

Prize Food for Great Agriculture 2; Profits of Markets, 3; Cultural and Arts received, 4.

Pear Blight, 4; Watering the Window 5;

Vinegar, 5; Po-

Quality in Milk, Cattle 6; Ran- stock, 6; Diar- Renovator, 6; Draw Good Fod- 7; Cattle Dis- tle, &c., 7.

and Over-reach- animals, 7; Stable

Business in Ox-

Varied Diet for

Convention, 9;

Cockle in re, 10; Causes of Future of Farm- 10; De- Farming in the ing Wheat, 11; Certainty and Minnesota's Mar- New, 11; Natu-

12.

Fertilizer, 14; Evaporation on Soil, 14.

To Render Boots Preventing Cold

SALE.

SALE. Aged 17 JARVIS, Byron.

BULLS FOR Good pedigree. P. O.

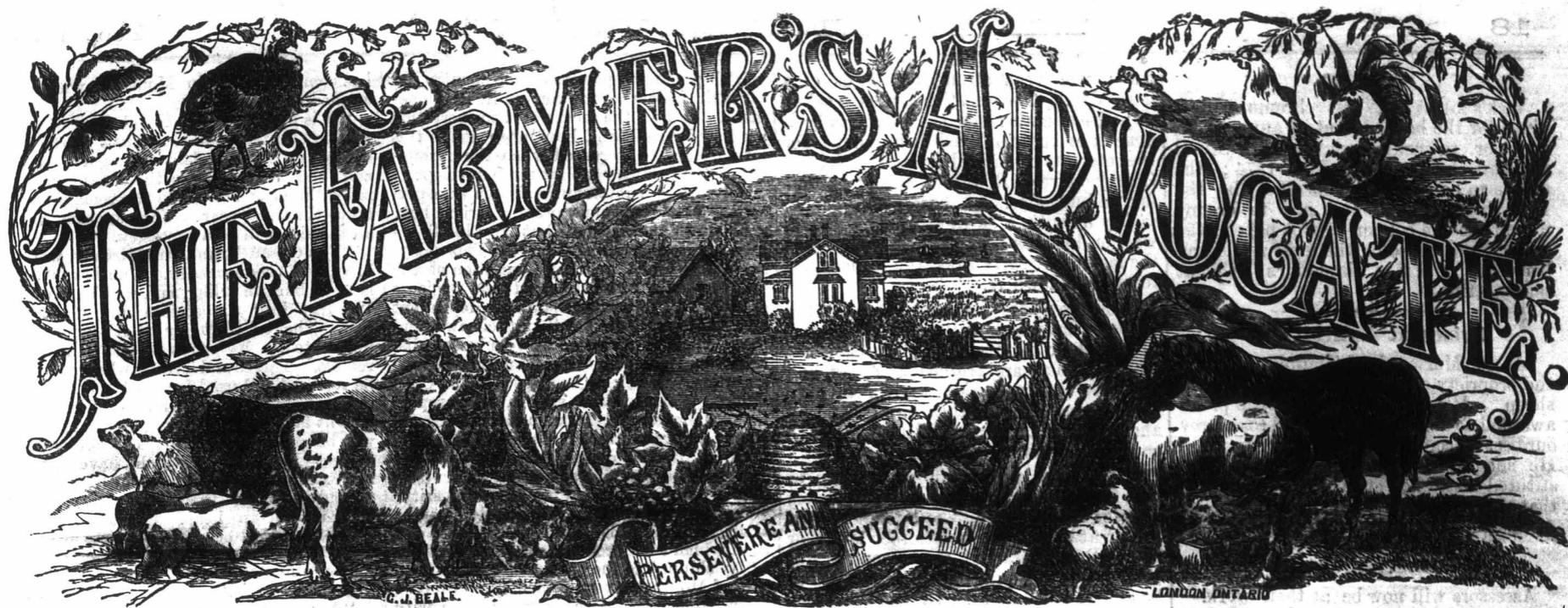
RAIL SOCIETY AND BANK.

WEST. Office.)

algamating "Free- Society have been Officers elected: - son, Esq., M. D. - Esq. (Sheriff Co, - Richard Bay- - Esq. Board of - M. P. P.; Lieut. - Esq.; A. T. - Esq. of Wright & - Jahn Mills, Esq.; - Esq.

RS and money advanced

BANK received on deposit, interest allowed at arranged for. O. A. ROE, Sec. & Treas.



VOL. IX. { WILLIAM WELD, Editor & Proprietor. }

LONDON, ONT., FEBRUARY, 1874.

{ \$1 Per Annum, Postage Prepaid. } NO. 2 { Office—Dundas-St., Opp. City Hotel. }

Granges.

This is the name applied to the new farmers' organizations. It means the same as lodges or clubs. The object of granges is to unite farmers in action for their mutual protection and advancement.—Lawyers, doctors, capitalists, surveyors, mechanics and merchants all have their organizations and accomplish much for their own protection and advancement by them. The farmers are fair game for all to prey on, and well they have been and still are being fleeced by the many devices planned for them.

The farmer stands alone; he can accomplish but little individually, but by uniting his strength with his brother farmers, he could accomplish much. In union there is strength. To make unity there must be some band of honor to combine parties together. The Masons, Orangemen, Odd-fellows and Temperance organizations all have their private bonds and secrets; they are able to use strength when required. In the granges there are secrets which are not divulged to the public; information is spread from one to the other of its members. These societies or granges admit of the farmers' wives, sons and daughters becoming members; in fact a grange cannot be established without having some ladies in it. This we consider is a beneficial regulation, as by their presence and aid greater good can be done and the granges be kept free from abuse and coarseness, and more harmony and good feeling will exist.

As in other secret societies, a fee is charged for admittance, which is expended for the benefit of the granges and to cover working expenses.

Religion and party politics are not allowed to be discussed by the granges; the members must be agriculturists. The granges have been organized in the western States for some years; we have long been working to organize farmers under the Agricultural Emporium, to work together. We have tried for many years, but have as yet only partially succeeded.

The granges in some instances propose to do more than we attempted, and in some instances not as much. They are fairly at work in the States and are rapidly increasing in strength; they at first were very weak, the existing powers were against them, the papers, merchants, middlemen, railway men and manufacturers opposed them. Despite this heavy opposition, they combined, increased, and fear nothing now; they have done good work for their members, who are enabled to realize more for their productions and procure their requirements at much lower rates, and are enabled to protect themselves against impositions, which they

could not otherwise have done. They have meetings and spread information to one another; they have happy, pleasing and enlightening gatherings wherever they have been established. They have never allowed a single grange to cease work, and all appear to be adding members and establishing others.

There are already a few granges established in the eastern part of Canada; we expect an association will soon be formed in this part to establish granges here. We do not, of course, know the secret working of the society, but on account of the good they have already done to many farmers where they have been organized, we intend to identify ourselves with them, and join the first grange organized in this section.

We advise all our readers to consider over this subject, and let us hear their ideas upon it. Shall we farmers in Canada unite in action for our mutual interests? That is the question. The following is taken from one of their circulars:

From the Official Circular of the National Grange:

In the meetings of this Order all but members are excluded, and there is in its proceedings a symbolized ritual.

The secrecy of the ritual and proceedings of the Order have been adopted chiefly for the purpose of accomplishing desired efficiency, extension and unity, and to secure among its members, in the internal working of the Order, confidence, harmony and security.

Women are admitted to full membership, and we solicit the co-operation of women because of a conviction that without her aid success will be less certain and decided.—Much might be said in this connection, but every husband and brother knows that where he can be accompanied by his wife or sister no lessons will be learned but those of purity and truth.

The Order of the Patrons of Husbandry will accomplish a thorough and systematic organization among farmers, and will secure among them intimate social relations and acquaintance with each other, for the advancement and elevation of their pursuits, with an appreciation and protection of their true interests. By such means may be accomplished that which exists throughout the country in all other avocations and among all other classes—combined co-operative association for individual improvement and common benefit.

Among the advantages which may be derived from the Order are systematic arrangements for procuring and disseminating, in the most expeditious manner, information relative to crops, demand and supply, prices, markets, and transportation throughout the country; also for the purchase and exchange of stock, seeds and desired varieties of plants and trees, and for the purpose of procuring help at home or from abroad, and situations for persons seeking employment;

also for ascertaining and testing the merits of newly-discovered farming implements and those not in general use, and for detecting and exposing those that are unworthy, and for protecting, by all available means, the farming interests from fraud and deception, and combinations of every kind.

We ignore all political or religious discussions in the Order; we do not solicit the patronage of any sect, association, or individual, upon any grounds whatever, except upon the intrinsic merits of the Order.

The most important work to be done by the order is, first, to thoroughly organize in all parts of the country. We suggest to the farmers that they take an active interest in this work, and secure subordinate granges in every township as speedily as possible.

To the Hon. A. Mackenzie and other Members of the Legislative Council: GENTLEMEN,

On behalf of the working farmers of Canada, whose interests our journal—the FARMERS' ADVOCATE—professes to represent, we would respectfully call your attention to a requirement of our thousands of readers. We have for years complained of the injustice to farmers of compelling publishers of agricultural papers to prepay single copies of such papers at double the rate that political papers are charged to pass through the post office, and even then on credit or payable by the receiver. In justice to farmers, we would suggest that agricultural papers should be charged no more than weekly political papers, namely, half a cent each. We are quite willing to pay that rate, and would rather do so than to pay an indirect tax to allow all the papers to pass free.

The large capitalists and merchants that receive daily from two to ten papers, should pay the postage on them. We make this request because we have heard that you contemplated to remove the postage from all papers. If this is done, we believe that the poor farmer, who can only take one or two papers, will have to pay a greater amount indirectly than they now pay directly, and the rich man who can afford to take many papers, receives another advantage at the expense of the farmers.

Also, we beg leave to suggest to your Honorable body the propriety of reducing the rate of postage on seeds. One pound of printed matter, in the shape of periodicals, can now be sent for four cents; one pound of seed cannot be sent for less than eight cents. Thus the farmer who requires a change of seed has to pay for its carriage twice as much as paper can be sent for. For the benefit of the farmer we would suggest that seed in small quantities should be carried as cheaply as other mail matter.

Humbly requesting that you may look favorably on the cause of the farmers, and grant to them a just and fair consideration, I remain on their behalf,

Yours, &c., W. WELD.

E. Middlesex Agr'l Society.

The annual meeting of the East Middlesex Agricultural Society was but very sparsely attended. The same directors and office bearers have been elected, with but slight change.

It is much to be regretted that the slightest attempts should be made to stifle the spread of agricultural information or anything pertaining to agriculture and its pursuits. We think discussions should be encouraged at these annual meetings, and when any new and beneficial plans are brought forward, as was the case at this meeting, by a real farmer of the name of Axford, they should be discussed and encouraged.

The subject brought forward by Mr. Axford was in reference to the best means of obtaining the highest price for beef by shipping it; also hinting at the necessity of farmers uniting for the discussion of agricultural affairs.

Such useful questions might with advantage be discussed at these meetings.—We presume these annual meetings are seldom of any more benefit than the mere election of officers, or some individual may wish to deliver himself of a little self praise, or talk against time. These meetings should encourage discussions among the members.

Apathy takes the place of activity, and objects that are intended for agricultural advancement are often overlooked, and the whole energy of the members is often displayed in getting up a species of Barnum Exhibition, more for the consideration of the dollars that can be received, than for the good that can be done.

Let us hear how your annual meetings passed off. Were there a few hours spent in discussing agricultural affairs brought forward, or were the legal regulations just filled and the officers there to elect each other?

Notice.

To our friends who are getting up clubs we are prepared to send the numbers from the 1st of January, 1874. In the March number we shall furnish you a list of some seeds that may be required by some of you. Any of you that send us one or more new subscribers during this month will be entitled to claim a package of some kind of seed, depending on the number of subscribers sent. In sending for the seed the date on which the subscribers' names were sent in need only be referred to. Send in a few new names,

A Prize.

Vick's latest and best chromo will be given for the best account of any county, city, or township annual agricultural meeting, held during Jan., 1874; the article to be sent into this office by the 15th day of Feb'y, and not to occupy more than one column of this paper; the award to be based on the most useful and beneficial report of discussions held at said meetings.

Prizes at Exhibitions.

Mr. M. Morwood, of Thorold, suggests the propriety of altering the prize list for sheep. His opinion is that the prizes awarded to shearing ewes tend to destroy our best sheep for breeding purposes.—He suggests that wethers should be substituted instead of ewes. He informs us that this is already done at many of the Agricultural Exhibitions in England.

Assessment.

Assessors will now be at their work.—It is right that farmers should pay their fair share of taxation, but it is not right for them to pay more than their just proportion. Farmers living a distance from gravel roads, railways, towns or cities pay a higher proportion than those living contiguous to localities where public money has been expended.

