

FARMER'S ADVOCATE

AND HOME MAGAZINE.

FOUNDED 1866.

VOL. XXIII.

LONDON, ONT., APRIL, 1888.

Whole No. 268.

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THE FARMER'S ADVOCATE & HOME MAGAZINE

WILLIAM WELD, EDITOR AND PROPRIETOR.

THE LEADING AGRICULTURAL JOURNAL PUBLISHED IN THE DOMINION.

The FARMER'S ADVOCATE is published on or about the 1st of each month. It is impartial and independent of all classes or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for farmers, dairymen, gardeners and stockmen, of any publication in Canada.

Terms of Subscription—\$1.00 per year in advance; \$1.25 if in arrears; single copies, 10c. each. New subscriptions can commence with any month.

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Our Monthly Prize Essays.

CONDITIONS OF COMPETITION.

1.—No award will be made unless one essay at least comes up to the standard for publication.

2.—The essays will be judged by the ideas, arguments, conciseness and conformity with the subject, and not by the grammar, punctuation or spelling, our object being to encourage farmers who have enjoyed few educational advantages.

3.—Should one or more essays, in addition to the one receiving the first prize, present a different view of the question, a second prize will be awarded, but the payment will be in agricultural books. First prize essayists may choose books or money, or part of both. Selections of books from our advertised list must be sent in not later than the 15th of the month in which the essays appear. Second prize essayists may order books for any amount not exceeding \$3.00, but no balance will be remitted in cash. When first prize essayists mention nothing about books, we will remit the money.

Our prize of \$5 for the best original essay on *Spring Management of Cows*, has been awarded to John Robertson, London.

A prize of \$5 will be given for the best original essay on *Farm Drainage*. Essays to be handed in not later than April 15.

A prize of \$5 will be given for the best original essay on *The Best Method for the Registration of Stock*. Essays to be handed in not later than May 15th.

Now is the time to subscribe for the Farmer's Advocate, the best agricultural paper in Canada.

EDITORIAL NOTES.

We consider we have only done our duty in trying to keep down expenditures. Now that the grants are made, it will be our duty to try and have them utilized as beneficially as we can for you.

It is now apparent that the Advisory Board of the Model Farm at Guelph has already done much good to that institution, and if left to them and the existing Principal, Mr. Mills, we might be able ere long to report some good results from it.

The Holstein cattle have of late years gained considerable ground in Canada. They are the largest breed of dairy cattle known in this country, and produce large quantities of milk, from which some of the best butter and cheese have been manufactured. At the last New York dairy show they carried off the first and second prize for the largest yield of butter, and have also received honors at numerous other exhibitions.

Our Chicago letter opens the question, which should cause all advocates of Commercial Union to consider, namely, In what way are we to treat our sister colonies? Do not our American cousins ask too much of us, namely, to offer ourselves to them at a price? We do not consider they have shown a disposition to treat honorably with us, or they would allow us to go into their country and capture our thieves that run there. Canada has offered to reciprocate with them on this subject, as we do not want to profit from their thieves.

Farmers' Institutes, where they have been established in Ontario, have been successful in drawing a pretty good attendance. A large amount of information has been elicited from the farmers and imparted to them. They have opened the mind of many a farmer to seek more knowledge, and much good has been done by reaching farmers that do not read much. A charge is laid against them, which we fear is too true, namely, that the main object of the movement has been for partizan purposes, and that they, as a body, have been used to ask for an increased agricultural expenditure, an increase of Government officials and increase of salaries. We doubt if the bread earners as a mass would sanction this, if they could help themselves. The introduction of partyism wiped out many a Grange. We would suggest for the benefit of these institutions and the interest of the farmer, that every means possible should be taken to prevent their becoming such.

I esteem the ADVOCATE very highly and wish it great prosperity. Every farmer should take the ADVOCATE.—R. VANSICKLE, Beverley, W. Flamboro'.

Farmers' Clubs.

Dominion Farmers' Council.

The Dominion Farmers' Council meets in the city of London, Ont., on the third Thursday of every month, at 3 o'clock p. m. All communications should be addressed to the Secretary, A. LEHMANN, LONDON, ONT. This Council has now on hand pamphlets containing its Constitution and By-laws, with an account of its origin, objects, etc., also a form of Constitution and By-laws suitable for Farmers' Clubs, which will, on application to the Secretary, be distributed free to all parties having in contemplation the organization of clubs.

The regular monthly meeting of the DOMINION FARMERS' COUNCIL was held on the 15th ult., Vice-President O'Brien in the chair.

COMMUNICATIONS.

Among the communications read was one from W. A. Macdonald, Secretary of the Council, in which he expressed his regret at not being able to attend the meeting of the Council, and that his departure to Europe made it necessary for him to tender his resignation as their Secretary.

The resignation of W. A. Macdonald was accepted by the Council, and a vote of thanks given him for the energetic manner in which he had worked for the interest of the Council.

The meeting deemed it advisable to postpone the election of a new Secretary till their next meeting and appointed A. Lehmann, of London, as Secretary *pro tem*.

One of the members stated that the bill passed by the Dairymen's Association had not been properly discussed by them, owing to the hurried manner in which it was presented to them, and that if the discussion had been allowed to take place the mistakes contained in the bill would likely have been rectified, and the bill thereby made a boon to honest farmers and cheesemen.

APPLE CULTURE.

The following paper was read by John Kennedy:

The apple will grow on a great variety of soils, but it seldom thrives on very dry sands, or soils saturated with moisture. Its favorite soil in all countries is a strong loam, or a strong sandy loam on a gravelly subsoil. A deep, strong, gravelly, or clayey loam, or strong loam of a limestone nature, produces the greatest crops and the highest flavored fruit, as well as the utmost longevity of the trees. Such a soil is moist rather than dry—the most favorable condition for this fruit. Too damp soils may often be rendered fit for the apple by thorough drainage, and too dry ones by deep subsoil plowing, or trenching where the subsoil is of a heavier texture.

As to situation there is difference of opinion; some prefer a hillside sloping to the north or west, it forming a protection from the rays of the sun after a clear frosty night; some prefer a southern aspect to ripen the wood and crop more perfectly. A belt of evergreens on the north and west sides would be very beneficial.

As to the best varieties, I would recommend for early summer: Yellow Transparent and Red Astrachan. For autumn: Duchess of Oldenburg, Gravenstein, St. Lawrence, Colvert, Fall Pippin and Twenty Ounce. For winter: American Golden Russett, Ben Davis, Fallwater, Ribston Pippin, Grimes Golden, Wagner and Northern Spy.

The Baldwin is a first-class apple, but the tree is so short lived, I would not recommend it. We have no better dessert apple than the Fameuse (snow apple). Last year it was remarkably fine and clear of black spots. I would strongly advise any person who intends planting an apple orchard, not to plant early summer, or fall fruit, as the country is already overstocked with apples of that class. Late fall and winter varieties of apples, suitable for export, is what is going to pay the orchardist. One tree of each of the earlier varieties already named, with a Sweet Bough, and a sweet pear for eating, and a Talman Sweet for baking, planted near the house for family use, would be a very good selection. In conclusion I would say that any soil that will grow good farm crops will grow good apples.

After the reading of the paper, John Kennedy showed some very fine and well preserved specimens of the Fallwater and Ben Davis. He stated that the former variety could not be surpassed for keeping qualities, that they could be kept sound and fresh till the fall following their harvesting. The Northern Spy was a good variety, but the trees did not commence to bear until ten or fifteen years after they had been received from the nursery, but after they had once commenced they gave a good return every year. The samples of this variety shown by him did not present the same fresh appearance as those named above.

D. Leitch stated that the Ben Davis had a very attractive appearance, but was inferior in quality; but that, so long as the buyers continued to pay the same price for it as for other standard varieties, it was a very profitable apple to grow for the export trade. The only objections that the Fallwater had was that its large size made it more liable to be bruised when packed into barrels. A medium sized apple could be packed with less danger of bruising. A peculiarity of the R. I. Greening was that, if it received bruises, they caused no decay, the bruised portion simply drying up and leaving the remainder of the apple uninjured. It was a good variety, but unless the trees were well manured they would soon cease to give profitable returns. His trees, after having ceased to bear, were again made as prolific as in their younger days by applying a liberal dressing of hardwood ashes. These should not, as was sometimes seen, be applied within a small distance from the stem, but should be evenly distributed over the soil ramified by the roots of the tree (the roots are generally considered to extend as far from the trunk as the branches). The Baldwin was still one of the best varieties. The breaking down of the branches could be prevented by top-grafting the branches of a tree of some hardy variety with Baldwin scions.

Wm. Weld, being asked what varieties were cultivated in his orchard, said that it contained too many varieties for the most profitable cultivation.

WHEAT.

The paper on the "Fruit Interests of Canada," prepared by A. Deadman, not having arrived, Wm. Weld favored the meeting with a paper prepared by him for the Farmers' Institute held at Dorchester:

MR. PRESIDENT AND GENTLEMEN,—This is the second invitation that I have received

from the Farmers' Institutes in this county to deliver an address on wheat, the previous acceptance of which was prevented by a protracted illness attributable to over-exertion.

I appreciate the call from your association, and I thank Providence that after months of debility I am able to be out again.

Spring wheat, of late years, has not been a very profitable crop in Western Ontario; thirty and forty years ago the yield was nearly double the quantity that it has been of recent years. The fall wheats have in a great measure supplanted it. Spring wheat can be most profitably raised in our North-west Territories. In England there is not the distinction of spring and fall wheat, as with us. In fact, their seed time is from the fall till the spring, all the seed being taken from the same bin. Varieties of wheat in the southern part of England appear to have a continual endurance. Fifty years ago the variety known as the Golden Drop was a leading sort; the same variety still holds its high position, and has continued to do so. Owing to some reason that we are unable to account for, our Canadian wheats have not continued so long in favor; for instance, forty years ago, the Club wheat, now unknown, was a favorite variety and generally grown; also the Siberian wheat, both spring wheats. The most popular winter varieties were the Soules and Blue Stem, and probably no kinds ever returned such large profits to the Canadian farmers. But now they are never heard of, and it is only the old farmers that remember anything about them. The Diehl wheat of recent years became a favorite, but it has been nearly abandoned of late years. Whether any climatic change has tended to reduce the popularity of old and distinct sorts, or whether their abandonment has been caused by insects, is a debatable question. The fact has been very clearly demonstrated that those who continued to attempt to raise the old varieties were compelled to abandon them.

The future state of the wheat market appears about as uncertain as the future state of our political affairs. It is our opinion that wheat will be grown in Ontario much the same as it is now, despite the enormous quantities we hear of being raised in India, Russia and Australia. Our North-west Territories are destined to supply much larger quantities than we have yet heard of, as soon as emigrants turn their attention to that country. United States pamphlets and agents have drawn emigrants to their shores, but as soon as it becomes known that the Canadian farmers do not suffer from blizzards or tornadoes as much as many of their American brothers do, and that our farmers are doing as well as those in the Western States—that our cattle thrive as well, and that there is yet plenty of ranching room, plenty of free farms and good land to be had, a tide of the proper class of emigrants will pour into this country such as has not yet been preceded. In no part of this continent have we met with such a lot of prospering, hopeful farmers as in our North-west Territories, including Manitoba. The pictured hard winter has no terror for those whom we met, who have gained a good foothold there. Their enormous wheat crop this year will soon double their population, and their output of wheat and other farm products will open other channels for their shipment to Europe. Mr. Shaughnessy, the Assistant Manager of the C. P. R., states that they have already forwarded the equivalent in flour of

8,000,000 bush. of grain, and there was from six to seven millions yet to be handled. Despite the low wages paid in India and Russia, we do not anticipate that the Ontario farmers will receive a lower average price than they are now receiving. The low price of wheat the past few years has had the tendency to diminish the acreage sown very materially in many parts of the world, particularly in England and India. England has for years stimulated the growth of wheat in India by every available means, and despite this the results do not appear satisfactory. Even last year the demand for American wheat was greater than the previous year. It is our opinion that wheat ere long will command a much higher price than it recently has.

You are all aware that I have introduced to you the best wheats, that have stood the various tests for the past 25 years. Very few of you are aware that I introduced the first Fyfe or Glasgow wheat into the township of Delaware. The best authorities I have yet conversed with say that it is the very same wheat to which the Government gave its influence to spread in the Northwest Territories as Red Fyfe.

I doubt if any one of you have any wheat that produces a better quality of flour than the Democrat wheat. We went personally to the southern part of Ohio to procure this wheat, and had it disseminated by seedsmen in Toronto and Hamilton. Every farmer in Canada that grows it procured it from seed imported first by your humble servant.

The Scott Wheat was disseminated throughout this Dominion largely by your humble servant, although it was first imported by enterprising farmers in Chatham.

The Clawson was first introduced into Canada by me; I went personally to Geneva to secure it, and the Lost Nation wheat I procured from the Maritime Provinces.

I have found very beneficial results from harrowing a thin, partially winter-killed crop. Common sense would tell a person if it looked like a continued drouth or frosty weather that the harrowing had better be dispensed with until rain is near. If you have not previously done so, try the harrow on part of a field of partially killed wheat this spring and notice the difference.

I might continue, but I know of no better fully tested wheats than those I have introduced. There are thousands of farmers that are raising wheat in our Dominion that have no knowledge of who introduced them. I cannot recommend any better varieties than you now have. As soon as I do you will hear of it.

In regard to the cultivation of the land and the rotation of crops, I have given pretty full particulars in the FARMER'S ADVOCATE. It is useless for me to repeat what every good farmer knows or should know, and the origin, component parts, statistics, etc., might occupy your valuable time and cause the foregoing remarks to be as dead matter to you as Government blue books and other Government publications are.

SEED GRAIN, ETC.

The importation made by the Dominion Government appeared from first reports to be likely to be of benefit in our North-west Territories on account of its early ripening.

Our Government may, and no doubt will, do some good by these importations and experiments. But we have always opposed these expenditures, because our convictions have been that private enterprise has done and would do

all that was necessary for the welfare of the farmer if left to themselves, and that partizan spirit of the worst and most dangerous kind is likely to be fostered by it.

Many unscrupulous dealers have changed the names of wheats introduced by us, and by means of trading agents to deceive the farmers, obtained notes under such false representations as to merit most severe punishment.

Both the Dominion and Provincial Governments are now expending considerable money in experimenting and importing.

NOVELTIES IN WHEAT.

The objections to the Indian wheats are that the flour made from them will not rise as well as that from our grain, nor has it as good a color; although the nutritive qualities may be good, its appearance excludes it from the tables of those who can afford a better article.

The "Bulls" and "Bears," also manipulators of the bucket-shop frauds, who have ruined so many, even the late President of the U. S., and one of our leading cheesemen, deserved censure for the undue fluctuations of the price of wheat. Some have endeavored to frighten our wheat producers by the prospective output of the Argentine Republic. There is no doubt but large quantities of wheat will be raised there, but its quality, the locality and manipulators of it are more allied to the southern hemisphere. The wheat will be required in other parts of the world. Thus we have not much to be alarmed about from that country.

The Dominion Government has taken the whole country by surprise by its wheat donations. Some of the leading Ontario wheat growers suspected something unsatisfactory in the mode of the manipulation of the prize list in Toronto last fall; also a suspicion was raised as to the name and quality of some of the much lauded wheat.

At the Exhibition at Montreal, the Ontario men exposed the deception, which caused a hushing up of the affair. We now extract the following from the Nor'-west Farmer for March:

THE RUSSIAN WHEAT.

The Winnipeg Board of Trade has sat down very heavily on the latest novelties in wheat. That of last spring's importation is let down with a modified condemnation. It was late last spring in coming here, and the only sample found equal to the original importation, that from Mowbray, is pronounced worth 5 cents less than No. 1 Hard Red Fyfe. Farmers who hold the produce of the sample bags sent out last year by Professor Saunders, should still give it another trial, under as favorable conditions as possible, using smut preventatives to keep it in as good shape as possible for this season's sowing. It is scarcely necessary for purposes of experiment that more of such samples should be distributed. If sown in this province on Government account, Ladoga wheat should be sown en bloc, so as to minimize the risk of its getting mixed among Red Fyfe growing in its neighborhood. Azof wheat, another variety from which much was hoped, is also being forsaken by the Portage farmers. The far famed Kubanka is still more cruelly condemned, or at least the sample called by that name, that was sent in by Professor Saunders. Ontario farmers, by the score, called it "goose wheat," and the Toronto and Winnipeg boards confirm their adverse judgment. The Kubanka wheat of Mark Lane is a valuable milling wheat. What is here shown by that name is condemned and denounced. The men who have paid fancy prices for it, will need to grow it under quarantine, if they grow it at all, for one bushel of it in a carload that has got mixed even by accident, would make the whole go rejected. It is now in order

for the original owners of "Kubanka" and "Saxonka" wheat to prove that our millers and traders, in condemning those varieties, have, through haste or ignorance, made a blundering deliverance.

F. Shore said that Ontario would still have to grow wheat, for although the Northwest could grow large quantities in favorable seasons, yet this supply could not be depended upon regularly, and Ontario wheat was always in demand for the best grades of flour.

John Kennedy said that in the Northwestern States the crop was also very unreliable.

East Middlesex Farmers' Institute.

A meeting of the above organization was held at Dorchester on the 19th of last month. The meeting was active and well attended.

A paper on Ornamental Trees, prepared by Mr. John McAnish, was discussed at considerable length, in which some good points were brought forward. Some of the members stated that evergreens taken from a swamp were more certain to grow than those grown on high land; the reason being that the roots were nearer the surface, and, therefore, could be easier preserved in those grown on the low lands. If trees had been grown too closely in rows and the roots had become matted, the best plan was to dig a trench along both sides of the row (as far from the trees as possible), laying the entire row flat, and then separating the trees, preserving the roots at the expense of the earth left on them. It was very injurious to expose the roots of trees to the frost, and therefore the taking up of trees in winter was not followed with good results. It was generally overlooked, when planting trees, that these trees would grow large and occupy a large space.

Mr. F. Shore, in a paper on Drainage, drew attention to the advantages obtained by drainage, in both wet and dry seasons. He stated that an open main-drain was very objectionable, as it required cleaning out, wasted land, was a trap for live-stock, and, especially if crossing a field obliquely, added to the cost of cultivation. These drawbacks outweighed by far the cost of a large tile drain. Drains in heavy clay soil should be dug in dry weather when the soil was dry enough to prevent puddling. The earth being dry when filled in, always remained porous and permitted the water to run through. For the drainage of quicksand he recommended placing boards under the tile and securing the joints with collars, or placing sods around them.

In the discussion that followed it was stated that drains did not commence to draw in heavy clay soil for three or four years after they were laid, but after that time they worked successfully. The importance of draining such soils in dry weather was strongly endorsed. For the drainage of quicksand it was recommended to put a layer of clay under the tile and around the joints. One speaker related his success in the drainage of such lands by putting stone in the bottom of the drain, leveling these and laying the tile on them.

A paper on Wheat, read by Mr. W. Weld, fully reported in the proceedings of the "Dominion Farmers' Council," caused considerable discussion. The practice of harrowing a partially winter-killed crop, as described by the writer of the paper, was endorsed by a large number of speakers. A number of questions asked and answered showed that the meeting favored a firm soil for the cultivation of wheat, especially if fol-

lowing peas sown after breaking from sod. A shallow cultivation and a firm soil reduced the liability of an attack by the wire worm.

In his paper on Manures, Mr. Thomas Baty pictured to the farmers the loss they suffered by not saving their farm-yard manure better. To prevent the well-known losses by washing or leaching and overheating, he kept his manure under cover and let his cattle tramp over it. The liquids he caught in a barrel and spread them occasionally over the heap.

In the discussion that followed this paper the theory of increasing the soil fertility by returning only the manure of the products grown on the farm, no matter how well taken care of, was thoroughly exposed. The advantage of mixing the manure from all kinds of stock was also alluded to. One of the members stated that he drew his manure out to the field as soon as it was made. One member, having difficulty to retain the liquids in the manure, having but little straw, was advised by a representative of the ADVOCATE to use dry muck, earth or sawdust. The first two did not only absorb the liquids, but also the gases that might be formed, especially ammonia. He also warned the farmers present not to use fresh ashes on their manure heap, as they acted directly opposite to gypsum, which was used to absorb the ammonia and retard fermentation.

Mr. Scott read a paper on Ensilage, in which he spoke of it in great praise. His method was to fill a silo, having perfectly smooth walls two to four feet, each day, till full, and then simply cover it with straw. No weighting was required.

Prof. Robertson said that the corn was in the best condition when the ears just began to glaze. It should be sown early, for it was more injurious to be caught by the frost once in the fall than to be nipped several times by it in spring. Planting the corn in drills, three feet apart, was much preferable to broadcast sowing. In Wisconsin, where ensilage had gained great favor, they followed the same method of curing as that described above. Filling in the cut corn in that way generated enough heat to kill the germs causing the decay.

Mr. W. L. Brown spoke strongly against ensilage, and said that, according to Sir J. B. Lawes, it could not be considered a success in England.

Mr. W. Weld said that although it might have been a success in other countries, growing different crops and having different climates, it was not necessarily advantageous for Canadian circumstances, especially where turnips could be raised, and the large Southern corn which was generally used to the best advantage for this purpose could not be successfully grown. He advised the meeting to be very cautious in trying it.

Prof. Robertson's address on the Dairy Cow was very instructive and listened to with marked attention. He opened his remarks by drawing attention to the fact that the selling price did not determine the profits, but the difference between it and the cost of production. The cost of production of the milk could be materially reduced, for the milk delivered to the cheese factories last year, given by 275,000 cows, could have been obtained from 175,000 good milkers. The cow which he intended to picture to them had been claimed by the breeders of all classes of dairy stock to be an exact description of their breed. The development of the organs of respiration, circulation and digestion were as important in the milking as in the beefing breeds. In the

latter they were required for muscular development, while in the former the nervous system directed them to the production of milk. The good development of the above organs was indicated by deep nostrils, depth of chest, full crops, soft and glossy hair, a large barrel, a skin of good handling qualities, and a moist nose. Round nostrils were objectionable, and a dry nose indicated an animal subject to indigestion. The good development of the nervous system was indicated by depth and breadth of forehead (from the root of the horn to the eyes), a large prominent eye surrounded by a soft chin void of coarse hair, and an absence of coarseness in all parts of the body. The spine (back-bone), containing the nerves, should be large, also the spaces between its upright processes. The size of the udder was of less importance than the size of the surface of its attachment, as indicated by its length and breadth. Having a good animal, the next thing was to take proper care of her, and not compel her to expend her forces uselessly by exposure or bad treatment. Being in a cold atmosphere or drinking cold water materially reduced the quantity of milk. It had been estimated by persons warming the drinking water for their stock, that 10 per cent. of the increased yield of milk would pay for the fuel required to warm the water. Badly-ventilated stables reduced the quantity of milk 10 to 14 per cent. Exciting the animal was also very injurious, reducing both quality and quantity of milk. To the chasing of cows by dogs he attributed half of the tainted milk delivered at factories. He recommended feeding cows all they would want, twice a day, claiming that they, being satisfied, would lie down quietly and chew their cud. No animal should be fed over-ripe hay or straw, as this would give their digestive organs unnecessary work. Concentrated foods should be fed and mixed together with the coarse fodder, for if the former were fed alone only half of them would be digested.

A writer in the London Garden, referring to the well-known fact that new seeds usually germinate more quickly than old ones, says that many old ones will germinate well with heat that would perish in cold ground—a fact which should be borne in mind by those who are testing seeds this year in warm rooms. Among those which may be kept two seasons are named onions, salsify and some others, while lettuce, tomatoes and artichokes will continue good three seasons; cabbage, turnips, spinach, kales, &c., four seasons, and melons, cucumbers and beets for five or six seasons. It must, however, be borne in mind that such rules as these are more or less arbitrary, as much depends on the condition of the seeds and the temperature and dampness of the place where they are kept, and on the condition of the soil which receives them, favorable influences sometimes more than doubling their keeping and favoring or preventing germination altogether. Another good authority says:—"Many vegetable seeds, properly kept, are good to a 'green old age.' For instance, beet seed has been found good at ten years, celery at ten, pumpkins at ten, melon at ten, and seeds of all the melon family are better over than under ten years; turnip four, lettuce three, cauliflower two, beans four and over, cabbage four, peas four, &c. Still, new seeds of all but the melons are best if fresh. Especially is it preferable to get them direct from reliable seedsmen each year than to trust to those sold on commission at the village store. Before planting any seed, whether home grown or from any other source, test each variety before intrusting them to the soil."

The Dairy.

Obituary.

It is with deep feelings of sorrow and sympathy we announce the death of one of our most useful contributors, Professor L. B. Arnold, who departed from this life on the 7th ult., aged 74. It is our opinion that from



his practical and scientific research, the quality and standard of our cheese have been greatly enhanced, and that no person in America has done so much good for the dairy interest.

He has striven bravely against the tide of life. His parents having but limited means, he was compelled to provide for his own education, which he did very energetically and thoroughly, graduating at Union College in 1848. From early boyhood he has been interested in dairy matters, and has for the last 32 years of his life made this important branch of agriculture his special study. He was an indefatigable worker, close student and careful experimenter, which, together with the pleasant manner in which he expressed the knowledge he had gained, gave him the confidence and esteem in which he was held by all who knew him. He has written several valuable works which have gained for him an almost world-wide reputation. Every dairyman will regret the demise of this useful gentleman. But his works live after him.

A Discussion on Test Churns.

At the late Wisconsin State Dairymen's Association, the merits, or rather the demerits, of test churns as an instrument for testing milk delivered at factories, for the purpose of paying according to its quality—which is considered by the dairymen of that State almost indispensable for the welfare of the factory system—was thoroughly discussed.

Mr. Smith, testing the various known milk-testing instruments, reported to this meeting:—"Up to the middle of August no milk-testing apparatus (tested by him) that required long tubes of small diameter gave any reliable results, while the churning of half-pound samples of quite acidified milk, in pint fruit jars, and weighing the butter, though not considered perfect, justified trials on a larger scale." In these tests some of the grand totals of the test churn agreed very closely with the butter realized in the factory churn; but in the separate tests making up this grand total there were considerable deviations from the large churn, thus showing that although on an average it might give fairly reliable results, it did not serve the purpose for which it was intended, viz., to give justice to each patron.

Hoard's Dairyman, in reporting this meeting, says:—

It appeared from chemical testimony that there is more liability of error from defective churning, as to the integrity of the sample, by churning in small, unphilosophically constructed and shaped vessels, than from all other causes, and the error increases as the churn diminishes in size.

Dr. Babcock has found that the unequal viscosity of the milk defeats the completeness of the churning. * * * He did not think it possible for the small tubes to churn out as much fat, proportionately, as a pint jar with larger sample; but even the jar did not churn its contents exhaustively. He could not get as near to the total fat as shown by chemical analysis, with the small churn as with a larger one; nor would the small churn get the per cent. of fat uniformly.

Butter-Making in Normandy.

This Province of France has gained a world-wide reputation for the excellent quality of butter it produces. Their method of manufacture has been described by A. M. in the Farming World, as follows:

One cannot travel far through France without observing how important a place the dairy industry holds in the general agricultural interests of the country. It is, however, in the northern departments that dairying is most extensive and most skilfully practiced. In the south the culture of the grape holds the premier place. In the north Normandy includes the most of what in Scotland we would call "the dairying counties." Perhaps no country is better adapted for carrying on this industry. The soil, belonging generally to the Jura formation, is a very good mixture of limestone and clay; and the climate, benignly influenced, like our own, by the Gulf Stream, is moist and mild. In summer the temperature is never very high, neither is it very low in winter.

Dairy practice varies considerably in the five departments of Normandy. In the north and east of the Manche, and in the west and north of Calvados, attention is chiefly devoted to butter-making; whilst in the other departments the manufacture of cheese, chiefly the well-known Camembert, is the staple form of the industry. The cows in most favor are those of the Cotentin race, big, heavy animals, and good milkers. It is the custom to house the cattle in winter, when they are fed largely on hay with a very moderate allowance of mangolds, turnips, and carrots. In summer the cows on not a few farms never leave the pasture fields—being milked where they graze—indeed, no other feeding is necessary when pasture is so rich and abundant. The pastures of Normandy have not a little to do with the excellence of its dairy produce.

The butter imported into this country from Normandy is generally consigned from a factory. But at these export factories the butter is not made. The factory system of butter-making has as yet but a limited hold in Normandy. The butter is made at the farms—not large farms either, as a rule—put up into lumps, which are collected by the large merchants, classified according to quality, and merely mixed together at the factories.

On a Norman farm the dairy is almost invariably a presentable building, whatever may be the condition of the general farm steading. It consists, as a rule, of two apartments, a milkroom and a workroom. Round two or three of the sides of the milkroom runs a trough, two feet deep by two feet broad, along which a slow current of pure cold water continually flows. This has a twofold function: to equalize the temperature of the room, and to reduce quickly the temperature of the new milk. The cows are milked morning and evening, and in some cases three times a day. When the milk is taken to the dairy it is first strained and then poured into earthenware pails, very similar to a deep Scotch "crock." These pails are then set in a row in the water trough in the milkroom, and in a short time all trace of the animal heat is gone. The system of "setting the milk" is thus rather a deep than a shallow one. In some of the best

dairies, famous for "Isigny butter" of the highest quality, the practice is to skim the milk after it has stood twelve hours. Of course the total yield of butter is not so great as it would be if the skimming took place after the milk had been longer set, but the butter made from this early-skimmed cream is so excellent and delicate in flavor that the loss in quantity is more than made up by the good prices the makers obtain. In other dairies the cream is allowed to sour, and is not taken off the milk until the milk has "turned." The farmers believe that they obtain a larger yield of butter by this means, and they find that it induces a fuller flavor, which finds favor with some consumers. This butter also keeps better if thoroughly well made.

