, I should like to have your or some of your correspondents' opinion as to the comparative advantage of feeding whole or cut turnips with provender once or three times a day; also, whether it would be better to commence with a small amount of provender and increase, or feed the same proportion all through. Any information on the matter will much oblige.

R. Y. GREENE.

March, Ont., Feb. 25th, 1873.

Prize Essay on Beans.

WHITE BEANS AS A CROP AND AS FOOD FOR SHEEP.

Take a poor, worn out stubble and immediately after the oats are removed, put on the cultivator, and give the land a good scarifying, crossways and lengthways. This should be done when the soil is dry, as the object is to kill the weeds that are then growing, and to cause the weeds and shelled grain that may be on the surface to germinate, to ensure their destruction by the plough, and also to enrich the land in some measure by their decomposition. Plough deep in the fall, if the subsoil is of sufficiently fertile a character to bear bringing to the surface; if such is not the case plough only such a depth as has been previously turned, and subsoil. If your soil is clay, plough into four-pace lands; be sure it is not too wet, and that no water can lodge in the furrows during winter. Manure on the surface, it is sure to get down deep enough. I have found the best results from well-rotted sheep manure. When putting in your spring grain, if you see any weeds showing their heads, run the cultivator over the piece, once or twice, when the weather is dry, to kill them. As soon as your grain is in, say the 20th of May, prepare your land for beans, by cross-ploughing into wide "sets," say 20 yards each; back a few seeds into the furrows so as to leave the land nearly level; or, if the land is mellow, (which it ought to be for beans), a good stirring with the cultivator, I have found to answer as well as ploughing; in either case the land must be well pulverized before drilling. If you have not got a double mould board plough, you can do quite well with any ordinary plough. What are called single drills are the best, as they can be made lighter and more expeditious, they should be made in the same direction as the fall ploughing had been done. I make the drill 28 or 30 inches wide, and three inches deep. A boy should follow with a seed sower, dropping the seed immediately after the plough, so that it may be deposited before the horse walks in the drills, by that means it is placed at a uniform depth and more in line; cover with two ribs of a diamond harrow, given lengthways of the drills, before the soil gets too dry. The seed should be dropped about three inches apart in the drill; I should prefer having three seeds placed at intervals of nine inches for convenience in cleaning and harvesting. This latter I have never been able to accomplish, in fact, I have raised hundreds of bushels of beans, the seed of which were dropped with a tin pail with a half inch hole in the bottom. The moment the beans are high enough to hoe run a horse-hoe twice in a row, as close to them as is possible without rooting them out; by attending to this you will leave little or nothing to be done by the hand hoe. They should get a second hoeing before they get too large. When the pods are forward, if the crop is good, the rows will touch and form one mass of green, very grateful to the eyes, at a season too when nearly everything else is parched with the heat of "dog days." As soon as a majority of the pods are ripe the crop is fit to pull; in fact, I have seen beans pulled green, ripen; and although a little smaller on that account, they have turned out much better than if left standing while green until struck by frost. Beans raised in sandy loam, or sand, might be taken out by an implement drawn by one horse, with knives attached, to take out two rows at a time, in the same manner as a writer in the *Advocate* describes one for taking out turnips. I have generally raised them in clay, or should have attempted something of the kind. I have to employ boys and girls from eight to twelve years of age; each one takes a row, two children pull together, in bunches the size of a half bushel; small bunches are safest, as they dry out readily after a slight rain. If there is danger of bad weather, it is better to stack in the field. Some stack in a conical form around a pole stuck firmly in the earth. This answers well enough if built on sticks or stones, to keep them off the ground, and covered with straw. I prefer stacking on two rails eight or ten inches apart; on these I put the beans with the roots inward, until I built a stack ten feet long, three feet wide, six feet high at one end and four feet at the other, supported by four stakes driven in the ground, two at each side. I cover with three boards. One of these stacks will hold fifteen or twenty bushels and are perfectly safe. As soon as quite dry, draw them in, and put them on a loft, where they can have air. If too scale thresh with a flail. In winter they thresh easy. If intended for sheep they may be fed

in the pods, of which they are very fond, preferring them to hay. For feeding in this way, I should recommend planting later, and pulling greener, as the leaves would remain on. I have never fed any but damaged beans to sheep, which I bought cheap, not certainly so nutritious as good sound beans, yet my sheep have done well on them, and have not dropped their wool as they are apt to do when fed on grain. I find half a pound each daily quite sufficient to fatten sheep. But will it pay? is a question that naturally arises, and a very proper question it is, for no farming is good that is not within a reasonable time remunerative. The answer is—It will pay to raise beans directly if the price is good and the market of easy access; or fed to sheep, should the market be distant or the price low. Indirectly, in the crop which follows; this, I think, the most important feature of the crop, viz., the improvement of the soil, for I have, for ten years, proved it the very best preparation for wheat. There is no other crop as well suited for a green fallow as beans because, drawing their nutriment from the air, they do not exhaust the soil, while with their numerous and spreading leaves they shade it, thereby keeping down the growth of weeds. And, finally, their last act is one of beneficence, for by enriching the soil with their leaves, they do what very few of us do—they leave the world better than they find it.

Wolfe Island, March, 1873. S. GOING.

DEAR SIR:—Your valued and welcome paper to hand. In the essay on the culture or cultivation of turnips, I held myself to the subject—"Culture, to Till, Improvement." I don't think this had anything to do with the quantity of seed, storing, &c., and your judges

with turnips in the whole, for a turnip should never be cut. Never cut the skin of a turnip or a potato when you cook them; nature put that jacket round them to preserve their nutriment. Fill in your steam box some cut hay or straw first on the bottom, then turnips, man-gold, bran, chaff, chopstuf, flaxseed bows on top—then you have feed for everything.

B—Root trap. A—Boiler and steam pipe into feed box. My plan is, have a good grainery over your root, feed, pig and fat cattle establishment. Roots received at trap B. Steam house F.—Chaff, bows, bran, &c., can be received from above. Roots, &c., can be flung in from the root house. Start your little fire at A, well secured. Shut up your steam house, go and attend to your business. Return in proper time, and find a box of the fine-t feed for all your stock. You can have your pigs, &c., as warm as you please. Doors at C, C, C. You can pass through into cattle shed in under barn, &c. I would like to have a place like this.

Yours truly, ED. McCOLLUM.

MR. EDITOR—I am sadly behind in my correspondence to the ADVOCATE. As for the North Norwich Farmers' Club, I may say that it is an established institution. With a membership of about fifty we do not think of breaking down. I think the plan of electing a president for each meeting is far superior to that of an annual election. Since Christmas we have held meetings semi-monthly, but intend going back to the monthly rule in the summer. Our last meeting in February was an interesting one. Mr. Jno. Ray was president, and his subject was "The Breeding and Feeding of Neat

will produce a fattening tendency. H. T. Losee would force calves and have heifer cows in at two years old. This he said would check the fattening tendency and turn it into a milking property. H. Vanvalkenburg would force calves for beef, but would not feed calves intended for the dairy extra. Would have heifers come in at two, then let them go farrow one year and bring them in a again at four years old. Would not buy pampered stock for breeding. Thought stalks and corn fodder the best kinds of feed. J. Ghent would, by crossing with the short-horn, get a larger breed. Thought too many calves were raised by half. Gilbert Moore advised gentle treatment of all animals. Thought that where two teams were required on the farm one of them should be an ox team. They were less expensive, and when worn out could be fattened, and the money received for the beef could be used to replace them by a young yoke. If more oxen were used we would, to a certain extent, evade the most selfish and despicable Harness Makers' Association.