Often the expenditure of public money for the construction of public roads and buildings has increased the value of the lands near the central points an hundred fold, but the taxes are but very little increased. They are often held by speculators or wealthy persons who will not sell even though double or even ten times the assessed value is offered to them. We know of one speculator who had been paying but \$70 per annum for years past by having his land assessed to suit himself by the powers that were. From a change in the acts of assessors the next season he had to pay \$400 for taxes.

If people hold land adapted for building lots, and will not sell them, they should be assessed at what they would bring if put into the market. We all pay an indirect tax for all railroads and all public improvements. The lands in the immediate vicinities of these improvements are scarcely ever taxed in proportion to the enhanced value.

Farms are vastly increased by the expenditure on railways, and to some extent by the erection of public buildings, but the lands in the proximity of the centres of these expenditures are not taxed near as much in proportion to the enhanced value of them.

Politics.

You are again plunged into the turmoil of another election. Perhaps you consider, as we do, that we are having them rather often. The object of the present one is to strengthen the power of the Reformers.

It is fortunate that this election takes place in the winter, as you can all spare time to attend the meetings much better than in the summer season. By attending the gatherings held by each party you will gain much information and be better enabled to form a correct opinion of the position of the affairs of the country than by attending only to meetings held by one party. Many of our readers are strong partisans, so strong that they would not be seen at a gathering of their opponents in politics; so strong that they will not read a paper published contrary to their opinions.

To be able to judge fairly you should read political papers on both sides of the question, and attend meetings held by both parties, not for the purpose of disturbing them, but to hear quietly both sides and judge and act for yourselves.

We have listened to some of the addresses given in this city by leading legislators, and we have noticed some of the acts of both parties relative to agricul-

ture; words can often cloak deeds of a dark dye. One question we have asked at political gatherings is, What has been done or is contemplated being done for the interests of agriculturists? Neither Conservative or Reformer, at any gathering we have attended, has been able to satisfy us with a suitable reply. Much wool or dust has been thrown about, but the facts are: party first, the farmers' interests are nowhere.

The citizens are for city interests; the lawyers have and will well guard and protect their interests. They have the power; they are trained to speak, and will use every device known to gain power, and in this they are invariably ahead of the farmers. You will have enough lawyers in the House.

If you have a choice in your riding to vote for a lawyer or a farmer, by all means vote for the farmer. The hue and cry of the great sacrifice of the timber lands or of the Pacific Scandal, are second in importance to this question: Are farmers to be always ruled and used as the substance from which to extract money to build up all other interests at the expense of their calling? Vote for farmers! Vote for farmers!!

Transportation of Produce.

The profit obtained by the farmer for the products of his lands is so inseparably connected with the facilities for bringing his produce to a good market that we may consider the question of transportation and the farmer's just remuneration for his expenditure of labor and capital as one. 'Tis true that without good farming, and, dependent thereon, good crops, there must be, not a profit, but a loss, in agriculture; but, even with the most skilful and persevering application of labor, directed by practical experience, and aided by all the researches of science, and, as their natural result, the most abundant yield, there can be no remuneration for the toil of the husbandman if he have not a good market for the product of his fields, with not more than fair expenses for freight. We are now led to the consideration of this subject by the difficulty and delay in forwarding freight to the European markets. We are not in the same sad predicament as the farmers in the Western States—we can yet obtain good prices for all the products of our fields. But we know that it is the part of a wise man, when his neighbor's house is on fire, to look to his own. The European demand for meat and cereals from every available source and the abundant and constantly-increasing supplies sent to meet that demand from the vast territories of the Western Hemisphere demand additional means of transporting, first to the seaboard, and thence additional lines of steamers with far greater carrying capacity to those markets that are ready to give good prices for all our surplus produce. There would now be less of the fluctuation of prices were it possible to send forward freight to our seaboard without delay, and to forward it thence at once, on its arrival, to Europe; but, while "miles of freight" are said to be lying at one point unable to be sent forward, and freight accumulates so rapidly along the line of the Grand Trunk Railway that another line of steamers from that port has become a matter of necessity, with the existing inefficiency of the means of transportation, merchants must hold back from purchasing largely, and the produce market cannot be firm, as, under other circumstances, it would be.

The importance of the transportation question has been brought practically home to the farmers of the Western States by the impossibility of their obtaining anything like a fair remunerative price for their produce, fully two-thirds of the price obtained when produce has reached the market being swallowed in the cost of carriage. Of three bushels of corn two are required to pay freight and other market charges, and the price of one is secured by the producer.

We are not in as bad a plight as those Western farmers, but we must see to it that we suffer no inconvenience and incur no loss by any failure or delay in the carrying of our produce. Even now we require greater facilities for reaching the markets of Europe. Markets easily accessible with remunerative prices are a great incentive to improvement in industrial pursuits. To secure those facilities, let all who are interested in the

wealth-producing powers of the country use all their influence to promote its development. If now the means of transportation are found insufficient, how much must this insufficiency be increased when the resources of the country are far more developed!

Any delay or interruption in the transportation of produce must prove a serious loss, not only to the farmer, but also to all engaged in its sale and transport. This delay, amounting almost to a total cessation of the produce trade, seriously affects the business of Montreal. Her merchants are dependent on a winter outlet other than their own, and the increasing business, as a centre of distribution, demands increased means of transportation. A Select Committee of the Corn Exchange Association say in their report that, "The annual lockout by the Grand Trunk Railway of the merchants of Montreal from all freighting facilities eastward has occurred this year at a somewhat earlier date than usual, and with exceptional severity."

Montreal is merely a centre of distribution, a point near to the seaboard from which such produce may be conveniently shipped to the consumers. The measure of Montreal's requirements for shipping eastward are, therefore, in equal ratio with its receipts from the west.

The ground of complaint is simply this:—The Grand Trunk Railway Company's business is not solely a Canadian business. Its terminus is Portland—its only or principal outlet, and its freight carrying is greater from Chicago than from Montreal. Of 150 car loads per week—the capacity of the regular mail steamers of the Allan line—70 cars are reserved for Montreal, leaving 80 cars for the local stations east and the stations west. There remains to be noticed another deficiency—that in the means of ocean transportation. The Allan line of steamships during the season of transport is unable to take from Portland all the freight required. An exchange of recent date says: More cars left Gorham, N. H., for Portland on Monday by the Grand Trunk than at any time in the history of the road. Furthermore, there are a number of freight cars along the line awaiting a chance to come in, and 840 car loads here waiting shipment. The largest Allan steamers take only 100 car loads. There are 1,250 loads now on the way to Portland, this side of Montreal.

Such a freight blockade as occurs annually and as must become greater with the increasing produce trade is a great loss to all. It is one that demands the most serious consideration of the Government. The producers of the national wealth should have every means afforded them of transportation for their produce to the best markets. Our farmers and produce merchants have certainly the first claim on Canadian railways and shipping. Our demands for means of transport must increase with our increasing population and prosperity.

The great demands now made on the carrying powers of the G. T. R. may be estimated from the following extracts.

"Those who think that Portland business cannot sustain a line of ocean steamships should take a look at the Grand Trunk freight yards, which are crowded to the utmost capacity with freight bound over the water. A vast quantity has accumulated, not one-half of which the Allan line of steamers can take away for weeks to come. 750 cars loaded with freight stand in the yards, while in every freight house and shed great quantities are piled up. One half the passenger station, generally given up to the storage of cars, is filled with barrels and boxes. All the tracks in the rear of the station are cumbered with cars, while the tracks that creep round warehouses to the wharves are in a similar condition. Even the Boston and Maine freight sheds have been brought into requisition, and sixty car loads are awaiting shipment there. One hundred cars have been stopped at South Paris because there is no room for them here. 600 have been transhipped at Montreal, and 500 wait at Toronto. Nothing like the quantity has been known before. The average number of cars loaded with foreign freight which come in during a week is 600. No steamer of the Allan line can take 300 car loads, and few go above 100. So the freight constantly accumulates. It is estimated that there will be freight enough this winter to load five steamships a week, for the amount gives promise of increase rather than diminution. One Montreal house alone has 160,000 barrels of flour awaiting shipment. Since the change of gauge and the laying of steel rails freight

has come forward to Montreal with unexampled rapidity.

"It is expected that the change of gauge will be effected by next August. Forty miles of steel rails will be laid between this city and the Canada line the coming year, 60 miles the year after, and the remaining distance the third year. Then another line of steamships will be a necessity.

"The Grand Trunk are already working in view of this necessity. The burnt wharf is to be built in piling, and will be extended 125 feet into the stream and widened 75 feet. The contract for Galt's wharf will undoubtedly be renewed and the wharf rebuilt. The Grand Trunk wharves are to be repaired and used for coal wharves. In order to supply the increasing demand for freight facilities the rolling stock of the road will be greatly added to. The old and imperfect locomotives, which have hitherto been a hindrance, will be done away with. Already sixty of them have been thrown into the scrap heap. Great numbers of freight cars will be added to those already in use. Then the company will be ready to put on a line of ocean steamers should it be deemed desirable."—*Press*.

"A demand for a new steamship line is made by the Directors of the Grand Trunk Railway who desire to enter into a contract with the owners of steamships for the transportation of freight from Portland to St. John and Halifax and from Portland or Boston in Liverpool and Glasgow. The Directors guarantee to furnish cargoes for two large steamships each week between the last-named ports.—*Boston Transcript*."

The growth of American cities and the increase of their commerce has always been a matter of surprise to visitors from the Old World. Cincinnati and Chicago and other towns have grown up as if by enchantment. But the progress of Montreal has been of late years unequalled even in America. The great American towns are becoming quite jealous of her unexampled progress. We mark her enterprise with pleasure, not only as a Canadian city, but also as affording us an outlet to the best markets. On the Canadian export trade the Montreal *Witness* says:—

"The exports of grain this year have been 8,060,003 bushels of wheat, 3,520,000 bushels of corn, 322,000 bushels of wheat, and 288,000 bushels of oats. The exports last year were 3,620,000 bushels of wheat, 7,467,000 bushels of corn, 1,063,000 bushels of peas, and 406,000 bushels of oats—the total for 1873 being about 12,700,000 bushels, against 12,450,000, or an increase of 250,000 bushels, in spite of the early close of navigation. To this increase, also, must be added the increase in the amount of flour, 130,000 bbls., equal to 600,000 bushels of wheat. These figures show that the opinion expressed by some of our leading shipowners last year, that the business of that year was not likely to be repeated, was a mistake, and that, instead of diminishing, there has been a step in advance, which, if not so large as that taken last year, is still very encouraging, and gives us good ground of hope for the future, more especially as we have now much reason to believe that canal improvements will be pushed vigorously. The increase in the shipments of butter and cheese has been more important, and a gratifying feature in the trade is the good reputation which they have acquired in the British markets—Canadian cheese, we believe, ranking above American, and butter taking a high stand. The amounts exported are 154,000 packages of butter this year, against 116,500 last year, and 390,300 boxes of cheese this year, against 208,450 last year."

A number of the leading merchants in Montreal are preparing to take a more active part in the export trade. They are entering with their accustomed energy into the Transatlantic steamship business. They are now building one vessel, a pioneer of the line about to be established. This will, it is said, be strictly a Canadian enterprise; its vessels will be registered in this country, and reckoned part of the marine of Canada. While conducting to the credit and wealth of the city carrying on this most important business, the additional means of transportation thus afforded must inevitably tend to agricultural prosperity.

RURAL AND DOMESTIC.

Hogs that run in an orchard pick up the windfalls and occasionally good apples never have the hog cholera; which is another proof of the value of a fruit diet.

Short-Horn

This association and fifty members of the United Horn breeders' association; an interest to be improved far the few. Breeds that only from port to realize feeding, and every hand herds of old sive has been are the old forced to give We give to dress delivery, by Dr. on "The best in our next Prof. Miles

THE Dr. Sprague a paper on the horns, from "Our skill favorite breed has received laughs at our wild animals of man reach flesh of the same del years ago. different. Beef on his self bred the taken, and mellow under whether the

"While our show ring, tain favorite are too much dress. If the dor, no mat neath.

"Through between the these, there cellular tissue made up of mutations o The extent varies very Where abund digestion, a formed carcass if with these handle melle

"Now the mals that h tender flesh proved so block.

"We con pecting to s in the prog this fattening transmit it. dark unsav all the prog the same, u new crosse flesh.

"Many well marble is equal to in place of should be from every practicable, when no lon she leaves thought giv color and co

"If I we men should that we gre the size of to approach little Kerry not avail. We are a fa us restive, penny, and this with fancy at we have no

Short-Horn Breeders' Convention at Cincinnati.