The cream is churned twice or three times a week, the days being regulated by the weekly markets of the district. Generally the true Norman barrel churn is used. The axle of this churn is horizontal, and the motion is generally obtained by horse-power, except on the larger farms, where water or steam is available. The churn is about half filled with cream at a temperature of about 57 degs. to 59 degs. Fahr., and from 30 to 40 revolutions per minute, according to the season, is the usual pace. As a rule, the butter comes in about 40 minutes, the slightest alteration in the sound of the churning cream being most intently waited for by the attendant dairy-maid. As soon as ever the small granules show on the tester, the churn is stopped, the greatest importance being attached to stopping the churn exactly when the butter has formed. To churn the butter into a lump is considered very bad management. The butter having come, the butter milk is run out at an opening in the bottom fitted with a sieve to intercept the butter particles. When most of the butter milk has been withdrawn, fresh spring water is put into the churn until it is half full. Three or four turns of the dashers are given, and the mixture of milk and water is again withdrawn as before. This process is repeated four or five times till the water which comes out of the churn is as bright and clear as when it was put in.

Where salt is used, it is almost invariably mixed with the butter in the churn in the form of brine, the granular form of the butter greatly favoring its thorough amalgamation. In this way the butter can be salted to the greatest nicety by means of careful washing after the brining process, thus modifying the strength of the salt to the required taste.

When removed from the churn the butter requires no more working than what is necessary to consolidate it and press out the particles of clear water. In some dairies the *de'aiteuse* is used to dry out this water; in others again it is used at an earlier stage instead of the frequent washings. When so used it is claimed that the final flavor is not so apt to be lost as by so much washing, and I incline to favor its use at the early stage.

It is perhaps not possible in every district in Scotland to produce such good butter as is made in Normandy, for there are few districts where the pastures are as rich. But careful enquiry and observation during a recent visit convince me that, other things being equal, the scrupulous care not to overchurn the butter is probably the great secret of success. The cleansing, and we may almost say the working, of the butter is performed within the churn, a thing that would be impossible were the granules destroyed, and the butter churned into a lump. Another point to be noted in their practice is the careful attention bestowed on maintaining the temperature of the milk room, where the cream is set as even as possible. The influence of temperature in hastening or retarding the use of cream is, I am afraid, a point much neglected by Scotch butter-makers. The flavor of butter is not a little intensified by atmospheric action.

One other point forced itself on my attention. I could not but notice the pride every Norman farmer's wife takes in the dairy, and how delighted she was to conduct the visitor over every part of the premises, and to call his attention to every portion of the work. It was very suggestive, too, to see how eagerly they enquired about the new processes and improvements. Their criticisms convinced me that it is the Norman farmer's wife that is the greatest secret of his success as a butter-maker.

The Farm.

Grass and Clovers.

III.

Having in the previous issues briefly described the principal grasses, we will now review the most important clovers.

RED CLOVER (*Trifolium pratense*) is a plant that was already known to the Greeks and Romans before the Christian era, and was cultivated in Britain more than two and a half centuries ago. It belongs to the leguminous family, which although very rich in nitrogenous compounds (albumen and gluten), have, unlike the cereals (which are comparatively poor in these compounds), not much difficulty in obtaining their supply of nitrogen. Red clover, possessing this characteristic of the group to a very marked degree, and having a very extensive network of roots, enriches the surface soil in vegetable matter, even if the upper portion of the plant has been entirely removed. If grown under favorable conditions, this plant is very valuable in the destruction of weeds, for by its vigorous growth it chokes, or at least checks, them. These qualities make it very valuable for green manuring. A rich heavy soil, possessing an abundance of calcareous matter, is best adapted for its cultivation, and light sandy or water logged soils are least suited for its growth. Its roots are very long and have been found to weigh as much as the remainder of the plant. They reach their greatest size if the plant is left to mature its seeds, and are least developed if the plant is continuously cropped. There are two varieties of red clover grown here; one is a biennial and the other a perennial. The former is what is known as the Common Red Clover, Broad-leaved Clover, or Meadow Trefoil. To this variety botanists give the above Latin name. The other variety, botanically known as *Trifolium pratense perenne*, is called Mammoth Red Clover, Perennial Red Clover, and in some parts of England, Cow Grass. The difference between these two varieties is that the Mammoth Red Clover blooms about three weeks later (about the same time as Timothy), is somewhat coarser, possesses narrower leaves, larger, opener, and brighter heads, bears seeds more abundantly, and is supposed to grow on poorer soils than the Common Red Clover. To obtain a catch of clover, the seed-bed should be well prepared, and the seed sown early in spring. Dressings of gypsum in quantities of 150 to 200 lbs. per acre are very beneficial to this crop.

ALSIKE CLOVER (*Trifolium hybridum*), is a plant, which in appearance is intermediate between the Red and the White Clover. This intermediate position had led to the belief that it was a cross between these two plants, but this opinion is now generally abandoned. It grows indigenous in several European countries; but being first cultivated in Sweden, it was first exported by that nation. A heavy low-lying soil is best adapted for its cultivation, and it thrives better in a moist than a dry season. It is a hardy plant and a true perennial, producing the greater bulk of its growth in the fore part of the season. Although quickly regaining its growth after being cut, it produces but a small aftermath. Unlike Red Clover, it does not turn quickly to woody fibre if allowed to grow after the commencement of bloom. It is fit to cut at about the same time as Timothy, and thrives well together with this grass, which is a friend of the

same rich, deep, low-lying soils. The Alsike, having an abundance of leaves and a fine and slender stem, frequently lodges, unless kept in its upright position by some strong grass. If lodged it should be cut as soon as possible, for in this position it is very liable to rot at its base. It frequently grows on a cloversick soil. The plant produces a large quantity of seed, easily collected, and has not been known to suffer much from the clover midge. The straw after being threshed is still very unwholesome. The seed must be taken from the first crop, the aftermath not being adapted for this purpose. This clover blooming for a long period of time, and the bees being able to reach the nectaries to extract the honey, is much recommended by bee-keepers. It is a very valuable clover for agricultural purposes, but requires two or three years growth before giving the best returns.

(To be continued.)

Ensilage.

In the report of the Elmira Farmers' Club, as given in one of our exchanges, we find the following reference, which very largely agrees with what we have said on the subject in previous issues of the ADVOCATE:—

"No member considered corn ensilage to be superior in feeding value to the dried stalks. One of the members said that in both methods of preservation there was some loss. Authorities did not agree as to the relative feeding value of a ton of green stalks saved by ensilage and the same weight saved by drying. In both cases loss was perceptible, but probably less by proper drying than in ensilage, but the condition of ensilage secured consumption more fully, and, perhaps, more than compensated for the difference in assimilable nutriment. As to saving grass from meadows in silos it was safe to say no economy would be found in the process, especially as ensilage, no matter what substance be employed, was not good as a whole diet. Well-cured grass of the best varieties was worth more in the form of hay than it could be if saved in silos, for if dried, it was subjected to less injurious changes in its composition and was quite as palatable as the best ensilage, while it was safer to feed. It was possible that enthusiastic advocates of silos might say that they offer the best means of preserving good grass, but it was doubtful if there was one good reason for the claim. The experiment had been tried, but never with profitable results."

Sprinkling plaster in the stables will absorb the ammonia and preserve it and the horse's eyes.

In a report of a Farmers' Club in one of our American exchanges, a speaker recommends scattering over a newly-planted potato field slices of potatoes poisoned with Paris green. By this method the potato beetles were frequently entirely destroyed before the newly-planted potatoes appeared above ground. This plan is at least worth trying.

Farmers should do all they can to make their lives pleasant. One way to do this is to have our surroundings attractive and tasteful. Neatness and cleanliness will add much to the pleasure of a home. Unsightly objects should be removed and a few flowers planted. These things are not only beautiful to the eye, but they have a higher and better use in the way of sanitation.

Selecting the Seed.

The importance of selecting the proper varieties of seed grains has been fully treated in our two previous issues, and we will here only draw attention to the importance of obtaining these varieties free from injurious admixtures.

One of the most fruitful causes of weeds on a farm is that their seeds are sown together with the grain, and the greatest precaution is therefore necessary to sow only clean seeds. A sample of all the seed sown should be carefully examined by spreading it out on a piece of clean paper, and carefully comparing the form and color of all the grains. By this plan, any foreign seeds may be easily detected. If possible, the sample should be taken from the bottom of the bag or bin containing the seed, for the smaller foreign seeds are generally found there in the greatest number.

Another thing to be avoided is the sowing of seeds infested with injurious insects. Some of these, such as the "flaxseed" stage of the Hessian fly, sometimes seen in wheat, may be seen when examining the sample for foreign seeds. But others, especially if only the eggs are present, can not be detected by any simple plan of examination. The precaution should therefore be taken not to sow seeds grown in localities or fields visited by insect plagues the previous season.

By taking a little precaution in this matter, much loss and labor may be avoided.

Clover Sickness.

(Concluded.)

The analysis of the soil of these two plots shows that the land which had been highly manured contains far more organic matter and nitrogen than the other plot, while at the same time it contains very much less of these substances than the garden soil. The evidence points to a destruction of the clover plant by living organisms in the soil, a large increase in this life having been encouraged by the liberal supply of organic and nitrogenous matter. This does not, however, explain—supposing we had taken another leguminous crop, say beans, at the end of the fourth and the eighth year, followed by red clover in the twelfth year—why the crop would, in all probability, escape the attack of the living agencies, and be free from disease. It is at this point that the difficulty of finding a satisfactory solution is the greatest, and it can only be met by assuming that the clover plant requires, as part of its food, a special organic compound.

It must be understood that on our experimental land, whether 4, 8, or 12 years elapse before the clover is repeated, the same operations are completed every fourth year. Instead of one application of rape cake and ammonia, there will be two or three, two or three crops of roots will be plowed in, and more corn crops will be grown. The only distinction that I know of will be that the earlier applications of manure will have gone through longer periods of decay, and have formed compounds of which we know little or nothing. These compounds, however, when we arrive at further knowledge upon the subject, may explain much which is obscure at the present time. That such compounds are formed we have very strong evidence in another field, where we endeavored to grow beans for a long series of years upon unmanured land. The

crop became very small, the growth being only a few inches high. Analysis of the soil showed that it had lost a large amount of organic nitrogen, and it was very poor in nitric acid. The experiment was therefore given up, and the field was sown with barley and clover. The barley was by no means a fine crop, but the clover was magnificent, and the color of the leaf remarkable for the beauty of its green.

I have selected this experiment out of a number of others where the clover was even more luxuriant, as in all the others manure of some description was used. Here we have the fact of a soil which became poorer in organic matter, nitrogen, phosphates, and potash, ceasing to furnish food for one leguminous plant, while it was accumulating food suitable for another plant of the same natural order. The soil of the garden where the clover has been grown for so long without disease differs in two remarkable respects from the soil of the highly manured rotation land, where disease occurred when the crop was repeated after an interval of four years. On the garden soil the accumulations from former manures were very large, and there was no fresh organic or nitrogenous manure to feed living bodies. It is quite possible that when organic matter has reached a certain stage of decay it may cease to be a food for much of the larger sorts of organic life in the soil, such as worms, &c.

Salts of ammonia appear always to have an unfavorable influence upon clover and to encourage disease. As far back as 1860 we published a map of a field, one-half of which had received salts of ammonia in addition to the various other manures applied, and it was quite evident, from the size of the various blank spots, that the disease was, in some direct way, encouraged by the application of ammonia. In a field which had received no dung or organic matter for a number of years, and had been growing barley manured with nitrate of soda and superphosphate of lime, with occasional crops of red clover, disease almost cleared off the plant when repeated after four years; but after eight years the crop was not attacked except where it joined the diseased portion, and it was evident that whatever was the cause of the disease, though it had passed over the border, it did not extend its ravages beyond a few feet. There are a few conclusions which may be drawn from these experiments:—

1. That clover disease does not occur even when the crop is grown continuously, provided that the soil contains in abundance the appropriate food of the plant.

2. That clover disease occurs in highly manured soils if the crop is repeated too frequently, and sufficient time is not allowed for the formation of the appropriate food of the clover.

3. That the fertility of a soil may be largely reduced by cropping and absence of manures, while at the same time the food specially required by the clover may be increasing in the soil. The crops grown during the process of exhaustion may be partly, or wholly, plants of the same natural order as the clover, provided that they differ from the clover in certain properties of their growth and the range of their roots.

4. That although clover does not appear to possess the same power of appropriating the mineral food of the soil as the cereal crops (for which reason mineral manures are often advantageously applied to this crop), still mineral

manures cannot be depended upon to grow clover on clover sick land.

5. That all the evidence points to the soil as the chief source of the mineral and nitrogenous food of the clover; and if it should be ultimately proved that the nitrogen of the atmosphere played any important part in furnishing the nitrogen taken up by the plant, it is more probable that the nitrogen enters into combination with some ingredients of the soil than that it is directly assimilated by the plant itself.

Beet-Root Sugar in Quebec.

BY WILLIAM SCRIMGOUR.

I have been asked to explain why this industry was not a success in the Province of Quebec. In order to do this briefly I will deal with the question in a general manner.

Some years ago this industry was brought prominently into public notice by a few local politicians and representatives of French capitalists, who went to work very energetically, getting the Quebec Government to promise a subsidy, and the Federal Government to concede the customs duties on the machinery imported, subject to the industry being carried on for a certain length of time. The interest taken in the affair was so great that no less than three companies were formed, and factories were erected at Coaticooke, Berthier and Farnham, costing altogether over five hundred thousand dollars (\$500,000). The Quebec Government then offered a bonus of \$10,000 to the company that first had sugar on the market, and every effort was made by each of the companies to secure the prize.

More time than was expected was spent in building and equipping the factories, and the first crop of beets grown had to be left in the farmers' hands.

This was a severe blow to the new industry, for compensation had to be made to the farmers, and a whole season's business was lost. Nor was this all, for the expenses consisting of salaries to directors, managers, chemists and skilled mechanics, besides interest on capital and incidentals, were running on all the time, and before another season came round they were obliged to mortgage their plant. This caused the public to lose all confidence in the undertaking, which now rapidly declined in its estimation. Many farmers would not deliver the second crop of beets until they were paid for, thus causing more trouble and delay in starting—so much so, that two of the factories had to give up without having worked one season. The other, at Farnham, which obtained the bonus of \$10,000, was better managed, and in better credit, and continued to run for two seasons, making a very good quality of sugar. But there was no prospect of getting a sufficient supply of beets to make the industry profitable, and it too was discontinued.

Now as regards the beets themselves, owing to the delay in opening the factories, the first year's supply remained so long in the ground that they were in some cases touched by the frost, and this caused an impression to get abroad that they could not be successfully grown here. Although proved afterwards to be quite erroneous, this, nevertheless, had a retarding effect on the industry. Again, the factories were situated in the districts where the cultivation of roots is almost unknown, and mostly among a people who are proverbially conservative in their habits, and who do not take kindly to innovations. The only farmers who showed the least aptitude for

raising this crop were those on the Island of Montreal, many of whom continue to grow them for their cows.

Such are the outlines of the rise and fall of the beet-root sugar boom in the Province of Quebec. Not only was it unsuccessful itself, but its failure has prevented the industry taking root in our land, which, on the whole, is much better suited for it physically than are many of the European countries where it now flourishes.

If tried again it should be on sound business principles, and the factory, for one is enough to start with, should be located among farmers able and willing to give to the cultivation of the root the intelligent care which it merits.

This industry was also tried in Maine in 1878, but the company suffered considerable loss at the outset, and just as the farmers were getting into the way of growing the beets it had to succumb.

The first season only about 1,000 tons of beets were obtained, which, of course, would not pay expenses. The second year, instead of following the plan adopted in Europe, the company thought they could improve on it a little, and built an oven at a great expense (\$5,000), which was to dry 25 tons of sliced beets per day, but in actual practice it was only able to dry about 7 tons per day, and the cost of working was \$6.50 per ton. This drying process was not new, but had been tried and abandoned as unprofitable. Some of the farmers were very successful in growing the beets, which were of good quality, and the industry would have gone on all right if the company had had sense enough to keep to the system so successfully followed in Europe. There is no use trying to establish such an industry as this without being thoroughly conversant with all the details.

Fitting Turf Ground for Potatoes.

In one of your issues a writer asked how to plant a piece of turf land to the best advantage with potatoes, says a correspondent of the Country Gentleman. As I have seen no practical answer, I will give the results of my experience. Let the man plow his turf ground in the spring or fall, as straight furrows as possible and of good depth, and when he plants his potatoes take one horse with the same plow or a smaller one, and plow the furrows the same way that he did before, three or four inches deep, and drop the pieces in these furrows every third furrow, or nearer if he likes. Be sure and follow every furrow; do not turn up the turf. If your ground is plowed six or seven inches deep at first, you can plow four inches next time and not turn any turf. Drop the pieces of potatoes along the landside of furrow, and the next furrow will cover them, but be sure and plow every furrow as you did at first. Then, if you harrow your potatoes over before they come up, say twice, you will have the nicest seed bed with the least labor you ever had. If you use fertilizer, scatter it on top of furrows before you plow the second time, and it will turn over on the potatoes when they are covered and be mixed with the soil. I think the inquirer said the ground he wished to plant was rich bottom land. He had better be careful about manuring too heavily, especially if his land is low or rather wet, for they would be likely to rot. But he has to run the risk, and had better use all the manure he can afford. This way of plowing the ground (if it is turf) the second time, is the best, quickest, easiest and most practical way to make the ground mellow I ever tried or ever saw tried. It

is a great saving of horse labor before and after planting, beside getting rid of buying so many different harrows that are regular horse killers. I would not take many of these new harrows if they were given me. The new cutaway disc harrow may be better, but I must see it work first or try it myself before I would have that. I might give some of my experiments, if you wish, as I have raised 500 bushels of potatoes per acre this summer, and have raised from 500 to 800 bushels per acre at different times.

Plowing.

Of all the farm operations plowing is one of the most important. On the manner in which it is done the yield of the crop very materially depends; and unless it is properly executed the crop will be materially reduced, no matter how the other operations have been done. Under varying conditions the method of plowing will have to be changed. Therefore it is not only a very important subject, but also one which requires considerable study. But as in the plowing season the work is generally crowded, it receives very little serious consideration. The lack of attention paid to this operation is by some authorities considered to be the cause of our low average yields as compared with the older countries, and it is, no doubt, one of the reasons why many farmers do not have better crops than they now realize.

In order to obtain the best results in plowing it will be necessary to consider the different soils, crops and seasons. Of these three factors, soil is the one which presents the most varying conditions requiring consideration. Deep and shallow, clean and dirty, light and heavy, wet and dry soils, as well as sod and stubble, and the amount of humus contained in the soil, have an influence upon the manner in which the field should be plowed.

The depth of the soil regulates to a large degree the depth it should be plowed. A deep soil should be plowed deep, and a shallow soil, shallow. But the time of plowing and the crop to be grown on such fields largely influence the depth. A shallow soil, having a fertile subsoil (especially if of a heavy character), if plowed in fall, can advantageously be plowed deep, moreover if a deep-rooted plant is to be cultivated on it. The action of the frost will make the stiff subsoil which is turned up friable, and the plant food locked up in it more available. The roots of the plants growing on it, finding the soil loose to a greater depth, will not only be able to descend easier, but will also find a greater store of available plant-food. If, however, a shallow soil be plowed in spring, it is necessary to plow it shallow, for otherwise the available plant-food distributed in the upper layer will be covered by inactive subsoil, which will be a very poor seed-bed for the young plant requiring very active food.

Weedy fields are generally plowed with narrower furrows, so as to be sure to cut all the roots, and, if possible a jointer-plow should be used, so that it will be impossible for the weeds plowed under to appear on the surface again. The character of the weeds regulate the depth to some extent. On no conditions should lands, on the surface of which weed seeds have been spread, be plowed deep, and if possible they should not be plowed till the seeds have germinated, which is best accomplished by

slightly covering them either by the harrow or the cultivator.

Heavy soils should be plowed as much as possible in fall, while the light soils may be left for the spring plowing; the condition of the former is much improved by the frost, while that of the latter is not much affected by this agent.

The moisture of the soil is especially of great importance in clay soils. If these soils are plowed when too wet, the plow will puddle them, the injurious effects of which may be noticed for a large number of years. This puddling consists in a complete closure of the pores of the soils and a consequent locking up of the plant food, for neither roots nor air will penetrate the particles of soils thus treated. If plowed when too dry, it will not only materially increase the labor of plowing, but the effects of it will also be very largely lost; for the soil will turn up in large lumps which cannot be completely pulverized either by the harrow or the roller. Several guides have been given to ascertain whether the soil is in the proper condition for plowing. One of these is to take a piece of soil, form it into the shape of a ball, and allow it to drop on the ground. If it breaks up into fragments the soil is in a fit condition for plowing. Another indication is to look at the turned furrow. If it has a glossy appearance the soil is too wet. The same thing is determined by introducing a smooth, round stick into the soil. If no noise is heard on its withdrawal, the soil is dry enough; but if a sucking noise be noticed, the plowing should be deferred to a more favorable time.

Sod may be plowed shallower and under more unfavorable conditions than stubble land. Soils possessing an abundance of vegetable matter are not benefited by fall plowing. They require air, heat and moisture to make their plant-food more available. Fall-plowing should be deeper than spring-plowing, and should be left as rough as possible, the object being to expose as much surface to the frost as possible. The different crops favor soils of different mechanical texture, but what we intended to draw special reference to is that deep-rooting crops require deeper cultivation than the shallow rooters. A plant with shallow roots requires its food near the surface. Deep plowing, distributing the food through a larger space, is therefore not advantageous to such crops.

The principal object of plowing is too frequently considered to be to get rid of the stubble of the previous crop and have a clean seed-bed for the reception of the new seed. Although this is an important function of plowing, yet the thorough loosening of the soil is in most cases more important, for by it the air is more freely admitted, which, circulating through the soil, performs those important actions without which the plants cannot thrive.

It is hardly necessary to state that in all plowing the furrows should be straight, of a uniform width, and as uniform a depth as is consistent with leaving the lands in a slightly arched condition. The width of the head-land should always be marked off by a light furrow. The plowman should respect this furrow, and when plowing the lands should go right up to it, but no further. Some good plowmen leave a land the width of the head-land unplowed on both sides of the field. This is done so that when plowing the head-land they can plow right

around the field, thereby preventing the horses from tramping so much on the plowed land, when turning. The plow should be put into such a shape that it will run at the desired depth and turn a furrow the required breadth without being compelled to do so by pressure on its handles. A perfect plow, drawn by a good team, should turn a good furrow without any guidance from the plowman, excepting, of course, when obstacles are met or the surface is uneven.

Potato Culture.

BY HENRY IVES, BATAVIA, N. Y.

The work of potato-growing, as I was called to practice it when a boy, was very different from our present methods of growing this important crop. In fact, there seemed to be no method used then (except that suggested by the different phases of the moon). Nearly all the tillage was done by hand, which gave the greatest labor.

In the years following these, when growing potatoes more extensively for the market, I found it important to adopt better tillage and more labor-saving methods than formerly in managing this work, which was considered the heaviest and most disagreeable on the farm.

But as there were at that time no farmers' institutes or clubs, or scarcely an agricultural paper by which to learn of such improvements as some might already have adopted for this special branch of farm work, I was left to invent and adopt such improvements for myself as best I could, and I was the more prompted to this by calling to mind the many days of back-aching work I had done with a heavy, dull hoe, in dressing even the small potato patch of other days.

I shall attempt to describe in this paper the more important modes of tillage and management by which the crop is grown in Western New York.

There is a general belief that a sandy or gravelly soil is the best; but if a strong clay loam or a heavy soil is to be used, and proper tillage is given it to keep the soil in a light, friable condition while the crop is growing, the chance for the larger yield might, I think, be in favor of the latter; and for quality of tubers, quite as good as that of the former. When planted as the first crop on new land, whatever the soil may be, it can be depended upon as about the best and most reliable potato ground to be had. And next to this an old and tough turf lot will be found most advantageous; both of these should be plowed in the fall previous. The winter's frost will help to settle and subdue the turf, so that in the spring a thorough stroke of tillage will put such ground in good order for the seed.

Then for planting, such varieties should be selected as are known to do best in that locality, for each variety has its favorite locality to grow in. But great care should be taken that the best of their vitality has not been wasted in a premature growth of sprouts. To this end the potatoes for seed can usually be kept better in pits or buried, than in cellars; the time of their sprouting can there be retarded if necessary, and when planted, they will start with a more vigorous growth than those from the cellar.

The safest way of cutting the seed is to do it just at the time of planting, but if cut before, it should be spread, say, a foot deep on a barn floor with plaster thrown over it, and frequently turned with the shovel until used.

Having a strong, rich soil, we find that with us

two or three eyes on a piece, and one piece in the hill, is sufficient, and their product is of a more uniform market size than where a larger amount of seed was used. In this connection I can say, from experience and carefully tested experiments, that a piece of potato of a given size will give a better gauge of the right amount of seed for a hill than any given number of its eyes would be, and that nature will assist so far in regulating this that the few eyes of the stem end piece will, in growing, show about as full a product both of tops and of tubers as are produced from the many eyes of the seed end piece.

I cut my seed mostly with a machine, gauged to cut all the seed of a uniform length off the potato.

As to the best season for planting, I would say that nearly all the extensive planters here have practiced for some years planting quite late, usually from the first to the twentieth of June. But I should be decidedly in favor of planting at least one-half my crop as early as I could put it in. In marking out for planting we do not usually furrow out deep enough. It will pay the planter to provide himself with a good tool for this work, one making a number of marks at a time, because then so many more of the spaces will be just of one gauge, and one with an indicator, so that the space between going and returning of the marker may also be of the same gauge, and with teeth working to the desired depth for planting. As to the space, I prefer to have two and a half feet one way by three feet the other. Then, for my closest and best work, I go by this narrowest gauge.

It is nearly the universal practice of planters here to check-row for potatoes, and of course mark the land out each way, making the second trench marks as deep as they desire to plant the seed. Here we come to a point at which many experienced farmers will unwittingly make a blunder that will cause them much unnecessary annoyance in properly tilling the crop through theseason. Of course we design from the first to so plan this work as to do it all with horse tillage, and have it show good clean tillage, too. To do this we must have straight rows, and these of a uniform gauge, so that the tools can do a full stroke of work all the way. The only way of accomplishing this, after doing good marking out each way, is to cross these last made marks in dropping, and following the rows indicated by the first marking. In this way each piece will be left in a line each way; whereas, if dropped along the line of these trenches, some of the seed will drop short of the cross-mark and some will over-reach it, so that when the plants come up they will stand zig-zag one way of the field.

Next in order will be to cover the seed. For this many different devices and tools are used, some which the planter makes for himself, or by utilizing such other tools as he may have, or with an implement made especially for this work, but nearly all is done by horse, instead of hand-work, and mostly at the rate of six to eight acres a day.

One important point about this work will be to throw a good high ridge of earth over the seed, covering them much deeper than you would design to have them planted. Then, dragging these ridges down once or twice before the potatoes come up will reduce them sufficiently to leave a clean bed of fresh earth for the potatoes to come up in, and will most effectually dispose of the first crop of weeds, which would otherwise be left growing with the potatoes. Dragging them again after the plants are three or four inches above the ground will destroy another crop of foul growth, which by this time will

have commenced to germinate in the surface soil, and be equal to a first hoeing.

After this the potatoes will so pre-occupy the hills that no more weeds will grow in them for the season, and any good course of tillage after this will keep the spaces clean between the hills and rows. The spring-tooth corn cultivator makes one of the best of tools to do the tilling with, and it should be used as often as once in a week or ten days until the tops are nearly of full size and commence to blossom. After this use the hinge-winged shovel plow, run it, like the cultivator, first one way across the field and then the other. Gauge the wings to hill up much or little, as desired.

Continue this work even after blossoming (regardless of any "old wives'" sayings to the contrary), until the potatoes are well grown in the hills. This gives the best possible condition for the development of the crop.

In harvesting the crop most of the planters use one or another of the many tools got up for the purpose. Although we do not as yet have a perfect potato digger, still the days of digging them by hand have nearly past.

One or two sets of bushel boxes will be found of great convenience in handling the harvested crop, and, whether going to the market or into the cellar, they can be handled with less bruising and more speed than in any other way.

Smut.

This disease, due to a fungoid growth, has done very serious injuries in both the Old and New World. Although very widely spread, it seems to be more injurious in some districts than in others. Some localities of Ontario have suffered from it largely last year, while others have entirely escaped. In the North-West more damage has been done last season than we have ever known it to do in Ontario.

There are several distinct species of smut, two of which affect the wheat. The more injurious of these, hard smut (*Tilletia caries*) does not destroy the covering of the grain, but reduces the substance inclosed by it to a black, disagreeably smelling powder, which is very injurious to the milling properties of the wheat. The presence of this species cannot be easily detected in the growing wheat-field. The other species, termed loose smut (*Ustilago carbo*) destroys the grain entirely and can readily be observed and prevented from further spreading by removing the affected plants.

In Bulletin No. 3 of the Experimental Farm at Ottawa, Mr. James Fletcher, in speaking of the remedies for these varieties of smut, says:—

Of a great many remedies which have been tried with more or less success, I select the three following as being in my opinion the best both for efficiency and convenience. The first and second I have myself frequently tried with manifest success. The third is given on the authority of Mr. Worthington G. Smith.