At our meeting on March 8, Elias Mott was president, and the subject was "Draining." The meeting was lively and interesting, but so much has been written and said on draining that I forbear giving an account of the discussion.

It almost seems to me that the most ignorant could see where it is necessary, but for going into the details of under-draining, I consider myself incompetent. It seems to be a trade, and you may read and read till you are blind, but you will never understand draining until you go at it and perform some of the labor.

For our next meeting H. T. Losee was elected president. Subject, "Management and Feeding of Dairy Cows." B. J. P.

Table of Vegetable Seeds

THAT MAY BE SOWN IN EACH MONTH, FROM APRIL TO SEPTEMBER.

APRIL.—Sow in hot bed: Sweet Corn, Cucumber, Egg Plant, Melon, Pepper, Tomato, Mustard and Cress. Sow in open ground: Asparagus, English Beans, Beet, Brocoli, Brussel Sprouts, Early Cabbage, Carrot, Cauliflower, Celery, Cress, Kohl Rabi, Leek, Lettuce, Onion, Parsley, Parsnips, Peas, Potatoes, Radish, Spinach, Early Turnips, Sage and Lawn Grass.

MAY.—Sow in open ground: Artichoke, Asparagus, Beet, English Beans, Dwarf Beans, Pole Beans, Brussels Sprouts, Late Cabbage, Carrot, Cauliflower, Celery, Sweet Corn, Cress, Cucumber, White Endive, Kale, Lettuce, Melon, Onion, Parsley, Parsnip, Peas, Potatoes, Radish, Rhubarb, Salsify, Spinach, Tomato, Early Turnip, all Herbs and Lawn Grass.

JUNE.—Sow in open ground: Bush Beans, Lima Beans, Pole Beans, Beet, Brocoli, Brussels Sprouts, Early Cabbage, Carrot, Cauliflower, Sweet Corn, Cress, Cucumber, Endive, Kohl Rabi, Lettuce, Melon, Nasturtium, Okra, Early Peas, Potatoes, Pumpkins, Radish, Spinach, Squash and Swede Turnip.

JULY.—Sow in open ground: Bush Beans, Beet, Carrot, Sweet Corn, Corn Salad, Cress, Cucumber, Endive, Gherkin, Kale, Lettuce, Early Peas, Pumpkin, Radish, Spinach, Squash, White Turnip and Swede Turnip.

AUGUST.—Sow in open ground: Bush Beans, Corn Salad, Endive, Lettuce, Welsh Onions, Radish, Spinach, Turnip and Winter Radish.

SEPTEMBER.—Sow in open ground: Cabbage for cold frames, Cauliflower for cold frames, Corn Salad, Cress, Lettuce, Mustard, Winter Radish, Spinach, Turnip and Lawn Grass. Also in October.

Opinions of the American Agricultural Press on Agricultural Colleges.

MORE LAND FOR AGRICULTURAL COLLEGE.

The so-called Agricultural College grant, which has lately been so industriously lobbied before Congress, has passed the House of Representatives, it is said, by one of those tricks so well-known to the wisecracks who make our laws. We have heretofore given considerable space to the discussion of agricultural education, and have also freely stated our views on the question. The *Hearth and Home* thus pointedly states the case in reference to this new and old grant:—

Some years ago, when the public lands were being disposed of with a free hand, a New England senator, finding that the appropriations of these lands were mainly for the benefit of the newer States, thought that the older States should have a share of the plunder and he hit upon a plan for giving every State a portion of the public territory, the proceeds of which were to be devoted to the founding of Agricultural and Industrial Colleges. As the land was to be divided among the States according to their population, the older ones came in for a fair share in the distribution; and as the object of the donation was to educate farmers' sons, or

to teach the sons of other people to be farmers, the thing had a popular aspect, and the bill passed. Many States came at once into the possession of a very large elephant. "Agricultural education! Oh! yes, of course we must have it! We wonder how we ever got along without it!" was the general feeling, and the various States set to work to realize upon their land-grants, and then to carry out the provisions of the law by establishing an Agricultural college. We do not know that any State considered the questions, "Do we want an Agricultural college at all?" or "What sort of a college shall it be?" but all went to work with the desire to do something, and the result is a melancholy array of failures. Not that all the colleges are failures, but as a whole, the entire Agricultural college system is an illustration of the folly of supplying a thing before there is a demand for it.

Now there has come a demand for more money, and a bill granting still other lands has already passed the Senate in what seems to us a most hurried manner. Before the House passes this bill, would it not be well to inquire what has been done with the money received from the grant of 1862, and if the results have been such as to warrant another appropriation of the public domain? We believe in education of agriculturists as we do in that of machinists, blacksmiths, shipbuilders, shoemakers, and everyone else, and would not appear to oppose the amplest public provision for the education of farmers' sons. But we think this is a proper time to inquire how the money has been used. Not to go outside of our own State, we find that the share of the national grant coming to New York was turned over, under certain conditions, to Mr. Ezra Cornell, to found a University which should perpetuate his name. New York's portion was 990,000 acres of land.

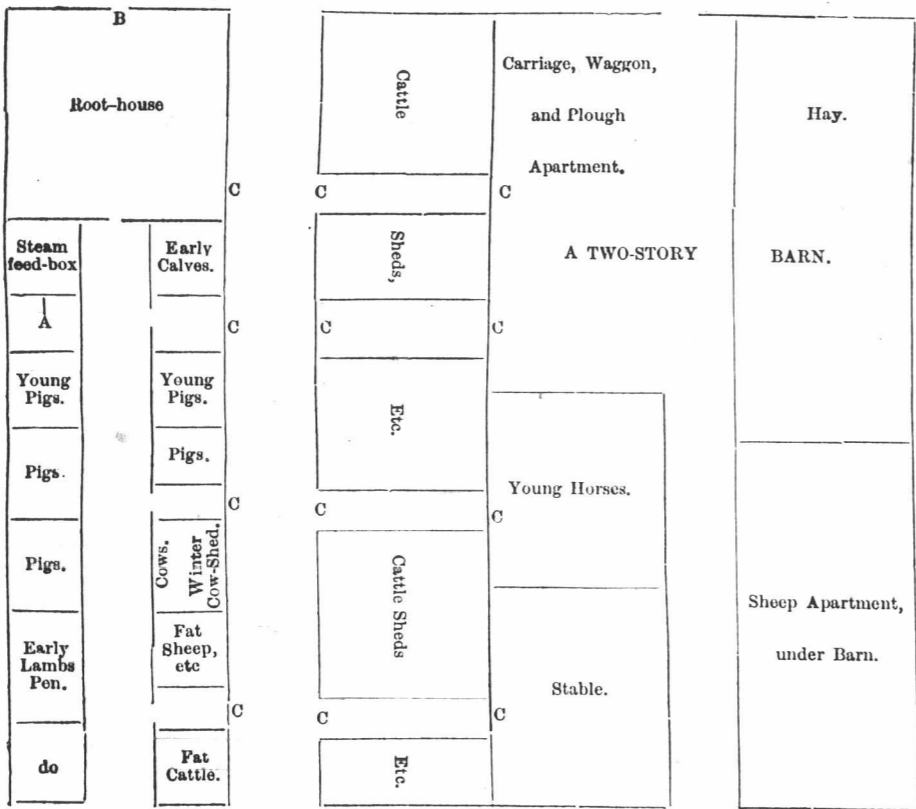
The Register of Cornell University shows that there are in all departments four hundred and ninety-four students, and in the classification it appears that of this number fifteen are agricultural students. Here is the great State of New York, which, second to none as an Agricultural State, or in the intelligence of its farming community, sends only fifteen of her sons to study agriculture at Cornell. If there were not something wrong about the whole matter, each township in the State should furnish as many students. What the matter is, we will not now discuss, but because the figures happen to be at hand, we have no doubt that the statistics in other States will show that it is worth while for Congress, before it appropriates more lands, to ask what has been the use made of the former grant, and whether it is worth while to force Agricultural Colleges upon a people who have not yet shown that they require them. The subject is one presenting many aspects, only one of which has been hinted at in the present article.

