

Lib. of Parliament 25

THE FARMER'S ADVOCATE

AND HOME MAGAZINE

PERSEVERE
SUCCEED

* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.*

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

VOL. XXIX

LONDON, ONT., AND WINNIPEG, MAN., AUGUST 15, 1894.

No. 364.



THE FAMOUS GUERNSEY COW, MOUNTAIN MAID 2ND,

WINNER OF FIRST AND CHAMPION PRIZES AT LONDON (ENG.) DAIRY SHOW.

THE PROPERTY OF MR. JULIAN STEPHENS, FINCHLEY, LONDON, ENGLAND.

EDITORIAL.

Arrangements should now be completed for attending and making exhibits at the agricultural exhibitions.

Experimental studies upon lightning are in progress at the U. S. Weather Bureau, in charge of Mr. Alex. McAdie.

A. D. Selby, a graduate of the Ohio State University, has been appointed chemist to the Ohio Agricultural Experiment Station at Wooster.

The London (Eng.) Live Stock Journal reports a fresh outbreak of pleuro-pneumonia at Hendon. The farm where it occurred is one on which the disease appeared last year.

"Beware of fancy in cattle breeding," is the lesson drawn from the great Underley dispersion sale of Bates Shorthorns. In another column "Scotland Yet" writes in an entertaining vein upon that event.

Reports from the English sheep fairs indicate a substantial advance in prices, from 8s to 15s being the increase per head, compared with last year. This rise is expected to influence the sales of pure-bred rams.

No time should be lost in plowing lightly or "skimming" fields where the oats were more or less stripped by grasshoppers. Follow with the harrow and roller. With a favorable season, this grain will germinate and make considerable growth, which can subsequently be fed off, or if not so needed, will serve to enrich the soil on being plowed under in the fall.

The Executive Committee of the Association of American Agricultural Colleges and Experiment Stations has issued a preliminary notice, announcing that the next convention is set for Nov. 13th, 1904, at Washington, D. C., and that the Sections on Agriculture and Chemistry and on Entomology have been designated to furnish parts of the programme for the general sessions of the convention.

M. Lucien Daniel, in a recent communication to the French Academie des Sciences, concludes that graft hybridization is possible in the case of certain herbaceous plants, which may be endowed with new alimentary qualities by grafting them on plants better endowed in this respect than themselves, and by sowing the seeds produced by the graft. The most striking results thus far obtained have been with the Cruciferae.

We regret to record the decease of one of America's most prominent and useful agricultural writers. We refer to the late Mr. Henry Talcott, of Jefferson, O., who died July 12th. Mr. Talcott was a man of unusual force and energy, prompt to decide and quick to execute. His attitude upon all questions was the result of settled conviction, and his opinions were always expressed fearlessly. He lived a positive, useful life, and departed leaving good and lasting influences behind him.

Following is a summary of the recent sale of the Underley herd of Bates Shorthorns, dispersed owing to the death of the Earl of Bective:

	Average.	Total.
23 cows and 3-year-old heifers.	£50 2 0	£1,152 7 6
11 2-year-old heifers.	62 8 6	686 14 0
16 yearling heifers.	36 15 8	588 10 6
5 bulls.	34 13 0	173 5 0
12 yearling bulls.	36 10 7	438 7 6
3 bull calves.	16 2 0	48 6 0
70 Shorthorns.	44 2 1	3,087 10 6

Under "Impressions of Canada," Mr. W. Fraser, Balloch, Culloden, makes, among other comments, the following, in a letter in the Scottish Farmer: "That pleuro exists in Canada has never been proved. On the contrary, twelve veterinary surgeons, who examined the farms from which the suspected animals were taken, reported that it did not exist, and the Imperial Government refused to send veterinary surgeons from Britain, although invited to do so by the Canadian Government. I believe that the home authorities were placed in a difficult position, but the fact that no disease has appeared in Canada shows that their action has been a mistake, and a mistake that it will be found very difficult, if not impossible, to repair." That is to say, the Home authorities will not own up to their blunder, and having taken the first wrong step, like most wrong-doers, will persist in going forward to the bitter end.

Exports of pure-bred stock for Great Britain have been slack during this year. The Australian Colonies have taken some choice cattle and sheep, and among others, the Lincoln breeders sent a number of valuable sheep to the Argentine.

The general average of a series of experiments at the Pennsylvania Experiment Station, extending over four years, showed that a hundred pounds of dry matter produced about four pounds, or, approximately, six per cent. more milk when the cows were fed on a ration which included ensilage than when given a ration containing roots. It required from 0.20 to 0.33 pounds more digestible matter to produce one pound of milk solids, and from 0.068 to 1.94 pounds more to produce one pound of butterfat during the period when roots were fed than in the periods when silage was fed.

It behooves everyone in charge of a threshing engine to exercise the greatest care over every danger from fire, especially at this dry season of the year. Engines often have to stand quite near a grain or haystack, and should the smokestack reservoir be allowed to go dry, or the spark-arrester be not in perfect condition, there is great danger of firing the buildings. There is also danger from the damper. While drawing the coals forward, should live cinders fall on a dry surface at the time of a fair wind, sparks may be blown into the barn. A fall never goes by without several barn-burnings, caused by threshing engines, and 19 out of 20 cases are due to carelessness.

The opinion is held by some feeders that hogs do better on dry chop than on that which has been soaked. The argument in favor of the dry feed is that slower mastication calls forth more saliva, which by a chemical action in the mouth and stomach changes much of the starch into sugar. This theory seems all right, but experiments fail to authorize the assumption of the theory as a fact borne out by experience. Meal that has been soaked for 10 or 12 hours is in splendid form to be readily digested on coming in contact with the juices of the stomach and intestines. It is also more palatable than dry food, and therefore much more will be eaten at a feed. Slight fermentation seems to have a beneficial effect upon it.

"Before the Improved Large White pigs were imported into Canada, Messrs. Davies & Co. used as an argument to the Canadian farmers to pay more attention to the form and feeding of their pigs, that Canadian pigs were mainly unsuited for their trade, and that they were at that time compelled to buy a considerable part of their supply from the States. From this one is compelled to draw the conclusion either that the Canadian pigs have vastly improved and increased, or that the pigs in the States have deteriorated, or maybe it is a little of both."—Sanders Spencer in Breeders' Gazette.

The reason that Canadian packers drew their supply of pigs from the States was simply because the pigs in sufficient numbers were not in Canada to be got, suitable or unsuitable. Now, the supply is more commensurate with the demand. As to whether the States hog has deteriorated, and how that has taken place, we will leave Mr. Spencer and the States hog raisers to settle.

Agricultural Depression and its Remedies.