1. SULPHATE OF COPPER, also called Blue-stone or Blue Vitriol.—This substance can usually be procured in any part of Canada from druggists or general-store keepers, at about 10 cents per lb., so that the cost of treating seed with the strongest solution recommended below, would not exceed 2½ cents per bushel. The different methods of applying this substance to the grain vary slightly; but the differences are merely with regard to the extent to which it is deemed advisable to wet the seed. Some advise soaking the grain; but it would appear from the results of many experiments that this is not necessary. Mr. Worthington G. Smith advises the following: "1 lb. of bluestone dissolved in five quarts of boiling water is sufficient for a sack of four imperial bushels. The wheat is soaked for ten minutes, or the ten pints of solution may be poured over till all is absorbed." Mr. S. A. Bedford of Moosomin, N. W. T., who has had

considerable experience as a farmer in Manitoba and the North-West Territories, says that the following method has proved successful in his district: "One pound of Sulphate of Copper is dissolved in a pailful of hot water, which is then sprinkled by one person over 10 bushels of wheat placed in a wagon box, whilst some one else keeps the grain well stirred. Should a large amount of smut be detected in grain required for seed, the solution is made stronger, double the quantity of bluestone being used." The chief advantage claimed for this method is that in a few hours the grain is sufficiently dry to sow with the drill. Mr. C. S. Plumb, of the New York Experimental Station, used 4 oz. of Sulphate of Copper in one gallon of water, and reports: "Seeds soaked seventeen and a-half hours in this solution were found to produce a slight amount of smut. Soaked forty hours all germs of the fungus were killed." It is to be noted that Mr. Plumb's experiments were with oats, in which, from the fact that the seed is contained in a comparatively loose husk, there is much more difficulty in removing or destroying all the smut-spores than in the case with the smooth and naked grains of wheat.

2. BRINE AND LIME.—A remedy generally available at country farm houses and from which good results have been secured, is to soak the grain for ten or fifteen minutes in brine of the ordinary strength used for pickling pork (i.e. in which a fresh egg will float). If well stirred many of the smut spores, smutty and imperfect grains, &c., will rise to the surface, and can be skimmed off and destroyed. After the brine is poured off, the wheat must be dried by dusting lime over it until all the grains are white.

It is claimed that sprinkling the brine on the grain instead of soaking it as above, before dusting it with lime, has been found successful; but I have never tried this method.

3. ALKALINE WATER.—It might happen that none of the above-mentioned materials were obtainable, and in such a case the mere washing of the seed would be beneficial. Mr. Smith says: "As the spores are lighter than water, steeping in brine or even pure water is often effectual, as the spores float, and are easily washed away. Some alkaline lye should be added if water is used, as the oil on the surface of the spores combines with the alkali and forms a soapy substance which is fatal to effectual spore germination." An alkaline lye suitable for the above purpose may be made by adding to three or four gallons of boiling water, in any suitable vessel, one gallon of hardwood ashes, and stirring frequently until the alkaline properties of the ashes are extracted; or an alkaline solution of sufficient strength may be made by dissolving about 2 lbs. of ordinary washing soda in a pailful of water.

Injurious and Beneficial Birds— The English Sparrow.

(CONCLUDED.)

Having thus glanced but slightly at the extraordinary rapidity with which the sparrow has increased in numbers, and its wonderful adaptability to climatic variations, it becomes highly important to ascertain as far as possible whether it is a benefit to us or the reverse, and to what extent.

As the birds were first introduced to the United States, so the American government has been first in the field in taking notes on these important points, and so far the evidence is almost entirely against the sparrow. Dr. Coues, one of the leading American Ornithologists, says: "Imported during a craze which even affected some Ornithologists, making people fancy that a granivorous cenisostral bird would rid us of insect pests, this sturdy and invincible little bird has overrun the whole country, and proved a nuisance without a redeeming quality."

Among other charges brought against the sparrow, it is accused of driving away our native birds; that such is the case no one can doubt who has given any attention to the subject. The Cat Bird, Oriole, House Wren, Window Swallow, Cliff Swallow, Blue Bird, Chipping Sparrow, Long Sparrow, Yellow Warblers, are all subjected to continued persecution, and are liable at any time to have their nests torn out, and the young or eggs destroyed. Under these circumstances it is

not to be wondered at that many of the native birds have left their former haunts, and in a few years we may expect to find the sparrow in undisputed possession of our gardens and shrubberies.

We are thus deprived not only of the cheerful song and sprightly society of our native birds, but also of the valuable service they render in the destruction of our numerous insect pests.

Among the gardens and orchards of Canada, the birds have not yet appeared in such numbers as in some of the older settlements, and the amount of mischief they are capable of doing is not yet fully understood; but if anything can be done to drive them off in some other direction, now is the time to try it, before they get so numerous as to be uncontrollable, as they now are in many of the States where they first settled. From the Department of Agriculture at Washington have been issued circulars asking for information regarding the habits of the birds, and from every State in which they have settled; the circulars are being returned filled with details of their ravages, and the loss entailed on gardeners, fruit growers and farmers. "Indeed it is safe to say that it now exerts a more marked effect upon the agricultural interests of this country than any other species of bird, and its unprecedented increase and spread, taken in connection with the extent of its ravages in certain districts, may well be regarded with grave apprehension."

Not only are the fruit buds of the grape vine, peach, pear, plum, cherry, apple, currants, etc., destroyed, but lettuce, beets, peas, radishes, cabbages, are all liable to be attacked as soon as they appear above the surface, and in some places the seed has been dug up and devoured before it had germinated, to prevent which the beds have had to be covered with netting. Abundant evidence is also furnished by farmers in different parts of the Union, regarding the damage to their crops by sparrows, from which the following is selected. Mr. Platt, of New Haven, Conn., says: "I cradled a small piece of oats and the sparrows gathered on it in such numbers that I killed 54 with one hand and 35 with the other, and in our seed garden we had to keep a boy going around all the time to prevent waste of cabbage and other seeds." Mr. I. H. Gurney, the well-known British ornithologist, says: "I think they do enough of harm to warrant everybody in killing them, say one-fifth good to four-fifths harm is about what they do, take the country all over, though in certain places at certain times they do nothing but harm. I have striven to say all I could in their favor, being naturally a lover of birds."

Miss Eleanor Ormerod, consulting entomologist to the Royal Agricultural Society of England, in her ninth report on injurious insects and common farm pests for 1885, states that "the sparrows drive off swallows and martins, thus permitting a great increase in the flies and insects destructive in the garden and orchard." Miss Ormerod cites a case in which the destruction of the sparrows, and consequent re-appearance of swallows and martins resulted in the abolishment of the insect pest.

Professor Lintner, entomologist for the State of New York, writes in the same strain in regard to the Tussock moth, the caterpillar of which is very destructive to the foliage of fruit and shade trees.

"These insects, it is stated, have increased rapidly during the past ten years, owing chiefly to such birds as the robin, the Baltimore oriole, and the two species of cuckoo, which formerly fed on them, having been driven away by the house sparrow."

From Louisiana comes a report from one of the rice planters that the sparrows have now attacked the rice on his plantation, and threaten to rival the bobo ink in the extent of their ravages. Indeed, so widespread and so general are such complaints that the house sparrow at the present time promises to be the most baneful pest the American farmer and gardener has ever had to contend with.

Keeping all these facts in view, the American people do not intend to let the subject rest. They do not think it expedient at the present time to offer bounties for the destruction of the birds, but think it perfectly feasible to accomplish a great reduction in their numbers by the united action of the people, aided by intelligent

legislation, without drawing upon the public purse.

Among the recommendations are the immediate repeal of all existing laws which afford protection to the house sparrow.

The enactment of laws legalizing the killing of the house sparrow at all seasons of the year, and the destruction of its nest eggs and young.

The enactment of laws protecting the great Northern shrike, the sparrow hawk and the screech owl, which feed largely on the sparrows.

Those who have the sparrows nesting about their premises are also requested to aid in the riddance of the pest by the systematic destruction of their nests, eggs and young, a long light pole with an iron hook at the point being found most serviceable for the purpose. A most effectual mode of driving the birds from their roosting places under verandahs, &c., is the occasional use of the hose, a few successive applications being found sufficient for the purpose.

In Canada the sparrow question has not received the amount of attention it deserves. This is probably owing to the fact that the birds have not yet appeared in such numbers as to call for immediate steps being taken to check their increase, but here, as elsewhere, they are every year becoming more numerous, and there is no reason to doubt that in a very short time our fields and gardens will suffer just as they have done in sections where the birds have been longer settled.

In a report on forestry recently issued by the Government of Ontario there is a chapter devoted to the preservation of birds. The so-called shooting matches, in which young men tramp over a given district and try who will kill the greatest number of birds and squirrels, are very properly denounced. The means being taken in the United States to reduce the number of sparrows is also referred to, but no similar action is recommended for Ontario. Neither is it suggested that such may become necessary. This, I think, is a matter of regret, as Ontario may justly feel proud of her fruit, and it is a matter greatly to be deplored if so severe a scourge is being fostered among us without anything being done to check its progress.

Dr. Brodie, of Toronto, who has for several years past been taking notes on the food of the sparrows, has submitted the result of his observations to the Canadian Institute, an abstract from which appeared in a recent issue of the Toronto Globe. Dr. Brodie is an ardent lover of birds, and approaches the subject with an evident desire to spare the sparrows, if possible, or, at all events, to say the most that can be said in their favor. The observations have been made with a great deal of care, and are no doubt perfectly reliable. Several ladies and gentlemen of Toronto have assisted in this work, and from all of them came repeated notices of the birds having been observed destroying the buds of fruit and shade trees throughout the city. But they also get the credit of taking some insects. Thus from March 1st till Oct. 31st, 1885, the stomachs of 237 birds had been examined, and 104 or about 43 per cent. of them contained insects of several orders. Special mention is also made of their being observed killing grasshoppers. This seems to be an acquired taste which it is hoped may improve on cultivation. I have seen a sparrow capture and devour a grasshopper now and then, but it seemed to be but an individual taste; for where several sparrows and several grasshoppers were near each other, the engagement did not become general. Dr. Brodie deserves credit for the time and attention he has devoted to this subject, which many who are more directly interested in it have failed to do. Its importance can hardly be over-estimated, and now that attention has been directed to it, let every gardener, farmer, and fruit grower in Ontario keep a close watch on the movements of the birds, and satisfy himself whether or not they are injurious. For if they are so now, the injury will assume gigantic proportions as the birds increase in numbers, and it may then be too late to cure or prevent it.

Do not change your stock suddenly from dry food to grass; but continue to give them some of the winter's ration a week or two after turning them out to pasture.

Stock.

The Cyldesdale Stallion Show.

This exhibition was held in the drill shed at Toronto on the 15th of last month. The animals exhibited were of fine quality and the prizes were keenly competed for. With one exception, all the horses present were imported stock, a number of them having been prize winners in their native country. The winner of the sweepstakes and 1st prize in the class foaled in '85, "Granit City," the property of R. Beith & Co., is a very superior animal, having won several first prizes before his importation to Canada.

Although the exhibition was well patronized, yet many prominent breeders were prevented from attending on account of the heavy snow storm that had taken place just before the exhibition.

Great credit reflects upon the Board of Management for the manner in which they conducted this exhibition. Each animal as it entered the ring was numbered to correspond to a number in a catalogue, which gave the horse's name, age, pedigree and owner, thereby enabling each spectator to know all the particulars about each horse in the ring, which would have been impossible without such a plan. Another very useful feature could still be added, viz., placing the numbers of the prize winners in their order on a pole inside the ring, in such a manner that all spectators could easily see them. This practice is followed at some of the European exhibitions and is much preferable to simply calling out the prizes as generally practised here.

The want of a proper building in which to hold exhibitions similar to the above, and in which the various agricultural meetings could be held, has been felt for a long time. What is wanted is a building affording ample seating accommodation for the above meetings, having a covered enclosure in which to hold the exhibitions, and in or about which stabling for the stock would be provided. At the present, exhibitors have to provide for their stock at the various hotels, which is very inconvenient, both for them and the visitors who intend to examine the stock closer. Steps have been taken in this direction, but without definite results. It is hoped, however, that better accommodation will be provided in the future.

Chatty Letter from the States.

[From our Chicago Correspondent.]

The extensive railway strikes have caused much uneasiness and uncertainty in trade. For some time past the railways in the west have been fighting and cutting rates among themselves; and during the past month the strike of the engineers on some of the principal roads has put traffic in bad condition. Since a Presidential year in the States is usually a bad one for business, the tradesmen are hoping that we shall not have another year of strikes as well.

By the way, what has been gained by all of these great labor strikes? Both sides have lost heavily in time and money, and of course the capitalists are the ones best prepared to stand losses.

Each of the leading parties is opposed to any change which may give the wool growers of the States a few years more of grace.

The sheep men declare that if Australian wools are admitted free, it will be no use for them to

think of raising wool; and they also claim that there will be little or no profit in raising sheep merely for mutton. However, the mutton business has been most profitable this year. During the past month many thousand head of far western corn-fed sheep, averaging 120 @ 140 lbs., have been sold at \$5.69 to \$6.10. Desirable 70 to 77 lb. Texas muttons have sold at \$4.75 @ \$5.25; and all in all, sheep have been selling decidedly higher than any other kind of stock.

The sheep raisers are making a desperate struggle to keep Congress from placing wool on the free list, and are making a big effort to have the high war tariff of 1867 restored. They are probably asking for the latter on the principle that people go into damage suits, placing their claims high enough so they will still be large after being cut down. In regard to the removal of all duties on foreign wools, there is a great difference of opinion. The free traders are in favor of putting wool on the free list, because they calculate that that branch of industry will offer the least political resistance. The fact, however, that a strong pressure is being brought to bear by the wool men, coupled with the fact that a large faction in many of the Texas cattle and sheep marketed here this winter have been fed on prickly pear, cotton-seed meal, and a variety of other kinds of natural and spontaneous growth in that region. Cattle and sheep fattening on what they call "solol," prickly pear, cotton-seed, etc., have sold in this market right along with corn-fed stock. It is only in the past year that Texans have learned to use these articles of native and spontaneous growth, and since corn is hard to raise there, except in certain localities, these new kinds of feed will greatly increase the meal producing power of the southwest.

The recent sale of Hereford cattle at Dexter Park, by the Iowa Hereford Cattle Co. and Harry Yeld, resulted in an average of about \$100 per head for six cows and twenty-four young bulls. The prices were considered very low, but the conditions were unfavorable. The cattle were mostly too young for breeding, and it was several months before grass. Cattle men were not feeling very buoyant over prospects for beef cattle, and these particular animals were in rather rough order. There is, however, an unmistakably better feeling in the market for fine cattle.

Prices for hogs have been remarkably unvarying for two or three months, ranging at \$5.25 @ \$5.60 for average weights of 250 to 400 lbs., and \$5.00 @ \$5.40 for pigs weighing 140 to 200 lbs. The demand for meats of all kinds has never been stronger or more reliable than it has been this spring.

Cattle feeders, however, have nearly all lost money—though a few careful and thorough feeders have made money, even when prices were lowest.

The demoralized state of railway affairs making freights very low, and the great scarcity of feed throughout the feeding sections, have kept the markets full of unfinished cattle; but the silver lining to that dark cloud is beginning to show itself, and cattle men are getting more hopeful.

In one of our exchanges a writer on breaking in colts stated that when they became unmanageable while in harness, a good plan was to get a stick, forked at one end, and a hole, large enough to admit the "belly band," mortised in the other. By tying the ends of the forks to the bit (one end to each ring) and passing the "belly band" through the hole at the other end, the colt could be easily controlled.

Revival of the Discussions on Bull "Rogers."

The discussions and investigations concerning the bull "Rogers," which occupied so much time and attention last year, are not set at rest yet. They were revived this year by W. C. Pottit, of Burlington, notifying the Dominion Shorthorn Association that he intended to test whether the actions of that society would be supported by the law. This notice caused considerable discussion, and induced the Association to express their hope that such evidence might yet be found which would enable the Revising Committee, in which they had entire confidence, to accept the bull "Rogers." If their hopes are realized a large number of Shorthorns which are now nothing but grades will again be elevated to the standard of thoroughbreds.

Balking Horses.

A horse is said to possess the vice of balking if it disobeys the command of its master: that is, when it is told to proceed it will either pay no heed to it, or, what is more frequently the case, instead of going forward it backs up. High-spirited horses that observe and remember what goes on around them are most liable to become balky. This vice is a habit that is acquired by external influences. Its causes are various and manifold, but can generally be traced back to improper management on the part of the driver. For instance, overloading a horse and then whipping it to start the load, is one of the most fruitful causes of a balky horse. But apart from any influence of the driver, a horse may become balky when accustomed to work with a mate possessing this vice. Balkiness is sometimes thought to be inherited from some ancestor, but this is only in so far true as the high temperament of that ancestor is transmitted to the offspring; and no matter whether that ancestor was balky or not, his progeny is more liable to become so than the descendants of a horse not endowed with this high temperament.

A horse is, as a general rule, easier made balky than cured, especially if the same driver that was the cause of his becoming balky attempts the cure. However, with proper and judicious treatment, almost all balkers can be broken from this habit.

Balkiness having a variety of causes, and the different horses possessed with this vice acting somewhat differently, no fixed rules can be given that will apply in each and every case; but there are some fundamental rules on which successful management can be based. These are:—Never lose your temper or let the horse see that he is inconveniencing you. Always be kind, but firm, petting the beast if he has obeyed your order, and giving your commands in a concise and distinct manner. Do not let the horse know that he has power to carry out his own will; therefore, if you cannot carry out your own point make it appear as if your will coincided with his, and make him obey that. Prevent him as much as possible from becoming excited. Try to make him forget that he is balking, and if he is balking make his position as uncomfortable as possible without letting him know that you are the direct cause of it, thereby giving him to understand that the discomfort he feels is a direct cause of his unwillingness to obey your commands. Sometimes a good sound thrashing is very beneficial, but in some individuals it is of no use.

A large number of horses balk after enjoying

long holidays. These are generally most effectually treated by giving them very light work to commence with, gradually increasing it until they do an ordinary amount of work, and not giving them too much idle time. If a horse balks when starting a load, turn him first to one side, letting him go as far in that direction as possible without moving the load; then turn him to the opposite side in a like manner. Repeat this movement several times if necessary, but prevent the wheels from sinking into the ground. Sometimes these movements, which are intended to cause the horse to forget that he has balked, or to quiet him (if he is excited), are not necessary; for the horse, although refusing to draw the load in a straight line, will frequently move off with it if allowed to "start it in a turn," the load being easier to move if the draft is applied to it at an angle, and the nearer this angle approaches a right angle (other things being equal), the easier it will be to move. Never load a balky horse heavy, but if it cannot be avoided, let him do some light work before putting him into the stable. Sometimes, if a horse refuses to move, especially if in a place where he has frequently balked before, a good plan is to compel him to remain there until he is very willing to get away.

With these instructions, a person that has thoroughly studied the peculiarities of his horse, will find but little difficulty to find a remedy that will be effective in his particular case. A thorough knowledge of the peculiarities of the horse and a sound judgment in carrying out the above general remarks, are of vastly more importance than volumes of special rules.

In reply to the question whether corn stalks, well cured, or the same put in a silo, are the more valuable fodder, the Country Gentleman says: "They are scarcely unlike chemically, and we know of no accurate experiments, performed side by side, showing superiority in either; but it is probable that the succulent character of the ensilage would give it some advantage." If actual feeding (experiments) does not show a superior value, then what is the "advantage" that the succulent fodder has over the dry? A fodder is valuable for what comes from feeding it. What right have we, or has the Country Gentleman, to claim superiority for one fodder over another where the constituents are alike and the results of feeding each are the same? Imaginary values don't make growth or fill a pail.—[Exchange.]

The English swine eaters are going back on over-fat pork. To help the reform and to get leaner meat a prize is offered by an English paper "of half a crown each in addition to the price per score on all pigs of good quality, between 7 and 9 scores, provided they do not measure more than a certain thickness of fat in every part of the back." The Americans should take a hint before they lose their hold on the British markets, and make pork suited to the new reform. Grass, clover, oats and peas will do it. Keep the hogs in a field; do not over-feed. And kill them before they become too lardy.—[Farm Journal.]

The disadvantages of cooked feed, as pointed out by the ADVOCATE for years, are now becoming to be more generally recognized, and remarks like the following are now frequently met with:—"One reason why cooked feed for stock of all kinds is not as nutritious as uncooked, is because it is not subjected to the process of thorough mastication. This is essential to digestion and assimilation, both in man and beast, nature having provided that the food eaten must be incorporated with the saliva in order to insure the full action of the gastric juice."

PRIZE ESSAY.

Spring Management of Cows.

BY JOHN ROBERTSON, LONDON.

In order to treat this subject fairly it is necessary to distinguish between feeding and dairy cattle. At this season of the year it is very necessary that cows coming in and intended for the dairy in summer should receive the very best treatment to put them in the best condition to do their very best in the pail during the milking season, whether the milk is intended for butter or cheese. The following points, if carefully attended to, will assist the ordinary farmer in bringing his cows in the best condition for a good summer's work.

1. Dairy cows should be allowed to run dry three months before they calve in spring, or any other time of the year. Some object to allowing a cow to go idle three months of the year, as a waste of time and feed, and no doubt there are some cows that with good care and good feed would not require to be dry so long; but I am writing about the average cow for the average farm.

I have no pet theory as to how long a cow should be dry before she comes in, but I have learned from my experience with them that when a cow has carried her calf for six months, it is well formed and requires considerable nourishment from the cow; from that time till she drops her calf, she should have rest, in order that her offspring may be well formed and properly nourished, so that when it is born it may be worth keeping and have a good strong constitution as well as the other elements necessary for the development of a good, strong, healthy animal.

2. If the cow has been put dry in fairly good condition three months before she was timed to calve, there is not much need for any extra feed or care, but keep her warm and clean for the first six weeks of this period. A little grain or sheaf of oats once a day is all the concentrated food that is required. If fed chiefly on hay and corn fodder, she will not need much grain. This rest strengthens all the departments of her system, thereby preserving her constitution and extending her length of usefulness.

3. Six weeks before she comes in there is evidently a change taking place in her system. Her calf is now fully formed, and needs more nourishment, and the cow must make more blood if she is to nourish her calf properly, and at the same time keep up her own condition as it should be when prepared for a good summer's work. Consequently, from this time until a few days before she calves, her comfort and her food must be gradually increased, especially her grain rations. These should be raised from two to three pounds of chopped grain, a little bran and cotton-seed cake or oil cake twice a day. A feed of roots is also very beneficial. I don't approve of slopping cows till they are in milk. Feed the grain with chopped straw or hay or chaff; mix it well, and moisten enough to make the grain adhere to the coarser food.

4. Two or three days before the cow's time is up, the grain feed should be stopped. A little bran or oil-cake, to keep the bowels open, may still be given, but she should be fed rather sparingly. If in good condition, or fat, a slight purgative does no harm. It cools the system, and may in some measure prevent inflammation or milk fever from taking place. From half a

pound to a pound of salts one day, and half a bottle to one bottle of linseed oil the next should, in ordinary cases, be quite sufficient.

5. When the cow is preparing to calve, take her to a loose box-stall, or a place where she will have some liberty; give her a dry, warm place, and leave her alone. She likes quietness. When the calf comes, give her a little help (if necessary). Take the calf to some place where the cow will never see it. Never let the calf suck her dam; it is cheaper and better to feed it by hand. Give the cow a warm drink of meal and water, with a handful of salt in it, and, if left alone quietly, all will be well.

6. Do not feed her heavily for three or four days after calving, but give her plenty of warm drink. Then begin to increase her rations of grain gradually, till about three to four pounds of mixed chop, twice a day, with plenty of hay or corn fodder, a liberal supply of good clean water and salt are given. She will then be in good condition for milking. A feed of roots daily is very beneficial for dairy cows, and, if possible, should be given till the cow gets to the pasture. Continuing to feed about half the quantity of grain for a week or two after she is turned out on the grass, is a benefit to her.

There is great truth in the old saying—"It's by the mouth the cow milks." Good care and good feeding is the best and surest way of making the dairy cows give their owners a good return.

You will see I have made no reference to any particular breed of cows, as the same kind of treatment is applicable to all breeds, quantity of feed excepted. This would be more in large cattle than in smaller ones, but they are all naturally of the same character and habit, and need about the same care and treatment in similar circumstances.

Profits from pork are dependent largely on the number of healthy pigs raised from each sow on the farm, but many farmers seem content to leave the matter entirely to the sow herself, giving her neither shelter nor attention at pigging time or a special diet thereafter. The consequence is, that she rarely raises more than one-third of the pigs she gives birth to, and even this proportion is weakly and dwarfish in growth. A good sow should raise five pigs at least, and if she is to do that properly she should be separated from the rest of the swine before pigging time and have a warm, well bedded nest in which to farrow. Hog raising cannot be expected to pay if the sows run with the rest of the herd, yet this seems to be quite a common practice on some farms.

It has none too frequently been observed that as a breeder of diseases there are few things that excel the average farm-house cellar. It underlies the whole house, with nothing to prevent its exhalations rising into the upper rooms except a thin board floor. In this cellar all manner of things for family use are kept the season round. Meat, vegetables, milk, butter, bread, pastry, preserves, pickles and fruit, are here stored in their various receptacles. There is very seldom anything to separate the fruit and vegetables from the other parts of the cellar, and there is usually more or less decaying vegetable matter to load the air with poisonous germs. At various seasons of the year the cellar wall collects dampness, or small pools of water lie under loose boards, sending up malarious odors into the rooms above. Cellars should be well cared for, well ventilated, kept neat and clean; and vegetable and fruit cellars should, as far as possible, be located out side of dwellings.

A Uniform Standard.

BY JOHN SHARMAN, SOURIS, MAN.

Is our system of registry for pure-bred stock what it should be? We think not. What a state would the trade of our country be, in if each branch of business were allowed to regulate the standard of weights and measures used by it in its particular business? We would have as many standards as there are now among the breeders of the different breeds of so-called pure-bred stock.

Legislation was required to make the system of weights and measures what it is, and legislation is required to make our herd-book standards conform one to the other.

What has the readjustment of the Shorthorn Herd-book cost the breeders of the country? Would the standard adopted by the D.S.H.H.B. Association have been adopted, had the breeders who had sold stock that were to be rejected, been required to refund the purchasers the price received for the stock less their value as a grade? We think not. If, then, as we claim, there is no more need of two or more standards in registering pure-bred stock than there is for so many standards of weights and measures, how can the desired end be attained? We would suggest as a means to forward this end, a meeting of the officers of the different Associations, at some convenient time and place, to discuss a standard; and when satisfied as to the standard required by them, let them organize as the Dominion Pure Bred Live Stock Association (or some other name to be agreed upon by them), and petition the Dominion Legislature for an Act to incorporate them under such standard as adopted, with proper provision for the punishment of parties who would sell as pure bred stock animals not registered by this Association.

The different breeds would, of course, come under their own different heading in the books of the Association, and as soon as the owner of one animal of a breed differing from those now registered in the country, produced the necessary evidence that his animal was eligible for registry according to the standard of the Association, the Secretary would be required to open a new book for that breed. Provision would, of course, have to be made for the issue of the different Herd Books, as required.

For the last two years, one could hardly take up a stock journal or farmers' paper without seeing an article on Stud, Herd or Flock Books, and in nearly every case a difference of opinion existed as to what the standard of the book in question should be. The Shorthorn men appeared to be as far apart as it was possible for them to be. If they could join hands over the breach, why not all the breeders of all the different breeds? If some such action as we suggest is not taken at an early date, will the standards of some of the other Associations not cause new loss and trouble to breeders, similar to those caused by the Dom. S. H. H. B. A.? Is it right that one's meat should have to be bred to such a perfect standard, that the horse, the noblest of all animals, should require only four crosses to make it eligible for entry in the records of the Canadian Clydesdale Association?

In an article in a recent issue of one of your contemporaries, a hint is thrown out to those who think of forming a Sheep Association and Flock Book, that might be well for any Association to keep in view: that is, "the adoption of

a scale of points," as, if the object in raising the standard is to lessen the number of animals registered, it can very effectually be done in this way, as there are still in the Dom. S. H. H. B., and probably some in all the other Herd Books, that the adoption of a scale of points would shut out.

I am sorry to ask so much of your valuable space, but know you see the importance to the country of its stock interests, and will be willing to grant any reasonable space for the discussion of so important an interest.

The Herd Books.

The losses sustained by the farmers by the multiplication of the Herd Books is simply incalculable. The over-booming and over-estimating of two or three kinds of stock has kept from our country animals that would in many localities yield more profit. The uniting of Government officials to gain more money and more power, and to use their united influence adverse to the farmers' interest, has again been evinced at the attempt to coerce from the farmers the control of the best Ayrshire Herd Book in Quebec. They are united, and may conquer the practical farmers, but the injury will not end there. If any one of those paid officials would, at their public meetings, point out to their audiences the real facts—who pays them; from whom they expect to gain the money they advocate expending, and for whose benefit the additional tax is to be raised, it would afford a valuable insight into their methods.

Both political parties have had their partizan meetings, and now it is time to give the *bona fide* farmers a voice. We are losing too many of our best farmers' sons. We are driving them across the lines. The interest of a few at the expense of the masses is the cause. The true interest of our people and our country, if we are to become a nation or a people of honor, must be looked after. At the present time it is not. Look at our runaway financiers, and the open scandals allowed to exist, like the swindles on the farmer. Our legislators should find a duty to perform in protecting the honorable and punishing the knaves that generally go scot free. Credit is too often taken by legislators and their vassals for ideas and plans that have been promulgated by the farmer, without the honor or honesty of giving any credit to the originator or inventor.