An account of Cornell University, in the report of the department of agriculture for 1869, which was evidently prepared by some one familiar with the subject, states that a large portion of the land-scrip has been favorably located, and that the estate at that time belonging to the college was valued at \$2,500,000. This is exclusive of donations from Mr. Cornell and others. The State of New York then has given to Cornell University its portion of the national grant, valued at \$2,500,000. In the way of agricultural education we have to show for this fifteen students. The income on two and a half millions should be \$175,000 per ann., and this, among fifteen students, will be over eleven thousand dollars a year to each one. We merely put the statement in this form to show what is done in New York for agricultural education, and as an indication of what might have been done had the fund been differently disposed of.

THE COLLEGE LAND GRANT BILL DEFEATED.

Every right-minded farmer in the United States will feel rejoiced at the final defeat of the College Land Grant Bill in Congress. We have heretofore called attention to the matter editorially, and have quoted from such of our cotemporaries as have fought the iniquity that was so persistently lobbied by certain agricultural college professors, in their own interests, and which at one time we anticipated would become a law through the trickery of a member. Later we feared it would be run through in an "omnibus" during the hurry incident to the close of the session. Perhaps the astounding corruption brought to light during the present session has made our Congressmen careful for the present. The Bill will undoubtedly be brought up again; if so, the lobbying of professors and regents will be spotted.

Those agricultural colleges that are doing their duty should be fostered, and the States in which they are situated can well afford to do so. Speaking of the defeat of the Bill, an agricultural cotemporary naively wants "such a showing up of the monstrosity that no future Congress will entertain it for a moment." That is the next thing to locking the stable door after the horse is stolen, but better late than never.—*Western Rural*.



laid great weight on both these points in giving their decision.

I would like to hear the opinion of good, experienced farmers on the question of manuring in the fall, or allowing the manure to mix with the soil for a length of time before planting, or placing the fresh manure in the fresh opened drill, right under the plant. The best crops of turnips ever I saw raised at home or in this country, were the green-topped Swede. It is a fine, large turnip. The fly does not ravage half so much on it as on other varieties of the Swede. It pushes out a strong leaf, much like the Yellow Aberdeen, and when it arrives at maturity the leaves cover the whole ground. It greatly improves the land, much more than any other turnip. You can't think the effect this first of turnips has on the soil—leaves it as mellow and as rich as you please. It throws off a large crop of leaves—a treasure in themselves if properly used. If they are put course about in your straw stock or your straw in your straw loft, you may expect to have something your cattle will thank you for through the winter. Try it. As to storing, I hope yet to have a good root house and cook house and pig house, all under the same roof, with a store overhead for all my chaff, bran, chopstuf, corn, and, above all, flaxseed bows. Every farmer should sow from an acre to two of flax every year for the seed alone; save it dry in the bowls. This is the stuff to mix on top every charge in your steam feed box. Men along the Humber, in England, can pay \$20 per acre, and raise flax for the seed alone, and make no use of the fibre. I ripped and saved the bowls of seven Irish acres every year in the old country. Then have a good steam box, fill it up

Cattle." A few extracts from his speech might be advisable. He classed the breeds of cattle of this country as follows:—First—Our own native breed, because they are accustomed to our climate and the usage cattle generally receive in this country. If we were to lose all our breeds but one he would rather have that one native than any other. He thought that on the whole the natives would yield the general farmer the most profit. As second he would place the short-horns. Thought a cross between the natives and short-horns never amiss, but advisable at all times and in all places. Third—The Devons; fourth, Galloways; after them the Hereford, Ayrshire, Jersey and Alderney. He thought the system of deaconing calves, as in Norwich, a bad one, because we do not raise some calves, but when the majority are deaconed we do not select good bulls, because we do not think it worth while to support good bulls when we raise so few calves. When we have a cow that is rather an extra milker we should raise her calves and see that they were got by a good bull. On the other hand, all calves from an inferior milker should be deaconed or vealed. He said it used to be considered sufficient for cattle to find shelter on the lee side of the barn, fence or straw-stack, but now we find them mostly in stables. Thought that in pasturing cows should have the run of the whole field, and not be changed about from one field to another. Breeding he considered one half and feeding the other half.

After Mr. Ray several members spoke, and from them some good ideas might be gleaned. W. S. Moore said in breeding for milkers he would not only look at the cow stock but also at the bulls. He said that if a calf is forced it



MINNIE MAY'S DEPARTMENT.

PRIZES.

I will send our \$2.50 package of Flower seeds and Bulbs as a Prize to the farmer's wife, daughter or sweetheart who sends me the BEST LETTER ON THE CARE OF FLOWERS AND HOUSE PLANTS. Also, a similar prize for the BEST LETTER ON DAIRY MANAGEMENT. Answers must be in by the 19th of April. MINNIE MAY.

A young married couple—Mr. and Mrs. Bland—have recently moved in near me, and have gone to housekeeping. The wife is one of those unfortunate beings who, though brought up by an excellent mother, is yet ignorant of all the common arts of daily life.

That word excellent, I think, I must take back, because how can it be applied to a mother who, knowing what changes fortune may bring in a single day, lets her children grow up without knowing how to make bread or do their own plain sewing.

This lady lost her parents, and, being left nearly destitute, was obliged to make a living by teaching music. She is now married to a young lawyer, just beginning in his profession, and in domestic economy she has everything to learn.

The first time I called on her she was so full of her troubles she could not help talking about them. "My husband is so fond of hot muffins," she said, "and I have no idea how to make them." I promised to send her my recipe; it was given me by an old housekeeper, and said by her to be infallible.

MUFFINS.

Mix a quart of wheat flour smoothly with a pint and a half of lukewarm milk, half a tea-cup of yeast, a couple of beaten eggs, a heaping teaspoonful of salt, and a couple of tablespoonfuls of lukewarm melted butter. Set the batter in a warm place to rise; when light, butter your muffin rings or cups, turn in the mixture and bake the muffins to a light brown. This week I made a jelly cake that John said was better than Mrs. Wisetop's. It is a new recipe, much nicer than any I ever came across.

JELLY CAKE.

Three eggs beaten very light; 1 cup of white sugar, 1 cup of flour, 1 teaspoonful of cream tartar mixed dry in the flour, 1/2 a teaspoonful of soda dissolved in hot water, 1 tablespoonful of cream or butter, 1/2 a teaspoonful of essence of lemon or vanilla. This makes one nice cake of three or four stories.

Tuesday, John Munson dined with us. He was an old college chum of John's, and is a very agreeable young man. He noticed Gussie's hand tied up, and asked what was the matter.