The English Agricultural Gazette gives a report of the investigating commission who have been endeavoring to arrive at conclusions regarding the present depressed condition of farmers in England. The causes of depression mentioned are bad seasons, low prices, foreign competition, increase of rents in time of inflation and too slow decrease since depression commenced, and change in currency.

The remedies proposed by witnesses examined are so numerous that at least two sessions of Parliament would be needed to carry them into effect. It is said that very few advocated protection. Many recommended bi-metalism, and a considerable number pleaded for fixity of tenure, valued rents and free sale; State loans to landlords, the same to tenants, freedom of cropping and sale of produce, reduced rents, a Pure Beer Bill, reduced railway rates, the prevention of preference railway rates, the readjustment of local taxation, State loans for the redemption of title and Land Tax, the amendment of the Agricultural Holdings Act in various ways, the strengthening of the Margarine Act, the abolition of the system of letting sporting rights over the heads of tenants, the cancelling of existing leases, compensation for disturbance, the more effectual prevention of cattle disease, sliding-scale rents, co-operation in buying and selling, the establishment of State granaries for storing corn, the abolition of market monopolies, the marketing of foreign meat, and the improvement of technical education.

A Celebrated Guernsey Cow.

Our front page illustration in this issue represents the noted Guernsey cow, Mountain Maid 2nd, owned by Mr. Julian Stephens, Finchley, London, Eng. She has earned the distinction of capturing 1st prize in her class, and also the first milking prize at the great British dairy shows of 1890 and 1892, as well as the champion cup for the best animal of the breed in 1892. The English Live Stock Journal, from which our illustration is re-engraved, states that the abandonment of the cattle section in 1891 resulted in her not appearing that year. At the last dairy show she was placed 2nd in her class, her yield of milk being 26½ lbs at one milking, testing 3.6 per cent. butterfat, while the cow placed before her gave 17 lbs., testing 4.9 per cent. butterfat. However, in the contest for the English Guernsey Cattle Society's £10 cup for the best animal, judgment to be made by a jury of three, on the lines of competition ruling at the summer shows as well as at previous dairy shows, the position was reversed, and Mountain Maid received the award. Subsequently she was placed first in the milking competition, and also took the Lord Mayor's cup once more.

The Guernsey cattle have always stood well in the estimation of the public, which reputation has been won by their own actual worth, as they have never been boomed as some of the other breeds have.

Their numbers in Canada and the United States have never been very large, but are now being rapidly increased. The exhibit of Guernseys at the last Toronto Industrial far excelled, both in numbers and quality, that of any former Canadian show, which should be a good representation of their standing in Canada at that time.

The home of the Guernseys is one of the Channel Islands, being quite near that of the Jersey and Alderney, although quite distinct from either of them. Their breeding is of the purest, as the laws of the Island of Guernsey have long prohibited the admixture of foreign blood, which fact undoubtedly decides their very prepotent qualities. As compared with the Jersey, they are larger in size, with a little more coarseness and hardness. It is claimed that they are more easily fattened and give a greater quantity of milk, but are not necessarily larger buttermakers. The Guernsey cow is a striking illustration of what can be obtained by breeding judiciously in a certain direction for a long time.

The Columbian dairy test gave the Guernseys second place, as compared with the Jerseys, but when we consider the vast difference in the numbers from which the members of each of the competing herds were selected, we could hardly expect any better showing. In the 30 days' test the following results were obtained:

	Jerseys.	Guernseys.	Shorthorns.
Pounds of milk.	13,921	13,518	15,618
Pounds of butter.	837	724	692
Cost of food.	\$111.24	\$92.77	\$104.55
Cost of butter per lb.	0.133	0.128	0.158
Profit on butter.	0.328	0.327	0.301

In the 90 days' test the records for the entire herds were as follows:

	Jerseys.	Guernseys.	Shorthorns.
Pounds of milk.	73,478	61,781	66,263
Pounds of butter.	4,273	3,300	2,800
Cost of food.	\$587.50	\$484.14	\$501.79

Gloomy Reports from Western States Corn Fields.

What with drought and hot winds, followed in some sections by widespread and destructive forest fires, the outlook for the Western States corn crop is gloomy indeed at this writing. At the great market centres orders to buy corn have been coming in very freely. Wheat has gone so low that it is being used for feeding purposes; but it can never take the place of corn in the great hog and cattle feeding districts. A short corn crop means a short hog crop, and that means higher prices for provisions. Many dealers look for a sympathetic rise all along the line, though recently wheat touched the lowest point ever known on the Chicago market. In expectation of the corn shortage, deliveries of hogs in Chicago have been unprecedented. Cable reports to Canadian packers of late have been somewhat discouraging.

The preparation of condensed milk, like every other branch of dairying, is now growing into an important industry. A train load of this product has lately left the New York Condensed Milk Works for cities bordering upon the Pacific coast. The train load represents the product of nearly 2,000,000 pounds of fluid milk. This is the second shipment of this character that has been sent directly to the coast.

THE FARMER'S ADVOCATE & HOME MAGAZINE

THE LEADING AGRICULTURAL JOURNAL IN THE DOMINION.

PUBLISHED BY THE WILLIAM WELD COMPANY (LIMITED), LONDON, ONT., and WINNIPEG, MAN.

JOHN WELD, Manager. F. W. HODSON, Editor.

- The Farmer's Advocate is published on the first and fifteenth of each month.
- It is impartial and independent of all cliques or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for farmers, dairymen, gardeners and stockmen, of any publication in Canada.
- Terms of Subscription—\$1.00 per year in advance; \$1.25 if in arrears; sample copy free. European subscription, £s. or \$1.50. New subscriptions can commence with any month.
- Advertising Rates—Single insertion, 30 cents per line. Contract rates furnished on application.
- Discontinuances—Remember that the publisher must be notified by letter or post card when a subscriber wishes his paper stopped. All arrears must be paid. Returning your paper will not enable us to discontinue it, as we cannot find your name on our books unless your Post Office address is given.
- The Law is, that all subscribers to newspapers are held responsible until all arrears are paid, and their paper ordered to be discontinued.
- Remittances should be made direct to this office, either by Registered Letter or Money Order, which will be at our risk. When made otherwise we cannot be responsible.
- The Advocate is sent to subscribers until an explicit order is received for its discontinuance. All payments of arrears must be made as required by law.
- Always give the Name of the Post Office to which your paper is sent. Your name cannot be found on our books unless this is done.
- The Date on your Label shows to what time your subscription is paid.
- Subscribers failing to receive their paper promptly and regularly will confer a favor by reporting the fact at once.
- We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles. For such as we consider valuable we will pay ten cents per inch printed matter. Criticisms of Articles, Suggestions how to improve the Advocate, Descriptions of New Grains, Roots or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.
- Replies to circulars and letters of enquiry sent from this office will not be paid for as provided above.
- No anonymous communications or enquiries will receive attention.
- Letters intended for publication should be written on one side of the paper only.
- All communications in reference to any matter connected with this paper should be addressed as below, and not to any individual connected with the paper.