Some persons may have been led to believe that the proprietor of this journal is opposed to thoroughbred stock, but this is a false impression, for no one appreciates well bred stock more than he. There is no breed of cattle horses and sheep that is suited for all kinds of work, and much as he esteems the Shorthorn and Clydesdale, he objects to their standard being made the spectacles through which other breeds are judged. The injuries caused by pampering any one breed of animals is not only confined to that breed; but the injurious effects are unduly reflected upon other breeds also.

In a recent issue of the New York Times a letter was published in which the writer made the assertion that the amount represented by the faces of the farm mortgages of the States of Ohio, Indiana, Illinois, Wisconsin, Michigan, Minnesota, Iowa, Nebraska, Kansas and Missouri, was \$3,422,000,000. Estimating the interest at an average of 7 per cent., the annual charge on this enormous indebtedness would be \$239,000,000—a sum, in the opinion of the writer of the Times, too great for the profits of agriculture to bear.

The FARMER'S ADVOCATE has done more to introduce the best varieties of grain, stock, plants, implements, trees, shrubs and flowers than any other publication in the Dominion edited and owned by one individual. It has furnished the best information on the dairy and agriculture generally. No publication has done so much to prevent the introduction and spread of contagious diseases. Its proprietor has done much more than has ever been published to keep the stock of the country in as healthy a state as it is. No publication has endeavored to keep down unnecessary or injurious Government expenditures more than it—its aim has been to guard morally and financially for the country and its readers. It has never been the organ of either of the political parties, consequently the Government officials have expended large sums to boom up opposing journals and pamphlets, most of which have ceased to exist.

The most independent and honorable farmers in each of our Provinces are supporters of this journal. Partizans having their private ends to serve may have united to attempt the suppression of the only FARMER'S ADVOCATE that has ever been published in this Dominion, and influences may have been brought to bear on members of Parliament that have not been acquainted with the real facts, and the public moneys have been used for the purpose of misleading the farmers.

As will be seen in our correspondence column, the unsatisfactory results with commercial fertilizers are very frequently due to their improper application. Men having made these fertilizers a thorough study, rarely fail in obtaining beneficial results with them. At a late meeting of the Mass. Hort. Society, Mr. Bartholomew, who has conducted many careful experiments upon his fields with chemical fertilizers, was asked what real benefit he had derived from his investigations. He replied that he had learned to place great confidence in commercial fertilizers; that he had learned that his farm, which his father, after 50 years of acquaintance and cultivation, had pronounced ill adapted to the raising of corn, gave him, under similar treatment, with the use of phosphate of lime in addition, in corn, one of his profitable crops; that by the proper use of commercial fertilizers he could obtain, at a fair profit, finer potatoes, free from disease and blemish, than by any other means known to him; that by the use of one or more of these substances as adjuncts to farm manures he could obtain at small expense superior crops of corn, oats, and potatoes, with less manure, while the remainder of the manure applied as top-dressing to grass lands had materially increased his crops of hay; and he found that he was keeping more stock, getting better crops and better satisfaction from his farm than before.

Sometimes judges very materially differ in their decisions as to the relative merit of the articles left for them to classify. Lately the samples of wheat having been awarded the prizes at the last Provincial and Industrial Exhibitions, together with some samples exhibited there without receiving prizes, were forwarded to Mr. Harris, Dominion Grain Inspector, for relative classification. The samples having received first at the exhibitions were placed by him at the foot of the list, while one of those not having received a prize at all occupied the first place, and the one having received second at the Provincial the next place.

Garden and Orchard.

A New Grape, "Mills."

The accompanying cut represents the new Canadian grape "Mills." It is introduced by one of the best nursery firms we are acquainted with, viz.: Ellwanger & Barry, of Rochester, N. Y. We are pleased to notice any enterprise in which Canadians excel. We have not as yet seen or tested this grape, but as many amateurs in Canada are anxious to procure the best, we quote Ellwanger & Barry's statement in regard to it: "The new grape which we now offer for the first time is the result of long and intelligent experiment by one of the most judicious experimenters in the country. The product of his efforts is a grape which for size, quality and appearance comes the nearest to the ideal variety of any we have seen. Its quality is the very best, exceeding in richness any hardy grape we are acquainted with. It possesses distinguishing characteristics which place it at once much in advance of the ordinary grape, and entitle it to

Grapes.

BY POMOLOGIST.

Grape culture is still in its infancy in the Dominion. Only a very small portion of this great country produces enough of this fruit for their own use.

Much improvement has been made in varieties within the last few years. There are few localities in Ontario where they cannot be grown, and I believe the time is not far distant when the limits where they can be produced will be very much extended.

The grape vine will adapt itself to almost any method of cultivation. It may be planted near a building, fence, tree or wall, and in all cases give good returns for generous treatment.

There is such a variation in climate that no one system of pruning would be satisfactory for the whole country. In the more favorable districts, where the vines can be left on the trellis all winter without injury, the method of pruning is not so important as in the colder localities where all varieties have to be laid down and protected. In very cold sections they should be

Eaton is a seedling of the Concord. It resembles Moore's Early, except that it is much larger—in fact, it is the largest outdoor grape I have seen. Bunch and berries very large, round, black, covered with a thick blue bloom, and about equal to Concord in quality. It is said to be as hardy as its parent, but it has not been tested in Canada. I have seen no other grape that made such a fine display as the Eaton.

Nectar, or "Black Delaware," is a seedling from the Delaware and Concord. Its clusters are not quite so large as those of the Concord, but more compact. It is the best quality of any black grape I have tasted grown in the open air. It is said to be very productive, hardy and ripen its fruit with Moore's Early. If it fulfils present indications after a more extensive trial, it will be a valuable acquisition to our list of early, hardy black grapes.

Empire State is a very fine grape in some localities, but has not come up to my expectations in some respects.

Moore's Diamond is another new grape of much promise; bunch large and compact;



"MILLS" GRAPE.

be regarded as a remarkable production. Having tested it in our vineyard a few years we now place it in the hands of the public, confident that it will be found a valuable addition to the list of choice fruits. We do not presume to say that it will succeed in all soils, situations and climates, but we believe that in a climate similar to ours, and with a reasonably good soil, situation and treatment, such as every grape should have, it cannot fail to give satisfaction. It is especially recommended to those who desire a grape of high quality and are willing to bestow upon it the care it deserves. This grape was raised by Mr. Wm. H. Mills, of Hamilton, Ont., by crossing Muscat Hamburg with Creveling. Bunch very large, compact, shouldered, some clusters weighing over twelve ounces. Berry large, round, jet black, covered with a thick bloom; flesh firm, meaty, juicy, breaking with a rich sprightly flavor. Skin thick; berries adhere firmly to the peduncle. Vine vigorous and productive; foliage large and healthy. Ripens about with the Concord, or a little later, and is a long keeper."

The mode of training may from the illustration be instructive to some of our readers. See our Prize List.

trained to branch out very low down; if below the surface of the soil all the better. Then a trench, several inches deep, may be dug late in the fall (just before the ground freezes up), the vines, after having been pruned, pegged down in them and covered with earth. The pruning should be done at least two weeks before the vines are covered, to give the parts that were cut time to dry up; otherwise they are apt to bleed when uncovered in spring.

In selecting a location for grapes always choose a spot where you can get the most sunshine and secure good drainage.

Some of the newer varieties are well worthy of trial. Among those that have been somewhat tested throughout the country,

Uster Prolific is gaining favor, and merits more extensive planting. It is a cross between the Catawba and a wild grape. In color and size it resembles the Catawba; the clusters are, perhaps, not as large, but the individual berries are a little larger. It is of the best quality, very productive and hardy; in addition to this its earliness will make it a grape of much value for Canada.

berries about the size of Concord; color greenish white, with a yellow tinge, when fully ripe; flesh juicy and almost without pulp; quality very good. The vine is said to be vigorous and productive. It has not been tested in Canada to any extent.

Jewel, a seedling of Delaware; black; berry medium; quality said to be of the best, equal to Delaware; vine vigorous, hardy and productive; season very early. I have not yet seen this new grape, therefore cannot say whether it will come up to the description given.

Jessica is a small white grape of good quality, about the size of Delaware; wood very short jointed; hardy and productive. Its good quality and early ripening make it of great value as an amateur grape; not quite large enough for market. It has been pretty well tested in Canada, and should be planted in all localities visited by frost early in fall. Where it will not ripen there are few sorts that will.

Moyer is a new grape of Canadian origin, which has received much praise. It is much like Delaware in size and appearance; of good quality; rather small for a market grape; blossoms largely pistillate, and needs to have a Delaware or some other variety near enough to fertilize it. It has not been tested out of the Niagara District.

Onion Culture.

Onions, like most other garden crops, thrive best on a well drained, thoroughly pulverized soil, free from weeds; and as sandy or light clay loams with a large per cent. of vegetable matter generally possess these characteristics to the largest degree, they favor the cultivation of this crop most. If the land is weedy, onion growing is a very disheartening and tedious work, for the young plants, being small and slender, give the weeds every possible opportunity to grow. Although this crop could be grown several years in succession on the same spot without material injury to the soil, it is not advantageous to do so; for the weeds, injurious insects and fungoid growth attacking the plant, will become more troublesome by such a plan than they otherwise would.

Onions do not seem to favor any special kind of fertilizer, and therefore the kind of manure used with them depends upon the soil on which they are grown. On vegetable soils, ashes would be very valuable, while barnyard manure and land plaster would be very beneficial for heavier soils. Light soils are very much benefited by manure from the poultry house. These should be finely divided (which is best accomplished by mixing them with about their own bulk of land plaster), and spread evenly over the land. If this manure be mixed and pulverized immediately before its application to the soil, ashes may be used in preference to the land plaster.

After the soil has been thoroughly pulverized the onion seed is sown in drills from 12 to 15 inches apart, at the rate of about 6 lbs. to the acre. Rolling the patch after it has been planted has been followed by very favorable results. As soon as the young onions (long, slender, tubular leaves, having the peculiar onion smell) are above ground, they should receive their first hoeing, being particular to stir all portions of the surface, except in the rows. The surface in these is best broken by lightly raking the plot at right angles to the rows. When thinning out the onions a space of one to two inches, depending upon the size of the variety sown, should be left between each plant.

If in the commencement of autumn, or even before this, the bulbs do not form properly and the nutrition is principally sent to the tops, forming what is popularly known as "thick necks," it is advisable to bend them down. This helps the development of the bulb very materially.

Restoring Frozen Plants.

During this month there are always more or less unexpected night frosts, which nip some of the earlier vegetables and flowers in the garden. A little information on this subject may save many of the best plants.

The fatal action of the frost is generally believed to be due to the freezing of sap in the plant, which, occupying a larger volume in its frozen state, ruptures the cells containing it. Therefore, the more sap in a plant, other things being equal, the easier it will be frozen.

When a plant (of animal) is frozen, prevent the direct rays of the sun from shining on them, and thaw them out as gradually as possible. Surrounding the frozen object by a sheet of cold water has given the most satisfactory results. Jarring or handling the frozen object should be avoided as much as possible.

Pruning the Apple Tree.

It is not at all a settled point by fruit growers what the proper time to prune the apple tree is. This difference of opinion may lead us to suppose that there is very little choice in the season of pruning. This is really the case, and more depends upon the method of pruning than the time at which this operation is done. It should be carefully avoided to remove very large branches from a tree. If a branch is in a wrong position it should be removed before it attains a considerable size.

With regard to the form of the trees authorities again differ, the majority, however, favoring the cup shaped system. This form is obtained by removing the upright stem just above the point at which three or four strong branches spring from the stem in opposite directions, at a convenient distance above ground. All the remaining branches having been removed when quite young, the chosen few will form the frame work of the crown. The principal advantage claimed for this system is that the fruit will receive more sun-light, which produces a better flavored fruit possessing brighter colors. Another system which is exactly the reverse to the above, consists in allowing the entire stem to remain, and from it training lateral branches. This system, being nearer the natural form, possesses some decided advantages; one of these is that the tree is stronger and not so liable to split.

The following paragraph, quoted from one of our horticultural exchanges, largely corroborates what we have said:

Orchardists differ very much with regard to the best time for pruning the apple tree. Some advise June, because wounds then made heal more readily than at any other time. Most farmers choose early spring, when the first mild days come, and before they can proceed with other work, and before the sap has begun active circulation. Of late some writers condemn this season as the cause of bleeding so often seen in apple trees in cold sections. Dr. Hoskins treats of this subject in a paper read before the Minnesota State Horticultural Society, showing that a tree that is not already blackhearted will not bleed, no matter at what season it is pruned. This blackheartedness is caused by excessive cold in winter, and is common in northerly sections, but unknown in southerly ones. For instance, the Baldwin is always blackhearted in Maine, New Hampshire and Vermont, while the Siberians and Russians are never in that condition. A tender tree will bleed, if blackhearted, no matter when it is pruned, and the less it is pruned the better. All things considered, we have as yet no reason for condemning the custom of our Canadian fruit growers with regard to the time of pruning their orchards, unless some special object is in view, of which we may speak under the head of Summer Pruning.

But with regard to the common method of pruning, we have some criticisms to offer. The annual butchering to which many orchards are subjected cannot be too severely condemned. On Maplehurst Fruit Farm, our oldest orchard, though over seventy-five years of age, would be in prime condition for another twenty-five years only for this practice. Indeed those trees which, on account of inferiority of kind, were most neglected by the pruner, are now the healthiest and finest in the orchard; while the others are rotten at heart, or hollow, from the great wounds made at pruning.

By leaving a heavy mulch on strawberry beds until quite late in the season, growth and fruiting may be considerably retarded. In many localities late berries bring generally a better price than early ones; in this case, as well as for a late home-supply, the selection of the latest good variety, and the use of a heavy mulch, left undisturbed as long as can be done with safety, will be found of value.

Horticultural Notes.

Keep all grass and rubbish at least two feet away from the base of the tree.

If you make a mistake in distance when planting out your orchard, you will be sure to have your trees too close together.

Strawberries will send their roots from 20 to 30 inches into the ground, if it is made very rich, and well worked to that depth. Mulching with rotted forest leaves saves all necessity for watering; and with the ground prepared and fertilized in this manner, the plants will be sure to produce larger, more, and better colored berries. This is not guess-work, but the teachings of practice and experience. I have carried all the water to strawberries that I ever shall, except when planting.—S. T. Hutchins, in "Garden and Orchard."

In the Gardeners' Monthly, P. Bennett says that coal tar is a very valuable insecticide, and that a convenient form to keep it in, so that it is at all times ready for use in the poultry house or garden, is to run the tar into a pie of fine sand until the sand takes up all it can absorb. This powder can be preserved for years without losing its power. Its odor, after being applied to the floor, will soon banish vermin from the poultry-house. It will also drive away the squash bug and other insects belonging to the same order if applied near the places they frequent. It should, however, not be applied on the leaves of the plants.

Did any reader of this paper, says the Farm Journal, ever consider that it was a moral duty to supply his table with an abundance of choice fruit? Did you ever notice that where the bill of fare lacked fruit there was the greatest tendency to alcoholic stimulant? There is a natural craving in every human frame for the juices of fruit. If it is not supplied in its natural form, it is demanded in the fermented form. In which form is it best for the body to receive it? Mothers! Wives! Sisters! Would you avert a calamity that may bring woe to your household? Then see to it that your tables are made inviting every day with some form of fresh or canned fruit. Fruit made into rich preserves is not demanded. Fruit should never be put up with more than a tablespoonful of sugar to a quart of fruit, and in most cases it is best without any sugar whatever. It should be the main object of every housekeeper, however, to plan so as to use fresh fruits in their season, and depend very little on a canned supply. Commencing with berries in May, the supply can be kept up with strawberries, raspberries, blackberries, currants, gooseberries, grapes, peaches, plums, pears, oranges and apples until the following May.

There is a time for everything, and also a proper time for plowing. However pressing the work at this season may be, a good farmer will not rip the soil open with the plowshare until that soil turns up crumbly and mellow. Land plowed when wet remains lumpy and does not crumble and pulverize as it should. Plant-food, locked up in lumps, is unavailable for plant-growth; hence, of no benefit for, at least, one season, and perhaps for more. Be patient. Await your opportunities. But, when the right time comes, be ready to begin work without delay.

The Apiary.

Seasonable Hints.

The coming month many who have decided to try bee-keeping on a small or large scale will wish to purchase bees. Few, if any, are really capable of making such a purchase to the best advantage, and become easy victims to any one who may have designs upon their pocket.

The most alluring bait which can be held before the novice in the spring is a heavy hive, the heaviest in the apiary. Another, that it is an Italian, Holy Land or Cyprian colony. To one of more extended experience such inducements are no inducements at all, or very little.

In spring the heaviest hive in the apiary, unless there be but one colony in the apiary, is likely to prove anything but the best. The reason is simple enough. The bees the previous season may have filled the combs so full of honey that there has been but little space left for brood rearing, and as worker bees during the active honey season live but about six weeks, and want of room has prevented the replacement of the old by young hatching bees, the colony has dwindled, and required proportionately little for winter stores, and when spring comes the hive is heavy with honey but weak in bees. The honey in the shape in which it will be found in spring has no market value, and that which you most require is not there—a strong swarm of bees. No—to choose well a colony of bees, it is best to see them at work when the sun shines brightly, and some flowers are in bloom to tempt them to venture out in quest of stores. Place yourself alongside of the colony when they are at work, and the colony from which issue or return the greatest number of bees in a minute or any given time is probably the best colony. Then it should be considered that if the combs in the hive are straight and worker comb, then a large and compact mass of brood is an advantage. If the brood appears scattered about in the combs and not in a compact mass, there is a strong probability that the queen is not as vigorous and prolific as she should be. Of course, there may be uncapped broods, which require careful examination. Foul brood is a very dangerous disease, and not infrequently found in Canada to-day, and probably more frequently in the United States. The novice cannot detect this disease, and must depend upon the honesty and experience of the man from whom he purchases.

Then as to breed, shall he purchase common Black bees, Italians, Cyprian or Holy Land? For reasons given in a previous article, do not purchase Holy Land or Cyprian. They are a light colored, fine looking bee, but unlike the Italians, they are very quick in their movements in shaking from the combs. They easily pass from the combs, and instead of dropping any distance and remaining upon the hive bottom or ground, take wing. They have other characteristics, but these latter a novice would not be likely to detect.

Black bees, as they are commonly called, are rarely pure, being crossed more or less with the Italians, now so common. It is, however, desirable to have them more Italian than Black. Italians are very good, but to have them pure is no great object for taking honey, and in money, for such purposes are no better than a cross between Italians and Black, with the former predominating.

The next question will naturally be, What kind of a hive shall I use? Let me here say success depends less upon the hive than upon the way it is handled, the strength of your bees when the season commences, and your locality. To have the very best results you should know the best way to manage your bees; you require a good locality, one with an abundance of white clover, alsike clover, thistle and basswood upon high and low land, with fruit bloom, willow, raspberries and the like for building up on is to be preferred; but a man may succeed fairly well with less knowledge and a locality less favored.

Does the hive then make no difference as to results? Assuredly it does. But there are a number of hives, the depth of whose frames and whose capacity is so nearly alike, that as far as results are concerned, one has probably no advantage over the other. What should be avoided is an extremely shallow frame or an extremely deep frame, and honey should not be taken from the lower story but by storifying or placing a super upon the brood chamber from which the queen is excluded by means of perforated metal in extracting. If comb honey be taken, and the brood frames are not too shallow, nonperforated metal is required, and an unnecessary expense. The objections to extracting from the brood frames and not from an upper story are simply:—The comb, with queen and young bees, have to be handled, endangering the queen's life; the brood chamber, which should be left undisturbed as much as possible to obtain the best results, especially in wintering, is constantly torn apart; you have to handle all instead of half the bees; you extract less honey at a time and have to handle the brood with it; if the honey flow should give out directly after an extracting, your bees are in a starving condition and must be fed, a very undesirable thing to do at all times of the year; the bees are prevented from working for a much longer time if extracting from the brood chamber than from above. There are many other reasons, but these will suffice. What should guide us in purchasing the kind of hive is the hive which will most readily sell again. Almost all our best and most extensive bee-keepers commenced with one or two colonies, and you cannot tell how extensively you may some day engage in the pursuit, and the time may come when you wish to sell again. Therefore, purchase and start with a hive which you can sell again. There is no hive more generally used in America and Canada than the one which takes the Improved Langstroth frame, and the eight-frame is probably more generally used than the ten. Finally, do not have a number of different kinds of hives; have all combs and supers interchangeable and save much useless trouble. Do not purchase a weak colony because it is cheaper, or appears to be such. It never is. A good colony at \$8 is cheaper than a medium at \$4. You may secure 100 lbs. from the former and get nothing from the latter, because it never built up into one strong enough to store surplus until after the honey season closed. No one should pay more than \$3 for a colony of bees. That is a fair price; but they may often be bought equally good for less.

Excessively acid fruits are unwholesome. They require the addition of a great deal of sugar to make them palatable and so are not economical. The sugar does not neutralize the acid; it only smothers it and renders them still more unwholesome.

Poultry.

Popular Errors.

That your fowls have not lice.
That feeding crushed egg shells to fowls learns them to eat eggs.
That once a day is often enough to feed fowls.
That food makes no difference in the plumage.
That mongrels pay as well as thoroughbreds.
That a first-class cockerel is dear at five dollars to cross on common fowls.
That it does not pay to advertise fowls for sale.
That poultry manure is not worth ten times the same bulk of stable manure.
That the manure of fowls is not worth one-third of what it costs to feed them.

Care of Young Chicks.

The season of hatching is again upon us, and before this reaches the reader there will be many downy little birds requiring attention. And while June chicks may to a very great extent be left to the care of the mother hen, those hatched in April must be carefully attended. Milk is an excellent article of diet for fowls at all times, and almost indispensable for young chicks. Boiled egg chopped fine has long been considered the best food for the first few days, but our own experience last season was that rice boiled carefully without stirring was better, being less liable to clog the bowels. If a tendency to diarrhoea is shown feed the egg at any time during the first month, but if the rice is fed there will be no trouble in that line.

Turkey Raising.

To begin with, turkey-raising, when rightly managed, is profitable. It costs no more per pound to grow a pound of turkey meat than it does to grow a pound of chicken meat, but whether sold alive or dressed, the turkey meat always brings the higher price. During the first few weeks of their lives, turkeys require more care than young chicks; but after they are fully feathered, and have thrown out the red on their heads, they become hardy, and are not so much "bother" as chickens. The farmer's wife who is in a suitable location for turkey-raising, can earn fifty or one hundred dollars raising turkeys, easier than she can earn the same sum by "raising" eggs, or by growing chickens for the fall and winter market, for the simple reason that the "heft" of the work connected with raising a flock of turkeys comes within the space of five weeks, when the turkeys are quite young.

THE BREED.—In regard to the breed, it is my candid opinion that, except in point of size, there is not much, if any, choice. Even the common turkeys are good, what there is of them; but on account of their great size, the Bronze and the Narragansett, and a cross between the two, are the favorites of those who raise turkeys for market. The white turkeys, called the White Holland, grow to a great size, almost as large as the Bronze; indeed, some of the best specimens of this breed rival the Bronze in size. But they are not so much raised for market as the other varieties, simply because of a mistaken notion that they are not so hardy as the colored varieties. So far as "tameness" is concerned, I don't believe there is any choice between breeds that have been cared for alike, except that turkeys from Bronze stock that has had a recent infusion

of fresh blood by the use of a wild gobbler, are rather more inclined to wander than those that are more remotely connected with the wild stock. But this rambling propensity can, by proper management, be held somewhat in check, and the flock kept within reasonable bounds with very little effort.

Sunflowers.

It is not too late to plant sunflowers even up to the tenth of June. They are one of the best of foods for chicks. They to a great extent supply the place of meat, being rich in oil, and yet with so much husk that they do not clog the gizzard. We usually plant at the rate of a quarter of an acre per hundred fowls. Plant in drills, eighteen inches apart in the drills, and the drills far enough apart to allow horse cultivation when the seeds are full size. Break down a few stalks every day, and the fowls will attend to the rest of it. There is no other food that gives the birds such a sleek, glossy plumage, and are at the same time good egg food. They will yield more per acre than corn, and where the fowls harvest them are not expensive to raise. They also make a nice shade for them during the summer months.

In Praise of the Dorkings.

There is no breed that can compare with the Dorking for compactness of body, and small amount of offal in proportion to weight of carcass. And, as to the quality of its flesh, it is far ahead of the majority of breeds now used. The Dorking possesses more good points than any other breed as a market fowl, and there are but two objections to it. The first is that it is only a moderate layer. That is, it is not inferior to some breeds as a layer, yet it is not equal to some others. The other objection is that it is somewhat tender when young, and not so easily raised as may be desired. But so far as the matter of raising them is concerned, the claim against them is due more to the lack of care. As they are a breed that feathers rapidly when young, all that is necessary is to feed them well the first three months, and they will not only keep in good health, but grow faster than any other kind of chick. But, in presenting the claims of the Dorkings, we do so with a view of inducing our readers to use them more for crossing on other breeds than for the purpose of keeping them in their purity. Crossed with the Brahma, they produce not only a good layer but a hardy fowl—one that also combines size with good market quality. Mated with the Plymouth Rock, a splendid cross is the result; and, even if used with Leghorns, the cross is excellent. The Dorking is an old-established breed, dating back in origin to the eighteenth century; and its blood always predominates when it is crossed with other breeds. Its advantages are such as should receive the attention of all.—[Farm and Garden.

Pour a gill of crude carbolic acid into a half peck of air-slacked lime and stir it up well. When you make a new nest sprinkle a handful of the lime on it, and with a stick beat the nest until the lime settles down through the hay and penetrates every crack and crevice. Not a louse will make that nest his home.

I think subscribers to a journal like the ADVOCATE should take good care of them, and have them bound up; a large portion of the contents is as instructive and profitable to look over after a few years as at the time of issue. And more particularly as a book of reference, if anything turns up that we want some information on any particular subject, the ADVOCATE (if bound up) can be referred to, and any article or information on the subject can easily be found, as a good index is attached to each volume. I have mine bound up.—WALLACE McDONALD, J. P., Rockton, Wellington Co.

Correspondence.

NOTICE TO CORRESPONDENTS.—1. Please write on one side of the paper only. 2. Give full name, Post Office and Province, not necessarily for publication, but as guarantee of good faith and to enable us to answer by mail when, for any reason, that course seems desirable. If an answer is specially requested by mail, a stamp must be enclosed. Unless of general interest, no questions will be answered through the ADVOCATE, as our space is very limited. 3. Do not expect anonymous communications to be noticed. 4. Matter for publication should be marked "Printers' MS." on the cover, the ends being open, in which case the postage will only be 1c per 4 ounces. 5. Non-subscribers should not expect their communications to be noticed. 6. No questions will be answered except those pertaining purely to agriculture or agricultural matters.

Correspondents wanting reliable information relating to diseases of stock must not only give the symptoms as fully as possible, but also how the animal has been fed and otherwise treated or managed. In case of suspicion of hereditary diseases, it is necessary also to state whether or not the ancestors of the affected animal have had the disease or any predisposition to it.

In asking questions relating to manures, it is necessary to describe the nature of the soil on which the intended manures are to be applied; also the nature of the crop.

We do not hold ourselves responsible for the views of correspondents.

Dominion Ayrshire Breeders' Association.

A special general meeting of this Association was held at Toronto on the 14th of March, to discuss the withdrawal of the Eastern Section of the Amalgamated Association, to decide upon a course of future action and to elect officers for the current year. The chair was taken by Mr. McCormick, who explained the object of the meeting, and then called upon the secretary, Mr. Wade, to read their offer made to the Quebec Association 22nd February last. It began as follows, with a short resume of the history of amalgamation from a western point of view:—"On the 6th of April, 1887, delegates from both Associations met at Ottawa to formulate a standard upon which the revision of pedigrees could be worked out. Knowing the difficulty before us, I suggested that we adopt the standard of the American Short-horn Breeders' Association. That animals must trace to one side of both sire and dam to imported animals, or to pedigrees, not false or spurious, already on record in the Herd Book of the Association." Mr. Rodden at once objected to this. After a short adjournment the western men prepared a new standard, to the effect "That all pedigrees now on record be submitted to a joint revising committee, consisting of three members from each of the existing Associations, which shall be empowered to pronounce upon the eligibility of such pedigrees for the future publication of the new Association, it being understood that the standard aimed at is imported Ayrshire stock on the side of both sire and dam." This was passed; and under this standard, so far as we are concerned, we have been working since.