"Burnt it over the spout of the teakettle," Gussie said.

"What have you done for it?"

"Mamma put arnica and water on at first, and then wrapped it up in raw linseed oil."

"Yes," said John, "that is good, but scraped raw potato is better. Just cover the burnt place with a poultice of potatoes; whenever the pain returns put on a fresh one and you will have no more trouble. I have known people who were fearfully burned to be cured in a few days by using this simple remedy."

ANSWERS TO CORRESPONDENTS.

Mr. Hunter says he tried oiling his floor, and the consequence is that the floor is spoiled; but upon questioning, I find he did not have his floor scrubbed before applying the oil. Now, I should think that any one with common sense would know enough to have a floor clean before trying any such thing as oiling.

Have the boards perfectly clean and dry, or the effect will be to injure instead of to improve. Do not be afraid to use plenty of hot water and soap, and only put on enough oil to sink into the pores of the wood; do not allow it to remain standing on the surface. If the floor is dirty the pores are already filled, consequently the oil must remain on the surface, and will catch all the dirt and dust.

New floors are better for oiling than old ones, although I think with care old ones can be made to look very well.

While on the subject of floors, I will give an idea for keeping oil cloths looking fresh and nice. I know of one that lasted ten years on a hall where there was a great deal of wear all the time, and it was not one of the very best cloths either.

It was an American cloth, and we all know that the English cloths are far superior to any others. About once in three months it was rubbed with a preparation of beeswax and turpentine. First wash and allow time to dry; then take the beeswax and turpentine, well mixed together, and rub on with a woollen cloth; then rub over it again with another woollen cloth, and, lastly, polish with a clean cotton cloth. It requires considerable hard rubbing, but well repays for the work. It is like a varnish, and forms a coating which preserves the cloth.

It is rather slippery at first, and care must be taken in walking on it not to fall. The night before you wish to use it, put your beeswax (cut up in small pieces) into a bowl, and pour the turpentine over it; in the morning stir it up, and if too thick, add more turpentine; have it like a thick paste; do not rub on but a little at a time. Some people use milk to wash oil cloth with, but I prefer the beeswax and turpentine, because in many cases the milk makes the colors dull and gives a greasy appearance.

Here is a letter from a little girl:—

DEAR MINNIE MAY,—I am a very little girl, but old enough to be very fond of candy. Molasses candy is very nice, and mother says if you will tell me how to make it, I can have some. I am one of Uncle Tom's nieces. ELLEN GRAY.

There are a great many people besides little girls that like candy. I am one of them myself, and I think that Uncle Tom likes candy as well as any little boy or girl. You ask him sometime.

MOLASSES CANDY.

Two large coffee cupfuls of molasses, and four very large tablespoonfuls of sugar; boil as rapidly as possible for twenty minutes.—Try if it is brittle by dropping into cold water. When done, rub one teaspoonful of soda smooth and stir dry into the boiling candy. Mix thoroughly and pour on to buttered pans. Stir while boiling to keep from burning. Do not pull it. If you like popcorn balls, pop it fresh and stir into a part or whole of it.

We have received a sample of colored cotton yarn from Messrs. W. Parkes & Co. It is pronounced the best seen by the ladies to whom we have shown it. See adv't.

The Col. Cheeny Strawberry is advertised in this paper. We have not yet seen them, but we are acquainted with the gentleman who advertises them. He is an old and reliable settler in the township where our farm is. He has for a long time devoted his attention to the strawberry plant. We think him the best gardener in the township.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—By a thorough knowledge of the natural laws, which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well selected coconos, Mr. Epps has provided our breakfast tables with a delicately flavored beverage which may save us many heavy doctor's bills.—Civil Service Gazette. Made simply with Boiling Water or Milk. Each packet is labelled—"James Epps & Co., Homoeopathic Chemists, London." Also, makers of Epps's Milky Cocoa (Cocoa and Condensed Milk.) 72-1-y

Latest Market Report.

LONDON, ONT., March 22.—White wheat, \$1.20 to \$1.25. Red winter wheat \$1.18 to \$1.20. Spring wheat, \$1.25. Barley, 59c. Peas, 60c. Oats, 38c. to 39c. Corn, 53c. to 55c. Buckwheat, 55c. Roll butter, 15c. to 20c. per lb. Fresh butter, 19c. to 22c. per lb. Keg butter, 10c. to 15c. per lb. Cheese, 9c. to 10c. per lb. Lard, 8c. to 9c. per lb. Eggs, fresh, per doz., 17c. to 20c.

TORONTO, March 19.—There were in to-day about 1,000 bushels only of all kinds of grain. White wheat brought \$1.41, and spring \$1.22 to \$1.23. Peas, 67c. to 69c. Oats, 40c. to 41c. Hay and straw were in large supply, the former going at \$15 to \$26, with a wide range of quality, and the latter \$9 to \$13.50. Poultry was scarce and dear, turkeys now commanding 12 1/2c. per lb., and geese 8c. to 9c. Chickens are quoted at 60c. to 70c. per pair, and ducks at 50c. to 75c. Eggs are steady at 18c. to 20c.

NEW YORK, March 21.—Flour: quiet and steady, receipts, 7000 bbls.; sales, 7000 bbls., from \$5.85 to \$8. Wheat: quiet and firm from \$1.60 to \$2.15. Rye, dull at 93c. to \$1. Corn, 64 1/2 to 65 1/2c. Oats, 44 1/2 to 51c.

We are glad to notice that Mr. A. S. Wheeler has been appointed, by Messrs. Bell & Co., of Guelph, to act as agent in this city for their renowned Organs and Melodeons. His office is No. 107 Dundas Street.—See advertisement in this paper.

The FARMER'S ADVOCATE, edited in London Ont., D.C. Terms, 1 per annum, if in advance; \$1.25, if in arrears; postage prepaid. Advertisements 10c. per line, square space. Communications and advertisements should be in the office by the 15th of the month to ensure insertion in the following number. Postage and all other expenses charged on collection of accounts, if in arrears.

Great Western Railway.

Trains leave London as follows:— GOING WEST.—12.50 p. m.; 5.35 p. m.; 2.45 a. m.; and 5.45 a. m., and 6.45 a. m. GOING EAST.—6. a. m.; 8.40 a. m.; 12.35 p. m.; 4.40 p. m.; 11.3 p. m.; and 1.15 a. m.

Grand Trunk Railway.

Mail Train for Toronto, &c., 7.30 a. m.; Day Express for Sarnia, Detroit and Toronto, 11.10 a. m.; For Stratford and Goderich, 2.55 p. m.

White's Cultivator

Is made of the BEST WROUGHT IRON. And is not only strongly made, but light in draft. Every improvement that experience can suggest has been effected. The frame is of the best wrought iron; the feet are made of the best steel, and the manner of lowering or raising is both simple and efficient.

See White's Cultivator Before purchasing. It may be examined at my workshop, King St., London; or at the Canadian Agricultural Emporium, Dundas St. Price \$35. White's Cultivator has taken FIRST PRIZE at every Exhibition.

FARM FOR SALE

IN SOUTHERN VIRGINIA, suitable for three families, there being 620 acres of land, with three houses thereon and plenty of barns and other outbuildings. Climate delightful and healthy. Can be rented for the first year on trial, at a low rent. For full particulars apply to Mr. DYAS, Office of this paper. 4-1in

Col. Cheeny Strawberry.