Address—THE FARMER'S ADVOCATE, or THE WILLIAM WELD CO., LONDON, ONTARIO, CANADA.

CONTENTS.

EDITORIAL:—
 317—Illustration. 318—Agricultural Depression and its Remedies; A Celebrated Guernsey Cow; Gloomy Reports from Western States Corn Fields. 319—To Our Agents; Fruit Buyers and the Apple Crop Prospects; Grants to Agriculture; The Industrial Fair; Sherbrooke Fair. 320—Our Common Schools and Farmers. 321—The Winnipeg Industrial; National Live Stock Sanitary Association; List of Principal Fairs to be Held in Canada.

STOCK:—
 321—Chatty Stock Letter from the States; A Sheep and Swine Breeders' Association for Manitoba and the N. W. T.; Our Scottish Letter. 322—Cattle Breeders' Association.

FARM:—
 322—Filling the Silo; Fall Wheat Reports. 323—Farm Water Supply; Gypsum—A New Insecticide; Silage as a Food.

DAIRY:—
 Some Interesting Facts Regarding Practical Dairying in Ontario. 324—Summer Feed for Cows.

VETERINARY:—
 324—Dentition and Dental Diseases of Farm Animals.

QUESTIONS AND ANSWERS:—
 324—Veterinary. 325—Miscellaneous.

GARDEN AND ORCHARD:—
 325—Apple Growing in Ontario. 326—Irrigation; The Flower Garden—Preparing for the Fall.

POULTRY:—
 326—Poultry on the Farm; Random Notes.

FAMILY CIRCLE:—327, 328.
 MINNIE MAY:—328.
 QUIET HOUR:—329.
 UNCLE TOM:—329.
 NOTICES:—331.
 STOCK GOSSIP:—331, 332 and 335.
 ADVERTISEMENTS:—329 to 336.

To Our Agents.

The large annual exhibitions, fall fairs and agricultural shows generally will soon be taking place, and promise to be as well, if not more largely attended than ever. In the past, many of our agents have been most successful at these gatherings, and we would again remind them to be prepared for the opportunity. Let us know what fairs you wish to attend, so that we can assign them to you, and have you supplied with the necessary outfit. We will supply the FARMER'S ADVOCATE from now till December 31st, 1894, for 35 cents. We prefer our present subscribers, their sons, or those heretofore acting, to undertake the work of securing subscribers. We are prepared to offer liberal inducements. Please write us at once for terms and sample copies.

Fruit Buyers and the Apple Crop Prospects.

We notice that a number of gentlemen from various parts of Ontario, a few weeks ago, in Toronto, completed the organization of what is styled The Canadian Fruit Buyers' and Exporters' Association. Resolutions were adopted and plans laid in reference to the approaching season's business, of sufficient importance to warrant us in directing the special attention of our readers thereto. We deem it advisable that fruit producers should be well advised as to the nature of the programme that has been arranged, because some of their proposals are rather too cool to be refreshing even in the hottest of August weather. No doubt there is room for considerable improvement in the apple trade, and had fruit growers lived up to advice frequently given in the FARMER'S ADVOCATE there would have been fewer complaints heard from buyers and consumers. This association should be productive of great good in obtaining advantages in shipping, uniformity of brands, etc., and it is to be hoped their efforts will be successful in that direction. They have resolved not to accept any "shipper's count" or "more or less" bills of lading, when shipping apples, but to insist on clean bills of lading. They pledge themselves also not to buy on what is known as the "so much and the rise" plan, or to give what is called a "bonus." A great deal of time was spent perfecting a "form of contract," which doubtless some of our readers will encounter ere long, and which we would caution them to scrutinize very closely before signing, always remembering that it takes two to make a bargain, and anything unjust in this ironclad agreement should be crossed out. The association decided to discontinue the system of engaging men on commission to assist them in buying and packing, and to pay them a regular salary by the day, week, month, or season, as could be best arranged. With competent, reliable men employed, the need of any "form of contract" is not very apparent. Sellers will be asked to carefully hand-pick apples, and to protect same from weather and soil till delivered, which we think is only reasonable. Good, honest picking and packing will pay the producers in the long run. The association proposes to bind sellers, in this contract, to board and lodge men free of charge while packing, a little arrangement that sellers, will have something to say about when the time comes. It was also "decided," so the report of the meeting reads, "to make all sellers of apples supply the barrels." Farmers will also have something to say about being "compelled" to throw in the barrels. No doubt, it would be a convenience to the buyers to get rid of the "barrel question" this way, even if they made nothing out of it. It is hardly reasonable to expect that small lots of barrels could be bought as cheaply from coopers as they would contract with shippers for.

Simultaneously with the report of this meeting newspaper paragraphs began to make their appearance telling about the enormous apple crop of this season in Ontario, and, in fact, of all the apple growing districts of the continent. Markets were going to be glutted and prices exceedingly low—about \$1 per barrel. After boarding and lodging the packers free, buying the barrels, etc., the farmer would have something handsome left out of \$1 per barrel! These glowing reports about the apple crop are entirely misleading, and are not warranted by the facts. Our observation and reports indicate that the Ontario crop will not average much over 50 per cent., in consequence of early frosts, dry weather, scab, etc. We have just received a trustworthy British report to the effect that the crop of the chief apple districts of England will not be more than one quarter what it was last year: France, a good average crop; Holland and Belgium, considerable less than the average; Germany, a poor crop, not equalling more than one-quarter of last year; Spain and Portugal, average crop, but the bulk of shipments will be over in September. The report concludes as follows: "It is, then, abundantly clear that the great bulk of the crops on this side will be consumed before supplies from your side arrive, and that shippers need not allow any consideration of our crops to limit the extent of their operations. Given a good crop on your side, and gathered in good condition, there is every prospect of a large trade being done with this country during the ensuing season. Shipments to London may commence end of October, and earlier to our northern seaports."

As to the big crops in New York and other States, we know as a matter of fact that early apples have been going to New York during the past month, and an order came in for at least one carload that could not be filled. Our readers will do well, therefore, not to be misled by these inspired reports about big crops and \$1 per barrel, because the present prospects are that really good marketable apples this fall and winter will command higher prices in Britain than for some years past. It is not desirable, nor is it necessary, that there should be friction between apple growers and buyers, but the former are not disposed to see prices systematically fixed in advance at a much lower point than supply and demand appear to warrant, and then to be coerced into granting concessions which simply mean cutting so much off prices. We desire to see fair and reasonable dealing on both sides.