This association, comprising one hundred and fifty members from the several sections of the United States, all of them Short-Horn breeders, is one of considerable importance; and their convention is of no little interest to stock breeders. The raising of improved farm stock is not now confined to the few. Breeders and graziers have learned that only from well-bred stock can they export to realize any considerable profit from feeding, and the consequence is seen on every hand in stock far superior to the herds of old-time stock owners. So extensive has been the change, that in few places are the old stock to be met with, being forced to give place to grade cattle. We give to day an extract from an address delivered at the Cincinnati Convention, by Dr. Sprague, of Des Moines Town, on "The best colored cattle. We purpose in our next issue to take up the address by Prof. Miles on "In-Breeding."

THE BEST COLORED CATTLE.

Dr. Sprague, of Des Moines, Iowa, read a paper on the color, contour, etc., of Short-horns, from which we extract the following:

"Our skill in fashioning the contour of our favorite breed of cattle is entitled to, and has received the highest praise, but nature laughs at our efforts, for, going back to the wild animals cited, as far as the knowledge of man reaches, the texture and flavor of the flesh of the deer has not changed. It affords the same delicious roast as it did a hundred years ago. No less flavor, no higher, no different. But who, when he takes a cut of beef on his plate, though he may have himself bred the animal from which it was taken, and have declared the beast to be mellow under the touch, can fully appreciate whether the morsel will be savory or not.

"While our efforts to appear well in the show ring, and to possess specimens of certain favorite families, are commendatory, we are too much led away by the surface of things. The demands of fashion in cattle are too much like the demands of fashion in dress. If the surface captivates by its splendor, no matter how much shoddy is underneath.

"Throughout the system, under the skin, between the muscles, and under the fibres of these, there is distributed what is termed cellular tissue. As its name implies, this is made up of cells, and in these cells the accumulations of adipose matter is deposited. The extent to which this tissue is found, varies very much in different animals. Where abundant, and associated with strong digestion, active absorbents, and a well formed carcass, flesh is taken on rapidly, and if with these combinations the skin be pliable and soft, the animal will almost invariably handle mellow when in fair flesh.

"Now the common notion is that all animals that handle mellow have high-flavored, tender flesh. This is an erroneous idea, proved so every day upon the butcher's block.

"We couple two animals together expecting to secure well formed, ready feeders in the progeny, and if the parents possess this fattening tendency they will generally transmit it. But, if both the parents have dark unsavory flesh, they and their get, and all the progeny after, for all time, will have the same, unless modified and improved by new crosses having light colored savory flesh.

"Many Shorthorns carry light colored, well marbled, firm flesh, which, when cooked is equal to the flesh of any of the smaller, but in place of tests being made in all herds as should be done, by slaughtering off-shoots from every animal in the herd, so far as practicable, testing the meat of the old cow when no longer of value, as an index to what she leaves in the herd, there is hardly a thought given to this, and we propagate for color and contour.

"If I were to advise, and this body of men should indorse the recommendation, that we greatly, or even materially lessen the size of our Shorthorns, aiming thereby to approach the quality of meat found in the little Kerry cow, this recommendation would not avail. The popular demand is for size. We are a fast people, and slow growth makes us restive. We like to turn an honest penny, and turn this quickly. We can do this with Shorthorns, and please our fancy at the same time, but we have not found that we can do this with

any other breed. Hence our policy should be to breed for exquisite quality of flesh, thus enabling us at all times to offer our friends a savory roast of steak, as well as to treat them to the finest view that can be placed before a man of expanded ideas, viz.: a collection of representative Shorthorns."

THE SUPPRESSED PAPER.---A paper was contributed by Mr. Matthews, of Virginia, to the Convention and by them suppressed. The National Live Stock Journal in giving a very full report of the proceedings of the Convention, says:--"The writer was not giving his opinion on this point, but reciting facts and circumstances which occurred independently of his agency. Doubtless the convention, composed of average breeders, thought the circulation of such a paper would disparage the value of their cattle; but those gentlemen should have considered that it was the facts and prices which formed the basis of the paper, and not the paper itself, which tended to the disparagement of their cattle." The paper would not be generally interesting to our readers. The conclusion the writer arrives at is:--"As far as the interests of the Short-Horn breeders are concerned, I don't think they would have suffered had the breeders let these Duchesses be packed off to England at the prices they sold for."

The Chinese Northern Yam.

China is a country we know but little about; it supports a denser population than any other country. The northern part is very similar to ours in regard to temperature, being quite as cold as with us.

A Dr. Prince has brought to this country an entirely new plant to us, bearing the above name. One of our readers residing near Belleville has forwarded us one of the yams, 13 inches long, weighing 1 1/2 pounds.

The tuber is a small round ball of a dark color, and the sets or cuttings are about an inch and a half long. The following are Mr. Embury's remarks regarding it; we have procured a few sets and tubers, and purpose giving one of each to any person that will send us one subscriber. If the few we have are not all taken up by this means, other parties may be supplied with a few.

It is our intention to grow some ourselves this year; we only give you the information we receive and the opportunity to test for yourselves. If they should at all approach Mr. E.'s sanguine expectations they will be a great advantage to the country.

CHINESE NORTHERN YAM.

(First introduced in the States by W. R. Prince, M. D., LL. D.)

This remarkable plant is a native of northern China and Tartary, and the northern limits of Temperate Zones. Having been the first to introduce this most important of all esculents to our country, and to urge its adoption by my countrymen, more especially of the Northern, Eastern and Western States, I have declared in my previous publications that when I shall have passed from earth I solicit no other boon from my country than the recognition of whatever service I may have thus rendered my brother man by the introduction of this plant as a sovereign and permanent provision of cheap and nutritious food for the poor, and as an absolute preventive of famine throughout all time.

When making our first experiment with his esculent, some of our cultivators having heard of the Chinese practice adopted in extreme cases of scantiness of land, when trenching four or five inches is pursued, assumed therefrom the erroneous idea that this was the necessary culture required. Nothing could be more erroneous. The usual growth of the root is 10 to 12 inches in length, and such is the average crop in ordinary farm culture. An extra growth to 15, or even 20, inches may be forced by deeper culture, and more deeply enriched soil. But we now have eight varieties of every form--some round, some oval, others short oval, others a longer oval, and then we have oblong varieties that average 5 to 6 inches in length, and others averaging 7 to 8 inches, and longer ones of 10 to 12 inches in length. They vary in color, several varieties having snow white flesh, others straw color, yellow, and others of a reddish tinge. Thus every cultivator can choose to suit himself, the same as with potatoes. In the vicinity of Pekin, 40° north, they cultivate more than fifty varieties, which are particularly described in their agricultural books. These

improved varieties have not been obtained by chance, as our seedling potatoes have been, but societies had devoted their special attention to the attainment of superior improved varieties for ages before Europe had emerged from its barbarism. I have announced the Chinese northern yam to be the most important esculent food for man which God and nature in their benign provision for our race, have planted upon our globe. I make this assertion on the following facts. No other plant which has been proposed as a substitute for the potato has presented claims meritorious and so well entitled to success as this, whose various estimable properties place it among the most desirable acquisitions of the vegetable department:

1.--Its hardiness and capacity of withstanding the cold of the most frigid climes during the winter in the open ground.

2.--Its facility and simplicity of culture, so readily comprehended by any laborer, and its adaptation to such a variety of locations and seemingly all soils, but more especially to such light and hitherto neglected lands, as have been deemed useless for other agricultural purposes.

3.--It productiveness and cheapness in which it far exceeds the potato or any vegetable. When its culture shall be properly established the crop of the long varieties will not be less than 600 to 800 bushels, and of the round and oval varieties is 400 to 500 bushels to the acre and still more is ardently and confidently looked for. Its propagation is more rapid than that of any other esculent, and it is hereby proven to be, in proportion to its actual value and importance, the most cheaply produced of all food.

4.--The nutritious and farinaceous qualities comprising the essential constituents of an excellent of the alimentary character. It will fill the positions of both meat and wheat as aliment; the flour made from it surpassing in pure whiteness, farinaceous excellence, the best obtained from wheat which it is destined hereafter to come into successful competition on account of its cheapness. It also possesses a peculiar distinctive character, superior to all other vegetables from its combination of nitrogen, the same constituent as is existent in meat, which thus becomes blended and assimilated with properties the same as are found in the best wheat flour, in corn starch, and in milk. It therefore presents the distinctive characteristics of substances essentially alimentary, and meat as food is rendered entirely unnecessary.

5.--Its unexceptionable excellence of flavor and freedom from any sweet, acid, or insipid taste, as is the case with most other prepared substitutes, and its congenial accordance with the entire human organism. Some contend that its flavor is a combination of the best potato and arrowroot.

6.--Its long keeping and freedom from all decay, as it never rots in the ground or out of it; it retains its excellence for more than a year, thus rendering it of prominent importance under any contingency, and especially so in long sea voyages, and as its character is antiscorbatic, it furnishes a preventative against scurvy and similar diseases. I have myself preserved the roots in an ordinary cellar, without any extra care, until June of the second year, when they were firm and sound, free from all sprouts, and in perfect condition. They may be kiln-dried, and thus preserved for the various uses for an indefinite time.

7.--It is a purifying and highly nutritious constitutional food, beneficial to the mind as well as to the body, and capable of developing the muscular power of man to its fullest capacity.

8.--The roots being perfectly hardy the crop, when desired, may be allowed to remain the entire winter in the open ground, or may be buried in burrows in autumn, ready when required for winter use.

CROP FROM TUBERS.

The growth of vines is similar to the sweet potato, and run over the ground or ascend any poles or bushes placed for the purpose. Each tuber of the long varieties produce one straight root, differing in length according to the variety, some 10 to 12 inches, others 12 to 18 inches and the round, globose and oval varieties produce roots of their respective character. These roots usually weigh from 8 oz. to 1 1/2 and 2 lbs. each. The new tubers are produced at the axit of the root, and when the plants are well care 1 for they average 20 to 30 to each vine, and 10 ten more. The blossoms are very diminutive but fill the air with delicious cinnamon perfume, and the vines are consequently very often trained on piazzas and trellises as valuable appendages. Some persons place a pole about 5 feet in height to each and train the vines thereon, but in general they allow them to trail on the ground the same as the sweet potato.

I have been cultivating the Chinese Yam since 1870. I find it to be the best substitute for the potato that man can cultivate. As soon as the frost is out of the ground in the spring the roots and tubers may be planted. Last spring I planted in drills about nine inches apart, and I find they can be planted

six inches in the drill and do well. They don't receive any nutriment from the atmosphere. It is from the earth they get all the nutriment they require. There is not any trouble with them after they have been planted. All there is to be done is to keep weeds down; the time for digging is about the last of October, the nick is cut off and put by for planting. The nicks must be cut in small sections, about 1 1/2 inches in length, they must be laid by for 48 hours, so that the sap will pass off. Plant in drills 2 inches deep, and the tubers 1 inch deep and 5 inches apart in the drill.

GEORGE EMBURY.

Wild Oats.

ESSAYS BY PRACTICAL FARMERS ON THE BEST MEANS OF EXTERMINATING THEM.

Written for the FARMER'S ADVOCATE.

In the January number of the FARMER'S ADVOCATE, the Editor invited contributions from farmers, detailing their experience in freeing their farms from "wild oats," a weed spreading rapidly in many sections of the country.

The essays received in reply to our invitation are concise and practical, containing in little space much valuable knowledge, not learned in colleges, or gathered from books, but the result of their own observation. The contribution to which the first prize has been awarded is by Francis Squires, Leeds Co., Megantic, P. Q. The decision was only arrived at after much careful consideration of the merits of the twelve essays contributed. To Mr. Squires contribution the prize was awarded, as his method was adjudged to be the most thoroughly efficacious, though others entered more fully into many details connected with the plant. It was deemed advisable that a second premium also should be given, and it was awarded to Richard Moore, Fullarton.

These two essays we publish now; and give a review of the others, arranging the copies systematically, so as to present to our readers the views of the writers in detail, and at the same time so ordered, and in such bright space as to give at one view the essence of the whole.

On this subject G. Davis says:--"Many imagine that it grows many years from the same root; but this, from considerable experience I believe to be erroneous. Two years I consider to be the utmost extent of its existence. It may be said in reply to this that if the plant lived two years it would not be so hard to destroy; but when you come to consider the fur jacket, thick skin and small, fur-covered kernel, it will be easily understood that they may lie for a great length of time, especially in a dry season, on, or in, the ground without either germinating or decomposing." In the prize essay published--No. 2.--the seed is accurately described, with its ripening, and means of propagation, showing how readily it is propagated and leading to the inference that even if it be a biennial or only an annual, the task of complete extermination is no easy one. N. Dickie in his essay speaks without hesitation of its being an annual, and, in this respect, "different from its brother nuisance the Canada thistle." The other essayists, though not in direct terms calling it an annual, in speaking of its destruction, treat it as such, referring to the extermination of the seed, and not at all referring to the root.

It is spoken of as not indigenous to the country, and only of late attracting the attention of farmers. One of the essays published speaks of its introduction from Germany. It is a known fact that some of the weeds, as well as most useful vegetables, now seeming from universal growth throughout the country to be indigenous, have in reality been introduced by European colonists, and are strictly speaking exotics.