AFTER MANY YEARS' EXPERIENCE in growing strawberries, I find this the best both for market and home use, and well adapted to this climate. It is a cross between the Triumph de Gand and Russell, it partakes of the firmness and meaty character of the first, and has the rich gloss and fine scarlet of the latter—of excellent flavor. The fruit is very uniform in size, and as productive as Wilson's Albany. The plant is most healthy and robust. 16 plants for \$1, or 100 for \$5; mailed free to any Post Office in Canada. Delaware Nursery. Address A. FRANCIS, Delaware. 4 2in

DAY'S SULKEY HORSE RAKE.



THE ABOVE RAKE IS OFFERED IN ENTIRE CONFIDENCE TO FARMERS AND DEALERS. In the Department of Agricultural Implements it is INFERIOR TO NONE as a labor-saving implement. It is operated with ease by a lad 12 or 14 years old. Its advantage over all other rakes consists in this:—

The head is so attached that it permits the teeth to accommodate themselves to uneven ground, the wheels running upon an elevation will not raise the teeth from the ground. By the raising attachment the operator can throw the teeth of the rake higher in passing over the window than any other manufactured. The elasticity of the teeth enables it to pass over stones and other obstacles. The teeth are so shaped and attached that they do not scratch or harrow the ground like most steel teeth rakes.

This Rake is the result of steady and repeated experiments. They are manufactured from good material and are well finished, being nicely painted, striped and varnished.

PRICE OF RAKE with Plaster and Seed Sower, \$35.00 60.00

All orders addressed to the manufacturer, A. HOWELL, Brantford or W. WELLS, London, will be promptly attended to. Descriptive Catalogues sent free on application. 4-4in

OCEAN PASSAGE.—Persons intending to take a trip to the Old Country, will find it to their advantage to go by the Steamers of the National Line—large, safe and comfortable vessels. Fare low. Apply to F. S. CLARKE, next door to the Advertiser Office, London.

For Strong, Early and Good Plants of

CABBAGE, CAULIFLOWER, TOMATO, CELERY, PEPPER, EGG PLANT, VERBENAS, GERANIUM, FUSCHIA, COLENS, and other Foliage Plants, Greenhouse, Bedding and Basket Plants of all kinds.

Asters and other Annuals from Imported Seeds. Send to C. E. BRYDGES, City Farm Gardens, London. Address P. O. Box 50 B. 4-4t

FOR SALE.

ONE RED & WHITE AYRSHIRE BULL, 20 months old. Dam, "Oxford Lass;" Sire, "Young Eldridge." A superior bull; took Second Prize at Western Fair. Apply to E. H. COOPER, lot 28, 1st con., London P. O. 4-2in

COTTON YARN.

WHITE, BLUE, RED and ORANGE. Warranted the very best quality. None genuine without our label. Also, BEAM WARPS for Woolen Mills. WM. PARKES & CO., New Brunswick Cotton Mills, St. John, N. B.

ENTIRE COLT FOR SALE.

THREE YRS. OLD. Got by imported Coach Horse "Golden Hero." For style and action cannot be beaten. PETER McTAVIS, Brucefield. 4-2in

COSSITT'S Agricultural Implement Works GUELPH - - ONT.

Manufactures all kinds of Agricultural Implements— CANADIAN SIFTER FANNING MILLS, PARIS STRAW CUTTERS, LITTLE GIANT STRAW CUTTERS, ONE HORSE SEED DRILLS, HAND SEED DRILLS, ONE HORSE PLOUGHS, TURNIP CUTTERS, &c., &c.

The attention of farmers and others is called to his superior HORSE TURNIP SEED DRILL, all of iron, sows two rows, and runs the canister with an endless chain instead of friction wheels, therefore is not liable to slip and miss sowing; and by raising a lever the sowing can be stopped at any time, thus preventing the waste of seed when turning at the end of drills. Orders from a distance carefully attended to and satisfaction guaranteed. LEVI COSSITT, Nelson Crescent, Guelph. 4-4t

50 Acre Farm for Sale.

TEN MILES FROM LONDON; 3 miles from Thamesford; 6 acres wood; good house, well finished; 4 acres orchard, grafted fruit, best kind; outbuildings good and large; corners on two gravelled roads; good creek runs through it. Price—\$3000. Apply at this office. 4-1t

ST. JAMES' PARK NURSERIES.

FRUIT AND ORNAMENTAL TREES,
SHRUBS, ROSES, &c.,
For Planting in the Spring of 1873.

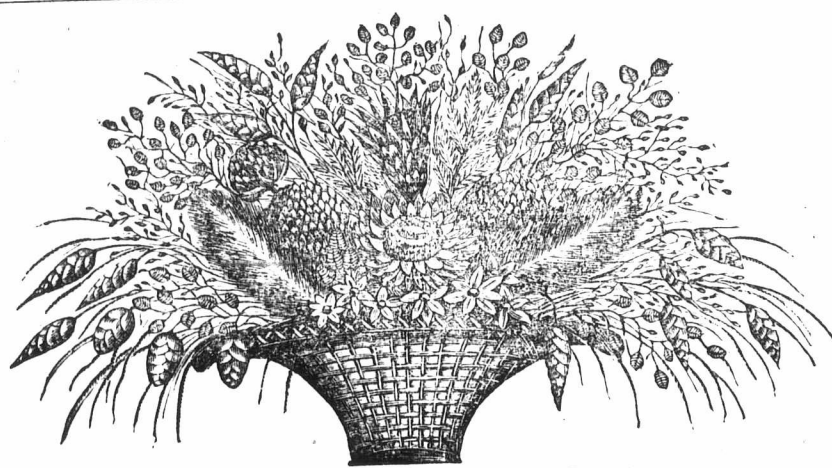
Standard and Dwarf Apples,
Standard and Dwarf Pears,
Standard and Dwarf Plums,
Standard and Dwarf Cherries,
PEACHES,
Grape Vines, English and American Goosberries,
CURRANTS,
Ornamental, Deciduous and Evergreen Trees,
Ornamental Flowering Shrubs.
HYBRID PERPETUAL MOSS & PROVINCE ROSES.
Hardy, Herbaceous Flowering Plants, Mammoth Rhubarb, Giant Asparagus,
etc., etc., etc.

Send Two Cent Stamp for Descriptive Catalogue.

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ST. JAMES' PARK P. O., ONT.

4 in A & M, Aug. & Sept.



BASKET OF EVERLASTING FLOWERS AND ORNAMENTAL GRASSES.

C. & A. SHARPE,
SEED MERCHANTS,
GUELPH, ONT.,

Will forward, post-free, on application, their priced catalogue of seeds for farm and garden, for 1873

FRESH GARDEN, FLOWER, TREE
AND SHRUB, EVERGREEN,
FRUIT AND HERB SEEDS
PREPAID BY MAIL.

A COMPLETE and judicious assortment. 25
sorts of either class—\$1.00. The six classes
(59 packets) for \$5.00.

Also, an immense stock of one year grafted Fruit
Trees, Small Fruits, Fruit Stocks, Young Fruit,
Ornamental and Evergreen Seedlings, Bulbs,
Roses, Vines, House and Border Plants, &c., &c.,
the most complete assortment in America. Pre-
paid by mail. Priced Catalogues to any address,
also, trade list, gratis. Seeds on Commission.—
Agents wanted.

B. M. WATSON, Old Colony
Nurseries and Seed Warehouse,
Plymouth, Mass. Established '42.

4-11

Farmers, Look Here!