Grants to Agriculture.

The following is a list of the grants for agricultural purposes voted by the Parliament of the Dominion, in the session of 1894, for the fiscal year extending from 1st July, 1894, to 1st July, 1895:—

Experimental Farms, maintenance.....	\$ 75,000
do. do. Dairy branch.....	25,000
To enable the Dairy Commissioner to promote dairying interests by advances for making cheese and butter within the Provinces, the proceeds of sales or products from such advances to be placed to the credit of the Consolidated Revenue Fund.....	36,000
Aid to Agricultural Societies, N. W. T.....	7,000
The Haras National, for the use of six stations for the Experimental Farms.....	6,000
Experimental Farms.—Additional amount required for maintenance, arising from adverse balances—\$3,000 in 1890-91, \$1,580 in 1891-92, and \$2,220 in 1892-93.....	6,800
To purchase a strip of land to make the south boundary of the Brandon Experimental Farm coterminous with the Assiniboine River.....	1,000
Printing and distributing of reports and bulletins of Experimental Farms and distribution of seed grain for testing by farmers; also trees and tree seeds.....	2,000
Additional, for promoting dairy industry in Nova Scotia, Manitoba and the Northwest Territories, viz.:—	
Additional travelling instructors in Nova Scotia for the whole year.....	300
Two travelling dairies in Manitoba and the Northwest—four men, at \$500 each.....	2,000
Travelling expenses, \$350 each.....	1,400
Three dairy stations in Manitoba and the Northwest Territories, at \$500 each.....	1,500
Contribution towards an Exhibition in the Northwest Territories.....	25,000
Total of grants to Agriculture.....	\$189,000

It will be observed that no appropriation was made for the Dominion Cattle Breeders' Association, a large deputation from which visited Ottawa early in May, although the Agricultural Committee, before whom their case was presented, unanimously approved a grant of \$1,000 to aid them in carrying on their work.

The Industrial Fair.

We have as yet failed to hear of a person who visited the Toronto Industrial Fair who came away dissatisfied with the programme and exhibits. Everything that is advertised is carried out in completeness. This year's preparation far exceeds that ever given before in the Dominion. The surroundings of the new buildings have all been drained, graded up and put in first-class condition for visitors to view every department with ease and satisfaction. In live stock, manufactures, dairy products—in fact, all the staple departments—the entries are much more numerous than ever before. Some entirely novel and brilliant spectacular features have been secured, which will doubtless prove irresistible attractions and fully sustain the reputation of the Exhibition. Just after harvest a little holiday is needed, and farmers will find a visit to such a fair as the Industrial a grand opportunity to add to their stock of knowledge regarding agricultural improvements.

Farmers who wish to keep abreast of the times and familiarize themselves with the latest results of mechanical science and invention in their practical application, will find themselves repaid many times over for the cost of a visit to the Industrial. The instruction obtained by even one day's inspection of the display may be the means of effecting large savings in outlay and inculcating practical lessons in the best methods of husbandry and the mechanical operations incident to modern farming that will prove of incalculable value. The customary arrangements for reduced railway fares and cheap excursions have been made. A host of visitors are coming from the United States.

Sherbrooke Fair.

The Sherbrooke Exhibition, which will be held from Sept. 1 to 8, is receiving special attention by way of preparation. A new covered grand stand capable of accommodating 2,500 spectators is taking the place of the old stands. Applications for space and entries are being received by the Secretary, Mr. R. H. Fraser, in far greater numbers than in any former year. All cattle and horse sheds have been renovated and made far more comfortable than formerly. The most expensive and attractive programme of amusements ever presented in Sherbrooke has been arranged for. Prize lists, posters and programmes will be sent applicants as soon as asked for.

Our Common Schools and Farmers.

Continued from page 240.

Let us look at this matter from the standpoint of evolution. Nature, when raising the anthropoid from the animal,—in other words, in creating man—made changes at three points: she enlarged the frontal brain, modified the mouth and throat to make articulate speech possible, and transformed the forefeet into hands. At these three points education should be applied. That is, our schools should aim not simply at brain culture, but at speech culture and hand culture. With such a reckoning, we are brought to the need of music, and the use of tools as well as books. I would give one-half of each day to the books; the other half to music, and play, and work. But do not let this manual culture be confined to mechanical tools alone, but also to farm tools. I hope to live to see every schoolhouse in the country set in a plot of land for comparative horticultural. The Germans and English are beginning to feel the need of this change, and are considering the project of establishing school gardens or incipient farms. Mr. Sewell read recently, before the British Association, at Newcastle-on-Tyne, a paper in which he outlined a school botanical garden. This is, of course, not a new thing on some parts of the Continent. I see no reason why the garden and garden tools may not constitute a part of the furnishing for manual culture. Gardening and horticulture train the hand, and these industries need the trained hand. If you expect your children to love such work, let them learn to do it in connection with and as a part of study and play. No child should ever have a breach made between play and work. It seems very probable that, when manual training is conjoined with a study of the sciences, there will be no further need of compulsory educational laws.

While I would not have anything done for the brain, I would not have anything done with the simple end of utility, as applied to the back and stomach. Yet the highest art and the highest utility coincide. Drawing, or the free use of the pencil, is in reality not an ornamental part of education, but a most practical part. It enters into half of our commonest industries. The young person more often has need of the pencil than of the pen, in winning his way. Old things pass away. I do not object to teaching penmanship, but I aver that four-fifths of the culture in this direction is superfluous, while drawing, which is set aside as an accomplishment, is in most demand for material as well as intellectual progress. We must reverse matters, and teach drawing, at all events; penmanship afterwards. So I would teach geology at all hazards, and geography afterwards. It is more important that a boy know the land he lives on, and what he can do with it, than that he should know the chief cities of Burmah and Japan. That is, I would apply educative force to the brain, but not to the brain only; I would teach the hands to draw and to work, and the voice the sweet art of music and the fine art of conversation.

It is equally important that our readjustment of the common school shall enable us to make farming profitable. The study of horticulture and biology will also aid materially in this direction. But there is quite as much advantage in chemistry and in farm economics. Farming will pay when it is done understandingly, intelligently, lovingly, with a knowledge of the forces we deal with and the things we handle. At present the bugs understand us better than we do them. They have little to learn, but that they have learned well. I keep an ant colony on one of my lawns to show occasionally to my boys and to visitors. How much more intelligently, economically, neatly, and with how much more attention to sanitation, these creatures farm it than men do! They have no mortgages. They keep cows, but their stables are models of neatness. But my hired men are almost sure to be machines, and are far from models of thrift and economy and neatness. They do not love the farm; they do not, with a few exceptions, work intelligently; they abhor experimental farming.