LONGEVITY OF THE SEED. Ill weeds grow apace is a familiar proverb; and not only is it true, but also the seeds of many weeds possess an extraordinary tenacity of life and in this the Wild Oats seem to be not a whit behind the other unwelcome occupants of the soil. Some extracts on this subject from the essays received will be sufficient to make known the experience of the tillers of the land:--"As soon as the wild oats are fairly headed, the top oats ripe, and before those lowest in the ear are out of their milk, about a third of the grains are dropped and ready to grow the first year; the second year the next third, that is, those on the middle of the ear; and the third year will grow the remaining

ing humbug would on of trash of which y would pay their as facts will prove, receipt not only ats, but everything the soil. A motify any sane man which would not be to them a crop of nothing could be Mr. E., I am pre- testimony that a success.

HARD MOORE,
Fullarton.

niggardly! Don't mind a dollar; any one number may more than pay you. Support your paper well and it may soon come out as a weekly newspaper, fighting the farmers' battles all over the country. Do this and you will not only make yourselves felt, but you will be respected and courted; your voice will be heard in the halls of Legislation; you will no more be the "rurals," the "bucolics," the "bush-whackers," but you will be the great country party, influencing and ultimately ruling the affairs of the country. But don't forget that others have rights and claims as well as you.

I have now shown how you may get into Parliament, and in future letters I will show what should be done there. My next will be on the relations between farmers and lumbermen.

Yours truly,
P. HARDING.

Cardiff, Dec. 24th, 1873.

CROPS IN MANITOBA.

ONANDAGA, July 5th, 1874.

I am going to move to Red River in the spring. I was out there this summer, and I like the country well. The crops were good. Wheat averages from 35 bushels to 50 per acre. Oats average from 60 bushels to 80. The potato crop was splendid. I saw potatoes that weighed 3½ lbs. each and onions which measured 18 in. round. I think flint is good for the North-West.

DANIEL OLIVER.

W. A., of Pigeon Hill, asks how to kill lice on cattle. We have given such information previously. We now give you a good tried plan. Wash the cattle with soft soap down the back. If they are not all killed by the first trial, repeat the application. Another plan is given by a correspondent in this paper.

PARMA, Jan. 6, 1874.

SIR,—There is one point I would like to see you advocate in your paper, and that is drains through or across several lots to an outlet in a river or bay, which the farmers will not open unless compelled to do so. By the Government you could induce the Minister of Agriculture to frame such a law that every farmer had to dig his part or the Government would do it for him, and make him pay for it—the said drain to commence at the outlet and from thence for the length required. Such a drain would be a great benefit to a large number of farmers in Canada. These drains will not be made by the Township Councils, particularly when the said drain runs through two townships. If there was a law that compelled every farmer to do his share or pay the full value for digging it then there would be no call for boring with the augur in meadows where sour grasses grow. Hoping that you will take this matter up in your valuable paper,

I remain yours,
JOHN McMURREN.

There are two sides to this question, and we therefore ask our readers to give us their ideas on this subject.

WHITE PROBSTEIER OATS.

I have raised probsteier oats for three years. The first year I sowed one bushel and a half by measure, and harvested 41 bushels, weighing 40 lbs. to the bush. The second year I had (as near as I could judge without actually measuring them) about 70 bushels to the acre. Last year they were sowed on sod, and the grubs near ate them all up. Still they yielded about 40 bushels to the acre. With me the straw has been short and stiff, always standing up first. Their bad qualities, if any, are that, being large and plump, the machine hulls some in threshing, and, if not cut till dead ripe, they shell some. I sold some to a few of my neighbors last spring, and they were well pleased with them. One of them who raised other oats in the same field told me that he thought the others were as good as the probsteier until he came to harvest them. Then he saw by the way the heads of the probsteier sheaves tipped down that they were far the best. He has not threshed them yet.

A. Yale, Danville, wants information as to how to take care of young fruit trees, what time is best to trim, &c. We have already given information upon this subject in our columns, but, if any of our subscribers has something new to say upon the subject, we will be happy to insert it in answer to Mr. Yale's inquiry.

and let the convention appoint a committee to draft by-laws to be guided by. We want the movement to spread all over the Dominion, so that the farmers may be protected. We refer Mr. Mackie to our remarks on granges in another column.

Mr. John Mans, Paris, asks for information about orchard grass, when, where, and how to sow, and price and where to obtain it. Sow it at the same time in the spring as timothy and clover, on good land well prepared, the richer the better. Sow about 7 lbs to the acre, as the seed is light. The price is \$4 to \$5 per bushel, which weighs 14 lbs. It can be had of all the leading seedsmen. If we can procure a genuine good article we will supply it. Some of our correspondents who have had experience with this grass might give us fuller information.

Mr. Alvin Wooley, of Simcoe, complains that our correspondents, in reporting their crops and experiments, do not give enough details about their method of cultivation, soil, &c. We are thankful for the correspondence we receive, but will be pleased if Mr. Wooley will favor us with communications of the kind he mentions.

Mr. S. Kerr says the cheapest and best wash for apple trees is common white-wash. Apply once every two years. It will keep them clean. He prepared to wash them in June.

SOWED CORN.

To the Editor of the Farmers' Advocate.

It is not my intention at this day to speak of the propriety of every farmer raising sowed corn, neither the kind, or time to sow, or quantity, &c. All has been ably and instructively set forth in the pages of the ADVOCATE in times past. But I merely wish to give my experience in curing it for winter use. As, until the past season, cutting and curing what I did not want to use green has been a slow and unsatisfactory process. Last September I took one of the Johnston reapers from the establishment of Brown and Patterson, Whitby, raised the rakes a little higher than usual for grain, and let the machine run every other rake, threshing off a sheaf which made a nice-sized bundle. I bound them with some of the same stalks, and let them in round stocks of 10 or twelve sheaves, with a band of stalks around them. In that position they stood until cured sufficiently dry to pack in any sized mow without injury. I consider that cutting them with a machine overcomes the greatest obstacles heretofore felt in the way of raising large quantities for winter use. My corn was sowed with a broad-cast seed drill—one half the field with common yellow corn; about 4 lbs. per acre. It grew about five or six feet high, with fine stalks. The remainder was sowed with Ohio corn without changing the machine. It was rather thin, and grew very tall—in some places from 8 to 10 feet high—still the rake placed the bundles out of the way for passing next round without much tangling.

PLATT HINMAN,
Pres. Haldimand Agr'l Society.
Grafton, Dec. 24, 1873.

FARROW WHEAT.

DEAR SIR,—I see by the ADVOCATE that the Farrow wheat as well as other spring wheats are inferior this season. Now, I have grown Farrow wheat for the last two seasons, and it has done splendidly with me. It has doubled the yield of the Scotch or Fife wheat sown on the same land.

HENRY G. SMITH.

CORRECTION.—The Typos made Mr. Cook say in the January number that he sowed three pounds of Farrow Wheat and reaped forty-three bushels, which ought to have been pounds.

NORTH BRUCE.

I shall continue the ADVOCATE, as it is a paper independent of politics and well worth the money.

The crops in this county were over an average, excepting hay, which was rather light; fall wheat was uncommonly good, from 30 to 30 bushels per acre; oats 40 to 50; peas 25 to 35; spring wheat 20 to 30; potatoes were the best I have seen in Bruce, the Early Rose, Early Goderich and Cups were

very heavy crops, I had one quarter of an acre and had 120 bushels. I intend to plant an orchard this spring, and should be much obliged if you would give me a little information on the adaptability of certain soils for certain kinds of fruit. My soil is a strong clay, but naturally dry where I intend the orchard to be. I should be glad to have the names of about half-a-dozen of the best varieties of apples, also a few of the best pears, plums and cherries. Would quinces grow on clay? What kind of nut trees would grow on clay soil? I should think nut-bearing trees would answer for shade trees, and answer the double purpose of use and beauty. Evergreens do not answer very well here, these two or three years past they have nearly all died. Are there any kinds of evergreens that will stand drought?

JOB CARR.

Much obliged for your expressed good opinion of the ADVOCATE, my best endeavors shall not be spared to make it continue to merit the name.

You say where you intend to plant your orchard that the soil is a strong clay, but naturally dry. Very, very few soils, especially clay soils, are well adapted for an orchard without the assistance of draining. For the first few years, perhaps, the trees would not indicate this upon your soil, but by-and-by, when they have become large and strong, extending their roots down into the sub-soil, it is most likely, that to an experienced eye, both the trees and fruit would say, "There is something wrong at the foundation." The following list of apples are all standard varieties of established reputation, the first two summer and fall, the rest winter:—Early Harvest, St. Lawrence, Baldwin, Rhode Island, Greening, American, Golden Russet, Ribston Pippin, King of Tompkin's County, Northern Spy. To the last named there is but one objection, which is, that it takes a long time to come into bearing, but that can be obviated in a great measure by judicious root pruning to check its rapid growth. Pears and plums both like a stiff soil, of pears we can safely recommend the following:—Bartlett, summer; Duchesse de Angouleme and Flemish Beauty, fall; Beurre Diel, Lawrence and Vicar of Winkfield, winter. Plums:—Lombard, Washington, Yellow Egg and Duane's Purple, all first-rate. Cherries:—Eton, Yellow Spanish, Napoleon Biggareau and May Duke are good. Quinces will do well on clay soil well cultivated, Apple or Orange the most desirable variety. Most of our native nut-bearing trees seem to prefer a rich, alluvial soil, except it is the Chesnut, which is more at home on a dry, sandy or gravelly soil, certain it is that it does not appear to grow more rapidly on the richer than it does in poorer lands. The Butternut, when young, makes a very handsome shade tree, while the Chesnut, equally as prepossessing in its appearance, has the advantage of its fruit being more valuable as an article of commerce. The Scotch Pine, which constitutes a large portion of the forests of Sweden, Russia and other countries in the north of Europe, thrives in the most dissimilar soils, is said to be most at home on barren, rocky hills; he should be a good customer to stand drought, but is very chary of being moved unless when very young. The Norway Spruce is our favorite, however, and acknowledged by all competent authorities to be the best tree in the greatest variety of situations, where a wind break or shelter is required. By mulching the surface of the ground about the trees three or four inches thick with rotten leaves, until they become sufficiently large to shade their own roots, you would remedy the evil you complain of. Perhaps a large white grub which eats the bark off the roots of Evergreens may have been the cause of your trees failing to live.

A. D. Sutherland, Lakeside, say Golden Drop wheat has done best with him. He asks if it is the same as the Morden. We cannot tell him without examining the heads of each.

Mr. John Mackie, St. Vincent, says:—We are forming a Farmers' Club here, but find ourselves at a loss from want of proper regulations. Please send us some of the by-laws of Farmer's Clubs in working order in your part. We intend to hold a convention and send two delegates from each club to it,

We thank each for their correspondence, but cannot insert all this month. We will insert all that is left over and of sufficient value in my next issue, and hope none of you will cease writing, and that more may take their pen to serve the general interest of the farmers.

Garden, Orchard & Forest.

TO DESTROY SQUASH BUGS.

This insect brings to grief many a fine bed of squash plants. The following remedy will prove effectual in destroying them. Take a quantity of poppy leaves, stalks, bulbs, &c., or any part of the poppy and steep in water either cold or hot; and if poppies are not to be had, take a small quantity of opium and dissolve it in water. This liquid supplied with an exceedingly fine sprinkle to the vines once or perhaps twice, will cause the bugs to leave the plants, never to return.

The same liquid applied with a squirt-gun to apple trees, effectually prevents the ravage of the apple tree worm. An ounce of opium would probably be sufficient for a large orchard.

LIME FOR APPLE TREES.

A Mr. Miller referred to the effects of lime on his orchard, and said: "I have found nothing better than lime in producing good apples; we have lime and gravel soil. Newton pippins planted in 1863; in twelve or fifteen years, the apples got scabbed, and I threw lime under some trees, and the apples growing on those trees are to-day as fine as any apples I have ever seen. I scatter a bushel of lime under a tree in the spring—some other varieties do not require so much. The apples are as good as 20 years ago when I used lime. My trees had deteriorated, and I used lime, and they are as good to-day as ever. I always keep plenty of hogs in my orchard—they pick up the insects. Barn yard manure tends to introduce insects, and make them breed more rapidly, and hence should not be used."

DETERIORATION OF APPLES.

M. M. Bateman at the late meeting of the Ohio State Horticultural Society of which met at Mansfield on the 10th of December, said: Our orchards do not average 50 bushels of really good apples to the acre. What is the cause of this? First, the apple worm does more mischief than anything else. Secondly, smutty fungus attaching itself to the apple stops its growth and renders it unfit for market use. These are growing on us. We are likely to suffer more and more as the orchards grow older, and the young orchards are damaged by proximity to old orchards. We can only look to newer portions of the States for good fruit. If I were looking for land on which to grow apples, I would go to a new country. We will be driven to the West for good apples unless we discover some means of checking the nuisances. We have discovered only one practicable and effective method of checking them, and that is by keeping hogs in the orchards. The hogs root out the worms from the ground and destroy them. I have known orchards that were prevented by this cause from bearing any good apples which afterwards bore good fruit, this cause being removed by this method.