NOW IS THE TIME TO SAVE YOUR MONEY
by sending for a Right of

STROHM'S RACK & GRAIN LIFTER

IT RAISES THE WHOLE LOAD AT ONCE,
and when elevated, it can be pitched off by
hand, or thrown into the mow by a horse at one
pull.

It is the **ONLY CHEAP and GENUINE**
Machine for the purpose yet invented.

Any handy farmer can erect one in three days.
100% Satisfaction guaranteed, or the money re-
funded. Address—**MARTIN & BROTHERS,**
Quebec P. O.

Agents wanted. Township, County and Far-
Rights for sale. 3i-2

STOCK.

SHORT HORN BULL for Sale: age 2, rising 3.—
Colour, red and white. A well-made, handsome
bull; never been damaged by over feed or over
work. Pedigree furnished. Price \$120.
4-2 in c J. SCOTT, COLDSTREAM

PUBLIC NOTICE.

DEPARTMENT OF AGRICULTURE,
Ottawa, 11th October, 1872.

VIENNA EXHIBITION.

In pursuance of an Order in Council, dated 2nd
October, 1872, notice is hereby given to Companies,
Firms or Individuals who may desire to send on
their own account articles to the forthcoming Vi-
enna Exhibition, of the following abstracts of rules
furnished, and the offer of services tendered by the
Committee of Her Majesty's Commission entrusted
with the management of the Exhibition of Colonial
productions.

The Vienna Exhibition programme refers to ob-
jects coming under a classification comprising
twenty-six groups, viz.:

- Group 1. Mining, Quarrying, and Metallurgy.
- Group 2. Agriculture, Horticulture, and For-
restry.
- Group 3. Chemical industry.
- Group 4. Substances of Food, as products of
industry.
- Group 5. Textile Industry and Clothing.
- Group 6. Leather and India Rubber Industry.
- Group 7. Metal Industry.
- Group 8. Wood Industry.
- Group 9. Stone, Earthenware and Glass Indus-
try.
- Group 10. Small Ware and Fancy Goods.
- Group 11. Paper Industry and Stationery.
- Group 12. Graphic Arts and Industrial Draw-
ing.
- Group 13. Machinery and Means of Transport.
- Group 14. Philosophical and Surgical Instru-
ments.
- Group 15. Musical Instruments.
- Group 16. The Art of War.
- Group 17. The Navy.
- Group 18. Civil Engineering, Public Works and
Architecture.
- Group 19. The Private Dwelling House, its in-
ner arrangement and decoration.
- Group 20. The Farm House, its arrangements,
furniture and utensils.
- Group 21. National Domestic industry.
- Group 22. Exhibition showing the organization
and influence of Museums of Fine Art, as applied
to Industry.
- Group 23. Art applied to Religion.
- Group 24. Objects of Fine Arts of the Past, ex-
hibited by Amateurs and Owners of Collections
(Exposition des Amateurs).
- Group 25. Fine Arts of the Present Time—Works
produced since the Second London Exhibition of
1862.
- Group 26. Education, Teaching and Instruction.

To the Exhibition of articles coming under the
above mentioned titles are added what is called
ADDITIONAL EXHIBITIONS and TEMPORARY
EXHIBITIONS, the former having refer-
ence to

1. The History of Inventions.
2. The History of Industry.
3. Exhibition of Musical Instruments of Cre-
mona.
4. Exhibition of the use of waste materials and
their products.
5. The History of Prices.
6. The representation of the Commerce and
Trade of the World, and the latter having refer-
ence to
1. Live animals (horses, cattle, sheep, pigs,
dogs, fowls, game, fish, &c.)
2. Butchers' meat, venison, poultry, pork, &c.
3. Dairy produce.
4. Garden produce (fresh fruits, fresh vegeta-
bles, flowers, plants, &c.)
5. Living plants injurious to agriculture and
forestry

The Managing Committee above mentioned of
colonial productions is under the presidency of the
Marquis of Ripon.

The Secretary of Her Majesty's Commissioners
for the Vienna Exhibition is Philip Cunliffe Owen,
Esq., who is to be addressed at Vienna, Exhibition
Offices, 41, Parliament Street, London, S. W.

The following is an abstract of the rules as far
as they may concern private individuals, i. e.

- a. Her Majesty's Commission is appointed to re-
present British and Colonial Exhibitors.
- b. Exhibitors will have to defray all expenses,
including transport of goods.
- c. The Austrian Committee will communicate
society through Her Majesty's Commissioners.
- d. The Exhibition will open at Vienna on the
1st May, and close on the 31st October, 1873.
- e. Exhibitors are responsible for the packing,
forwarding, receiving and unpacking of their
goods, both for the opening and after the close
of the Exhibition.
- f. The objects will be submitted to the judgment
of an International Jury.
- g. The objects for Exhibition will be received at
Vienna from the 1st February until the 15th day of
April, 1873.
- h. The objects exhibited will be protected
against piracy of invention or design.

Exhibitors and their Agents will receive tic-
kets entitling them to free admission to the Exhi-
bition.
On account of the limited space of time remain-
ing, intending exhibitors should lose no time in
placing themselves in communication with Her
Majesty's Commission Committee.

J. H. POPPE,
Minister of Agriculture.
London, Jan., 1873. 23i

NEW SEEDS FOR 1873

WE have now received our NEW IMPORTA-
TIONS of
GARDEN & FIELD SEEDS,
and shall be glad to receive a continuance of that
patronage with which we have hitherto been fa-
vored. Our Seeds are all selected from the best
varieties, and from well-known houses in the trade.
In fact, we take every possible care to obtain the
very best articles. We offer, among other varieties,
the following:—

Cabbage.—Large Drumhead, Early and Large
York, Flat and Red Dutch, Savoy, Winning-
stadt, &c.

Carrot.—Early Horn, Long Orange, Altringham,
Intermediate, White Belgian, &c.

Turnip.—Early Stone, Skirving's Purple Top
Swede, Yellow Aberdeen, White Globe, Orange
Jelly, &c.

Clover and Timothy, Tares, Flax Seed, Hun-
garian Grass, &c.

ROWLAND & JEWELL,
Corner Dundas and Richmond Sts.,
73 B-3 LONDON, ONT.

TREES, SHRUBS, VINES,
PLANTS, &c.

Geo. Leslie & Sons

OFFER for Spring of 1873 a completely assorted
stock of

FRUIT TREES, ORNAMENTAL TREES,
FLOWERING SHRUBS, ROSES,
SMALL FRUIT PLANTS,
BEDDING PLANTS,
GRAPE VINES,
DAHLIAS,
ESCULENT ROOTS, &c, &c.,

of varieties proved to be suited to the wants of our
climate.

This is our 31st YEAR in business, and we think
we can give satisfaction to all our patrons.

WE make our ENTIRE BUSINESS A
SPECIALTY. Our stock is packed to carry
safely to any part of the world. Orders by post or
telegram will receive as careful attention as if pur-
chasers were personally present. Priced Descriptive
Catalogues—48 pages—sent to any address on
receipt of a two-cent stamp.

GEO. LESLIE & SONS.

Toronto Nurseries, Leslie P. O.