Wilson Flagg says in his book about trees: "When I am journeying through the country, and behold the rocky hills, sometimes for miles in extent, entirely bare of trees, affording too little sustenance to support even whortleberries, I am informed by the older inhabitants that, in their childhood, these hills were covered with forests. The woods were cut down, and there was nothing left to prevent the soil from being washed down into the valleys. Now nothing remains to support a new growth of trees." I care not in which direction you turn, American farming has to account for its depression by its methods. You have never seen a case of failure, where there were no heavy doctor's bills, but you could put your finger on a removable cause. Our hop speculators are a sample. When they make money on hops, it is at the expense of every other crop in the way of manure and labor. When there is a large margin in their favor, they buy fast horses and pianos, smoke cigars and cultivate other wasteful habits. When the market drops from one dollar a pound to five cents, the auctioneer sells the pianos and horses for one-tenth value, and the farmer who sought only money, and had no love for, or knowledge of, the land, and the things of the land, joins the westward caravan, or hangs himself. I said to a friend, of good judgment: "Take your pencil, and make an estimate of the loss in one way and another of farm produce. We figured the absolute loss, first

and last, of bad culture, bad handling, and general lack of intelligent method and economy, at one-half. I truly believe one-half the production of American lands is lost through ill-directed education. Our apple crop is more than half lost, and this is pretty surely true of all other fruits, except, perhaps, small fruit, which cannot be grown at all except with special attention. The plum trees, over large areas of the Northern States, have been cut down, or ought to be, to get rid of black-knot. The cherry trees were also assailed fifty years ago, and gradually eliminated by the same disease. The curculio spoils yearly tens of thousands of bushels of both these fruits. Remedy, more knowledge of entomology and of tree life itself. Give that, and the snap and backbone will be found. The farmer is rarely a lazy man; his trouble is, he does not know his enemies, or how to fight them. He does not know his friends from his foes in the insect world, and is as likely to destroy the former as the latter. I hired a peripatetic Yankee for two months. He had a common school education, but he did not know granite from conglomerate, and undertook to spray tent caterpillars for codlin moths. Unfortunately, he, like many more farmers, despised any knowledge that did not come along as heredity. One-third of the apple trees of Central New York were ruined within the last five years by the tent caterpillar—not only the fruit, but the trees. The invasion was enormous; but the fight was an open one. The worms came out ahead; the fittest always survive. Last winter I negotiated for five tons of hay of a dairyman. It was so full of wild carrot and Canada thistles that I accepted but the first load. We cannot afford to pay for hoeing the weeds out that will be seeded in by such manure. Such hay decreases the owner's milk product one-half, and by and by the weeds will whip him off his land.

I have an acre of flowers for our own pleasure; although, as a rule, these might add largely to the income of small fruit-growers. But we may as well grow our luxuries, if we have cultivated tastes, as to buy them. There is more real pleasure in hollyhocks than in fast horses, if you are educated to understand them. A young lady full of common and high school wisdom visited my grounds and found immense pleasure for a couple of hours. Then, looking over the superb valley, through the rich and rare trees, she said: "But it must be terribly lonely here." "Ah," I said, "that is so, if you have no friends here, or acquaintances. You do not know these elms, and lindens, and magnolias—they are strangers; but to me they are companions. No, we are not lonely here." But, with all my gardens of berries and lawns of flowers, I let my neighbors' bees carry off my honey until last summer—which was poor policy. A man should know how to gather all his crops, from the honey in his raspberry flower to the berries themselves. Then, he should know how to grow each crop to the best advantage. Then, he should know how to handle them all economically. Then he should have so large a variety of crops that he will not seriously be embarrassed by the loss of one, or two, or even three each year. Farming in the West is mostly speculative; so is much in the East. It is a venture of all a man's prosperity on one or two crops. If the market go down, or the crops fail, the farmer is as badly off as a sheared lamb in Wall street. He has nothing to do but to growl at capitalists, who are doing precisely what he tried to do and failed. So when we come to estimate the farm trouble, we cannot leave out the lack of knowledge about insects and about manures.

There really is no reason why the tide that for a century has set toward cities should not be reversed. To some extent it is now being reversed. The literary and mercantile classes began some time since a hieira into suburban homes; and the mechanics are now following them. This, of course, is not to make farmers of them, but it is to give them a taste for land and land culture. Mr. Hubert, in a capital volume on "Liberty and a Living," pictures the possibilities before a city journalist. If a taste for the country can be cultivated, and with rural life can be joined a fair share of refining influences and the comforts of art and music, as well as pure air and exercise, we are on the road to a reconstructed agricultural sentiment. Mr. Hubert shows us admirably that we can get all the good there is in a city, and have our work tell at the hub while we live at the end of the spokes. He says: "People talk of the inspiration of the crowd—the electrical effect of numbers. I can see but little of this in our American cities." The suburban life of our larger cities has, for the past five years, enormously widened out. To hasten the further reaction, so that agriculture in the twentieth century shall be once more the leading division of American industry, is a matter of political and social importance. When this is accomplished we shall have filled the hopes of our founders, and made the Republic what Jefferson believed to be possible.

But how, you say, can this revolution be wrought? By what possible means can we secure for our common schools teachers equipped to teach geology, chemistry, biology, and physics? When the demand comes, we shall surely have the supply; but let us not make the mistake of supposing these to be more abstruse or difficult studies than geography, arithmetic, and grammar. Rightly taught, these latter are far the most difficult and advanced. They belong only with older pupils. The former sciences are simpler and more fundamental. They deal with everyday questions and are near at

hand. The only trouble in science is with the nomenclature. Science as entomology, for instance, deals with butterflies and bugs—just what children naturally take to. Science as botany deals with flowers, fruits, roots, trees—just what all children like. Science as geology deals with the dirt and stones and brook beds—just what children love. Science as chemistry pulls things to pieces and reconstructs; as physics, it plays with sunbeams. This is not at all abstruse. *We want just as little as possible to do with books while educating a child.* But I am not enthusiastic enough to believe we can work a revolution of this nature in a day, or in a year. We must first see our need. The end will be that we shall not allow a school in the land to be under the care of any but Normal graduates. Drawing and music are a part of hand culture and voice culture, and you can just as easily equip teachers for such studies as for those which you now have. I have said there should be a school garden about each schoolhouse. Why not also telegraphic and telephonic connection with every simple country school? This also, and much more, will come, making the common schoolhouse the centre of the district, rather than a neglected, desolate hovel by the wayside.