SYSTEM OF FARMING IN GUERNSEY.

In Guernsey, as in Jersey, a very "high" system of farming prevails; great use is made of sea-weed as manure, both in the direct application as it is taken from the shore, and in the use of the ashes of that which has been dried for the use of fuel; deep plowing—for the parsnip crop—puts the land in an excellent state of tilth; and the considerable population of the towns afford an abundant supply of stable manure. The result of all this is a degree of fertility that is equalled in America only in the market gardens; and the farmers of these islands find, as we should under similar circumstances, that the garden system of farming is the most profitable.

The lesson which they teach is that "a small farm well tilled" is worth much more than a large one half tilled.

A blacksmith has succeeded in changing the gait of a pacing horse to that of a trotter by simply fastening an extra pair of shoes, heavier than usual, for the fore feet, whenever he wants the horse to trot and taking them off at all other times. The sudden change of weight on his fore-feet forces the horse to change his gait,

so the mere points while good milkers...

INFLUENCE OF LIGHT ON MILK AND CREAM

In responses to inquiries, Mr. L. B. Arnold, Secretary of the American's Dairymen's Association, sends the following to the Buffalo Live Stock Journal...

While some organisms of a peculiar nature flourish better in the dark than in the light, the general effect of light upon living organisms, both animal and vegetable, is to encourage growth and perfection of development...

FEEDING.

A farmer, who has reputation as a makes the position...

NO GOOD FARMING WITHOUT STOCK RAISING.

J. B. Lawes, the great indefatigable experimental farmer of England, gives it as his decided opinion that the fattening of animals on the farm is the only legitimate and profitable farming...

gutters, and after milking, all the droppings are removed and the floors and gutters are flushed with water...

SUGAR BEETS FOR FATTENING SWINE.

Jonathan Talcott gives a statement in the Boston Cultivator of an experiment performed on a Suffolk pig where sugar beets were largely employed for fattening...

ORIGIN OF THE BERKSHIRES

The following account of this breed we extract from the American Agriculturist for 1872:— All who pretend to any positive knowledge on this subject (in England) with whom we conversed, agreed that this breed of swine originally was a large and rather a coarse animal...

EUROPEAN AND AMERICAN DAIRY FARMING, FROM AN AMERICAN POINT OF VIEW.

Importance of clean milk.—In my report upon English Dairies in 1866, made to the American Dairymen's Association, I called attention to the character of English milk as cleaner than ours...

prolific breeders, the best of nurses, of thrifty growth, early maturity, easily kept on grass and carrot roots, or bran and brewers grains, and will fatten at any age...

NOVA SCOTIA LIVE STOCK.

The Sun of Truro, N. S. says, a pair of cattle weighed a few days since in that town are probably the largest and fattest cows in Nova Scotia. They weighed 3,240 lbs. of the old breed...

WASHING BUTTER.

A very large majority of butter makers wash the butter; a majority do not, and claim that washing is not only unnecessary but injurious. Good butter is made by some of each way of thinking...

SELECTING A BULL FOR BREEDING GRADE CATTLE

A successful breeder and feeder of grade Short-Horn cattle recently incidentally expressed to us his disagreement with the common impression that a coarse, rough Short-Horn bull was not only "good enough" but well adapted for use on common or grade cows...

It does not follow that farmers should pay large prices or look for fashionable pedigrees, but they should look for good form. We do not undervalue pedigrees and would look carefully to this, but no pedigree is sufficiently good to cover glaring defects in form...

HOW HE DID IT.

We know a farmer, now in comfortable circumstances, who, beginning with a few cows and constantly increasing their number, paid all the expenses of running his farm, all grain bills and brought up his farm to a splendid condition solely from the profits of his milk...

the increase of their manure will more than compensate for the extra labor employed in soiling.

Two smart men can do all the work and not be over driven at that. He sells his cows to the butcher when they have reached the minimum product of milk that he counts on...

EXPERIMENTS OF STEAMING FOOD FOR CATTLE.

In that excellent little work "The Illustrated Annual Register of Rural Affairs," published by Lutero, Tucker & Son, about 20 pages are devoted to the experiments of Wm. Bennie, P. A. Avery and others, on steaming fodder, mode of feeding, plan of stables, &c., from which we make extracts on the use of steamed food and the mode of manufacturing butter...

Wm. Bennie's farm contains only about 50 acres, but he has obtained enough food for 50 cows, with the exception of the pasture, most of which is on another place. By cutting and steaming hay and other fodder, including corn-stalks, straw, &c., he saves one-third of its value, so that two tons will last as long as three tons fed in the ordinary way...

The Way the Food is Steamed.

He cuts and steams the food twice a week, it remaining warm and in good condition for three days, a slight fermentation sometimes commencing after the third day in warm weather. The steam is generated in a common vertical engine boiler, which is about 6 feet high and 2 1/2 feet in diameter, and cost when new one hundred dollars. Second-hand boilers, which will answer as well, may be had for fifty dollars. The water is let in at the bottom, and the steam passes out through the pipe at the top. The fodder is cut by a horse by means of a tread power, and two men are required, two hours each, each twice a week to cut and fill the steam vat. The fire is started in the morning, and the cutting is commenced at the same time; as fast as the chopped stuff is made it is shovelled down into the vat, wet sufficiently as successive portions are deposited, and trodden down compactly. Two hundred gallons of water are required for the contents of the vat, which is in the basement, and of brick, six feet square inside, and eight feet high. Mr. B. would line this vat with sheet iron, so as to give a higher pressure of steam. A large side door allows the cooked food to be shovelled out and fed to the animals, the stalls of which face the vat as a common centre. Three or four tons of coal are sufficient to do the cooking for the winter, besides which, the whole expense is the labor of the two men who do the cutting, which is equal to eight hours per week. An important saving, both in labor and fuel, is effected by not cooking every day, as but little more is needed for the larger quantity of steam.

The Management of Mr. Avery's 50 Acre Dairy Farm.

The farm on which these animals are kept and fed, contains only 50 acres. About 10 acres are in pasture, where the cows are turned after milking in the morning, and allowed to remain until 11 o'clock, when they are again brought to the stable and fed with green clover or corn fodder, as the case may be; the window-shutters being closed, so as to darken the stable and keep out flies. About 4 acres are down with

fodder-corn, 3 bushels per acre, in rows about 2 feet apart, and subjected to horse cultivation. Three acres are in clover, which furnishes the first available food for soiling; then grass and corn. Alternating or mixing is found to answer best, as corn, when fed alone as fodder, is found too releasing, and hence a feeding of dry hay or wheat bran is occasionally given. The cows, when in milk, are soiled, being fed from the crops named. Dry cows, young animals and sheep are pastured on a farm six miles distant. The whole of the hay and fodder for the winter feeding is cut on the home farm. Any clover or corn fodder left from soiling is dried for winter use. When drilled fodder is well dried it is found equal to the best hay. Nothing is better than green or well dried clover for making milk.

The following are the number of acres for each crop on the 50 acres:—

Pasture,	10 acres.
Meadow,	20 "
Fodder corn,	4 "
Clover,	3 "
Cabbage,	3 "
Roots,	3 "
Tobacco,	4 "
Buildings, &c.,	3 "

No grain is raised, but meal is bought for feeding with steamed fodder, with the proceeds of the sale of cabbage and tobacco, and the income of the place is derived from the milk and the sale of Ayrshire cattle, which is the only breed raised, and of which there are about fifty head, of all ages; twenty or twenty-five are cows, and the rest younger animals of various ages, besides 20 Cotswold sheep and 40 horses. One of the Ayrshire cows, from the excellence of the food given, gave its weight in milk in 25 days.

Having noticed the mode of feeding practiced by Mr. Bennie, we will now pass to notice

Method of Treating Milk and Making Butter

Practiced by Mr. Crozier, who feeds on the same principle, but on a larger scale. Mr. Crozier, from the excellent food given his animals, is enabled to average a pound of butter for each of his animals per day. This he sells for 70 cents per pound, which is found to be more profitable than making cheese or disposing of the milk in any other way; the milk yielding at the rate of 10 cents per quart in butter, the sour-milk and buttermilk for pigs more than paying for the manufacture of the butter.

The milk is treated as follows:—It is first strained into deep cans, 20 inches deep and 8 inches in diameter, and set in cold water to take out the animal heat, it is then strained into cans 4 inches deep, and 15 inches in diameter at the top, which are filled for 2 inches deep with milk. Before the pans receive the milk they are rinsed in cold water to prevent the milk adhering to them. The cream is taken off every 24 hours, from each milking at a time, and put into an oak churn or barrel, holding 40 gallons. At each skimming a little salt is added to the cream, and stirred thoroughly with a stick. The butter is never allowed to come in less than 50 minutes, which is accomplished by means of a brake on the horse-power which controls its velocity, and causes slower churning. If it is done sooner, there is a loss in quantity and quality. When the butter is just ready to gather, one gallon of water to forty of cream is added, which assists in separating the milk by making it more liquid. It is then put into the butter worker, one pound of salt is added to each twenty-five pounds of butter, and also half a teacupful of sugar. No water

is ever used for wasting it, which would carry off the sugar as well as its perfect flavor; the hand never touches it in working, a sponge and cloth are used for absorbing the buttermilk when pressed to the outside. When the operation of working is finished, it is made into cakes or balls of one pound each, handsomely printed with a mould; each cake is encased in damp muslin, and one hundred of these packed in an elliptical case, 2 feet long and 20 inches wide, with successive shelves to hold the cakes, with a space for ice at each end; each of these cases sell for \$70. Such golden butter we have not often seen; it is eagerly bought at this high price, and customers who do not want poor butter say they "can't get half enough." The skimmed milk, with some cream still remaining with it, is fed to the calves—and such calves! The young Jersey's were pic-

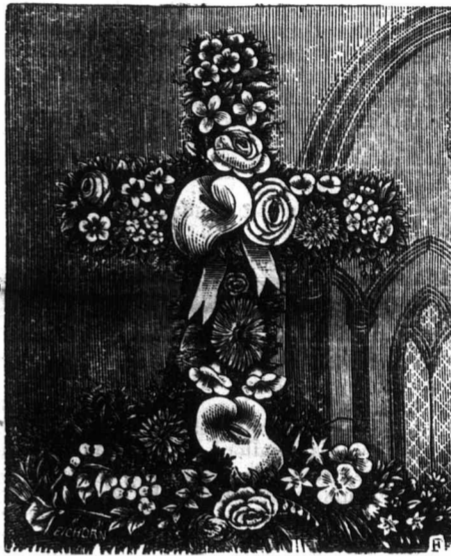


THE BASKET OF FLOWERS.

tures of beauty, and their eyes and faces look like young fawns in color. A very fine sight was that of nineteen Jersey milk cows twisting their heads, all in a row, through the stanchions into the manger in the open ally, for their fresh steamed food, which they devour with great eagerness.

Vick's Chromos.