"At the next meeting, held in Ottawa on 26th April following, Mr. Nicol proposed that a business basis be formulated before the pedigrees be taken up, and this resulted in a decision to take the Canada Herd Book as a nucleus. But, unfortunately, at this time nothing was said about the standard, the western men considering it settled already and the eastern people saying nothing about it, as they most certainly should have done, and voted it down if it did not suit them. It was not, however, until the meeting at Ottawa in September, during the Provincial Exhibition, that we learned that Mr. Rodden was paying no attention to the standard passed by his ain being to Hew to the line, let the chips fall where they will." I am not going to discuss which principle is right, whether cattle with forty or fifty years' breeding of pure sires on a cow, the evidence of whose importation is imperfect, are not as good as breeding from a cow known to be imported, but the question there was a certain standard laid down for our guidance, and that should have been adhered to until one that suited all had been passed. Since that meeting I have been deputed by the western breeders and the Agriculture & Arts Association to make one more proposal, and that is to have, so to speak, two standards, one for those tracing strictly to importation, and the other in the form of an Appendix, for those tracing to animals whose importation was not proved. This was to be accepted on condition that the Constitution and By-laws, and the financial basis as agreed upon at Kingston, should continue, being briefly as follows:—Section 1. That this being an Amalgamated Association, the books and pedigrees of the Ayrshire Breeders' & Importers' Association, and those of the Dominion Ayrshire Breeders' Association, previously the property of the Agriculture & Arts Association of

Ontario, be handed over to the last-named Association, which undertakes, in consideration of receiving the registration fees and the money received from the sale of the books, to take over all the books now belonging to the Ayrshire Breeders' & Importers' Association, and to pay what liabilities there may be upon them, and to publish from time to time, and to pay for the publishing of future volumes as they are printed, furnishing the Association with a copy of the same for each of its members at a reduced price, to be arranged for with the Executive Committee, so that they can be given free to each member of the Association. The remainder of the volumes to be kept, and sold as required by the public.

Sec. 2. The yearly or bi-yearly subscription fee of \$3.00 shall be the income of the Ayrshire Breeders' Association of Canada, to be used to pay for volumes of the Herd Book for members, and for any other purpose that may be thought by the Executive Committee to be to the advantage of the breed of Ayrshire cattle."

These were the chief points in the Secretary's report.

At a meeting of the Eastern Association, held in Montreal on 23rd February this year, this proposed double standard was put in the form of a resolution, embodying the proposal of Mr. Wade's report. This was carried. A committee was then appointed to draw up a plan for a basis of amalgamation. This committee, which was composed of Messrs. Rodden, Brown, Koning, Garth, Drummond and the Hon. Louis Beaubien, reported unfavorably to the scheme of amalgamation; so the whole matter fell through. So it is seen that it was not the question of standard, after all, but where the work should be carried on—in Montreal or Toronto—and they chose to have their office in Montreal; and in order to do this some of the members donated as high as \$100 each to pay for the current year.

The election of officers for the current year was next proceeded with, and resulted as follows:—

President—Mr. James McCormick, Rockton.

Vice-President—Mr. David Nicol, Cataract.

Executive Committee—Messrs. James Yuill, Carleton Place; E. W. Ware, Hamilton; Thomas Guy, Oshawa; A. W. Smith, Simcoe; A. Kains; and M. Ballantyne, St. Mary's.

Secretary-Treasurer and Editor—Mr. Henry Wade, Toronto.

Membership fee was fixed at \$3.00 per year, and registration fees at 50 cents each to members and \$1.00 to non-members, with 25 cents additional for certificates.

The subject of a Herd Book coming up, the Secretary explained that the Agriculture & Arts Association had agreed to commence recording Ayrshire pedigrees in a new book, to be called "The Dominion Ayrshire Herd Book, New Series, Vol. I.," and in that case it would not be necessary for the members who had joined in 1887 to pay again in 1888, as no Herd Book would come out this year. This was confirmed by a motion.

The Standard is:—All animals recorded in the Dominion Ayrshire Herd Book, Vol. I., New Series, shall be divided into two classes, viz.:

1st. Animals that trace on side of both sire and dam to importation from Great Britain.

2nd. Animals not clearly proved to trace to importation, owing to the imperfect manner of keeping records prior to the commencement of registration, which have been already recorded as pure bred, and their progeny. This class to be published in an Appendix with a distinct set of numbers.

The symbol to be used for the new series to be a dash on either side of the numbers, as follows—1—, and for the Appendix, the same sign with the addition of the letter A to the number, as—A1—.

There was no opposition to this. The Constitution as adopted at Kingston, with a few necessary alterations to suit the new arrangement, was agreed to.

The Secretary was authorized to request Mr. Rodden to return the books and pedigrees sent in for the Canada Ayrshire Herd Book, and to furnish copies of all pedigrees recorded in that book during the amalgamation that were sent through him.

Exhibition matters were then discussed, particularly with regard to milking. The Secretary was finally requested to notify the Provincial and Industrial management that it was the opinion of the meeting that all Ayrshire cows on exhibition be milked clean at 7 p. m. on the day next before the day of judging.—H. WADE, Toronto.

The Herd Law.—The FARMER'S ADVOCATE has friends even as far north as Muskoka; I would not be without it for a good deal; it is well named, as it advocates the farmer's interests so well. I noticed a letter in it some time ago on the herd law in the United States. I have thought a good deal about it, and am sure it would be a splendid thing for Canada, as it would benefit the farmers in a great many ways. It would reduce the expense of fencing to a mere trifle, as the fields could then be left open to the road. This would prevent all snow blockades, compelling people to pull down the fences and drive through the fields, a practice not altogether pleasing to the owner of the said fields. If there were no fences the land could be cultivated close up to the ditch on the roadside and thus keep down all noxious weeds, which are too often neglected now, and allowed to sow their seed in adjoining fields. I should imagine that the herd law would be a greater advantage to the farmers in the older portions of Canada, than for those of Muskoka, who in the past have been depending so largely on the roadside and bush for the maintenance of their cattle in the summer months. But now the forests are rapidly being converted into cultivated fields and utilized for something more profitable than pasturing every-

body's cattle. So that in the course of a few years we will be compelled to adopt pasturing or soiling. The latter system seems to be coming in favor in Canada, and, I think, will continue to spread until it is universally adopted. If this be the case, why not have a law which will make line fences unnecessary and thus do away with a large portion of the expense attached to farming. Mr. Thos. McMillan's figures on the expense of fencing, which appeared in the prize essay published in the February issue of the *ADVOCATE*, ought to wake us up to the necessity of doing something towards curtailing our expenses in that line. The preservation of the forests is another matter to be considered. The cattle, when allowed to run in the bush, annually destroy countless numbers of young trees, which are necessary to replace the old ones. The manure made during one half the year is, to all intents and purposes, also wasted. Some of the readers may be surprised at a resident of Muskoka talking about saving timber; but owing to the frequent bush fires and the rapid disappearance of the pine for lumber, which is always in demand, we have not a great amount of timber to boast of, and that which is left being mostly hard wood, we have as little fencing timber as those in the less sparsely settled portion of Ontario. The farmers here have been in the habit of putting up fences of hard wood and balsam logs around their newly cleared fields. These are, of course, only temporary, and when decayed must be replaced by more expensive ones. I think, therefore, that every one will approve of the herd law sooner or later. Those who have an abundance of timber need not trouble themselves about a market for it, as there will always be a demand for cedar in the cities for block pavements, and the other soft woods are also always in demand.—HERBERT COLDWELL, Allanville, Ont.

Condition of the Farmer in the Maritime Provinces.—Have read the essay on the "Condition of the Canadian Farmer." Certainly, according to Mr. Beal's description of the Ontario farmer, this must be the Garden of Canada, that the farmers are so prosperous, and that farm property has doubled in value in the last ten years. I wish we in N. S. and N. B. could give such a report; but it is very different. Farm property has decreased in both Provinces in the last ten years, and a great many vacated. In my opinion we will never revive until we can secure full reciprocal trade with the U. S. The essay says that there is no discontent in Ontario among the farmers. Please step down to our Provinces and see what our farmers into tell you. We want a higher price for our products and a ready market.—CUMBERLAND FARMER.

Injurious Effects of Salting Cows Irregularly—Milk Testing—Experts Wanted.—I have done the best I could to fill the blank you sent. Stones are a great drawback here, and increase the cost of production a great deal. I am very thankful to you for the way you have worked in the interest of the honest farmer, especially on the question of testing milk. I find irregular salting a great injury to milk cows. I have tested it several times and I find that if they get no salt for ten or twelve days, and then get all they will take, that it reduces the cream about one-fourth for two or three milkings. Last September I fed refuse salt, and they did not take enough of it, and when I gave fresh salt it reduced the cream one-third for three milkings, and in churning I found that it reduced the butter about the same. We are building a cheese factory here, and want to engage a cheese maker; would prefer an expert at testing, with new instruments described in *ADVOCATE*.—H. R. A., Middleville, Ont.

Tanning Skins with their Hair on.—I have a nice calf hide about eight months old, of which I would like to make a robe. Will you please inform me through the next issue of the *ADVOCATE* how to tan it with the hair on.—J. R., Air Line Junction, Ont.

[In "Moore's Universal Assistant" the following recipes to tan furs are given:—Remove the legs and useless parts; soak the skin till soft, then remove its fleshy substance and soak it again in warm water for one hour. Moisten with soft water half an oz. each of borax, saltpetre, and glauber salt; apply these with a brush to the flesh side of the skin (thickest in the centre), and double it together, flesh-side in, keeping it in this condition in a cool place for 24 hours, without allowing it to freeze. Then wash the skin clean, and take sal-soda, 1 oz.; borax, ¼ oz.; refined soap, 2 oz.; melt them slowly together, being careful not to allow them to boil, and apply the mixture to the flesh side at first. Boil up again and keep in a warm place for 24 hours; then wash the skin clean again, as above, and have 2 oz. saleratus dissolved in hot rain water sufficient to well saturate the skin; take alum, 4 oz., salt, 8 oz., and dissolve also in hot rain water; when sufficiently cool to allow the handling of it without scalding, put in the skin for 12 hours; then wring out the water, and hang up for 12 hours more to dry. Repeat this last soaking and drying 2 or 3 times, according to the desired softness of the skin when finished. Lastly finish by pulling and working, and finally by rubbing with a piece of pumice-stone and fine sand-paper. This process works admirably well on sheep-skins, furs, dog, wolf, bear-skins, &c. Another recipe for a raw hide is to sprinkle evenly over its flesh side 2 parts of salt, 1 of saltpetre, and 1 of alum. Roll up the skin and put it away for a few days (till the salts are dissolved.) Then remove all the fleshy parts that have remained on the skin, and nail it, stretched out tightly, on the sunny side of the barn till dry. To soften it, soak it with neatfoot oil, and expose it to the sun again. The superfluous oil may be removed with a wedge-shaped stick.]

Speedy Cut.—I have a mare I let loose about eight weeks ago to exercise. Next morning when hitching her up I observed it was with difficulty she could bend one of her knees, but after taking a few steps she did not seem to be lame. I could see a little swelling on the cords from the pastern joint up to about six inches above the knee. First I used sweet oil and turpentine, but it seemed to blister too much and do no good. Then I used vinegar, saltpetre and wormwood with the same result. At one time it was very hot on that projecting bone behind the knee, but after using hot water cloths through the day and lard at night, it became quite cool again. The joint is still very stiff, and no improvement can be noticed. The swelling has spread all around the knee and down to the pastern joint.—P. M., Blake, Man.

[Your horse is suffering from speedy cut, caused by striking the leg with the opposite foot. You should not have blistered it, but applied warm water, followed by some cooling lotion, such as 1 oz. of sugar of lead, and 1 oz. of sulphate of zinc dissolved in a pint of water. The ingredients will not entirely dissolve, and the lotion should be shaken well before being applied. In your case, continue the hot water applications, and smear the blistered surface with oil or lard.]

Senovial Abscess.—I should be much obliged if you would tell me how to treat a yearling colt that got its stiffl joints hurt. There are large lumps on them.—J. F. D., Fleming, Assa.

[The above are frequently seen in heavy-bred colts without any special cause. Treat them with any astringents, e. g., oak-bark tea, alum, sulphate of iron, or vinegar and saltpetre. The astringent enumerated last has generally given the most satisfactory results.]

Sore Shoulder (Siftasts) in Horses.—I got a 4-year-old colt from a neighbor this winter, which had two soft lumps on its shoulders caused by plenty of hard work last summer. As soon as I began to work him the lumps swelled and became raw sores. Can you tell me the best method of reducing the lumps?—R. V. W., Christie, Ont.

[The tumors on your horse's shoulder are what is known as siftasts, caused by an ill-fitting collar. The only effectual remedy is to get them cut out by a veterinary surgeon.]

Weed—Widths of Stall for Horses—Liniment for Sprains.—Last summer the hind leg of a young mare, belonging to me, swelled from a little above the hock joint to the hoof. She does not seem to be lame on it. I blistered it several times and bathed it with liniment, but without effect. The swelling diminishes on exercise, but is not entirely removed. Please tell me how to treat her. 2. What is the usual width of a stall for a horse. 3. Is the following liniment valuable for horses, for sprains, bruises, rheumatism, etc.?—1 pint alcohol, ½ pint spt. turpentine, 1 oz. spt. ammonia, 1 oz. oil organum, 2 ozs. olive oil, 2 ozs. pul. Spanish fly.—J. W., Osprey, Man.

[1. Your mare is suffering from weed, a disease closely allied to grease, with which some veterinarians say that it is identical. It is the result of various causes, chief of which is a neglected case of grease. It is a disease in which the swelling has become organized, and is therefore difficult to reduce. After she has been exercised apply a liniment, prepared by mixing 2 ounces of olive oil, 2 ounces of ammonia, and 2 ounces of turpentine; repeat this twice a day. Internally, give a purgative drench of 7 drachms of aloes and 1 ounce of ginger, dissolved in water. Following this give night and morning, for eight or ten days, 1 drachm of saltpetre. 2. Single stalls are generally from 4 feet 3 inches to 4 feet 9 inches wide, and double stalls from 7½ feet to 8½ feet. 3. Your liniment is too strong for ordinary purposes.]

Sowing Clover.—I have a field of clay land that I want to seed down with red clover. Would you advise me to sow it with barley or spring wheat? 2. Would you advise me to sow it in front of the drill teeth and let them cover it, or sow it behind them and cover it with a light harrow?—P. D. D., Adolphustown, Ont.

[1. As far as the catch of clover is concerned, there is very little choice between barley and spring wheat as a foster crop. 2. It largely depends upon the seeder you are using. The object to be aimed at is to have the seeds slightly and evenly covered. If you think you can accomplish this by sowing in front of the drill, you will save the trouble of harrowing it. If not, your better plan would decidedly be to sow it at the rear. Rolling the land after the grass or clover seed is sown is generally followed with very good results. The greatest success in sowing clover has, however, been obtained when sown in spring on the snow.]

Land Plaster for Corn—Failure of Superphosphate on Oats.—I intend raising fodder-corn for ensilage. The land is a light sand; part of it a little damp; but I have raised very good corn on it. I intended using manure and land plaster. Do you think it will pay to use the plaster? How many bushels per acre should be used of it, and in what manner should it be applied? Would it be beneficial to sow a portion of it in the drill at time of planting, and the remainder after the corn is up? Would the manure be better used in the drill, or spread and turned in with the plough? Is corn hard on the land? Some say that it will ruin the land. Would it be advisable to grow two or more crops in succession in the sown field? I used a ton of superphosphate on five acres of oats, two years ago. I could have bought the oats for less than I paid for the phosphate. It cost me \$36.—A. E. F., St. Philippe d'Argenteuil, Que.

[1. In your case, gypsum (land plaster) is not likely to give very beneficial results. It is especially applicable on vegetable or deep loamy soils, and has the best effect on clover or other leguminous crops. When applied, it should be sown evenly over the soil at the rate of 150 to 250 lbs. per acre. The object is to distribute it evenly, and a cultivation after the sowing, mixing it thoroughly with the soil, is beneficial. The manner in which to apply the manure depends upon the condition of the soil and the amount of manure you intend to apply. If the land is poor and you can only give it a scanty dressing, it may prove advantageous to apply it in the drill; otherwise, spreading it would be the better plan. 2. If a good crop of corn is grown, that thoroughly shades the ground, it cannot be said to be hard on the land. The term is, however, very indefinite, as one kind of crop may be "hard" on one soil and "easy" on another. It is generally not advisable to grow any one kind of crop several times after another, but if the preceding crop has been very heavy it will be justifiable to grow it again. Before using any kind of special fertilizer extensively—unless you are well versed with the fertilizer and the requirements of the soil—it is advisable to test it on a small scale in the field and on the crop you intend to use it with afterwards. Light sandy soils are not benefited much by superphosphate; and as oats do not specially favor this crop, it is no wonder that you were not very unsuccessful with it. This is, however, not the fault of the fertilizer, but is due to an improper application, to which a large proportion of the failures with these fertilizers can be traced.]

Fertilizers for Peas, Beans, and Fall Wheat.—Being a reader and admirer of the *ADVOCATE* for a number of years, I take the liberty of asking the following questions: 1. What is the best fertilizer for dwarf peas? They are to be sown on last year's root land. 2. By what fertilizer would beans be most benefited? 3. What commercial fertilizer would you recommend for the cultivation of fall wheat; the fertilizer to be applied this spring? All the above crops are to be grown on a clay loam.—A. A. S., Peterboro, Ont.

[It is impossible to give you a decided answer to your questions without knowing more definitely the character of your soil and your previous rotation. Peas and beans generally have most difficulty in obtaining their supply of potash, and unless your land is heavy, a dressing of ashes or sulphate of potash would likely give good results. If your soil is on the heavy side, has been cultivated for some time, and has received no other fertilizers than farm-yard manure, a dressing of superphosphate is likely to be followed by good results. All these fertilizers should be applied as early as possible to the soil, and should be well mixed with it. If your soil is naturally rich a dressing of 100 lbs. of gypsum (land plaster) will likely help your pea and bean crops. 2. If your soil is lacking in vegetable matter, the presence of which is indicated by a dark-colored soil, a dressing of about 100 lbs. of nitrate of soda or sulphate of ammonia, and 400 lbs. of bone superphosphate, or 200 lbs. of mineral superphosphate of lime, early in spring, would likely have a beneficial result. If the soil is not lacking in organic matter, a dressing of superphosphate alone would likely give good results on a clay loam.]

Returns for a Rented Cow.—A neighbor wants to take five or six cows for summer and raise calves. What quantity of butter should he give me?—T. W. D., Orillia, Ont.

[This very materially depends upon the cows. If they are good milkers and have been fed well during the past winter, from 50 to 60 lbs. would be a fair amount; but if the cows are poor milkers and have received straw-stack management, your neighbor would lose heavily if he gave one half of that amount. Some cows are a loss if accepted as a present.]

Exchanging Straw for Manure—Fertiliser for Orchards—Bone Mills.—1. What will pay me better, to sell my straw, say at \$3.00 per load, and buy artificial fertilizers; or exchange my straw for horse stable manure? I live near town, and can exchange for all the straw I can part with. I can make four trips a day. My farm is sandy and clay loam, with mostly clay sub-soil. 2. What would be the most profitable fertilizer for my orchard? I cannot spare sufficient stable manure for it. 3. Would it pay me to buy a bone mill to grind up bones for manure? I can get all I want at 40 to 50 cents per cwt. I have a horse-power, and a jack that I could drive it with. What would be the probable cost? 4. What is the more profitable feed for a milking cow—wheat-bran at \$1.00 per cwt. or shorts at \$1.10 per cwt.? How should it be fed—dry, or mixed with warm water?—W. G. H., Port Hope, Ont.

[1. If by exchanging your straw for manure you mean providing a stable with all the straw it requires for bedding, and receiving in return all the manure produced in it, it will be more profitable to accept this offer than to buy artificial fertilizers. Providing that the horses are fed fairly well, receive daily 8 lbs. of wheat-straw for bedding, and produce 60 lbs. of manure daily, they would produce a bulk of manure worth \$20 for each ton of straw used. This would leave, after the cost of hauling has been deducted, \$14 per ton for wheat-straw, \$15 for oat-straw and \$16 per ton for pea-straw. These calculations have been based upon the actual selling price of commercial fertilizers. Little or no account has been taken of the loss in the manure occasioned by bad management. 2. The best fertilizer for your orchard is ashes. Read on this subject the report of the last meeting of the Dominion Farmers' Council, given in this issue. Other potash fertilizers, such as sulphate of potash, muriate of potash, etc., are also beneficial, and may be procured from Messrs. Brodie & Harvie, Smith's Falls and Toronto, at about \$2.80 to \$3.00 per cwt. 3. We know of no firm manufacturing these mills. But perhaps Mr. Wm. Rennie, Toronto, advertising small bone mills in our columns, or Mr. P. Lamb, Toronto, using large bone mills, may give you the desired information. Bone dust is selling at \$1.75 to \$2.00 per hundred, which leaves you a good margin for grinding them. 4. Bran and shorts have nearly the same feeding value; therefore, bran will be the cheaper food at the prices you quote. Under ordinary circumstances it is better to feed dry.]

Quantity of Clover Seed Required to be Sown.—Please state in next issue of ADVOCATE the number of pounds of clean alsike or red clover seed that should be sown to the acre.—W. R., Bayview, Ont.

[This varies with different localities and soils. In some fields 3 lbs. of red clover seed have given as good a catch as five times this amount sown alongside of it. Generally, 10 to 15 lbs. of red clover seed are sown. The seeds of alsike being somewhat smaller, a little less seed will be required.]

Couch Grass—Barley following Clover.—Please let me know in your next issue the best way to kill twitch grass, and if there is any danger of the seed growing from manure. And also your opinion of sowing barley after clover, on loam with a gravel bot. om.—NEW BEGINNER, Paris, Ont.

[Where fields have become badly infested with this weed, a very good plan is to plow the field deep early in the season; cultivate shallow, whenever the weed appears above ground, till midsummer; then cultivate deep and bring the sod to the surface; keep field clean till fall; plow again and sow a hoe crop next spring. Another good plan is to sow buckwheat very thick, immediately after plowing; plow this crop in when in bloom, and sow buckwheat again, followed by a hoe crop next season. The seeds have frequently grown after being in the manure-pile for a long time. On all soils not especially rich in humus, cereal grains (including barley) are much benefited by a previous crop of clover.]

Alfalfa, or Chilian Clover.—Would alfalfa, or Chilian clover, make a profitable pasture for spring calves? I understand it can be cut three and four times a year. What crop should be saved for seed?—J. T., Willow Grove, Ont.

[Alfalfa, or lucern, is a plant that requires a loose and friable sub-soil. The first year it should not be cropped at all. It requires three or four years to become well established. After this it will yield heavy crops for a large number of years. It grows quickly after being cut, and can withstand the drought marvellously well. It is especially favorable to a more southerly climate. It is especially valuable for soiling or pasture. There is no special crop to which the maturing of the seed is confined.]

Mange.—I have a mare suffering from some kind of itch, that I have failed to cure. There is no trace of lice, and her mane and tail are not affected, but the remainder of her body is very itchy and covered with dandruff. She is constantly biting and rubbing herself, having in some parts rubbed off all her hair. She has been suffering from this disease since last summer.—E. A., Harrisburg, Ont.

[Your horse is affected with mange, a small insect burrowing in the skin. Clean her well by thorough grooming and washing. Dress a portion of her body every second day with a solution of carbolic acid, 1 ounce to 1 quart of water. Give internally, night and morning for eight or ten days, 1 drachm of saltpetre and 2 drachms of sulphur.]

Conveying a Creek in Tile Drain.—Along the road passing my farm is a small spring creek, which passes through the farm. This creek I would like to carry in tile. Would you kindly inform me through the ADVOCATE what would be the best receptacle to build so that the water may enter the tile to their full capacity, free from debris, and that in time of freshets surplus water may pass on down the roadside.—D. E. C., Frankford, Ont.

[Your best plan is to dig a silt basin, and from it lead away your tile drain; constructing the first few feet of the drain of cedar boards, with wire gauze or netting fastened across it at its outer end. The silt basin is made by digging a hole considerably deeper than the bottom of the drain is to be. Its object is to check the flow of water, thereby allowing all silt to settle at the bottom. The water should enter this silt basin as nearly as possible on the same level as the drain leading it away. The dirtier the water and the more rapidly it flows, the larger the silt basin will have to be.]

Force Pumps.—At the last year's Western Fair I got a pump for use in my garden, "Brooks' Champion." It is double action, and has hose and spray attachments. The pump is made of galvanized iron and is substantial and good in every way; in fact it is altogether the most complete and serviceable article of the kind I have ever seen. It can be used for spraying large trees or the smallest bushes, and put to many other uses as well. I understood at the time that it was likely it would be manufactured either in London or Toronto for this season. Could you find out for me, and reply in your next issue? I am anxious to give all fruit growers and gardeners a chance to get it, as I think it will prove a boon to all; it will pay a man who has only a dozen apple trees to buy one. I paid \$3.50 for mine. I have given a description of it at so many meetings, that people are bothering me now to find it out.—A. Mc. D. A., Goderich, Ont.

[The pump above referred to is manufactured in this city by Messrs. Beecher Bros.; see advertisement in this issue. We have tested it and feel sure it will be of great value to fruit growers.]

Fertilizers.—I have a field of high, dry land, from which I got a good crop of potatoes after applying a fair coating of mixed cow, horse and pig manure last year. I want to apply special fertilizers to it this spring. Please inform me what to use for wheat. Where is it to be purchased? What it generally costs? The quantity required per acre? and other necessary information regarding it. What fertilizers should I apply to a field on which I grew flax last year without an application of manure? and in what quantities should it be used?—J. A. M., New Perth, P. E. I.

[To give a satisfactory answer to your question, it would be necessary to have full particulars about the soil and rotation of previous crop. If your land is a light sand it will require all the principal constituents of plant food, and therefore a general fertilizer, viz., farm-yard manure or a compound of special fertilizers. Having applied the above manure last year, a dressing of ashes—1,000 lbs. to 1,500 lbs. per acre—would likely prove very beneficial; especially if 75 lbs. of Chili-saltpetre (nitrate of soda) and 200 lbs. of fine bone dust were also used. The Chili-saltpetre should be applied at the time of sowing, and the others as early as possible. If the land is heavier the ashes may be reduced, and entirely dispensed with in a clay soil. The bone dust may advantageously be replaced by superphosphates in such soils. If a large percentage of humus is present—as indicated by a dark color—the Chili-saltpetre will be of little value. On such soils a dressing of lime or ashes would be of benefit; these substances should not, however, be applied with superphosphate; if they are used, and a phosphoric acid fertilizer is also required, bone dust or apatite should be used in the place of superphosphate. The fertilizers may be obtained from Messrs. Lamb & Co. or Brodie & Harvie, advertising in our columns. The prices vary depending on the composition of the fertilizer and their demand. For average samples they were quoted last year as follows:—Bone dust, \$40 per ton; bone superphosphate, \$35 per ton; mineral superphosphate, \$26 per ton; nitrate of soda, \$58 per ton.]

Commercial.

(Farmer's Advocate Office.)

Farm Produce.

PRICES AT FARMERS' WAGONS.

Toronto, April 2, 1888.

Wheat, fall, per bushel	0 80	0 82
Wheat, red, per bushel	0 80	0 82
Wheat, spring, do.	0 75	0 80
Wheat, goose, do.	0 71	0 73
Barley, do.	0 67	0 77
Oats, do.	0 48	0 50
Peas, do.	0 67	0 70
Dressed hogs, per 100 lbs.	7 50	7 75
Chickens, per pair	0 60	0 75
Butter, pound rolls	0 20	0 27
Eggs, fresh, per dozen	0 18	0 20
Potatoes, per bag	1 00	1 10
Apples	2 50	3 50
Onions, per doz.	0 15	0 20
Do. per bag	0 00	2 00
Turnips, white, per bag	0 40	0 50
Rhubarb	0 00	0 15
Cabbage, per doz.	0 50	1 50
Celery	0 40	0 75
Beets, per peck	0 25	0 30
Parsley, per doz.	0 00	0 20
Hay	11 00	15 50
Straw	7 00	12 50

CATTLE.

April 4th.

The Toronto Mail of to-day says:—Though prices did not rise and can be quoted now at the early figures of last week, there was a tendency in the cattle market for values to harden. A little inquiry was being made for export, but in the face of cables from cattle-dealers in the United Kingdom giving the rates obtainable there as being very low, great caution is being exercised by shippers. But little stock was being purchased for Montreal, and while trade in that city is spoken of as being active, prices are keeping very low.

The London *Canadian Gazette* of the 22nd ult. says that the arrivals of American and Canadian live stock for the past week has been on a much more liberal scale, both at London and Liverpool. Trade ruled exceedingly dull, values for the best animals only touching 6d per pound. Shipments of fresh beef and mutton continue to arrive quite as heavily as ever, and the general character of the trade, both in the open market and at the Lairsages, is weaker. Cable advices received on Monday put the number of cattle shipped from American seaboard at considerably below the average, and in view of the stoppage of inland traffic through the recent storms, the probabilities are that for the next few weeks the supply will be very short.

Buffalo, March 31st, 1888.

CATTLE.—Receipts, 8,901 against 12,444 the previous week. The market opened up on Monday with 130 car loads of cattle on sale. The demand was light, there being no eastern buyers in the market. A few of the very best cattle here brought about last week's prices of which two loads; 1,688 lbs. were sold at \$5.37½. In a general way, however, the market was considered 10 cents lower than on Monday week. Good 1,500 to 1,600 lb steers, \$5@5.25; good 1,400 to 1,500 lb do, \$4.60@4.90; good 1,300 to 1,400 lb do, \$4.40@4.70; good 1,200 to 1,300 lb do, \$4@4.40; good 1,100 to 1,200 lb do, \$3.85@4.25; good 1,000 to 1,100 lb do, \$3.50@3.90; cows and heifers and mixed butchers, \$3.25@3.75; fat bulls, \$3.25@3.75; sausage do, \$2.75@3.25; stockers very dull at \$2.75@3; feeders also dull at \$3.25@3.75. There were about 25 loads on sale Tuesday, all of which had been left over from the day before. Boston dealers took the bulk at about Monday's prices. There were only a few scattering head on sale Wednesday and Thursday, but there was no demand. On Friday the receipts were light and so was the demand, but prices were considerably steady. The following were the closing

QUOTATIONS:

Extra Beeves—Graded steers weighing 1,500 to 1,600 lbs.	\$5 00	@5 35
Choice Beeves—Fine, fat, well-formed steers, weighing 1,400 to 1,500 lbs.	4 60	@4 90
Good Beeves—Well-fattened steers weighing 1,300 to 1,400 lbs.	4 40	@4 70
Medium Grades—Steers in fine flesh, weighing 1,100 to 1,200 lbs.	3 85	@4 25
Light Butchers'—Steers averaging 1,000 to 1,100 lbs. of fair to good quality	3 50	@3 90
Butchers' Stock—Inferior to common steers and heifers, for city slaughter, weighing 900 to 1,000 lbs.	3 25	@3 75
Michigan stock cattle, common to choice	2 40	@3 00
Michigan feeders, fair to choice	3 00	@3 50
Fat bulls, fair to extra	3 25	@3 75

Family Circle.