N. B.—All orders should be sent to us as early
a date as possible. The Montreal Telegraph Co
have an office on our premises. 4 2in

"HEIKES TRIUMPHS

Over the Seasons." He offers from his extensive
cellars a general assortment of Trees, Plants, Vines
and Seedlings, IN LARGE QUANTITIES and in
fine condition. Goods will be carefully packed, and
can be shipped at any time. Address W. F.
HEIKES, Dayton, Ohio. 3-1

THE SHORT-HORNED BULL

LONDON LAD

AGED 14 months; color, light roan; very hand-
some; well proportioned; dam Rasina by Arto-
mus. He took first prize at St. John's, and first at
Lobo Exhibitions. Price \$150. Pedigree recorded.
Apply to JOHN TUCKEY,
Lot 29, con. 4, London, Lobo P. O.

SEEDS! SEEDS!!

GEO. J. GRIFFIN,
LONDON SEED STORE
CITY HALL BUILDINGS,

Begs to call the farmers' attention to his stock of
selected

SWEDISH TURNIPS,
MANGLE WURZEL,
CARROT SEEDS,
AND

GARDEN AND FLOWER SEEDS
in great variety, and of the very best quality.

CATALOGUES GRATIS!

25 PAPERS CHOICE FLOWER SEEDS for \$1.

ESTABLISHED 1855



I was the first to introduce to the public the Hubbard Squash, American Turban Squash, Marblehead Mammoth Cabbage, Mexican Sweet Corn, Phinney's Water-melon, and many other

New & Valuable Vegetables.

This season I have a new and exceedingly valuable squash, new varieties of corn, three fine melons, and other choice new vegetables for my customers.

My business is to supply what every good farmer is anxious to get, the very best of vegetable seed. I grow a hundred and fifty kinds on my four seed farms, right under my own eye, making new vegetables a speciality, besides importing their choicest varieties from European growers. A fine selection of flower seed, home-grown and imported, will also be found in my Catalogue, which will be sent free to all applicants.

As stated in my Catalogue, all my seed is sold under three warrants: 1st, That all money sent shall reach me. 2nd, That all seed ordered shall reach the purchaser. 3rd, That my seeds shall be fresh and true to name.

JAMES J. H. GREGORY,
1-4 Marblehead, Mass.

ABBOTT BROS.,

CARRIAGE BUILDERS Dundas Street, East of Wellington Street,
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**J. H. WILSON,
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Graduate of the Toronto Veterinary College.
Office—New Arcade, between Dundas street and Market Square. Residence—Richmond street, opposite the old Nunnery.

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**YORKSHIRE
CATTLE FEEDER**

FOR FATTENING AND BRINGING INTO CONDITION HORSES, COWS, CALVES, SHEEP AND PIGS.

THE YORKSHIRE CATTLE FEEDER
IS RECOMMENDED AND USED BY
FIRST-CLASS BREEDERS.

Stock fed with it have always taken FIRST PRIZES. Milk Cattle produce more milk and butter. It fattens in one-fourth the usual time, and saves food.

Price 25c., and \$1 per Box
A Dollar Box contains 200 feeds.

HUGH MILLER & CO.,
Agricultural Chemists,
167 King St., East, Toronto.
For sale by Druggists everywhere. Also at the Agricultural Emporium, London. 1-41

Great Sale at Chisholm & Co's.

WHOLE WINTER STOCK REDUCED.
Now for BARGAINS

AT THE
STRIKING CLOCK
London, Feb., 1873. 2

CARRIAGES

HODGINS & MORAN, Makers, Richmond St., have now on hand, ready for Spring trade, a most desirable lot of well-finished carriages and buggies. We notice some very neatly finished Family Phaetons, and consider them very cheap. We would advise our friends and the public to call and see their entire stock before buying elsewhere. All the work warranted, and made out of second-growth hickory. 3-3

WILSON & HASKETT,

PRODUCE DEALERS AND COMMISSION MERCHANTS. OFFICE—Corner of King and Oxford Streets, INGERSOLL, Ont.
JAS. M. WILSON. | JNO. HASKETT. 3-4

**AGRICULTURAL
INVESTMENT SOCIETY
AND SAVINGS BANK.**

SHARES - \$50 EACH
Payable \$1 per Month.

Stockholders receive Periodical Dividends.

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SOLICITOR—DAVID GLASS, Esq.

F. B. LEYS,

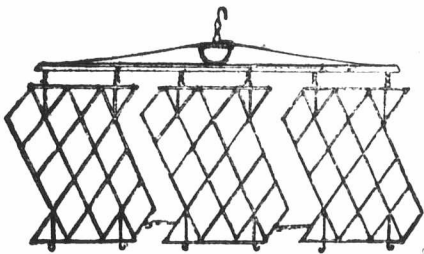
Secretary & Treas.
OFFICE—TALBOT-ST., ONE DOOR NORTH OF DUNDAS-STREET. 6-7
London, May 26, 1872.

GETTING UP CLUBS.

Great Saving to Consumers.

PARTIES inquire how to get up CLUBS. Our answer is—You should send for Price List, and a Club Form will accompany it, with full directions, making a large saving to consumers and remunerating to Club organizers. Send for it at once, to

MILLER'S GREAT TEA WAREHOUSE,
52 and 54, Front Street East, Toronto, Ontario.
Local Agents Wanted. 5-1f
Toronto, April 26, 1872.



**HOWARD'S IMPROVED
IRON HARROW.**

THIS Harrow is superior to all others, because it is the most complete. It covers 14 feet of land. It leaves the ground finer, works freer, and adapts itself to uneven land. It does not bend, and chokes less than any other Harrow. It is so constructed as to draw either end. The teeth being so set as to tear the ground up to a good depth, or to pass lightly over the surface, as the teeth are beveled on one side. It can be worked with a span or three horses, or it may be unjointed and worked with one or two horses, in one, two or three sections.
They are giving entire satisfaction.

Price of Harrow complete, with three sections, treble-tree, and two coupling-trees, \$35. Price of two sections and one coupling-tree, \$22.
Address—THOMAS HOWARD,
Adelaide Street, London, Ontario
Samples may be seen and order taken at the Agricultural Emporium. 71.4e

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Telegraphic Institute.**

THE OLDEST, CHEAPEST AND BEST COLLEGE in the Dominion.

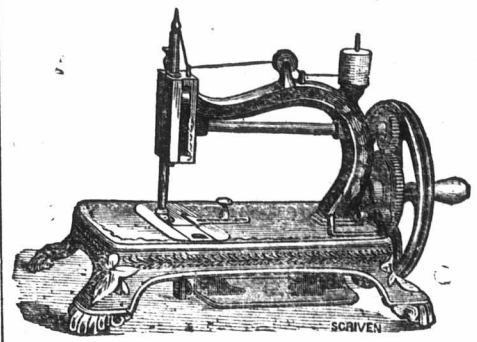
Young Men Fitted for a Business Life.

No matter what may be your calling, take a course with us, and you are better fitted to pursue it. No class of men are more imposed upon by lawyers and others than farmers; but if they take a course at our College it will enable them to do their own business, and thus save hundreds of dollars yearly.