This subject is of intense and growing importance, and cannot have the go-by. *As we educate, so we are.* If we are not educating farmers, farmers we shall not have. No social change ever took place, for better or for worse, that was not the result of preceding educative influences. It is possible for a system of education to become entirely foreign to the age in which it is in practice. Vambery, after one of his masterly descriptions of the learned institutions of Khiva and Bokhara, says: "The richly endowed colleges of these cities are visited by hundreds of students from India, Afghanistan, and Chinese Turkestan. Great diligence is displayed in study; but only in grammar, rhetoric, and history, while mechanics and sciences are considered superfluous. After fifty years of Russian occupation they regard with freezing indifference machinery, railways, and modern manufactures. Only a vast upheaval of the educational foundations could transform this people. As the schools are, so are the people. We have quite passed the point where we can rest contented with schools that simply inform their pupils. We must have a national aim, a national system, for a national end. Certainly the farmer must insist that the tendency of the school shall not be to take his children from the farm, unsettle the home instinct, unfit them to be happy agriculturists, and turn them over in a ceaseless tide into shopkeepers and traders.

Supplementary to the changes I have emphasized in common school education, is it not possible to make farm life recipient in a high degree of the advantages of University Extension? This, the latest stage in the evolution of educational methods, proposes in brief to carry the advantages of higher education to those who cannot go to the university to get it. It is an enlarged "Chautauqua," and while not yet a clearly defined system, it has in it an optimism concerning popular culture never before conceived. In this county of New York State, Oneida, we have a County Farmers' Club. During the winter the professors of Hamilton College have delivered a course of lectures before the club and its friends, on the following and kindred topics: "Political Economy and its Bearings on Farm Life," "Biology in its Relations to Farmers," "The Geology of Central New York"—considering soils and water courses; "Farmers' Libraries and Home Culture."

These eminently practical subjects bring the college and the farmer into close relation. It is projected to carry the plan forward much more thoroughly, and inaugurate courses with abundant laboratory and probably field work. For a very large part of the country, something of this sort is possible. In all ways we should aim to make the farm the brightest and most intellectual home; we should carry there what we have concentrated in cities and towns. We are at the dawn of a distributive age. Electricity will, as a power, be easily carried to a distance. It also carries knowledge everywhere at a trifling cost. I do not despair of even seeing our farm homes connected with university laboratories in such a manner that the whole work may be reported; in other words, so that the professor, if he have common sense, may address instructively an audience scattered over a whole township or county. But at present the one practical and all-important point is to have in our common schools a curriculum of study that will make our children acquainted with land and what is on the land; an education that unfolds the nature of soils, and the wonders of life in and on the soils; and while bewitching them with the everlasting unfoldings of such studies, makes it possible for them to master their foes, and receive the benefits of insect, bird and plant friends. This done, no occupation can compare with farming for its charms and advantages.

Although a great deal has been done in Cape Colony by way of lectures, and the introduction of the most modern English dairy implements, yet the dairy industry does not rapidly advance, as that country seems to be better adapted for sheep and goats than dairy cows. Australian butter is going into that country and supplying the markets at 15 3/4 per pound retail. The Cape farmers' extremity is proving the Australian farmers' opportunity. It is well that Australia has found another market in Britain.

The Winnipeg Industrial.

The Winnipeg Industrial Exhibition of 1894 was a success, and an improvement in nearly every department over previous exhibitions.

The weather was perfect and the attendance larger than ever before, amounting to 15,000 people on citizens' day; and, while the proportion of visitors from the country was not so large as we should like to see, yet the farmers and stockmen of the Province and Territories were out in good force, and stables and pens were full to overflowing.

It is gratifying to notice that some improvements have been made in the accommodations for the stock; the horse barns have been floored, making a great improvement; the sheep pens moved to a much better situation, and the swine pens sheltered from the burning sun by a projecting roof. The cattle stables have not yet been altered, although the breeders have repeatedly requested that changes be made.

A new refrigerator has been built in the dairy building, which is a great improvement on the old plan. The increased prize list for dairy products brought out a good show of farm dairy butter, and the prizes were scattered pretty well over the country. J. A. Ruddick, who is in charge of one of the Dominion Travelling Dairies, judged the dairy products, and no one is more competent.

A year ago, those whose chief interest lies in vegetables, roots and field products, bitterly condemned the Summer Show, contending that it was impossible to make a creditable display so early in the season. The show just past satisfactorily proves that a good show can be made; and the loaded benches of really wonderful field and garden products makes as good an advertisement of the resources of the country as the monsters that can be produced by the end of September. We fancy that the Summer Fair is now a fixture, and all hands had better make up their minds that it requires a pretty good article to capture prize money—and act accordingly.

As has already been stated, the Exhibition was a decided success, and we feel that it is largely due to the lively interest taken in it by the Canada Pacific Railway Co., who spared no pains to assist in every possible manner. All exhibits were carried to and from the Exhibition free, and the officials were most obliging in every instance.

National Live Stock Sanitary Association.

At a meeting of representatives of State live stock boards, held in Washington, June 20th, a permanent organization was effected, to be composed of a representative of the Bureau of Animal Industry, U. S. Department of Agriculture, members of the various State live stock boards, commissioners, State veterinarians and other State officials having supervision of the diseases of live stock. Officers were elected as follows: President, J. A. Potts, of Missouri; Vice-President, Dr. Robert Ward, of Maryland; Secretary, A. M. Brownlee, of Illinois. These officers constitute the executive committee of the Association, and with Messrs. Lyman, of Massachusetts, and Hinds, of Michigan, form a committee on constitution and by-laws. The next meeting of the Association will be held in Chicago.

List of Principal Fairs to be Held in Canada.

Dates.	Secretary.
Stanstead, Que. Aug. 22-23	H. E. Channel.
Industrial, Toronto. Sept. 3-15	H. J. Hill.
Sherbrooke, Que. Sept. 1-8	H. R. Fraser.
Quebec Provincial, Sept. 10-15	R. Campbell.
Western Fair, London, Sept. 13-22	Thos. A. Browne.
Midland Central, Sept. 17-21	John P. Oram.
Ontario and Durham, Sept. 18-20	W. R. Howse.
Central, Guelph Sept. 18-20	Wm. Laidlaw.
Belleville Exhibition, Sept. 18-21	J. M. Hurley.
Central, Ottawa Sept. 21-29	E. McMahon.
Great North-Western, Sept. 25, 26	James Mitchell.
Goderich Sept. 25, 26	W. P. McClure.
Woodstock Show Sept. 25, 26	J. W. Archer.
Great Northern, Col- Sept. 25-28	James Keith.
lingwood Sept. 26-28	R. M. Wilson.
Central, Lindsay Sept. 26-28	R. M. Wilson.
Southern, Brantford. Sept. 26-28	W. G. Merritt.
Peninsular, Chatham Oct. 2-4	Archie Tolton.
Northern, Walkerton. Oct. 2-4	John Jerman.
Markham Fair Oct. 3-5	F. F. Wallace.
Woodbridge Fair Sept. 16, 17	H. Wade.
Ontario Fat Stock Dec. 11, 12, 13	Toronto.