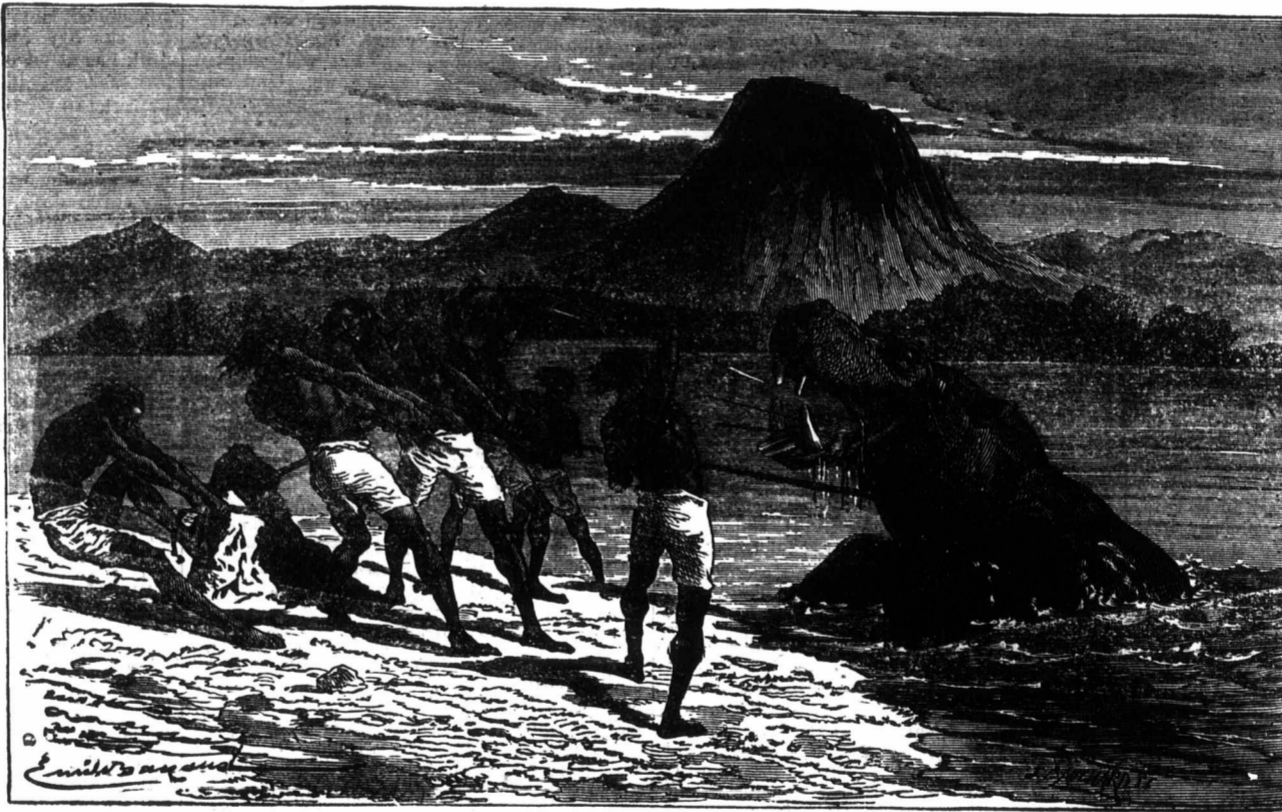
The Cross of Fowers is a choice work of art, and will be given to those who gain prizes, and prefer it to either of the others. Personally we do not like this quite so well as some of the others, and shall only send it to those selecting this one expressly. It is a handsome picture and size 19x24.



VICK'S CHROMOS.

The Hippopotamus.

The name of this enormous and apparently unwieldy animal, by which he is known to us, is Hippopotamus, or Greek for River Horse. Had the Greek travellers been better acquainted with the appearance of this animal, they might have called it River Cow or River Hog. It is only when his head is half submerged that we can cor-



THE HIPPOPOTAMUS.

The Basket of Flowers.

This is not quite as large as Vick's former Chromos. We have shown it to really good judges of art; it is pronounced by them to be the best that he has yet published, in regard to artistic skill. We shall give them and other choice works of art to persons that get up clubs for our paper or write prize articles. We shall give one each month on some subject pertaining to agricultural interest. Every one that sees them cannot fail to be highly pleased with them. Five new subscribers at \$1, or four new subscribers with your own name, will gain one of the Chromos.

rectly call him a River Horse. Once we see his nose and mouth we are apt to call him a River Cow; but when he is once well out of water, and we see his heavy head and short legs, we would say immediately that he was more like an over fat hog than either cow or horse. The hippopotamus has four equal toes on each foot, enclosed in hoofs.

They have two, a male and a female, at the Zoological Gardens in London, England. A short time since a young one was born, which was the first hippopotamus born in England. The male for a long time tried to kill the little fellow, but the mother fought boldly for her child, and taught him to fight also, and between them they thrashed him unmercifully. Ever since Mrs. Hippopotamus

has been the head of that household, and the male has assumed a very submissive demeanor.

Spring Wheat.

The remarks made in this journal last month under the above heading have drawn forth many communications.—Several gentlemen have kindly given us information of several kinds of wheat that have done well in their sections. One says the Baltic has done best with him; another praises the Club wheat, and considers it a new variety; some prefer the Rio Grande, which appears to be most like the McCarling or Red River wheat. The Scotch, Fife or Glasgow wheat are liked by many. They are all the same variety, only known under different names in different localities.

One gentleman says he has a new variety from California that is surpassing every other variety; another has some he got from a Russian vessel, which he expects great results from, and another has some procured from Mexico. None of these new varieties have yet been sufficiently grown or tested to know if they are the same that we have, or will do any better. If any of you have a sufficient quantity to offer to the public, even in small quantities, of any kinds that are really new and answer better than the old varieties, they would be of great value, but up to the present time we are not sure that any new variety is in existence that is better than the old.

One gentleman sends us a head of bearded spring wheat; it is bearded much like the Siberian. He states that it has far surpassed any other variety in his neighborhood. The grain appears much shorter than that of the Rio Grande wheat. We do not think much of its appearance. He calls it the Red Fair wheat.

To speak plain we have lost both money and reputation by trying spring wheats on our farm, and by procuring stocks, we would rather others had given a trial and reported to us, still if we could be sure of a good variety, we would pay a good price for it.

The Farrow wheat has done better than any other variety in this part of the country; on our farm the past season, it yielded better than any other variety we had, but, though it yielded the best, it is a poor, miserable sample to send out for seed; still, if any want to try it they can be supplied.

In this section spring wheats do not answer as well as in many other sections to the north and east; in this part of the country the fall or winter wheats are much more profitable. In many sections the spring wheat is doing better than in

this. If it did not we fear that many farmers would be hungry during the spring season. It is our belief that our spring wheat will not pay the expense we have been at with it, considering time, &c. labor and trouble.

We purpose procuring any varieties that we hear of and have hopes of being of advantage to the country. In the next paper we hope to be able to give you the offer of any new varieties that may be procurable, but we shall only send them

Two Durham cows, Rosetta and Rose Ann, reared by Mr. Jas. Cowen, of Galt, were sold by Mr. G. L. Harrison, of Morley, N. Y., for \$8,000 each.

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Wheat.

In this journal last above heading have communications.—I have kindly given you all kinds of wheat in their sections, as done best with the Club wheat, and variety; some prefer it appears to be most Red River wheat. Glasgow wheat are they are all the same under different

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Texas Cattle.

This cut is from the first photograph ever made in these yards from live Texan steers, and is to the life. The genus—Texan steer and Texan cow boy—though dissimilar in some respects, have the same nervous temperament, and the steer is as liable to "turn up" and let you have it as the cow boy is to draw his "weepon" and also let you have it.

In the thorough-going, thorough-bred Texan steer you have the exact reverse of the meek, lymphatic native; he is wiry, quick, alert, and, what is the best feature, his flesh is cheaper than that of his cousin, the native.

MATTHEWS, KINGSBERRY, & Co., Kansas City, Mo.

Our readers have heard of the Texan cattle, but comparatively few have seen any of them. To give you some idea about them we have procured the above cut from Messrs. Matthews, Kingsberry & Co., of Kansas City, U. S. We give their own remarks above in regard to the cut and the cattle. The term "cow boy" we presume to be the term used to denominate the owners or herdsmen, and is doubtless a common name in that part of the country, as "lumbermen" or "choppers" are here. We presume the meaning is that one is as likely to give you his dirk or a shot from his revolver as the steer might be to raise his handsome horn or leg. The natives spoken of we presume to mean the native cattle or common stock of the country.

We are surprised that these awkward, ill-shaped animals would furnish flesh cheaper than better-bred animals.

We have no idea of introducing this stock to our country; it is probable that their wild nat- ures may suit their wild life and their wild country better than our feather bed pampered Durhams would, still it is our im- pression that cat- tle with less horn, bone and leg may sup- plant them on their own native grounds. The change, if it ever does take place, would take a long time, per- haps nearly a century.

The Durham bulls that have been introduced among even the natives have made but little heading as yet to improve that class; in fact, some large stock men have told us that the Dur- ham bulls have no chance with the native stock. They pine away and die, shortly or are soon killed by them. The business done by dealers in Texan cattle is enormous.

Messrs. Matthews, Kingsberry & Co. sold during the last nine months of 1873 thirty-two thousand, seven hundred and forty-three head of cattle, a goodly num- ber for one firm to ship.

* CARPENTERS.—A specimen copy of *American Builder* sent free. Full of plans and working drawings. Send your address to Chas. A. Lacey, Publisher, Box 1748 New York City.

THE CO-OPERATIVE SYSTEM OF MANUFACTURING CHEESE AND BUTTER.

The co-operative system of manufacturing cheese and butter on a large scale is very superior to the home making principle. It gives better facilities for the general use of improved modes of making, it gives a chance more of a uniformity of the article put on the market; consequently it brings a higher price. This system has not been applied to butter making in Canada, but has been in the United States, and the result has been very gratifying. The quantity of miserable, filthy butter put on the market indicates

So much is allowed, usually 2½ cents per pound. For the information of those who purpose going into the business I will give a brief sketch of the

West Missouri Cheese Company,

Kindly furnished to me by James McLeod, Esq., Deputy-Reeve of the Township, who is one of the directors of the above company. The capital, \$4,500, was borrowed, payable in 3 instalments, so that those who subscribed for stock did not have to pay anything down. This was divided into 450 shares of \$10 each. There are 65 stock- holders and 85 who send milk, so that nearly all of those who send the milk are

factory has a capacity for manufacturing the milk of 800 cows.

The officers consist of a president, secretary, treasurer and 7 directors, elected annually by the patrons. An executive committee of three is also appointed to effect sales, but this is not usually done without consulting the directors.

Ayr Agricultural Works.

Mr. John Watson, who has gained the honors at the International Exhibition has done a good service to the country by showing that Canadians can manufac- ture implements as well as the inhabitants of other countries. We have procured many agricultural im- plements from him as well as other manufacturers, and we must in justice to Mr. Watson say, that his implements and machinery have been better constructed and contain better material than any others pur- chased by us. The implements we have had and supplied from his manufactory have always given satisfaction, namely, his root cutters and chaff cutters.

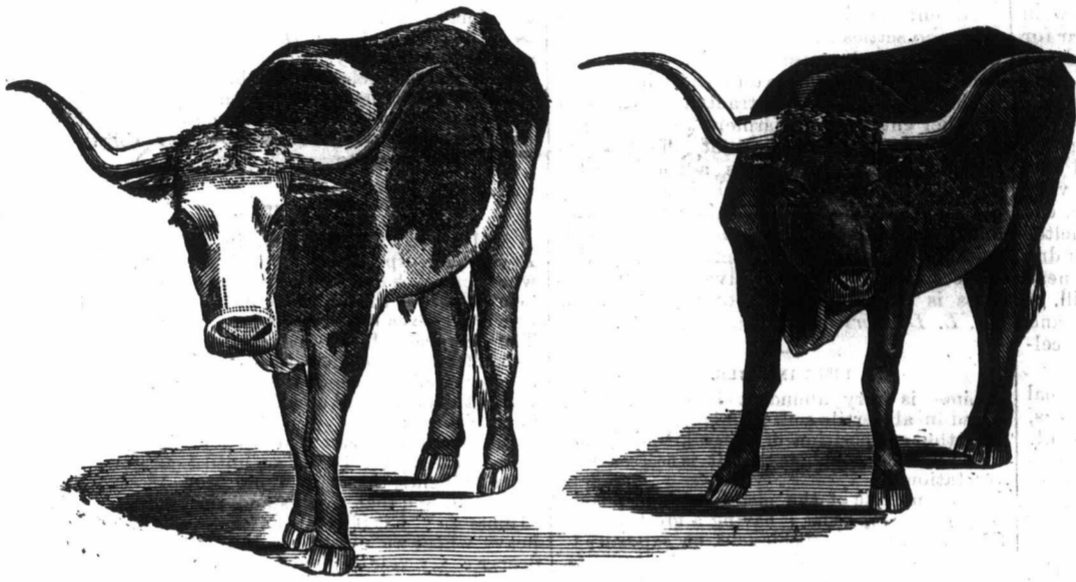
He has taken more pains to satisfy his customers, or persons who have procured his imple- ments, than any other manu- facturer we have heard of. We have known him to send his agents a long distance and put machinery to rights at his own expense, even when the imple- ments have been put out of gear by improper usage.

There is a very great differ- ence in the value of machines or implements. If they are properly constructed and contain good material, the cost of carriage is nothing in com- parison to having a superior implement.

Nebraska Scenery.