SWEET SIMPLICITY.

We were "country cousins" of the most pronounced type, just returned to our quiet rural home from the delights of a first visit to London. Great was our excitement and loud was our chatter for many weeks, until the walls of our decorous Rectory echoed again with our mirth. Reminiscences of our delightful experiences occupied our tongues incessantly, somewhat to the chagrin of our reverend parent, who found for a time that his clothing and coal clubs had become matters of but secondary importance to his dutiful daughters. Mother however enjoyed listening to our various adventures, which somehow in the telling seemed to assume larger proportions than they had possessed when actually happening.

One evening we were gathered around the fireside in the winter twilight, chattering volubly. Annie was describing with painful lucidity a stupid misunderstanding of mine, whereby I had displayed an unwonted amount of ignorance respecting a matter which was common knowledge to the rest of those present. Annie could certainly describe an occurrence very cleverly, and I felt my cheeks glow again at the remembrance.

Father even was so heartily amused that he put down his book and came from the window, where he had been sitting apart, to join our circle by the fire.

"Never mind, Janie," he said soothingly, when the laugh at my expense had at last subsided. "Ask your mother to tell you what an exhibition she made of herself on her first visit to London, more than twenty years ago now."

Mother laughed as she began her story. "Twenty-five years ago," she said, correcting my father; "and I was just nineteen years old, and very shy and timid—much more so than any of you girls. It was just after your uncle Robert's marriage. He had been what the world calls very fortunate at the beginning of his career; for he had married a wealthy heiress and been appointed at the same time to one of the most fashionable churches in London. He and his bride spent the first summer after their marriage at my father's place in Somerset; and in return, I suppose, my sister-in-law invited me to go back to London with her for a long visit. I stood rather in awe of the fine fashionable lady; and my brother being several years older than I, and having been educated away from home, was almost a stranger to me. But the attraction of a visit to the great city was strong enough to overcome all objections, and I consented to go with them willingly enough.

"I was not very happy there. To begin with, my sister-in-law and myself had nothing in common—all her thoughts, wishes, and desires were absorbed in the fashionable world, and what people were saying and doing in that charmed circle. For me, with my simple country bringing-up, this was an unknown land, and I must confess, a land into which I had no desire to enter. When her fashionably-dressed visitors called, if I could do so in time, I made my escape to the little room under the roof allotted to me, where at least I was safe from intrusion of any kind. Mrs. Robert, I knew, would never dream of toiling up so many flights of stairs, however much she might desire my society.

"After some time I endeavoured to comply with her wishes by remaining in the drawing-room when visitors were announced. To this day I remember the torture I endured on such occasions. 'What shall I say next?' was my anxious thought, as I sat stiffly on a chair and ransacked my unhappy brains in search of some topic of conversation which might prove successful. Sometimes chance sent a friendly old lady who listened indulgently and sought to draw me out of my shell as I began timidly to tell of my home in the country—the only subject I knew how to talk about; or perhaps kind fate sent some young girl to my side who I felt instinctively was quite as shy as myself, and with them I got on so well as to earn a scant word of commendation from my sister-in-law after the visitors had departed.

"I don't think my brother's wife meant to be unkind, for being always accustomed to plenty of society herself, she could not possibly understand what I suffered. Worst of all were the occasions when I chanced to be absent from the drawing-room when visitors were announced, and she sent a servant to search for me; trembling, I have come slowly step by step down the stairs from my chamber under the roof. How enviously I used to look at the happy parlor-maid who had come to call me when she tripped lightly down the stairs to her own domain, while I had to stop short at the drawing-room door, twisting my fingers in the vain attempt to sew up my courage sufficiently to place my hand boldly on the door-handle, turn it, and walk into the room filled with people!

"Looking back now, I am sure it must have been trying in the extreme to my brother's wife to have to exhibit so *gauche* a sister-in-law. I am sure I caused her often to feel bitterly ashamed of her husband's family by some foolish action or speech, and her glance of contemptuous amusement or wrath went far to make me ten times more awkward than before.

"Altogether I felt myself a nobody, and always remained as silent as possible, repressing all the natural questions which a hundred times a day sprang to my lips, for fear that the conversation arising from my inquiries might prove to be concerning matters that I ought to be fully acquainted with, and so cause the look I knew so well to come over my sister's face, or give rise to one of

my brother's patronising smiles. One lesson I learned from it all was that even in the home-circle, as I have endeavoured to teach you girls, one should endeavor not to get into a narrow groove of thought. If we live in a village and are a country parson's family, it is of course only natural that our talk should be chiefly of the little interests and small people that surround us. But by reading, and conversing intelligently about what we read, we should endeavor to keep ourselves near to the central current of thought which animates the great world outside; then we should not feel ourselves utterly stranded, even though we may be a little behind-hand, if circumstances should call us into a circle of people who know absolutely nothing of and cannot be expected to take an interest in our daily lives. But I must get back to my little story, and not peach on your father's preserves by delivering an impromptu sermon.

"From the very first day of my arrival in my brother's house there had been one subject of conversation between him and his wife which never failed, and apparently possessed great interest for both.

"Are you going to see the Misses Turner to-day, Robert?" his wife would ask at breakfast; then again at luncheon—"Have you been to the Turners?" or, "Did you manage to see Miss Elizabeth Turner to-day, Robert dear?"

"And then there would ensue minute descriptions of his visits to Miss Elizabeth—how Miss Catherine had confided to him the very bad opinion the doctors had respecting her sister, how he had sat for an hour to-day with Miss Elizabeth, how he was going this afternoon to read aloud to Miss Elizabeth, how dear Miss Elizabeth had said so and so to him, how he had said so and so in reply to dear Miss Elizabeth; and to all his wife lent an eager and attentive ear.

"In fact, it became so natural to me to hear constantly about this Miss Elizabeth that I verily believe I should have inquired of my brother at the luncheon-table respecting her welfare had my sister-in-law omitted to do so. I grew quite accustomed each afternoon, as she and I went forth to pay our round of visits, to turning my steps first of all towards the mansion of Miss Elizabeth in Gordon Square, that we might duly make our inquiries and leave our cards for the interesting sufferer.

"One day, when my brother came in to luncheon, he carried in both arms, with much elation, a very handsome illustrated Bible, which he announced to be the gift of 'dear Miss Elizabeth.' On the title-page his name, with a few friendly words, was written in the trembling and uncertain writing of an aged hand from whose nervous grasp the pen was soon to drop for ever. My sister-in-law and I both pressed forward to examine and admire the Bible, and her quick eyes soon perceived a gift within the gift, in the shape of a certain piece of pink paper of a more mundane aspect than the leaves which enclosed it, and signed by the same trembling hand which had written her husband's name in the book.

"Dear Miss Elizabeth," said my sister, when she had carefully examined the slip of paper—"what a sweet old lady she is! Now, Robert dear, there is no reason why I should not have a brougham at once, is there? You know you said I might if Miss Elizabeth—"

"Hush, dear!" interposed my brother hastily, with a glance at me.

"I went on eating my luncheon in silence, feeling rather uncomfortable, with a sensation of pity for Miss Elizabeth in my heart, and a longing for the pure atmosphere of my father's home and a glimpse of his dear face, whose daily ministrations were to the poor, the blind, and the halt, and who, when he made a feast, invited those who could make him no return.

"A feeling of unhappiness oppressed me as I went to prepare for my afternoon walk with my sister-in-law, and I felt miserable as we walked along and I noted how eagerly she scanned every well-appointed carriage which passed us on our way. And, when we stopped at the great house in Gordon Square, and I heard the unctuous tones of her voice as she inquired for Miss Elizabeth and left a specially kind message for her, I turned away sick at heart. She did not often use terms of endearment to me, but on this particular day she was overflowing with amiability.

"Now, dear," she said cheerfully, as we passed on by the stately houses, "I am going to take you to call at the house of the most charming woman of my acquaintance—Lady Katherine Loftbourne. She is quite the most fascinating person I know—and so clever and handsome! I am sure you will be delighted with her."

"The feeling in my heart respecting fine ladies did not corroborate this assertion.

"And you must try not to be so shy. Speak up, my dear girl, and don't mope your words. I am sure when you do speak I nearly always fail to understand what you say; and people find that so tiresome.

"No words of mine could have been 'so tiresome' to others as were the painful heart-beats which accompanied these inaudible speeches to me; but she could not understand that.

"And, oh, my dear child, I wish you could be persuaded to leave off that silly habit of blushing and looking dazed when any one addresses a remark to you! The way you have of innocently rounding your eyes is not so bad, especially if it is a gentleman you are speaking to. Some men like that kind of pretty simplicity.

"I am sure I never thought of whether they liked it or not," I replied half tearfully.

"Well, then, its effect is so much the greater. But probably at Lady Katherine's exhibition, it is only ladies; and we don't care about simplicity, for the plain reason that we don't believe in it. Now don't redden up, silly child! I know your question-

ing pretty face and round baby-eyes are undoubted quivers in your armoury, but there is no use in wasting your ammunition. If there are a number of ladies in the drawing-room, hold up your head and speak clearly, if you speak at all. And don't let your speeches be too long, like that one the other afternoon, when you were describing your skating last winter at such unnecessary length to old Mrs. Waverleigh. Try to indulge in a little graceful badinage, instead of having talk made up of facts and anecdotes. Do, dear child, display some savoir-faire."

"She might as well have asked me to possess myself of the crown of England, or to display an intimate knowledge of the habits and customs of the Chipparee Indians. Her opinion of my conversation with old Mrs. Waverleigh was a severe blow to my pride. I had felt quite elated with the success of my visit to that friendly old dame, who had kindly sought to converse with me on a subject of which she judged I possessed some knowledge. So it was with a feeling of abject fear that I followed my stately sister-in-law up the spacious staircase of Lady Katherine's house in Woburn Place. We were soon moving in an atmosphere of rosy light, shed by colored glass on marble statuary and sweet-smelling clusters of exotic flowers and graceful ferns. The dignified man-servant who conducted us up the stairs and ushered us somnolently into the drawing-room was quite enough to strike dismay to my heart. I admired, while I envied, the calm of my sister's face as she went forward to meet the lady who rose languidly to greet us. The room was filled with visitors; and my sister-in-law's prognostications were correct—all present were ladies, with the exception of one thin pale-faced young man in clerical dress.

"As I sat down upon one of the amber-colored velvet chairs, I saw at once by the indescribable expression which only a woman's eye is capable of producing that we were instantly appraised at our proper worth as being 'only the parson's people.' My sister was seated near Lady Katherine, with whom she entered at once into an animated conversation. After my country face and plain unlovely dress had received a passing glance, and been found most uninteresting, I sat apart alone and unnoticed.

"An unknown race, who spoke in a language I did not understand, surrounded me, and I began to feel rather solitary, when the only member present of what I felt inclined to term the 'softer sex' drew his chair towards mine, and began to chat kindly with me.

"This event called a flush of vexation to my sister-in-law's proud face; but it served to give me a self-possession quite foreign to my nature, and I became quite lively, and after a time actually dared to laugh at some quaint remark of the young clergyman's.

"Presently the door was opened and a new visitor announced. There was a subdued flutter of pleasure as a tall and strikingly handsome young man, dressed in perfect fashion, advanced gracefully into the room. He greeted Lady Katherine deferentially, and then with well-bred ease began to chat to the ladies nearest to him, well aware, I am sure, that he was the cynosure of all eyes.

"After a few minutes, to my intense surprise, I found him at my side. Demure little country maiden though I was, I felt a naughty pleasure in the knowledge that the fashionable ladies present were vexed at this. Pride was to have a fall, as you will see. Perhaps his manner was more impressive than it would have been had he been speaking to a lady in his own set, but in any case I felt it very pleasant to be thus singled out for attention. He had a masterful way of speaking too, notwithstanding the apparent careless ease of his manner, and soon he had absorbed my attention to such an extent that I felt, rather than saw, that my first friend the young clergyman found himself quite in the way; and I experienced a little twinge of remorse as he rose quietly from his chair and went away to another part of the room.

"And so this is your first visit to London," said my new friend, looking at me with an expression of amusement on his face which I also perceived was not unmixt with admiration. It must be quite refreshing to hear your naive reflections on men, women, and things.

"I don't make any reflections, sir," I said timidly. "The fashion of addressing gentlemen as 'sir' lingered then amongst ladies of the old school, and was another exhibition of my provincial bringing-up."

"No? All the better: I don't like philosophers in petticoats—do you?" he asked, smiling.

"No," I replied bashfully, wondering what on earth he meant.

"That is a remark which savours of high treason in this house, you must know," he went on, lowering his voice, for Lady Katherine is a blue-stocking of the deep-st dye. If Mother had only known her, he would surely have put her in his galaxy of *Preieuses Idiotes*.

"Would he? I said, feeling quite bewildered, and wishing my young clerical friend back again—his conversation had been simple enough for my limited powers of comprehension.

"I think my companion must have discovered from my face that I was puzzled, for he soon changed his tactics.

"As it is your first visit, I suppose you have been going in for a great deal of sight-seeing?" he went on, smiling, and gazing into my face with an admiring air.

"Yes," I replied, delighted to find myself on safe ground once more. "My brother took me the other day to see Madame Tussaud's exhibition. It is quite wonderful and lovely," I added, with fervid enthusiasm.

[TO BE CONTINUED.]

Minnie May's Dep't.

MY DEAR NIECES:—I know many of you like to make your dress allowance go as far as possible, so I will give you some hints from a reliable source. If you have any skirts, the bodices of which are rather shabby, procure enough of a darker shade and make a fresh one. Or what looks decidedly stylish is a bodice or basque made of striped material of two colors only, but one of the colors must match the color of the skirt. And for morning wear at home they are decidedly comfortable, besides being pretty and becoming, and assist one in utilizing skirts that would otherwise have to be abandoned. Black and white stripes may be worn with almost any colored skirt. There is a decided tendency to gowns of two shades for spring wear, the darker shade for basque and drapery and the lighter for skirt. A lovely mouse-colored velvet is made into a low bodice and drapery, over a delicate shrimp-silk with a deep pinked-out ruche at the foot. The drapery lined with shrimp is caught up high on the side, and the front of the body is shrimp-silk gathered very full, with ribbons of mouse-color tied across. This design can be carried out in many contrasts of color, and of any material. There has been an effort to revive jet trimming, but though stylish on a black toilet, it is an expensive investment and not a serviceable one; the beads are continually falling off, leaving ugly ends of thread showing. I would not advise my young readers to make heavy investments in jet. A plastron and vest can be worn by a young lady over a black silk or satin and looks pretty and stylish, but it is a more appropriate decoration for matrons, being heavy and elderly-looking. Blouse waists and girdles are gaining favor, but all sensible women will wear what is most becoming, and the blouse waist and girdle do not suit all figures. The short-waisted woman, if she wears a girdle at all, will find the most becoming is a ribbon about three inches wide, placed low in the side seams of her basque, and knotted far down on the skirt in quite long bows and ends. Green is the favorite color for spring, as heliotrope was last spring, but neither are serviceable colors,

tume fade with the sun after it has been worn only a few times. Arrows in silver and tortoise-shell pins of every device will

of it ever being washed, the drapery should be made so it could be untied to laundry, and the flounce or flounces should be always made bias, and all heavy box-pleating avoided. The beauty of our summer toilets consists in their simplicity, and it is more desirable to be fresh looking in the morning than elaborate. Choose the buttons for washing dresses off some simple style that soap nor water will not injure. Linen collars and cuffs remain the favorites, being generally more becoming than rucheings, and not so perishable. Handkerchiefs are to be seen in every style, but pure white remains the favorite. Those with fancy borders do not give the same wear; the colors grow dim and look shabby long before the handkerchief is worn out. Bonnets are shown in all shapes as last year, so every lady can be suited. The poke bonnet is revived, but will not be a favorite on account of its unbecomingness. Tulle bonnets of all colors will be worn, and what young lady cannot make her own? So the cost will be trifling, and with the addition of a spray of light dainty flowers on top and strings to match the flowers in tint, each young lady will have a pretty and becoming head-dress. Sun shades and parasols are to be had in every color and style, but those who cannot afford a number of different ones would do wisely to invest in a stylish black satin or silk, with a handsome fall of fringe or lace. It will harmonize with any toilet, and stand the wear and tear better than the light fancy ones. You can add bows of ribbon of any color you choose to the top and handle. A pin will hold these bows in place and you can take them off at pleasure.

MINNIE MAY.

Thoughts.

Most people can bear blame from enemies, but few can withstand flattery from friends.

Except love, nothing terrestrial satisfies a man so completely as to have a woman whom he likes jealous of him.

A verbal promise is as binding morally as a written promise legally.

No act is negative; it is either good or bad. One word of appreciation to a living person is to him better than ten thousand words after he has fallen asleep.

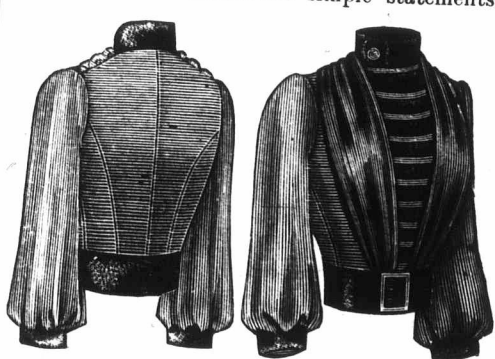
The Christian religion is the only religion which recognizes the brotherhood of man.

He who never believes the simple statements



and we do not care to see our pretty spring cos-

be worn in the hair at home and for evening. Where the head is large and hair abundant the larger ornaments can be worn with very good effect. But what looks worse than to see a tiny woman with an arrow or skewer through her hair as if it were put there to keep her whole hair on her head? Little women should confine their hair ornamentation to small, flat stars or devices that lie flat to the head, and leave the skewers to their larger sisters. Colored hose have been shown, but they are considered in the worst possible taste. Nothing looks prettier nor neater than black hose for street or house wear, besides having the advantage of making the foot look smaller. Now for a chat about our cool calicos and sateens. They come in all shades of color and design, from pink to peacock-blue, and are warranted to wash. But we should wear our sateen one summer at least without being laundried by an occasional ironing; but in view



of others cannot expect to be ever believed him-

Recipes.**CHICKEN FRITTERS.**

Cut cold chicken in small pieces; season with pepper, salt and the juice of a lemon. Let this stand one hour. Then make a batter of two eggs to a pint of milk; a little salt, and flour enough to make the batter not too stiff; stir the chicken in this, and drop it by spoonful into boiling lard.

WHITE FRUIT CAKE.

Two cups of white sugar beaten to a cream, with one cup of butter, one cup of milk, two and a half cups of flour, whites of seven eggs, two teaspoonfuls of baking powder. When all has been thoroughly mixed, add one pound each of sliced citron, raisins, blanched almonds and figs.

BOILED ICING.

Three cups of white granulated sugar, one cup of water, boil to a clear syrup; beat the whites of four eggs to a stiff froth; pour into the hot syrup; stir frequently while cooling.

ORANGE MARMALADE.

Nine bitter oranges, 3 sweet oranges, 4 lemons; cut the oranges across the grain in the thinnest possible slices. Take out the pips and lay the sliced fruit into four quarts of water for thirty-six hours. Then boil quickly for two hours; add eight pounds of white sugar, and boil one hour, or until it jellies.

APPLE MARMALADE.

Take russet apples; cut, pare and core in pieces about an inch square. To every pound of apples add one pound of sugar. Put the sugar to boil with just enough water to dissolve it, and a large lemon to every four pounds of fruit, sliced. Boil until the syrup gets thick; then add the apple and boil until it looks clear. Put into small pots.

LEMON MARMALADE.

One dozen lemons, three oranges; slice thin; take out the pips; pour over them four quarts water. Let stand for 36 hours; boil for one hour; add eight pounds granulated sugar, and boil until it jellies.

BAKED MILK.

Bake two quarts new milk for eight or ten hours in a moderate oven in a jar tied down with writing paper. It will then be as thick as cream, and may be given to weak persons.

HOUSEHOLD HINTS.

Camphor put in drawers and trunks will keep away mice.

Do not wear too tight a collar; it is apt to produce an ugly enlargement of the neck.

To remove machine oil, cover the spot with French chalk, and leave to dry. Brush off with a whisk.

Roast a lemon very carefully without burning it. When it is thoroughly hot cut and squeeze it into a cup upon three ounces of finely powdered sugar. Take a spoonful whenever the cough is troublesome. It is as good as it is agreeable to the taste.

As soon as you feel you have a cold in the head, put a teaspoonful of sugar in a goblet, and on it put six drops of camphor; stir it, and fill the glass half full of water; stir till the sugar is dissolved, and take a dessertspoonful every twenty minutes. This is a sure cure if taken as directed.

Cover lemons with cold water, and they will keep fresh for weeks.

Remove all vegetables as soon as they begin to decay; sweep up and destroy, all refuse in the

cellar. Wash and sweeten all preserve jars, bottles, or butter tubs; disinfect the damp corners with chloride of lime, as a preventative against fevers, sore throats, or other malarial diseases.

Let Nature wake the children; she will not do it prematurely. Take care that they go to bed at an early hour—earlier and earlier until it is found that they wake up themselves in time to be dressed for breakfast.

While the baby is down for a creep draw little stocking legs over his arms, and secure them by a safety pin.

Sleeping is injurious and dangerous, often resulting in disease of the spine and brain.

Most people drink too much and too fast. A small quantity of water, sipped slowly, satisfies thirst as well as a pailful swallowed at a draught.

Canned Goods.

The *Grocers' Chronicle* insists that the fact the canned goods are cooked goods, cannot be too widely known or carefully remembered by users. They are not put up in vessels from which they are to be eaten when convenient to consumers, but are only packed in tins in order to preserve them. No canned goods are guaranteed to keep fresh and remain sound for any number of days after being opened. When opened the contents of the tin should be immediately turned out and eaten as soon as possible. If the food must be kept at all, cover it up and keep in a cool place—always, however, turn out of the original tin. The liquor round lobsters, salmon and all vegetables, excepting tomatoes, it is desirable to strain off and throw away. Lobsters and prawns are improved by being turned out into a sieve and rinsed with clean, cold water. Never on any account add vinegar, sauce or any kind of condiment to tinned foods while they are in the tins, and never leave such mixtures to remain an hour or two, if from forgetfulness it is done.

All tinned goods are put up as fresh as it is possible to be, but, unless corned or salted, will not keep turned out as freshly-cooked goods will, and certainly not longer, as many thoughtlessly suppose or expect they will. Sardines, if preserved in good oil, and if of good quality, will be an exception; as long as the oil is good the fish can be kept in the tins, but seven days is long enough to trust these before eating. Consumers should not buy larger packages of canned goods than they can consume quickly; if they should, most of the fish and meats can be potted after re-cooking, sauces and seasoning being used. If the nose and eyes are properly used, it is as impossible to partake of an unsound tin of canned food of any kind as to partake of bad meat, fish or vegetables from a shop.

Etiquette in French Families.

The etiquette in the best old families of France as regards young girls is very strict. At 17 they begin to be seen at their mother's "at homes," but at 18 only they make the debut in society, beginning with the opera, Lenten receptions, and what are now generally called bals blancs. The French girl never has any cards of her own; when she is what they call in England "out" her name is written below her mother's. The letters addressed to her are always delivered first to her parent's hands, who passes them to her opened or unopened, as she sees fit. She wears no jewels beyond one row of pearls around her neck. She rides early, before the fashionable hour at the Bois, escorted by her father; her brother may take her out driving,

and she is even permitted now to take the reins, a liberty which, ten years ago, would have stamped her outrageously fast. French girls of almost any rank, including the bourgeoisie, never walk out alone. They marry young, presumably before 20.—[Pioneer Press.

Her Name.

There is, after all, a good deal in a name, if we must believe all that a correspondent of the Philadelphia Press has to say on the subject.

"The best of all names," she writes, "is the one on which there is no stain. But may not a De Montague or a St. Clair be as good and noble a man or woman as a Spriggins or a Spratt?"

"My maiden name was Butterpole. It really was. I'd just as soon it had been Beanpole, every bit. And, as though that name wasn't frightful enough, my father and mother named me Betsey Jane.

"Betsey Jane Butterpole! Think of it!"

"My parents were good but old-fashioned people. They always called me by my full name, and would not hear to such a thing as 'Bettie,' or 'Bessie,' and my roguish brothers would draw out 'Bet-say Ja-a-ne' in a way that would always rouse my anger. Sometimes they kindly consented to abbreviate the name to 'Bets,' a concession that drove me frantic.

"How I always dreaded the first day at school! We lived in the country, and had a new teacher every term. I always felt sick when he or she came around with the roll-book, and asked,—

"What is your name?"

"Betsey Jane Butterpole," I would stammer out; and there never was a teacher who was proof against that name. They always laughed right out.

"There was a boy named Johnnie Jones, who thought a good deal of me, in spite of my name. He tried to make up a valentine for me, but this was the best he could do with the material he had:—

"O, my girl's name,
Is Betsey Jane,
And also Butterpole,
I love her with my very heart,
And also with my soul."

"I used to win the first prizes at school; but what good did they do me, when the teacher had to get up before everybody on 'last day' and announce the winner to be the possessor of such a name as 'Betsey Jane Butterpole'?"

"Many a time have I gone crying to bed after father or mother had introduced me to strangers as 'Our daughter, Betsey Jane,' and I hardly think I should ever have contemplated matrimony if it hadn't been to rid myself of the Butterpole part of my name. My husband has told me since that he laughed for fifteen minutes when he first heard the name of 'Betsey Jane Butterpole.' And when we were married I saw his mouth twitch when he had to say: 'I, Henry, take thee, Betsey Jane,' and so forth.

"None of my children are named after their mother. I, for one, am of the opinion that the naming of children is an important matter, and that they have a right to expect that parents will have some consideration for their future feelings."

The lightest joys are inseparable from the greatest griefs, and whether or no both shall affect us for good depends upon ourselves.

Stock Notes.

Our readers' attention is directed to an advertisement in this issue of Mr. E. W. Judah's sale, which takes place April 26th, at Hillhurst, P. Q. Mr. Judah has many very noted Herefords, and we trust the attendance will be large.

Messrs. Dawes & Co., of Lachine, P. Q., are determined to sell a large number of their Herefords and Aberdeen Angus Bulls. They have a very fine lot of young bulls.

In this issue will be found Mr. F. A. Fleming's advertisement of Hereford cattle. This herd is well known throughout Canada, and the animals should bring good prices.

The postponed sale of Mr. John Ireland of Copetown, and Wm. Templer of Jerseyville, will take place on the 11th inst. Thirty head of Bates Shorthorns, with first-class pedigrees, a number of Durham grades, and seventeen Leicester sheep, will be sold.

James Leask has recently sold to C. M. Simons, of London, the important cow Lady Gladstone and calf. To Peter Leask, Virdeu, Man., Shorthorn bull calf; also two Shropshire ram lambs to H. H. Spencer, Brooklin, Ont.; one do. to S. Allan, Bowmanville, Ont., which was winner of 1st prize at County Fair; also one do. to J. Caldwell, Clark, Ont.

D. & O. Sorby, Guelph, Ont., report the following sales of Clydesdales in March: To Messrs. A. & G. Davidson, Monticello, Iowa, Lorna Doone (imp.) [220], foaled '83; sire, Macgregor (1487); dam, Brisk II. (618); in foal to Farmer Lyon (imp.) [302] (3340); this mare won first prize at Guelph Central Exhibition, 1884. To John Davidson, Ashburn, Ont., two colts bred by us, viz., Loch Doon [306], foaled 1886; sire, Farmer Lyon (see above); dam, Lorna Doone (see above); and Prince of Gourock [624], foaled 1887; sire, Gallant Boy (imp.) [303]; dam, Jane Eyre (imp.) [217]. Last Oct., we bought from the Waterloo Horse Co., Hawkesville, Ont., Boydston Boy (imp.) [216], 1872, (111), to stand at the head of our stud; he is one of the best bred horses now alive, and also one of the best stock getters.