The C. A. C. have just finished shearing 15,000 sheep at their farm at Swift Current, of which Mr. W. Rutherford is manager. There were twelve shearers, two of whom, Australians, sheared from 140 to 150 sheep a day. The average clip is about 7 lbs. to the animal.

STOCK.

Chatty Stock Letter from the States.

FROM OUR CHICAGO CORRESPONDENT.

The receipts of live stock have made rapid gains since the late railroad strike was declared off. The arrivals for the first half of August show substantial gains over the corresponding time last year. On Monday, July 30, Chicago received 27,200 cattle, 62,899 hogs and 10,400 sheep—over 101,000 of all kinds; the largest number ever received at any one point in one day. As a matter of interest it may be stated that the largest numbers ever received in one day were: 32,677 cattle, 66,597 hogs, and 25,000 sheep; but those big arrivals of the different kinds of stock were on different days. No less than 2,361 cars were required to bring into the Union Stock Yards the live stock put upon the market for July 30. The previous largest number of cars in one day was 2,175. That would make a long train. During the first seven months of the year, the four leading markets, Chicago, Kansas City, Omaha, and St. Louis, received 3,110,000 cattle, against 3,348,000 in 1893; 7,467,500 hogs, against 5,857,400 in 1893, and 2,234,000 sheep, against 2,429,400 in 1893. Thus, it will be seen, there was a decrease of 238,000 cattle, an increase of 1,610,000 hogs, and a decrease of 190,000 sheep.

Present prices, compared with a year ago, are as follows:

	1894.	1893.
Best fat cattle	\$5 00	\$5 10
Medium "	4 00	4 25
Inferior beef steers	3 00	3 25
Best range steers	4 10	4 10
Best Texas range steers	3 40	2 90
Best heavy hogs	5 45	5 50
" light "	5 25	5 95
Good packing hogs	5 15	5 25
Best fat sheep	3 90	4 50
" grass rangers	2 55	3 60
Lambs	4 50	5 50
September wheat	55	61 1/2
" corn	59	40
" oats	31	24
" short ribs	6 85	7 00
" lard	7 20	7 50

On August 6, cash wheat and cash corn sold in the Chicago market at the same price, 53 1/2c. A dealer said the oldest inhabitant wasn't old enough to remember when anything of the kind had happened before. The conditions of the live stock market are generally much more healthy than they were a month ago. Business in general is still depressed, but on every hand the feeling is expressed that the worst has been passed.

The hog market is very active, stocks and provisions are light, and there seems to be a good consumptive demand. The quality is poorer than a year ago, and light hogs which then were selling at 45c. premium over the best heavy are now selling 20c. below them. Hog buyers are bidding briskly for prime heavy hogs, suitable for making "fat backs."

Robert Slob, of the Anglo-American Packing Company, comes back from Europe a bull on produce, particularly on lard. The hogs, because of the corn failure and their hasty marketing, are not, he says, going to be lard yielders.

Sheep are not doing well, and have been selling at bed-rock prices.

A Nebraska man writes that they have plenty of young pigs, but are liable to have to knock them in the head for want of feed to get through the winter. An Illinois feeder urges farmers to feed wheat instead of corn. He says, when ground and fed to pigs in swill or to cattle with cut fodder or straw, it is far more valuable as a feed than corn.

Some 1,235 to 1,312 lb. Hereford and Angus heaves recently sold at \$1.00, the top of the market the day they were sold.

The failure of the Warren Live Stock Co., of Wyoming, was due to the great depreciation in the value of mutton and wool.

A Sheep and Swine Breeders' Association for Manitoba and the N. W. T.

A representative meeting of the sheep and swine exhibitors at the Winnipeg Industrial was held at the Fair grounds during the exhibition, for the purpose of organizing an association to foster these important industries. The cattle, poultry, trotting horse and dairy interests are each represented on the Board of Directors of the Winnipeg Industrial Exhibition, but the sheep and swine have no one to look after their interests. Besides exhibition matters, there are many things that can be accomplished by such an association to further the interests of the various breeds of sheep and swine. Mr. F. W. Hodson, of London, Ont., Secretary of the Dominion Sheep and Swine Breeders' Association, being present, was asked his opinion as to the advisability of attempting to form such an organization in this Province, and after hearing him and fully discussing the whole matter *pro* and *con.*, it was resolved to organize an association and affiliate with the Dominion Association.

Geo. H. Greig, of the FARMER'S ADVOCATE, was elected Secretary, and Leslie Smith, Wanawana; Jas. Bray, Longburn; R. J. Mitchell, Winnipeg; and J. A. S. Macmillan, Brandon, were appointed provisional directors, with power to add to their numbers; and they were instructed to prepare a constitution and by-laws and call a meeting of all interested at an early date.

Our Scottish Letter.

Possibly the most important event which has happened here since last we wrote is the dispersion of the Underley herd of Bates Shorthorn cattle. The late Earl of Bective was a son of the Marquis of Headfort, an Irish peer, in County Meath, but held land in Westmoreland, on the confines of Yorkshire, in his own right. He was all his life an enthusiastic Shorthorn breeder and one of the most energetic members of the ring which rushed Shorthorn prices up to the fabulous figures reached in the seventies. It was he who gave £8,000 for a cow at the New York Mills sale, and he bought three cows from Mr. Abram Renwick's herd, in Kentucky, at abnormal figures also. Duchesses roamed in his herd in abundance. The Underley parks are full of rich, old pasture, and here the herd had multiplied, while at the various draft sales during the great period of the breed extraordinary prices were realized. In 1874, 55 head drew £19, 677, an average price of £357 15s 3d each. Six years later, 62 animals drew £9,783 18s, or an average of £157 12s 10d. Thirteen bulls were sold in 1884 for £471 9s, or £36 5s apiece—a serious fall. In the following year, 51 animals made £3,468 3s, or £64 3s 6d, not a bad average, as times then were, but something far below the extraordinary figures of ten years earlier. Forty animals were sold in 1887 at £2,983 1s, or the better average of £74 11s 6d. A good private sale was effected in 1876, when 5 animals were sold for 6,000 gs.; that is, £6,300, or £1,260 each. In the next year, 1887, 12 drew 7,200 gs., or £630 each, and 7 were sold in 1878 for 12,200 gs., or £1,830 each. Such prices make one's teeth water, and yet it may reasonably be doubted whether they were a healthy sign of prosperity. In 1892, 40 were sold, and drew only 1,427 gs., altogether less than the price of one cow in 1878. The average in this case was £37 9s 1d, and at a later draft sale in September, 1893, 22 were sold for 583 gs., the average in this case being £28 6s. At the final dispersion last week, arising from the death of Lord Bective, 72 head, including a few calves, made the average price of £42 17s 7d apiece.