The above illustration gives a good idea of the peculiar roll of the prairie lands, and

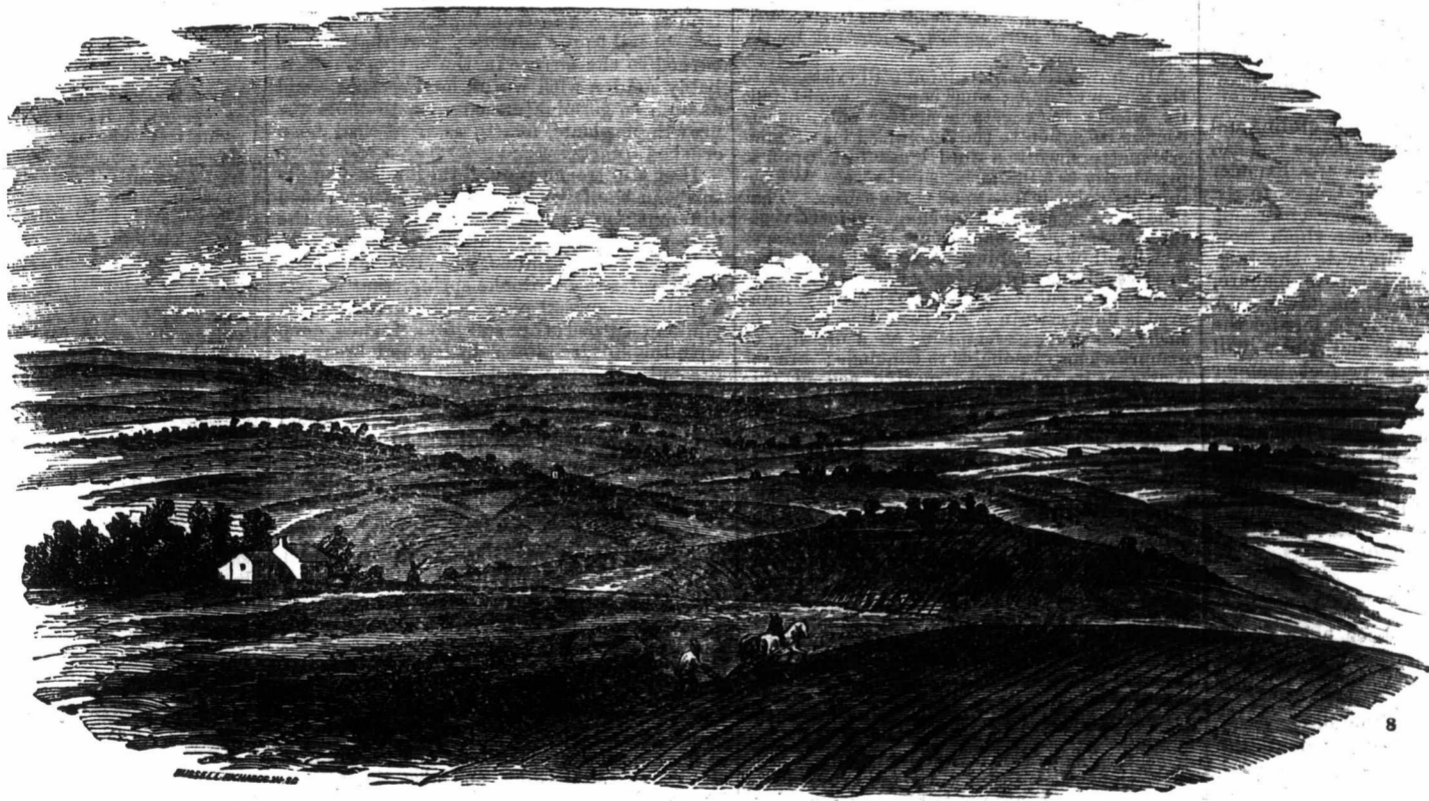
shows how the pioneers of the West are gradually taking possession of the ground, and making good farms, where but a few years since the Indian and the buffalo were the only inhabitants. Parts of Nebraska are excellent farming land, and yield immense crops of corn, which there the main depen- dance. The great trouble is the distance their corn has to be shipped before it reaches a good market. So that, although it may command a good price at the sea- board, the Ne- braska farmer receives but a small proportion of the amount, fully two-thirds of the price going to pay for carriage and com- mission.



TEXAS CATTLE.

that a reform is needed in that line. But we need not look for a change in quality until the co-operative system is adopted, as in cheese. It cannot be expected that where milk is manufactured into those articles on a small scale, say from the milk of from 7 to 12 cows, and by those who follow other pursuits (usually agriculture) as well, would

be interested in the profits accruing from the manufacture. The dividend has not yet been struck, as all the cheese is not sold, but it is expected to be about 10 per cent., which is not bad for the first year. The dividend is expected to be much larger when they get more accustomed to the business. They have made arrangements by which



PRAIRIE, TEN MILES EAST FROM LINCOLN, NEB.

be able to turn out as good an article as those who are skilled in the business, and whose whole time is taken up with it.

When the factory system first came into use the factory was erected by a capitalist who usually manufactured the cheese for so much per pound, but sometimes he bought the milk. The system of farmers forming a company among themselves for manufactur- ing their own milk, is now conceded to be more satisfactory, as all the profits of manufacturing go to themselves, conse- quently they have more of an interest in it.

they will save \$200 in the manufacture alone, next year. The drawing of the milk will not cost as much per pound, as they will not have to go over so large a territory for a load. There are two buildings, one in which the cheese is made, 30x42. The upper part is used as a dwelling for those employed. The other is a drying house, 30x50, and has 3 flats. They are frame, and cost \$2,250. Adjoining the former is an engine and tank house, 20 feet square. The apparatus including an engine and seven wagons, which cost about \$1,600. This

HIDE-BOUND TREES.

Trees that have long stems exposed to hot suns or drying wind, become what gardeners call "hide bound." That is, the old bark becomes indurated—cannot expand, and the tree suffers much in consequence. Such an evil is usually indicated by grey lichens, which feed on the decaying bark. In these cases a washing of weak lye or of lime-water is very useful; indeed, where the bark is healthy it is beneficial thus to wash the trees, as many eggs of insects are thereby destroyed.

NEW BRUNSWICK AS A FARMING COUNTRY.

The Colonial Farmer. Frederickton N.B. in discussing the question of the locality of the Provincial Exhibition, speaks in this wise of parts of (districts) of the province.

There are but few finer farming districts in the Province, or even in the Dominion, than the whole region around Woodstock. Choice breeds of cattle and sheep have been introduced from time to time, which must have left their impress upon the present stock, and their owners would have an excellent chance to compare notes.

The residence of New Kincardineshire and Hellerup could talk to strangers of their rise and progress, and not a few visitors would take away with them a fuller appreciation of the abounding natural resources of our provincial North West.

AGRICULTURE IN GREAT BRITAIN.

From an address before the Rural Club of New York. By John R. Dodge.

England, Scotland and Wales, known to gather has Great Britain, a manufacturing and commercial country, in which but six per cent. of the population are actually employed in agriculture, furnish an example of the cleanest culture, the most rational processes, the most extensive use of money in permanent improvements and in fertilization, and the highest rate of production known to the industry of Europe and of the world.

The total area of Great Britain is 56,964,260 acres, of which England comprised 32,590,397—the whole scarcely equal to the area of two of the Western States of average size. The population to be supported, 26 millions, is one in rather more than two acres; in England one to 1 1/2 acres are yet little more than half of the total area, 31,000,000 acres is under cultivation, nearly 24,000,000 of which is in England proper.

The production of meats is the first object of British agriculture; the growing of wheat is the consideration of next importance. Both cattle and sheep are well known to excel all others in meat production, attaining greater weight in a given time than continental animals. The official average of net weight of course of British cattle of all ages is 600 pounds; of cattle imported, 500 pounds; of British sheep and lamb, 60 pounds; of imported, 50 pounds.

The present tendency is to the increase of live stock, and the diminution of the live grain area. There has been a decrease, since 1850, in the breadth of wheat, oats, peas, and beans, and an increase of barley, roots, clover and permanent pasture, the reduction in "white crops," which now average, 7,500,000 acres, exceeds 1,250,000 acres; wheat now occupying a little more than 3,000,000, or about one-sixth of our wheat area, although the product sometimes exceeds one-third of ours.

The decrease has been about ten per cent. in twenty years, not in product but in acreage, the yield having increased 1 1/2 bushels, and five bushels in 100 years, being now 28 bushels, the largest national average. The supremacy of turnips has therefore not weakened in the least, and the importance of sheep which suffered some decline during the area of low prices for wool in 1867, is now steadily advancing.

There are now about 28,000,000 sheep to 30,000,000 acres of productive area. It was recently assumed, on good grounds, that one-fourth of the cattle were annually sold at the rate of £16

each in England, £14 in Scotland, and £10 in Ireland; that one-third of the English sheep and one-fourth of the Scottish are annually sold at about 35s. each. The tendency has since been to still higher prices. Not only is the proportion of stock large, both to area and population, but the extra size of animals and extra feeding contribute both quantity and quality to home resources of fertilization, and afford a valid reason for enlarged production.

DRAINING.

One of the most serious drawbacks under which our agriculture labors is the insufficient capital employed in it. No other industry is carried on in such a hand-to-mouth manner as is our farming. It is very much as though the present commerce of the country were carried on upon rafts, or the old-fashioned galleys propelled with oars, instead of the modern clipper or the costly steamer of huge proportions; or by means of the ancient caravan instead of the modern railroads. Such a system is not conducted to profit in these days, and our farming is confessedly not so profitable as the other industries. Our plan is not yet that of producing the greatest effect from the least expenditure of material, but, on the contrary, it is that of making up by quantity what we lack of quality. Our average yields of crops are very low; we therefore cultivate more ground. The consequence is we expend twice or three times the labor that is really needed to produce the required result.

This unfortunate system has covered the Southern States with abandoned "old fields," for there has been pursued to a greater extent than to the north and west, but even here its effects are seen in fields half covered with crops which struggle for existence against much adversity.

But the misfortune of the affair is that we cannot remedy this evil without commencing at the very bottom, and that our farmers are very loth to do. They cannot be made to see that a field of ten acres should and may bear a crop equal to that now grown upon twenty acres by the expenditure of an increased amount of labor at the first, or in other words, by the investment of more capital. It is difficult to convince them that by expending twenty days' labor upon a piece of ground, in draining for instance, an annual saving of ten days' labor is gained, not upon this particular piece, but upon another piece which need not then be cultivated because the drained piece is increased in producing capability fifty per cent. That one drained acre will produce as much as one and a half or two, or perhaps three acres undrained. But it is a well-known fact, which has been exemplified thousands of times without one single failure, and if we can by this effort induce any of our readers to try for himself the result of an experiment upon one single acre, we are assured that he will repeat the process to the utmost of his means.

There are some lands so admirably under drained by natural that artificial methods are not needed. But the great majority of lands absolutely require this improvement for the complete development of their fertility; and as to the rest, it is doubtful if the greater part would not be improved by it to a sufficient extent to make the outlay needed a judicious one. But to indicate those lands which absolutely need drainage, we may mention the following kinds:—All clay lands of whatever character; all lands with clay subsoil; all lands with compact gravel beneath them, and generally, all upon the surface of which water will remain for twenty-four hours. It is very evident that their rare few lands that are not included in this category.

The purpose of drainage is to remove the water held in suspension in the soil, not the moisture but the superfluous water. The means whereby this is done is to dig ditches of such a depth and at such a distance apart that this objectionable water may rapidly find its way into them. The effect of the operation is to lower the surface of saturation—called by civil engineers the water table—to such a point that the roots of plants are not brought into contact with the stagnant water, and their growth thereby arrested. The disappearance of the water from the stratum of soil above the drains leaves innumerable vacancies and interstices which are instantly occupied by the atmosphere, which not only carries warmth with, but the great fertilizing agent, chemical reducing agent, and the great fertilizing agents, nitrogen and carbonic acid, the first

of which renders particles of the solid subsoil, and prepares and fits them for plant food, while the latter directly furnish the most important elements thereof. While stagnant water is present in the soil these absolutely necessary agents of plant nutrition are forbidden to enter, nor could they enter into it, would they be otherwise than inert and inactive. This aeration of the soil is the most important and effective aid to agriculture. Among other effects that of the consequent hastening of the growing season in spring is not to be overlooked. The departure of the frost from the ground leaves it in a sodden condition, in heavy farm operations are impossible, and many weary days of waiting and watching are spent by the farmer before he can put in his plough or his seed. Then in many cases favourable opportunities of preparing the ground and sowing and planting are lost, and the summer season is shortened by several days. Then, too, the tender germs of the sown seed, if indeed the seed ever sprout, is destroyed by the ungenial cold and wet, drowned in fact, and replanting is made necessary. The ill effects of late planting we need not enumerate, but they are all felt in these cases to their fullest extent.

In addition to this, the season is also equally shortened at the other end, and the growth of fall farm crops is arrested by the early saturation of the soil by the fall rains. In this condition of weakness and suspended animation the frosts arrive and the young plants are "heated" out of the soil and cast wrecked and ruined upon the surface. Thus both spring and fall are shortened, and the season in which growth may occur and work is done is curtailed at both the beginning and the ending. The effect of draining is to obviate all this and render it impossible. The promise of seed time and harvest is only fulfilled to the letter to the farmer whose land is drained, all others enjoy it but with limitations. The seasons may come round, but it is only when he is fully able to seize upon their opportunities that the farmer can read all their promises. There has been enough pointed out in this article to enforce the need and the advantage of draining, and on a further occasion we propose to enter upon the methods and cost of doing it.—N. Y. Times.

ENGLISH PRIZE FARMING.