Messrs. T. & A. B. Snider, German Mills, Ont., write: The great storm on the day before our sale prevented a large outside attendance, especially from the east, north and south. The attendance was principally local, with the exception of a few Americans from the west, who were the principal buyers. Good prices would have been realized had local men shown any ambition to buy, especially for the Scotch cattle; but under these circumstances a large number of the animals had to be withdrawn. Mr. Wm. Moffat, Paw Paw, Ill., writes since as follows: "All that I have to regret is that your sale was not a greater success, and especially on those Scotch cattle, which should have sold for more money. You were somewhat unfortunate in this sale. I never before met with such a backward crowd of people—no spirit or ambition to help and encourage your noble effort; so my sympathy is with you. After a little, if you do not dispose of the rest of those Scotch cattle, I might desire them at private contract. These are the popular cattle." Mr. Moffat bought five females of Cruickshank breeding, and one calf, at our sale. They are leaving to-day for their new home in Illinois. We enclose herewith a list of the animals sold, every mail bringing letters of disappointment from parties who could not get here. Wm. Moffat & Bros., Paw Paw, Ill., Matchless 29th and calf 10 months old, \$400; Gean Blossom 2nd, \$225; Gean Blossom 3rd, \$215; Gean Blossom 4th, 10 months old, \$90; Julia Lutton, \$150. To Edwin Grant, St. Helens, Ont., Humber Maid, \$250. To Samuel Johnston, Harriston, Ont., Martha, \$105. To T. C. Douglas, Galt, Ont., Empress 3rd, \$90. To John Wallace, Strasburg, Ont., Empress 4th, \$95. Bulls—Young Strathallan, withdrawn @ \$210. To Theron Buchanan, Branchton, Ont., Deacon, \$80. To John Grant, Strasburg, Ont., Beaumont, \$66. Stallions—To Sam'l Kline, Marion, Kansas, Grey Hawk, \$1,525. Bordine, withdrawn @ \$2,000. Mares—To Mr. Coughlin, London, Helen Fawcett, \$150.

NEW ADVERTISEMENTS.

SPECIAL NOTICE.

THE FARMER'S ADVOCATE refuses hundreds of dollars offered for advertisements suspected of being of a swindling character. Nevertheless, we cannot undertake to relieve our readers from the need of exercising common prudence on their own behalf. They must judge for themselves whether the goods advertised can, in the nature of things, be furnished for the price asked. They will find it a good rule to be careful about extraordinary bargains, and they can always find safety in doubtful cases by paying for goods only upon their delivery.

ADVERTISING RATES.

The regular rate for ordinary advertisements is 25c. per line, nonpariel, or \$3 per inch. No advertisement inserted for less than \$1. Special contracts for definite time and space made on application.

Advertisements unaccompanied by specific instructions inserted until ordered out, and charged at regular rates.

The FARMER'S ADVOCATE is the unrivalled advertising medium to reach the farmers of Canada, exceeding in circulation the combined issues of all the other agricultural publications in the Dominion. Send for an advertising circular and an estimate.

POSTPONEMENT OF SALE.

The subscribers in consequence of the very severe storm and almost impassable state of the roads on March the 21st, have been compelled to postpone their sale announced for that day until

WEDNESDAY, APRIL 11TH, 1888.

when the whole of their

HIGH-CLASS STOCK

as previously advertised in this Journal, will be sold to the highest bidder without any reserve whatever.

Mr. Ireland, having leased his farm, must of necessity dispose of his stock. Sale to commence at 11 o'clock sharp

Shorthorns will be brought under the hammer at 1 o'clock p. m.

Parties will be conveyed to and from all trains stopping at Copetown Station on day of sale and afternoon previous. Seven months credit will be given on all sums over \$20 on approved notes; under that amount cash. Lunch at noon. Send for catalogue.

NOTE BY THE AUCTIONEER.—Having had an opportunity of inspecting the whole of the stock on the day first announced for the sale, I can highly recommend them to intending purchasers as being animals of superior merit, and in prime condition, and well worthy the attention of any one requiring good, thrifty well bred stock.

JOHN IRELAND, Copetown P. O.
WM TEMPLER, Jerseyville P. O.
Geo Andrew, Auctioneer, Oakville.

COLONISTS' TRAINS.

The CANADIAN PACIFIC RY

will run SETTLERS' TRAINS to all points in
**MANITOBA,
THE NORTHWEST,
BRITISH COLUMBIA,
—AND—
THE PACIFIC COAST.**

Leaving TORONTO, N. & N. W. Station, Brock St. at 9 p. m.

Tuesday, April 3rd.

and EVERY TUESDAY thereafter during April. A Colonist Sleeper will be attached to these trains. Make early application to agent for what cars and berths you will require. 3-foot cars supplied for colonists' movables. No Customs delay or expense. No quarantine. No transfers. For further information see agent, or write

**COLONIZATION AGENT,
263-a 110 King Street West, Toronto.**

EARN TELEGRAPHY. The best paying profession practically taught and situations guaranteed. Catalogue free. **SHERMAN TELEGRAPH CO., Oberlin, O.**

JERSEYS!

—BY—

AUCTION.

First Annual Spring Sale

of American Jersey Cattle Club (registered), Jerseys will be held at

OAKLANDS

—ON—

Wednesday, April 25th, '88

at 11.30 a. m.

The Sale will include

1. Cows and Heifers in Milk.
2. Cows in Calf to our celebrated Bulls.
3. Half-bred Jerseys.
4. Sons and Daughters of the Pure St. Lambert Sweepstakes Prize Bull, Canada's John Bull.
5. Bulls and Bull Calves, some of them Pure St. Lambert, sons of Canada's John Bull.

Numbering in all about

40 HEAD

OAKLANDS FARM is about half a mile from Waterdown Station, on Toronto Branch of G. T. R.

All trains will stop at Waterdown Station on that day.

Purchasers met at Station.

The Public are invited.

Catalogue on and after 18th April.

V. E. & H. H. FULLER

Proprietors,

Hamilton, Ont., Canada.

SMALL FRUITS.

Now is the time to procure some valuable plants by simply devoting a few minutes time soliciting subscriptions for the FARMER'S ADVOCATE.

CONDITIONS:—These premiums are only given to our old subscribers, for sending in new names accompanied with \$1.00 for each name; renewals do not count.

For one new name, we will send post-paid twelve strong healthy plants of any of the following varieties of Strawberries: Jewell, Lida, Ontario, Belmont, or twenty-five of either Wilson or Daniel Boon, or twelve Red Raspberry bushes, either the Cuthbert or Marlboro.

For two new names, we will send eight of the Ohio Black Raspberry bushes, or eight Hilborn, or three Fay's Prolific Currant, acknowledged to be the largest and best red currant grown, or five Lee's Prolific, or one Industry Gooseberry, or three Smith's Improved Gooseberry, or one Niagara Grape Vine; or ten Black Walnut trees. See illustration of tree they are grown from on page 66, March, '86.

For four new names, we will send the New Grape "Mills," see page 109 this issue.

Commence your canvass at once and send in a good list. See premiums for wheat in another part of the paper.

Notices.

The Industrial Fair and Agricultural Exposition, Toronto, will be held from 10th to 22nd September, 1888.

As the Ontario Government has now appointed Government Milk Inspectors, we will not send out an examiner this year.

Reports from the last shipment of apples from the Annapolis Valley—where they have proper storage for them—state that from 25s. (\$6.00) to 45s. (\$10.80) per barrel were realized for them in England. The cost of shipment did not exceed \$1.00 per barrel.

Messrs. V. E. & H. H. Fuller, proprietors of the Oaklands Jersey Stock Farm, intend having their 1st annual spring sale of Jerseys at Oaklands, on April 25th. Forty head of this noted herd will be disposed of. See advertisement in this issue.

Mr. F. W. Stone sold last month to Mr. Mathias Kirby, Armstrong's Mills, Ont., the 2-year old Shorthorn Bull, *Lord Glaston* 9th, roan, sired by Barrington J. 2nd, 31746; dam, *Maud* 9th by 5th Airdrie, 21,883, &c.; also to Messrs. Rice and Vining, for shipment to Manitoba, to found flocks, 83 pure bred sheep, viz.—1 Cotswold ram and 36 ewes, 1 Southdown ram and 45 ewes. Mr. Stone advertises a number of bulls for sale at reasonable prices.

Mr. Duane H. Nash, of Millington, N. J., the sole manufacturer of the Acme Pulverizing Harrow, Clod Crusher and Leveler, has now opened storehouses at Strathroy and Brighton, Ont., Canada, thus delivering free on board cars and duty paid, and will send one of these harrows on trial to any responsible farmer in Canada. We would recommend any of our subscribers wishing a really good implement to address Mr. Nash for his circular. In doing so please state you saw his advertisement in the FARMER'S ADVOCATE. Mr. R. Gibson, the noted Shorthorn breeder, considers it the most useful implement on his farm.

STRATFORD
Iron Bridge Works
ENGINE, BOILER

—AND—
General Repair Shop.

W. W. COWAN, Proprietor,
Box 120
STRATFORD, ONT.

GREAT SALE
OF IMPORTED AND HOME-BRED
HEREFORDS

ON WEDNESDAY, APRIL 11TH, 1888.

I will sell by Public Auction at my farm at Weston, Ont., on the above date.

THIRTY HEAD OF PURE BRED REGISTERED HEREFORDS

consisting of 23 young Cows and Heifers, and 7 Bulls; several of them are prize winners and show animals; all are in fine condition and well bred, the blood of Horace, Grove 3rd, and Lord Wilton being well represented. This line of breeding cannot be excelled.

Weston is 8 miles from Toronto, on the Grand Trunk (main line), and C.P.R. (Owen Sound Branch). The farm buildings are half a mile from both railway stations. Sale will take place under cover if the weather is unfavorable. Catalogues on application.

F. A. FLEMING, Proprietor.

John Smith, Brampton, Auctioneer.

Seven months credit on approved notes. 268-a

Seven per cent. per annum off for cash.

AUCTION SALE

—OF—

HEREFORDS

The subscriber, instructed by Mr. E. W. Ju ab, will sell at the "Lowlands" Stock Farm, Hillhurst, Co. C. mpton, P. Q.,

THURSDAY, APRIL 26TH, 1888.

20 head of Thoroughbred Hereford Cattle.

BULLS,

COWS,

and HEIFERS.

Among the lot is the imported bull **KING**

PIPER, No. 24212, (7063), which has stood at the head of the herd for five years. Several imported cows will also be offered.

TERMS: Under \$100 six months, over \$100 twelve months credit, on satisfactory endorsed notes at 7 per cent. interest. Liberal discount for cash. Send for Catalogues. **Sale at 1.30 sharp.**

JOHN I. GRIFFITH,

Auctioneer.

268-a

EDWARD C. RYOTT,

AUCTIONEER AND STOCK SALESMAN,

TRENTON, ONT.

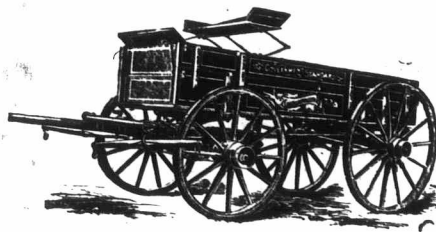
Thoroughbred or Pedigreed Stock Sales a specialty. Sales attended to in any part of Canada.

Satisfaction guaranteed every time, having 15 years valuable experience in leading Canada sales, and 3 years with Mr. George Freeman, the great stock salesman, Yorkshire, England. Correspondence solicited. Terms favorable.

268-a

The CHATHAM MANUFACTURING CO., Ltd.
Chatham, Ontario Canada.

MANUFACTURERS OF THE
CHATHAM WAGON



Of which we give a faithful illustration, and which the Government of the Dominion of Canada has adopted as the Standard Wagon. We simply ask intending purchasers, in their own interests, to send to us for particulars of the Chatham Wagon before purchasing any other.

Railway Platform Baggage Trucks. Farm and other Dump Carts.
Hardwood Lumber and White Oak Gang Sawed Ship Plank.
The Patent Champion Hay Rack, Etc., Etc.

CORRESPONDENCE SOLICITED.

268-y

TO OWNERS OF STALLIONS.

The Richmond County Agricultural Society will give a Bonus of One Hundred Dollars for a Stallion to stand in the County for service for the season of 1888. The stallion to be a Coaching Horse, or a Cleveland Bay. To be approved of by the Board of Directors, and be shown at the Town of Richmond, Que., on the 17th of May next, for such approval. Further particulars on application to undersigned.

Melbourne, P. Q., March 6th, 1888.

JOHN MAIN,

SEC.-TREAS.

268-b

BRICK AND TILE MACHINERY

Five different kinds of Brick and Tile Machines for Steam or Horse Power, manufactured at C. NORSWORTHY & CO'S., St. Thomas, the head quarter for clay working machinery for the Dominion of Canada.

Several Second-hand Stock Machines for from \$35 to \$55.

PORTABLE THRESHING MACHINES A SPECIALTY.

Send for Catalogue.

Also Engine Boilers, Saw Mills, and General Machinery.

C. NORSWORTHY & CO., ST. THOMAS, ONT.

268-c

BEE-KEEPERS

4 U

Buy elsewhere it will pay you to send for our price list of

Honey Extractors, Knives, Smokers, Comb Foundation, Hives, Sections

and all other kinds of bee-keepers' supplies; also to subscribe for our **Canadian Honey Producer**, a monthly, 40c. per annum, published in the interests of bee-keepers. Price list and sample of paper free on application.

Bees for Sale at Lowest Rates.

Address **E. L. GOULD & CO.,**

BRANTFORD, ONT.

268-b

ADVERTISE
—IN THE—
ADVOCATE



Do you want APPLE, PEAR or PLUM TREES, GRAPE VINES, new or old kinds, STRAWBERRIES, RASPBERRIES, DEWBERRIES, CURRANTS, any varieties worthy of cultivation. Your orders are solicited at the Central Nursery. I make a specialty of furnishing genuine first-class stock at 25 per cent. less than agents' prices. Catalogue free.

A. C. HULL, St. Catharines, Ont.



FOREST TREES.

Catalpa Speciosa, White Ash, European Larch, Pines, Spruces, Arbor Vites, etc., etc.

R. DOUGLAS & SON, Waukegan, Ill.

NORWAY SPRUCE

In Large Quantities. Also ROSES, CLEMATIS, Climbers, Shrubs, Dahlias, Herbaceous Plants, &c. Send for price list.

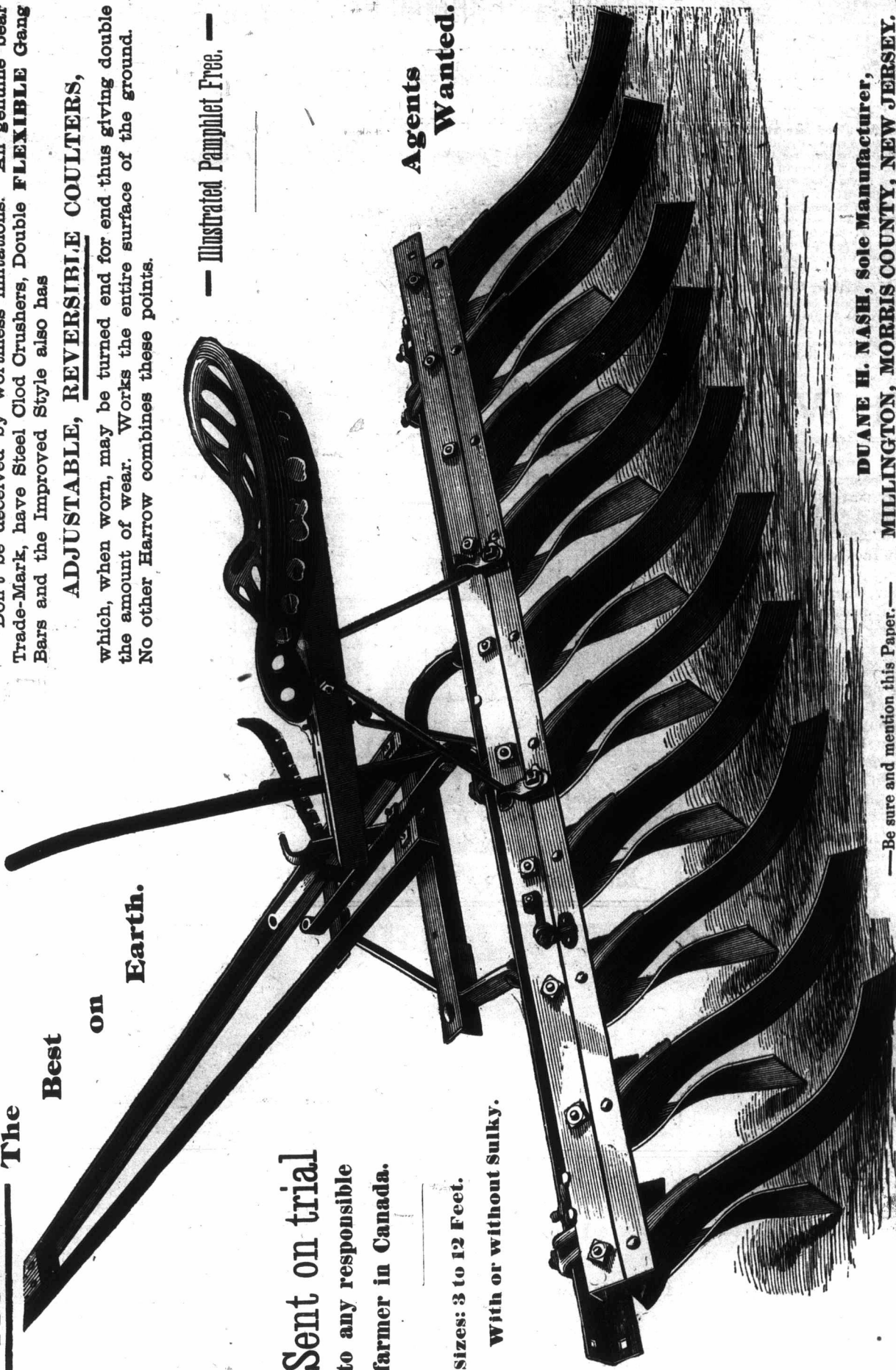
A. GILOHRIST, GUELPH, ONT.

"ACME" Pulverizing Harrow, Clod Crusher and Leveler.

Don't be deceived by worthless imitations. All genuine bear Trade-Mark, have Steel Clod Crushers, Double FLEXIBLE Gang Bars and the Improved Style also has

ADJUSTABLE, REVERSIBLE COULTERS,

which, when worn, may be turned end for end thus giving double the amount of wear. Works the entire surface of the ground. No other Harrow combines these points.



Best on Earth.

Sent on trial to any responsible farmer in Canada.

Sizes: 3 to 12 Feet.

With or without Sulky.

Agents Wanted.

— Illustrated Pamphlet Free. —

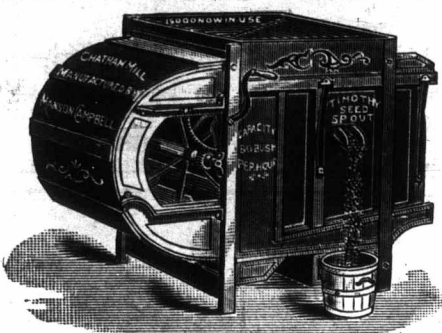
DUANE H. NASH, Sole Manufacturer, MILLINGTON, MORRIS COUNTY, NEW JERSEY.

—Be sure and mention this Paper.—

I DELIVER HARROWS FREE ON BOARD CARS AT STRATHROY and BRIGHTON, ONTARIO.

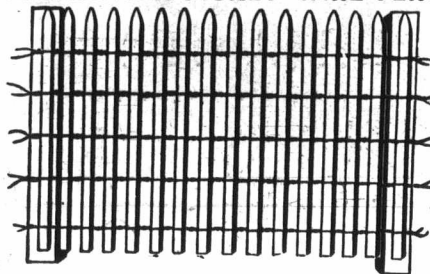
Address DUANE H. NASH, Millington, New Jersey, U. S. A.

THE CHATHAM FANNING MILL



2,800 SOLD IN 1887.
The Improvements for 1888 are as follows:
 To the large number of screens and riddles furnished last year I have added four zinc screens, making 17 in all, with the following objects in view, which I am sure are important: 1st. Fast and good cleaning of wheat. 2nd. Special attention has been given to rapid cleaning of barley, removing all foul seeds and broken weeds. 3rd. Have added a long mesh zinc screen for taking chaff, oats or rye from wheat, and also an attachment for knocking or agitating the screens and not allowing the meshes to fill up.
 Send for Circular.
MANSON CAMPBELL, Chatham, Ont.
MASSEY MFG. CO. of Toronto, 86 McGill St., Montreal, Sole Agents for the Province of Quebec.
VAN ALLEN & AGUR, Winnipeg, Man., Sole Agents of Manitoba and N. W. T.
 Agents wanted in unoccupied Territory.

COMBINATION PICKET WIRE FENCE



By far the cheapest and best of all farm and garden fences. Prices from 45c. per rod upwards. Address orders, etc., to **TORONTO PICKET WIRE FENCE COMPANY**, 151 River St., TORONTO.
 Fence Machines for sale. 268-a

\$15 WIRE PICKET FENCE MACHINE
LOWDEN'S PERFECTION.
 Patented. Best field machine in the U.S. or Canada. Write for Illustrated circular. Address **C. L. SPRAGUE, Agent**, DEXTER, ONT.
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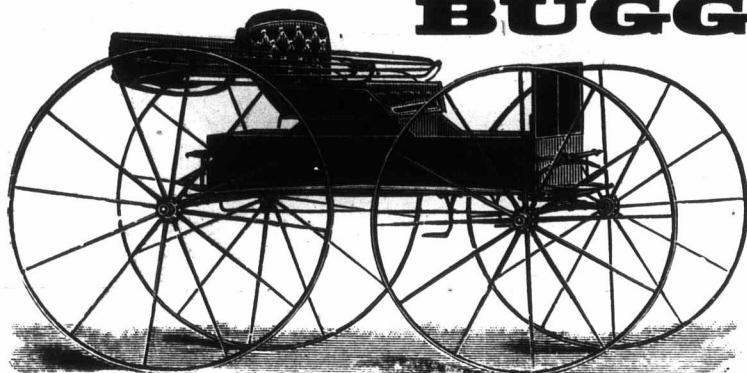
CHOICE FARM PROPERTY

—IN—
Manitoba and the Northwest

FOR SALE.

Apply to **JOHN WELD, London, Ont.**
 268-ff

BUGGIES!



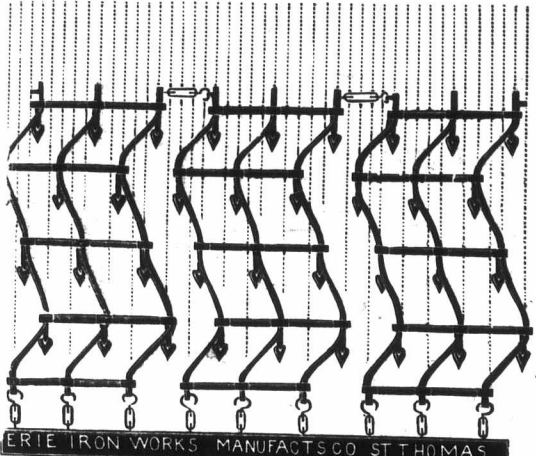
We make a specialty of **PIANO BOX TOP BUGGIES** specially adapted for farmers' use. Our output for 1887 was over 1,000. Agricultural Agents will find it to their advantage to send for Catalogue and Price List. All work is guaranteed.

B. J. NASH & CO.,

Wholesale and Retail. 268-f 111 York Street, LONDON, ONT.

PATENT

LANCE TOOTH HARROW

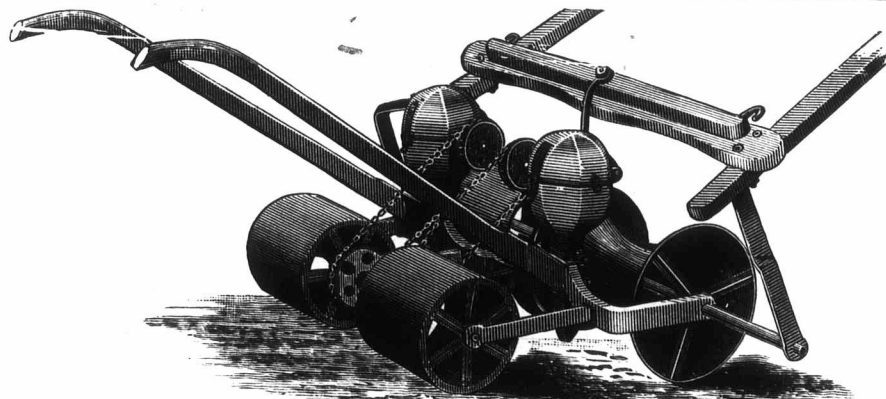


THE SIMPLEST AND CHEAPEST HARROW MADE.

Will harrow in sod or loose ground, better than the best. Send \$16 00 and we will send a sample harrow to any part of the Dominion, or if farmers will club together, we will make a liberal discount. Extra liberal discount to agents.

We also manufacture **Plain Tooth Harrows, Steel Plows, Potato Diggers, Iron Frame Corn Cultivators, Trumps Patent Steel Cultivator, Steel Drum Rollers; also Wooden Drum Rollers.**
 Address, 268-a

ERIE IRON WORKS MANUFACTURING CO., St. Thomas, Ont.



HORSE TURNIP SEED DRILL

All Iron, with new Improved Cannisters. Sows two rows at once.

—We also manufacture—
 Land Rollers, Harrows, Reapers, Mowers, Mills, Feed Cutters, and RIDING and WALKING PLOWS.

THE COWDY MANUFACTURING CO.,
 Suffolk Street, GUELPH, ONT.
 268-a

Don't Wait

Until your hair becomes dry, thin, and gray before giving the attention needed to preserve its beauty and vitality. Keep on your toilet-table a bottle of **Ayer's Hair Vigor**—the only dressing you require for the hair—and use a little, daily, to preserve the natural color and prevent baldness.

Thomas Munday, Sharon Grove, Ky., writes: "Several months ago my hair commenced falling out, and in a few weeks my head was almost bald. I tried many remedies, but they did no good. I finally bought a bottle of Ayer's Hair Vigor, and, after using only a part of the contents, my head was covered with a heavy growth of hair. I recommend your preparation as the best hair-restorer in the world."

"My hair was faded and dry," writes Mabel C. Hardy, of Delavan, Ill.: "but after using a bottle of Ayer's Hair Vigor it became black and glossy."

Ayer's Hair Vigor,

Sold by Druggists and Perfumers.

Pimples and Blotches,

So disfiguring to the face, forehead, and neck, may be entirely removed by the use of **Ayer's Sarsaparilla**, the best and safest Alterative and Blood-Purifier ever discovered.

Dr. J. C. Ayer & Co., Lowell, Mass.
 Sold by Druggists; \$1; six bottles for \$5.

JOHN FERGUSON & SONS,

174 to 180 King-st., London, Ont.,
PROFESSIONAL UNDERTAKERS and EMBALMERS
 Manufacturers of all kinds of

HOUSEHOLD FURNITURE.

Lumber of all kinds taken in exchange for furniture. 264-y

J. F. QUIN, V. S., BRAMPTON ONT
 Ridging horses successfully operated upon; write for particulars. 261-y

BROOKS' CHAMPION FORCE PUMP
—AND—
FIRE EXTINGUISHER,
Patented Aug. 7th, 1882.




A BOON TO FRUIT GROWERS
By simply adjusting the sprinkler, which goes with each pump, it is adapted for spraying gardens, plants, trees, lawns, etc., also for throwing liquid solutions of all kinds, to destroy noxious insects on plants, vines or trees.
Retail price, Galvanized Iron, \$3.50; Brass, \$4.50.
Good Reliable Agents wanted in every locality. Send for Circulars. Sole Manufacturers for Canada.

BEECHER BROS.,
LONDON, ONT.

268-b

"IT'S A DANDY."



No intelligent farmer would be without the "Dandy" Patent Bag-holder, which will last a lifetime and costs only 75 cts. Sold by agents. Territory still open. Circular free. Sample (free by express) on receipt of price. Address—C. W. ALLEN & Co., 87 Yonge St., Toronto; Wm. EWING & Co., Seed Merchants, Montreal, or J. H. ASHDOWN, Winnipeg. 266-1f



THE DAISY CHURN
was awarded the Silver Medal and First Prize over all competitors.
AGENTS WANTED in every town in the Dominion. For Price List and Terms Address
WORTMAN & WARD MFG. CO.,
266-d LONDON, ONT.

CALVANIZED WIRE
POULTRY NETTING
B. GREENING & CO.
HAMILTON, CANADA
SEND FOR PRICE LIST

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EVERY FARMER HIS OWN MILLER.

LITTLE GIANT FEED GRINDER.

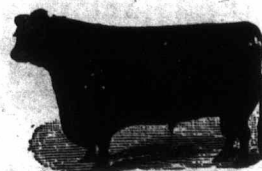


PATENTED DEC., 1886.
Grinds all kinds of grain into meal, coarse or fine. Will grind corn and cob into meal for stock feeding. Furnished with special Disc, which will grind corn into table meal and buckwheat and wheat into flour.
Send for circular.

J. A. McMARTIN & CO.,
National Pump Works.
Manufacturers of Geared and Pumping Wind Mills, Hand, Power and Steam Pumps.
637 Craig Street, MONTREAL. 267-f



35 CHOICE



Hereford and Aberdeen Angus Bulls FOR SALE.

25 Herefords and 10 Aberdeen Angus Bulls, varying in age from a few months to two years. A large number of them are one year old.
FOUR IMPORTED HEREFORDS, ALSO ONE ABERDEEN ANGUS.
The balance are our own breeding. Our stock are all choice animals, and will be sold cheap, as we have more than we care to keep.
Correspondence solicited. Address

DAWES & CO.,
LACHINE, P. Q., CANADA.