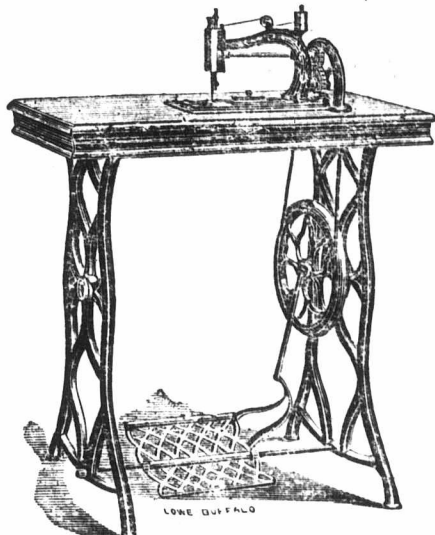
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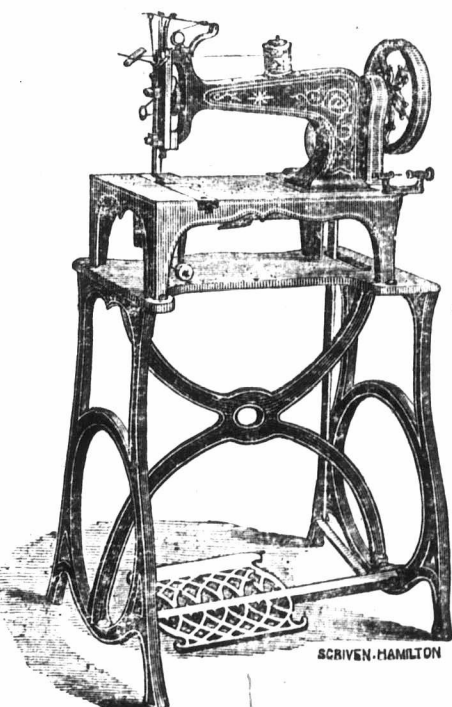
The Lockman Patent



Hand Machine. Price \$25.



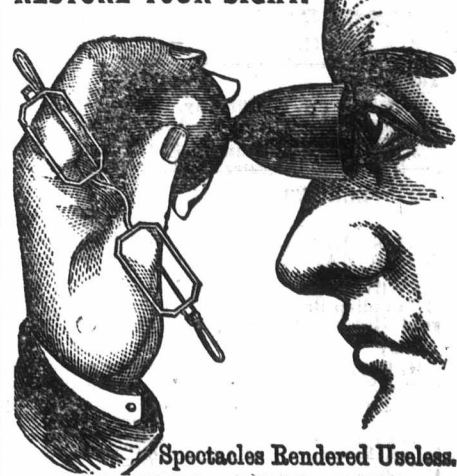
No. 1. Plain Top. Price \$32.



MANUFACTURING MACHINE
Price, \$55.

WILSON LOCKMAN & CO.,
MANUFACTURERS
HAMILTON ONT. 3-41

RESTORE YOUR SIGHT.



**Spectacles Rendered Useless.
OLD EYES MADE NEW.**

All diseases of the Eye successfully treated by

Ball's New Patent Ivory Eye Cups.
Read for yourself and restore your sight. Spectacles and Surgical operations rendered useless. The inestimable blessing of Sight is made perpetual by the use of the new PATENT IMPROVED IVORY EYE CUPS.

Many of our most eminent physicians, oculists, students and divines have had their sight permanently restored for life, and cured of the following diseases:

1. Impaired Vision; 2. Presbyopia, or Far Sightedness, or Dimness of Vision, commonly called Blurring; 3. Asthenopia, or Weak Eyes; 4. Epiphora, Running or Watery Eyes; 5. Sore Eyes—specially treated with the Eye Cups—cure guaranteed; 6. Weakness of the Cornea, or Optic Nerve; 7. Ophthalmia, or Inflammation of the Eye and its appendages, or imperfect vision from the effects of Inflammation; 8. Photophobia, or Intolerance of Light; 9. Over-worked Eyes; 10. Myodesopia—moving specks or floating bodies before the eyes; 11. Amaurosis, or Obscurity of Vision; 12. Cataracts, Partial Blindness; the loss of sight.

Any one can use the Ivory Eye Cups without the aid of Doctor or Medicine, so as to receive immediate beneficial results and never wear spectacles; or, if using now, to lay them aside forever. We guarantee a cure in every case where the directions are followed, or we will refund the money.

2000 Certificates of Cure, From honest Farmers, Mechanics, and Merchants, some of them the most eminent leading professional and business men and women of education and refinement, in our country, may be seen at our office.

Under date of March 29, Hon. Horace Greeley, of the New York Tribune, writes: "J. Ball, of our city is a conscientious and responsible man, who is incapable of intentional deception or imposition."
Prof. W. Merrick, of Lexington, Ky., wrote April 24th, 1869: "Without my Spectacles I pen you this note, after using the Patent Ivory Eye Cups thirteen days, and this morning perused the entire contents of a Daily Newspaper, and all with the unassisted Eye."

Truly am I grateful to your noble invention; may Heaven bless and preserve you. I have been using Spectacles twenty years; I am seventy-one years old. Truly Yours, PROF. W. MERRICK.
Rev. Joseph Smith, Malden, Mass., cured of partial Blindness, of 18 years' standing, in one minute, by the Patent Ivory Eye Cups.

E. C. Ellis, late Mayor of Dayton, Ohio, wrote us Nov. 15th, 1869: "I have tested the Patent Ivory Eye Cups, and I am satisfied they are good. I am pleased with them; they are the greatest invention of the age."

All persons wishing for full particulars, certificates of cures, prices, &c., will please send your address to us, and we will send our Treatise on the Eye, of 44 pages, free of charge, by return mail.

Write to
DR. J. BALL & CO., P. O. Box 957, No. 91, Liberty Street, NEW YORK.

For the worst cases of Myopia, or Near-Sightedness, use our New Patent Myopic Attachments which applied to the Ivory Eye Cups, has proved a certain cure for this disease.

Send for pamphlets and certificates—free. Waste no more money by adjusting huge glasses on your nose and disfiguring your face.

Employment for all. Agents wanted for the new Patent Improved Ivory Eye Cups, just introduced in the market. The success is unparalleled by any other article. All persons out of employment, or those wishing to improve their circumstances, whether gentlemen or ladies, can make a respectable living at this light and easy employment. Hundreds of agents are making from \$5 TO \$20 A DAY. To live agents \$20 a week will be guaranteed. Information furnished free of charge. Send for pamphlet, circulars, and price list. Address

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Being a Handy Book of Forms, with observations, designed for the use of Farmers, Merchants and others. Enabling them to draw their Deeds, Mortgages, &c., without the assistance of a lawyer.—Price \$1.50. sent free by mail to any address, on receipt of the amount.

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BREEDERS DIRECTORY.

R. S. O'NEIL, breeder of Lincoln and Leicester Sheep and Short Horn Cattle. Birr P. O., London Township. 1y

J. S. SMITH, McGillivray, Breeder of Leicester Sheep and Durham Cattle, Ailsa Craig.

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G. WELDRICK, Thornhill, Breeder of Cotswold Sheep. 11-u

GEO. JARDINE, Hamilton, Importer and Breeder of Ayrshire Cattle and Leicester Sheep. 11

J. BILLINGER, Richmond Hill, Ont., dealer in Canadian Bred Stallions. Best prices given for good Horses, and some first-class Horses for sale. 8-tf

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DAWS & CO., Lachine, P. Q., Importers and Breeders of Ayrshire Cattle. 8-ly

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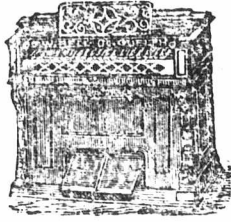
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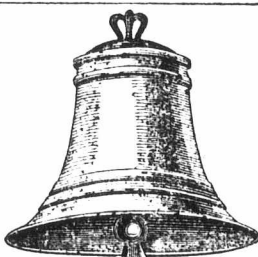
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