It is not from English farmers who merely rent their farms that we hear the complaint that their business is not profitable, but from the owners of American farms; yet these English farmers each every year pay large sums for rent, and still larger sums for permanent improvements upon the land, from which they derive but a temporary benefit. At the same time we own our lands, and in our estimate of profit the interest on their cost rarely enters into the calculation as a charge upon the receipts; yet the complaint is general that our farming does not pay. Possibly there may be something in our want of good management, and a comparison with the methods followed by English farmers who have been competitors for the prize of \$500 offered by the English Royal Agricultural Society, might help to point out the weak spot. The farm which was awarded the prize was one occupied by Mr. W. G. Walgate, of 400 acres, of which 120 are in grass. His rotation is one of five years, viz: turnips or other roots, grass grain (wheat oats or barley), clover, wheat and oats, or peas and beans. The stock consists of 160 heavy long-wool sheep, or as many more as may be needed to consume the roots; a large number of pigs, many of which are purchased for fattening, and not reared upon the farm; 40 bullocks for fattening, and 12 horses. The labor costs \$8 per acre. All the manure made goes to the root crops, with 600 pounds of bone dust and 400 pounds of superphosphate per acre in addition. The consumption of oil cake and other purchased feed is immense; the bullocks eating 6 pounds a day while grazing, with 7 pounds of meal per day added when finally fed on turnips; the manure is therefore very rich. The wheat is sown in drills 9 inches apart, and 8 to 10 pecks per acre is sown. This crop is horse-hoed, also hand-weeded. The clover fields are sown with 14 pounds of white and 7 pounds of red clover seed per acre, with a little Ridgegrass (Narrow-leaved Plantain) mixed. This farm is said to have been evidently under profitable management, and on no other farm was there such an excellent lot of stock in the fields. Mr. Walgate has been a tenant of his farm for 25 years, and had built the greater por-

tion of the farm buildings himself. One of the other farms was admired for its neatness both around the farm steading and the fields. The report says a more charming garden, tidier fields, better roads, and more perfect fences were never seen. The other of the three farms competing was managed in a similar manner to the prize farm, but the special object of admiration was a magnificent wheat field.

Now in comparing the condition and management of these farms with that of the general run of our farms, there are a few leading points of difference. They are the root culture, liberal feeding of cattle and production of rich manure, clean cultivation of even the wheat crop. Heavy manuring at the commencement of the rotation (which takes place of our corn) and turnips, and a clover crop between two grain crops. An abundance of labor is rendered necessary by this system of management. It is not necessary to point wherein we fall short in any respect; it speaks for itself. There is nothing here impossible of achievement by any American farmer.—American Agriculturist

THE THEORY OF FARMING.

I am well aware that farmers, as a class are opposed to theories, for the reason that many theories cannot be practised by a large majority of them.

The theory that I have is an old one, and also one that can be practised by every farmer, poor as well as rich.

I will divide it into two heads; First—raising grain.

For corn, manure a sod early in the spring, plow just before planting, and the cut worm will work on the sod instead of the corn. Never pasture corn ground or the cut-worms will work on the corn.

Plant no more corn than you can work well, or you will lose in the end.

The corn should be followed by oats, and by wheat. Top dress with well rotted manure for wheat, and the next spring, seed down to clover and timothy. By following this we will be sure of good crops and the land will be getting richer.

Second.—In regard to raising stock, keep no more than you can keep right, and keep the very best stock. Many farmers patronize the cheapest stallion whether he is the best or not, and the same way with other stock. This is certainly wrong. It just costs as much to keep poor stock as good stock, and good can be sold at any time and always at an advantage, while poor stock is hard to sell and is generally disposed of at a loss. Never pasture. I know farmers that have always pastured, will be hard to convince that it is not the true way of farming.

They argue that stock does better and are less trouble. It has been proved that stock does just as well, if not better to be kept up the year round. I admit it is less trouble to pasture, but without trouble and hard work, and good management, we can never enrich our farms and become successful farmers. Stock can be kept on a great deal less when kept up. But the great point is manure. Those that have never tried soiling, have but a faint idea of the amount of manure that can be made by keeping stock up; and with manure we can always have good crops and good crops only, pay.—Cor. Farm Journal.

CHANGING SOILS PERMANENTLY.

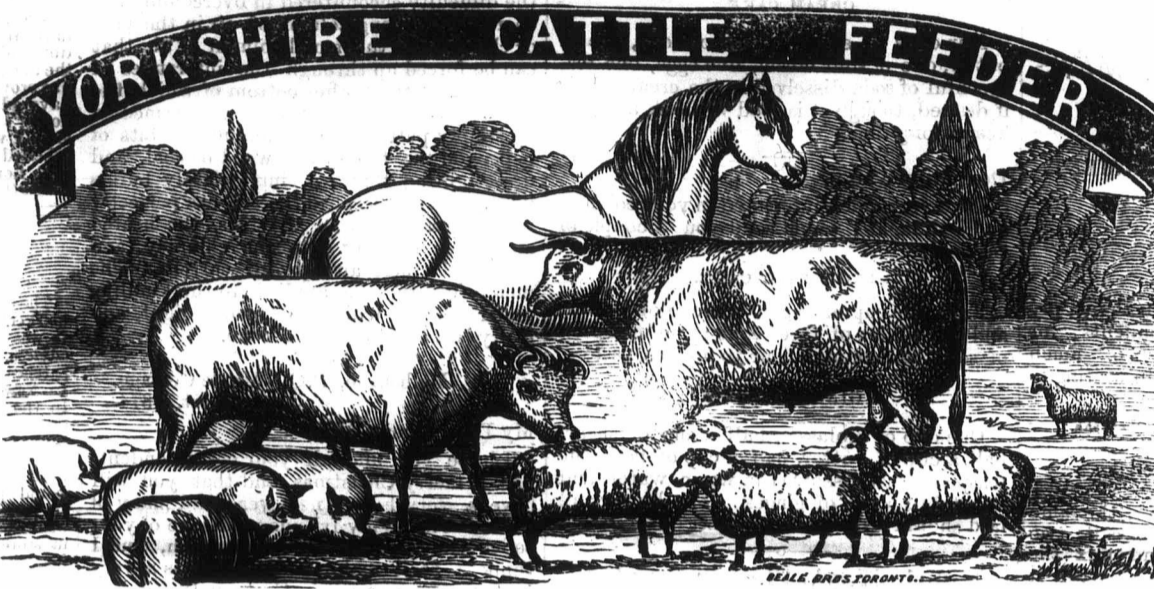
Every farmer and gardener knows that manure does not last a great many years in the soil, and that he has to manure again; and that a farm or garden in fine condition, if not fed with fertilizers, will run out after a while. But I have tried one way of improving the soil that is permanent, and the improvement, I calculate, will last a hundred years at least. My soil is heavy, too heavy for gardening, and I have made it lighter by drawing on sand in winter, from a knoll composed mostly of sand. When the horses and hired man had little else to do, I had them hitched to the sled, and covered a part of my garden with a stratum of sand two or three inches thick. In a year or two, when it became well mixed through the soil, I should like you to have seen the crops that grew there! I measured a crop of carrots at the rate of 1200 bushels per acre. This was nearly twenty years ago, and is now the best part of the garden. It don't exhaust. The sand stays there—it cannot evaporate. It would be too much to draw sand for a farm, yet I think it will pay well on some particular spots for root crops. If the sand is handy two men and a team will cover ten square rods in a day, costing say sixty dollars per acre, and well worth it on a small scale. Have not some of your readers sand knolls that they could get at for winter drawing!—B. X. in Cultivator.

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Bow Park, Brantford, 7th July, 1873: Messrs. Hugh Miller & Co., My Dear Sirs.—Your Yorkshire Cattle Feeder is all and more than it is represented to be; a table-spoonful daily works marvels; it sharpens the appetite, helps digestion, and gives a healthy tone to the whole system. Yours truly, GEORGE BROWN.

Bangor, Pickering, April, 1872: Hugh Miller & Co.—I have used your Yorkshire Cattle Feeder to cattle that I was anxious to make up quickly. It had the desired effect, and is the best thing I ever used. I strongly recommend farmers to use it. SIMON BEATTIE.

Lansing, March 29th, 1872: Hugh Miller & Co., Toronto, Sirs.—After using your Yorkshire Cattle Feeder this winter for my stallions, I must say that it is a first-class article, not only as a feeder, but as a regulator of the system. I



have not had occasion to use any other medicine for my horses to keep them healthy. Independent of its feeding properties, which I think cannot be excelled by any other so-called Cattle-Feeder, I should advise all horse-men to use it as a regulator, as I believe it to be safe and efficient. I hope farmers and others will give it a trial; they will find it a great saving to them in fodder and doctor's bills. I am, yours respectfully, Wm. Long, Importer and Dealer in Entire Horses Landing O., Ont., Yonge St.

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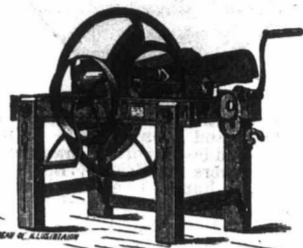
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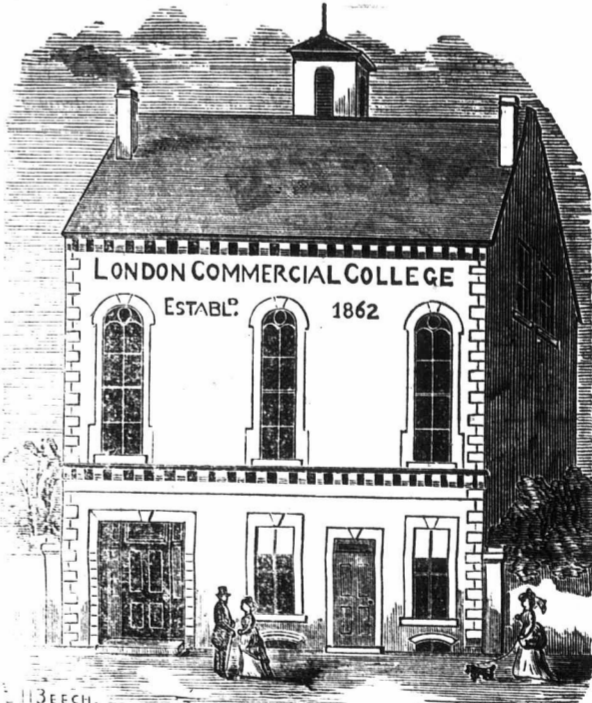
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CONTENTS OF FEBRUARY NUMBER.

EDITORIAL:—

Granges, 17; To the Hon. A. Mackenzie, et al, 17; E. Middlesex Agricultural Society, 17; Notice, 17; A Prize, 18; Prizes at Exhibitions, 18; Assessment, 18; Politics, 18; Transportation of Produce, 18; Short-Horn Breeders' Convention at Cincinnati, 19; The Chinese Northern Yam, 19; Wild Oats, 19.

CORRESPONDENCE:—

Price Essays, 20; A Voice from the Backwoods, 20; The Prince of Wales' Prize, 21; Crops in Manitoba, 21; Sowed Corn, &c., 21.

DAIRY DEPARTMENT:—

Devon and Short-Horn Cows, 22; Value of Good Feeding, 22; Guernseys, 22; What is Thorough-bred, 22; Cooling Milk, 22; Comb-ing Wool, 22; Something about Jerseys, 22; Mr. Mechi's Feeding, 22; Wool-Growing in Australia, 22; Sheep Husbandry Abroad, 22; Influence of Light on Milk and Cream, 23; No Good Farming without Stock Raising, 23; European and American Dairy Farming, from an American Point of View, 23; Sugar Beets for Fattening Swine, 23; Origin of the Berkshires, 23; Nova Scotia Live Stock, 23; How he did it, 23; Selecting a Bull for Breeding Grade Cattle, 23; Washing Butter, 23; Ex- periments of Steaming Food for Cattle, 23.

The Basket of Flowers (illustrated), 24.
Vick's Chromos (illustrated), 24.
The Hippopotamus (illustrated), 24.
Spring Wheat, 24.
Texas Cattle (illustrated), 25; The Co-operative System of Manufacturing Cheese and Butter, 25; Ayr Agricultural Works, 25; Nebraska Scenery (illustrated), 25.

AGRICULTURAL:—

To Manage Hen Manure, 26; Books and Papers on the Farm, 26; Lime in Soils, 26; An Inch a Year, 26; Subsoiling Land, 26; Professor Bell's Exploration in the North West, 26; Notes from Columbia Co., Wis., 26; New Brunswick as a Farming Country, 27; Agriculture in Great Britain, 27; Drain- ing, 27; English Prize Farming, 27; The Theory of Farming, 27; Changing Soils Per- manently, 27.

UNCLE TOM'S COLUMN, 28.
MINNIE MAY'S DEPARTMENT and Markets, 29.
Advertisements, 30, 31, 32.



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