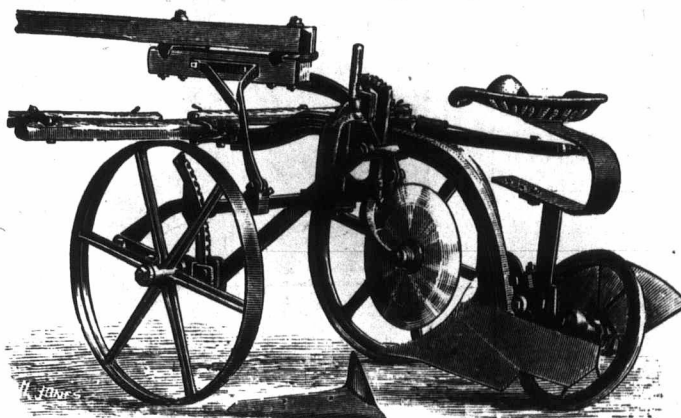
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Hamilton Business College

Corner of King and James Street's, HAMILTON, ONT.
One of the largest and best Business Colleges in Canada, giving the most thorough course of instruction at most reasonable rates. Send for circulars.
HATTRAY & GEIGER.

268-y

COCKSHUTT'S J. G. C. RIDING PLOW



—IS THE—
LIGHTEST DRAFT
Plow in the world. Our own design and invention. Send for one on our trial terms and be convinced for yourselves. It is the only Riding Plow that has had a successful sale in Canada.
Send for our Pamphlet and Record with news from the field.

COCKSHUTT PLOW CO. (Ltd.), Brantford, Ont., Can.

268-f

PREMIUMS! NEW WHEAT.



SAXONKA SEED WHEAT.

Probably the greatest demand this spring by farmers desiring to try new and promising varieties of wheats, will be for the Saxonka. This wheat was imported from Russia, and is now raised with success in Canada. By the reports we have received it ripened much earlier than the Red Fife; some claim that it has ripened from 6 days to 3 weeks earlier than other spring wheat, and that it is a wheat of superior milling quality; that it has a strong, stiff straw, and yields a very large crop. We have not as yet tested it on our land, but intend doing so this spring. We will send two pounds of this wheat, postage paid, to any P. O. in this Dominion, to anyone who sends us one new subscriber to the FARMER'S ADVOCATE AND HOME MAGAZINE for one year; the subscription price of \$1 mus; accompany the order; or one pound will be sent to anyone who will send us in 50 cts., accompanied with a new subscriber's name, for 6 months. All now have an opportunity of testing this wheat, and procuring the seed at cheap rates. With proper care 30 pounds may be raised from one pound. We shall not dispose of any of this wheat for cash.

LADOGA SPRING WHEAT

We will also enclose in same parcel a few grains of the LADOGA SPRING WHEAT. To all who will promise to report results to this office. This wheat is claimed by some to be even earlier than the Saxonka. It will only be sent with the 2 lb. lot.
See page 120 for Small Fruit Premiums.

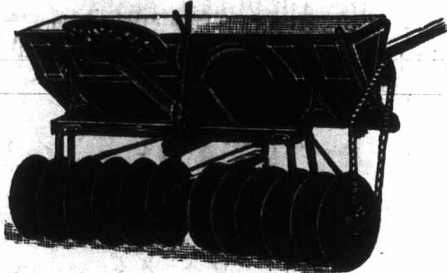
RELIABLE SEEDS

FOR THE **Farm & Garden.**

Our Illustrated and Descriptive Catalogue FREE! Every Farmer and Gardener should send for one. Address,

J. A. SIMMERS,
Seed Merchants and Growers,
Toronto, Ont.

THE "CORBIN" Leads Them All!

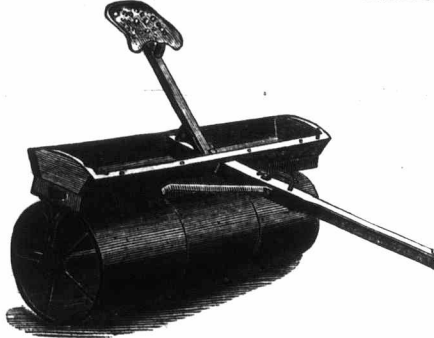


This out shows the removable seeder attachment for the Corbin Harrow. Every harrow will take it. It sows all kinds of grain broadcast. It is simple and easily managed. It is furnished with a perfect drive gear. The Harrow and Seeder is one of the most profitable implements a farmer can buy. It saves the horses, saves the driver, insures the crop. It does a great variety of work, and does it well. Every farmer who is not informed as to what this Harrow is, and what it will do, should drop us a card for particulars.

(See "Advocate" of January and February.)
THE LATEST!—The Managers of the Government Experimental Farm, at Ottawa, bought two Corbin Harrows in preference to all others.

Get a good machine while you are about it. The No. 30—Rever-ible—turns the soil either toward the tongue or away from it, and is having an immense sale. Read what the "Advocate" says about it. Read what all the leading agricultural authorities say about it.

THE CORBIN WROUGHT-IRON ROLLER



Has finished bearings, babitted oil boxes, and weight box. It is silent running, easily turned, of light draft, and fitted with a grass-seeder. The cheapest Iron Roller in the market, and giving unbounded satisfaction. Sold in Manitoba for three seasons, with constantly increasing sales. Send for circular.

THE ST. LAWRENCE MANFG. CO., OF ONTARIO, LTD.
PRESCOTT, CANADA.

GENERAL AGENCIES—Johnston & Co., Fredericton, N. B.; R. J. Latimer, Montreal, Que.; Van Allen & Agur, Winnipeg, Man.; Nicholles & Renouf, Victoria, B. C. Sold also by all agents of the Massey Manufacturing Co. in Manitoba and the North-West. Sold also by 150 local agents in Ontario.

ON 30 DAYS' TRIAL. THIS NEW ELASTIC TRUSS



Has a Pad different from all others. Is cup shape, with Self-adjusting Ball in center, adapts itself to all positions of the body while the ball in the cup presses back the intertines just as a person does with the finger. With light pressure the hernia is held securely day and night, and a radical cure certain. It is easy, durable and cheap. Sent by mail. Circulars free.

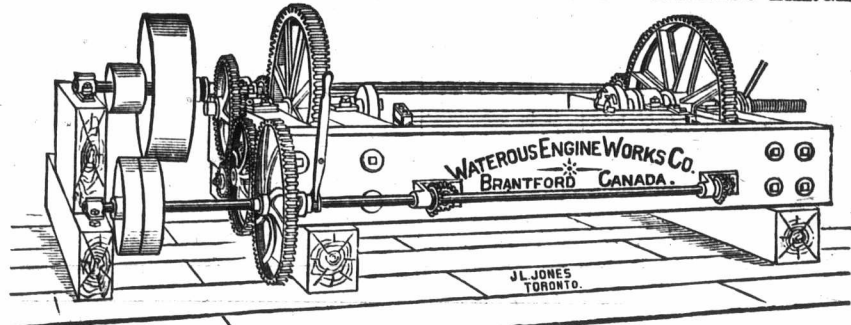
\$5 to \$8 a Day. Samples and duty FREE. Lines not under the horses' feet. Write **BREWSTER'S SAFETY REIN HOLDER, HOLLY, MICH**

SAWMILLERS INCREASE YOUR EARNINGS

By Cutting Cheese-Box and Basket Stuff, with our

VENEER MACHINE.

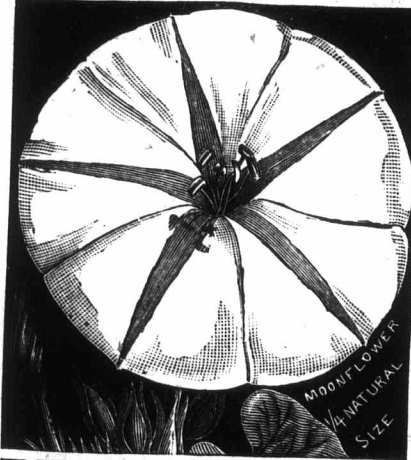
A NEW AND INCREASING TRADE. OUTFIT CHEAP. PROFITS LARGE.



Order at once and be the first to start in your district.

Waterous Engine Works Co., BRANTFORD and WINNIPEG.

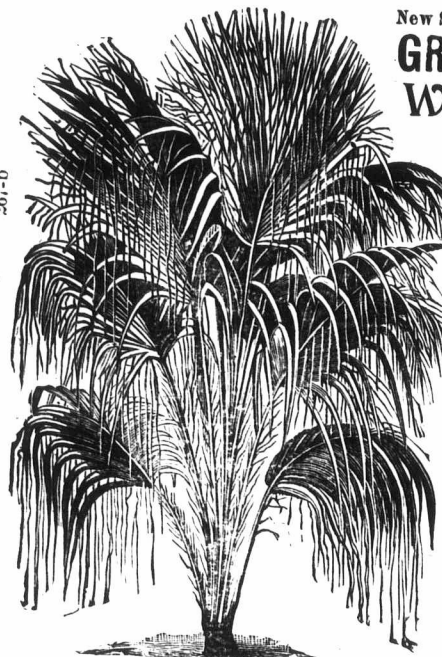
OUR MANUAL OF EVERYTHING FOR THE GARDEN



is this season the grandest ever issued, containing three colored plates and superb illustrations of everything that is new, useful and rare in Seeds and Plants, with plain directions of "How to grow them," by PETER HENDERSON. This Manual, which is a book of 140 pages, we mail to any address on receipt of 25 cents (in stamps.) To all so remitting 25 cents for the Manual we will, at the same time, send free by mail, in addition, their choice of any one of the following novelties, the price of either of which is 25 cents:—One packet of the new Green and Gold Watermelon, or one packet of new Succession Cabbage, or one packet of new Zebra Zinnia, or one packet of Butterfly Pansy, or one packet of new Mammoth Verbena, or one plant of the beautiful Moonflower, (see illustration), on the distinct understanding, however, that those ordering will state in what paper they saw this advertisement.

PETER HENDERSON & CO., 35 & 37 Cortlandt St., NEW YORK.

Grand Palms from Seed.

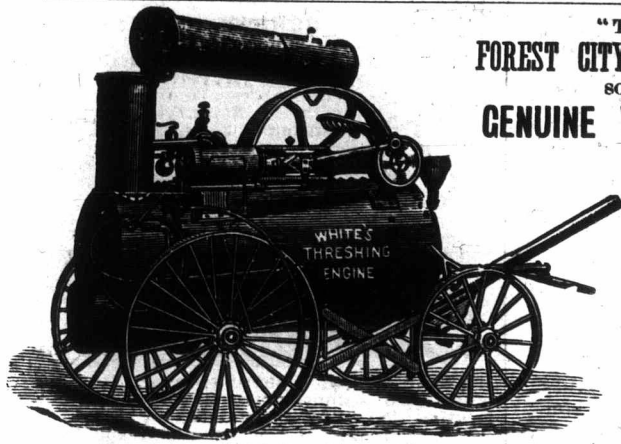


New Seeds, Bulbs, Plants, Fruits,—Rare Tropical Fruits
We are now able to offer for the first time, both seed and plants of that King of Ornamental plants, the new **FILIFERA PALM.** Stately and beautiful beyond description, it is the finest addition that can be made to any collection of plants, and can be grown in any window or garden as easy as a geranium. It is of a compact growth with elegant large leaves, from which hang long thread-like filaments, giving the plant a most odd and beautiful appearance. In fact there is nothing like it in cultivation and good specimens sell for enormous prices. Plants are easily raised as the seed are large, germinate quick and grow rapidly. Per packet 25cts. 5 for \$1.00. Year old plants 40cts. each, 3 for \$1.00, 7 for \$2.00 by mail postpaid. Will also mail 3 Storm King Fuchsias for 50cts., 12 Excelsior Pearl Tuberoses for 50cts., 12 Choice Mixed Gladiolus for 30cts. Our Giant Excelsior Pansies, best in the world, 20cts. per packet. New Primrose Verbena, yellow, a sterling novelty, 25cts. per packet. True Pygmae Aster, 50cts. per packet.

Our Seed Catalogue for 1888

Is the most elegant ever issued. Illustrated with 10 colored plates, stipple-litho. covers and hundreds of fine engravings. In it is offered a great variety of Flower and Vegetable Seeds, Bulbs and Plants of all sorts, New Fruits and Rare Tropical Fruits suitable for pot culture, such as dwarf Oranges, Pine Apples, Bananas, Figs, Guavas, Sugar Apple, &c. This elegant and Expensive Catalogue will be sent FREE to any who order anything here offered, or who expect to order after getting Catalogue. We have a branch office in Canada and DELIVER GOODS BY MAIL DUTY AND POSTAGE PAID. Special Offer. For Verbena Seed and Catalogue. Write at once as this will add an elegant Seed or Bulb novelty free.

Address, **JOHN LEWIS CHILDS, FLORAL PARK Queens Co., N. Y.**



"THE FITTEST SURVIVES."
FOREST CITY MACHINE WORKS, LONDON, ONT.
SOLE MANUFACTURERS OF THE

GENUINE WHITE THRESHING ENGINE,

Special 20-horse power Portable Saw Mill Engine, (same pattern and style), Light and Heavy Traction Engine, and is licensed by all Insurance Co's, and has proved itself to be the most durable. The Engine for the Northwest is made to burn either coal, wood or straw. A thorough warranty given with all Machines and Engines. Call and examine our Machinery, or correspond with us before purchasing elsewhere.

NEW IRON SEPARATOR.
GEO. WHITE, Proprietor and Manager.
H. B. WHITE, Head Traveller.
HUB. J. WHITE, Sec. Treas.
A. W. WHITE, Asst. Manager.
F. J. WHITE, Asst. Sec.

287-1f

THRESHING MACHINES

THE NEW MODEL.

33 and 36-inch cylinder. Will thresh more grain of any kind, and cleaner, with less waste, than any machine in the market. The New Model is the best machine to be had for Flax.

HALL THRESHING MACHINES.

32 and 36-inch cylinder. Though this machine has been before the farmers of Canada and the United States for fifty years, it is still the favorite machine where horse-power is the motive power to drive it.

OSHAWA 12-HORSE PORTABLE ENGINES,

With Spark Arresters, Dalgell Steel and Wilson's Steel Tubes in the Boilers, the best Steel and the best Tubes in the world, ensuring absolute safety to all who look after their engines.

PITT'S 10-HORSE DOWN POWERS.

WOODBURY 12-HORSE MOUNTED POWERS.

PLANET 10-HORSE DOWN POWER.

All of Iron. Safe to leave out in all weather.

CALIFORNIA 12-HORSE DOWN POWER.

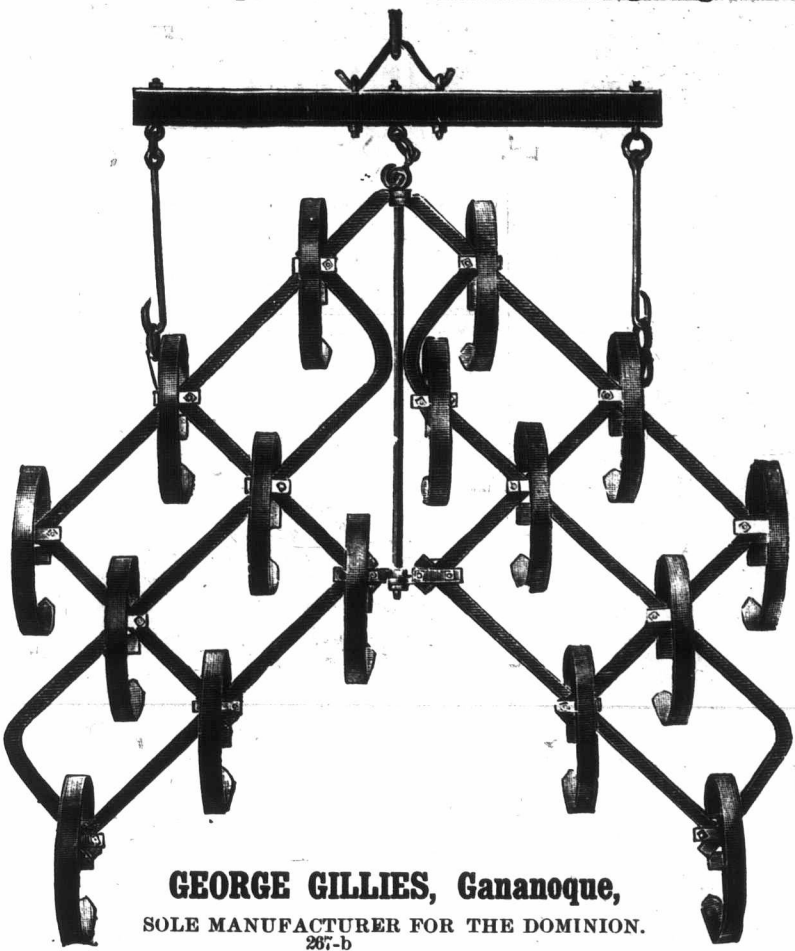
All of Iron. Safe to leave out in all weather.

In quality of material, good workmanship and finish these machines cannot be excelled. Repairs and parts of machines at all times on hand.

Joseph Hall Machine Works Oshawa

287-1 JOHN LIVINGSTONE, Trustee.

LaDOW'S Improved Patent Float Spring-tooth HARROW



GEORGE GILLIES, Gananoque,
SOLE MANUFACTURER FOR THE DOMINION.

287-b

Many improvements have been made on this harrow during the past year, making it now the best Spring Tooth Harrow before the public. It is made in two sizes, 16 and 18 teeth respectively, with and without runners. All steel frame, no wood to rot or wear out. See one of these Improved Harrows before buying any other, and write for full descriptive circulars of them. All implements guaranteed for one year.



BAIN WAGON CO.'S

Farm Truck

THIS cut represents the most convenient Wagon ever put on a farm, because it is suitable for all kinds of work, and always ready, no changes being necessary.

THIS WAGON was invented and first introduced in Michigan, U. S., and is now very extensively used by leading farmers in the United States.

AND EVERY WAGON made and sold by us in Canada is giving entire satisfaction. For further particulars and prices

284-1f

Address **BAIN WAGON CO., Woodstock, Ont.**

FERTILIZERS!

LAMB'S PHOSPHATE MANURE

—GOOD FOR—
Wheat, Buckwheat, Cabbage, Rye, Millet, Onions, Oats, Barley, Potatoes, Corn, Peas, Beans, Tomatoes, Turnips, Carrots, Hops, etc., etc.

LAMB'S BONE MEAL

—GOOD FOR—
All Kinds of Grain and Root Crops.

Lamb's Phosphate Screenings

—GOOD FOR—
Trees, Vines, Shrubs, Asparagus and Strawberry Beds, New-made Lawns and all purposes requiring a very permanent manure.

Send for circular with price list to

PETER R. LAMB & CO.,
287-c MANUFACTURERS, TORONTO, ONT.

ONTARIO PUMP Co.

[Limited.]

Toronto, Ontario.



MANUFACTURERS OF
**WIND MILLS,
FEED GRINDERS,
HAYING TOOLS,
IRON & WOOD PUMPS,**

And a full line of Railway, Town, Farm and Ornamental Water Supply Materials.
Geared Windmills for driving machinery, pumping water, &c., from 1 to 40 horsepower.
Send for Descriptive Catalogue.

287-y

Over 6,000,000 PEOPLE USE
FERRY'S SEEDS.

D.M. FERRY & CO.
are admitted to be
The LARGEST
SEEDSMEN
in the world.
D.M. FERRY & Co's
Illustrated, Descriptive Priced
SEED
ANNUAL
For 1888
will be mailed
FREE TO ALL
applicants, and to
last season's custom-
ers without ordering it.
Invaluable to all. Every one
owning Garden, Field or Flower Seeds should send for
it. Address D. M. FERRY & CO., Windsor, Ont.

266-d

JOHN S. PEARCE & CO.
OUR SEED CATALOGUE FOR 1888
SENT FREE TO ALL WHO APPLY.
SEED MERCHANTS
LONDON ONTARIO

WANTED Choice samples of Timothy, Red and
Alsike Clover, etc. Correspondence
invited. 267-a

FERTILIZERS

For Grain, Vegetables and Roots,
Fruit Trees and Small Fruits,

MANUFACTURED BY
The Standard Fertilizer and Chemical CO.
(LIMITED.)
SMITH'S FALLS, ONT.

The HIGHEST RECOMMENDATIONS from practical
men. Descriptive Pamphlet free on application.
Address orders to
R. J. BRODIE, Manager,
SMITH'S FALLS.
Or **BRODIE & HARVIE, Montreal.** 267-c

ASK YOUR DEALER FOR
STEELE BROS & CO'S
SEEDS.
FOR SALE BY
ALL LEADING MERCHANTS
ILLUSTRATED CATALOGUE MAILED FREE
ADDRESS
STEELE BROS & CO.
TORONTO, ONT.

2nd-HAND MACHINERY. Descriptive
Catalogue sent free on
application.
Address **H. W. PETRIE, Brantford, Can.** 258-y

TREES

FRUIT AND
ORNAMENTAL
ROSES
Grape Vines.

SPRING PLANTING.
We offer the largest and most com-
plete general stock in the U. S., be-
sides many novelties. Catalogues
sent to all regular customers, free.
To others: No. 1, Fruits, 10c.; No. 2,
Ornamental Trees, etc., illustrated,
15c.; No. 3, Strawberries; No. 4,
Wholesale; No. 5, Roses, Free.
ELLWANGER & BARRY,
Mt. Hope Nurseries, ROCHESTER, NEW YORK.
266-c

COLEMAN
Business
NEWARK, N. J. Open all the year. Best course
of Business Training; best facilities; pleasantest
location; lowest rates; shortest time; most highly
recommended. Write for catalogue and be con-
vinced. **H. COLEMAN, Pres't.** 262-y

CANADA BUSINESS
COLLEGE.
HAMILTON, ONT.
TWENTY-SIXTH YEAR.

Best equipped and most successful Business College
in the Dominion. Over 250 students past year.
Offers unequalled advantages to farmers' sons and
others desiring a business education. For handsome
illustrated catalogue write.
258 y **R. E. GALLAGHER, Principal.**

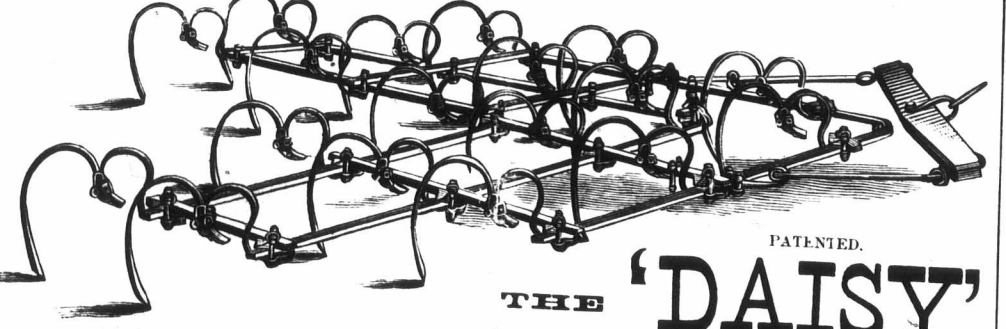
Warranted a Perfect Seeder



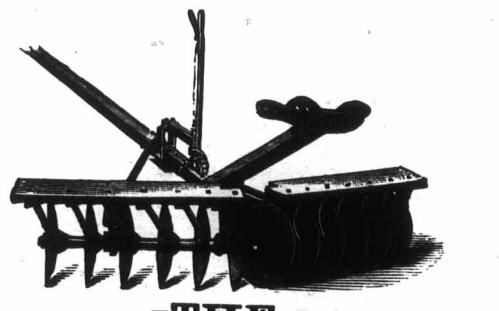
and Best Cultivator Made

THE MANN COMBINED SEEDER AND HARROW

has proved itself to be without exception the best general purpose tool ever put in the hands of the
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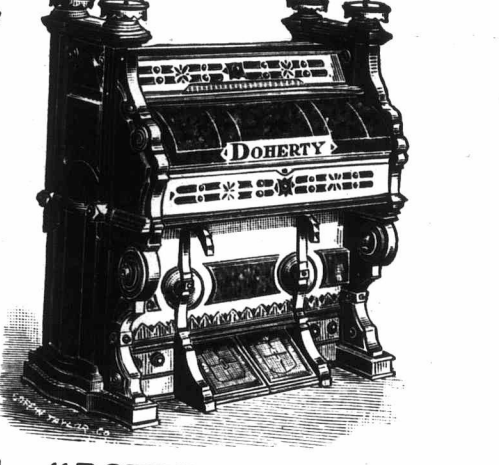
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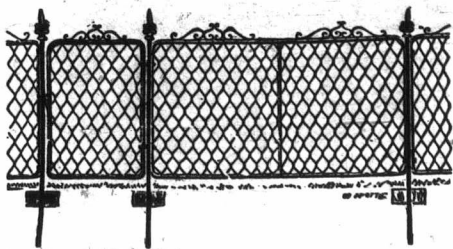


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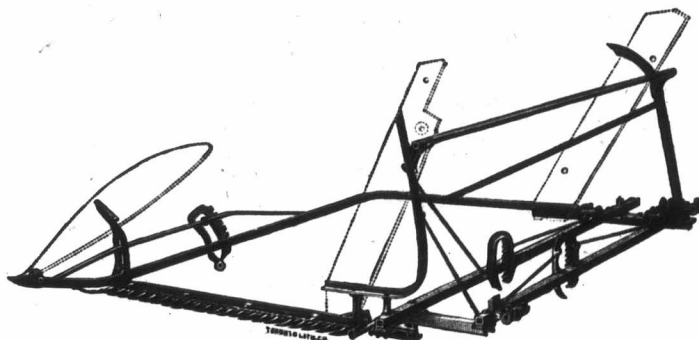


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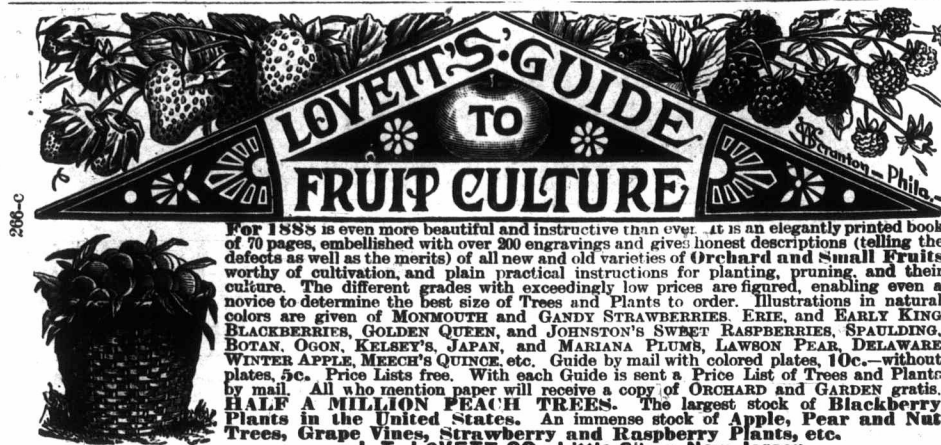
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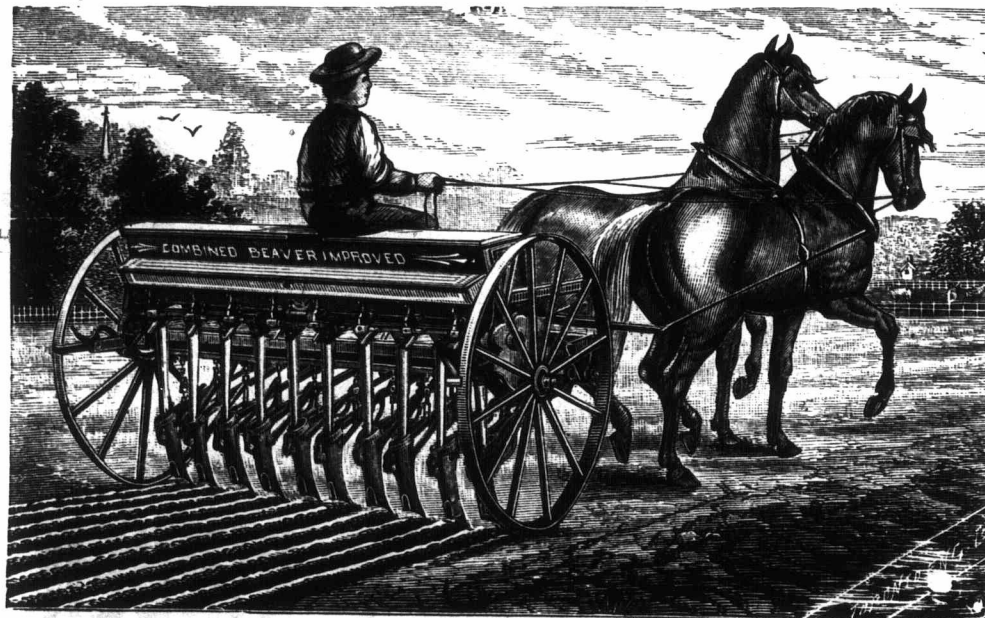
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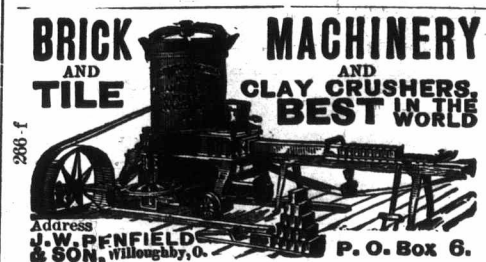
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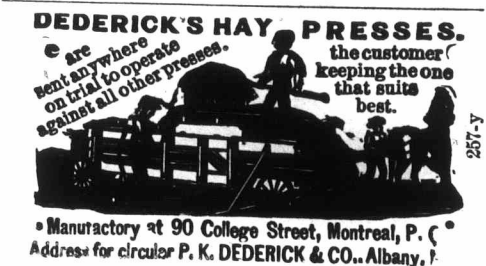


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