The foregoing is a recital which cannot be glanced over without some curious questionings. The drop in prices is extraordinary, and yet, having seen the cattle at the dispersion, we cannot say that as a whole they were cheap. Some of the cows were eagerly enough in demand, and fairly good, even fancy prices, as times now are, were realized. Mr. Joseph Harris, Calthwaith, Penrith, gave 165 gs. for Duchess of Holker III., and Mr. J. Douglas Fletcher, of Rosehaugh, gave 160 gs. for Duchess of Leicester XIX. It was a pathetic sale in several respects. The late Earl was a splendid representative of the English peer of the olden time, inhabiting an ancient pile within a great park, and keeping what was practically open-house during a great part of the year. Never very robust, he was cut off in the prime of his manhood, and the world is distinctly poorer by his loss. His only child is the wife of Lord Henry Bentwick, whose half-brother is the famous sportsman and farmer, the Duke of Portland. But another touch of pathos is associated with the dispersion at Underley. We heard Mr. Thornton giving the history of the old days, the prices paid and realized for the stock once sold, or the cow once bought, the ancestor of what was before us, and then, without hesitancy, offers of 20 and 30 gs. were made for their produce. The absolute dispersion of a great herd is always more or less of a pathetic function, but when it suggests such sudden contrasts, one has difficulty in restraining a smile. What, then, is the fact about these great cattle? Were they good cows and bulls which were offered for sale? Anyone who had been trained in the Aberdeenshire School would say, certainly not. Many of the cows had a distinctly dairy look, a good thing in itself, but they were tall, narrow and patchy, and it was hard to believe that man could ever have gone into raptures about such cattle. Lord Bective was obviously recognizing this. He mated one of his best Duchess cows with the celebrated champion Shorthorn, New Year's Gift, and the result was a bull calf, for which 60 gs. was paid at the sale. The bulls, nobody seemed particularly anxious to buy. The lesson of the Underley dispersion is: Beware of fancy in cattle breeding, and, indeed, in any branch of stock-raising. Be sure to look for the cattle first and the pedigree afterwards. Men who reverse this order will end where the fancy Shorthorn patrons have ended—in the ditch.

Various shows have recently been held in the border districts where sheep are the staple product. The lover of the Cheviot, perhaps the prettiest of all British breeds of sheep, there found himself at home, and the white, thick-coated bleaters had many admirers. The Border Leicester was also much in evidence. He is a different sort of sheep altogether, and the cross between the two, the famous Half-bred, the produce of a B. L. sire and Cheviot dam. This is a sheep which has only to be seen to be forever admired. He has more than the B. L.'s size and weight, and is a more compact, active sheep than he is. His wool sells almost as well as that of the Cheviot, and there can be no doubt that he was the means of working a revolution in border-farming. When trade was thriving, and there was

a keen demand for early lamb, these half-bred sheep and their produce sold for big money. To raise them, whole tracts of moorland were broken and brought into cultivation, and land values rose with a bound. The curious question has been raised: whether these half-breeds are a pure breed? It is difficult to appreciate this question. There are only two recognized ways of breeding them: by a Border Leicester sire out of a Cheviot dam, or by a ram, the produce of such a union, out of a ewe similarly bred. Such is a very useful kind of sheep—none more so; but that it is a breed we much doubt, as it cannot exist within itself. The blood of the B. L. and Cheviot must ever and anon be resorted to, to keep up the character of the type evolved. This does not seem to us to consist well with the character of a breed. No sheep are, however, more valuable, and their name, Half-breeds, is used chiefly to distinguish them from the cross-breeds, which are the produce of a Border Leicester ram and a Blackface ewe. The latter make capital hogs, and are largely bred for the hogg market. SCOTLAND YET.

Cattle Breeders' Association.

The fourth annual meeting of the Pure-Bred Cattle Breeders' Association of Manitoba and the Northwest Territories was held in the Manufacturers' Building, on the Winnipeg Exhibition grounds, on the evening of July 25th. Mr. Leslie Smith, Wawanessa, First Vice-President, took the chair in the absence of President E. A. Struthers, from whom a letter was read, regretting his inability to be present.

Mr. W. S. Lister, of Middlechurch, Secretary-Treasurer, presented a statement of receipts for the past four years, showing the total to have been \$243, and of the expenditures amounting to \$148.50; balance on hand, \$94.50. Also a report of the business undertaken during the past year. The report, as read, was adopted.

The election of officers was then proceeded with, resulting as follows: President, Leslie Smith, Wawanessa; First Vice-President, H. O. Ayearst, of De Clare; Second Vice-President, James Glennie, Portage la Prairie; Secretary-Treasurer, G. H. Greig, Winnipeg. Directors—Representing Shorthorns, J. G. Barron, Carberry; Herefords, W. Sharman, Souris; Jerseys, James Bray, Portage la Prairie; Holsteins, W. J. Young, Emerson; Ayrshires, D. Steele, Glenboro; Polled-Angus, J. Traquaire, Welwyn; Galoways, W. Martin, Winnipeg; Walter Lynch, Westbourne; Donald Fraser, Emerson, and A. Graham, Pomeroy.

C. M. Richardson and R. Waugh, Winnipeg, were appointed auditors.

On motion of Mr. Ayearst, seconded by Mr. R. D. Foley, a vote of thanks was passed to Mr. Lister for his services as Secretary during the last three years.

On the motion of H. O. Ayearst, seconded by Jas. Glennie, regret was expressed that E. A. Struthers had been unable to attend the meeting, and he was thanked for his labors as President. Thanks were also given to other retiring officers.

On motion of J. G. Barron, seconded by D. Munroe, it was resolved that, in the opinion of this meeting, the Industrial Exhibition should not commence later next year than the 17th of July.

On motion of W. S. Lister, seconded by J. G. Barron, the Secretary was instructed to send out circulars to agricultural societies in reference to holding exhibitions on consecutive dates along the different lines of railway, to facilitate the attendance of judges and others wishing to attend a number of them in circuit.

R. D. Foley moved, seconded by D. Munroe, that the directors be requested to name competent men to act as judges in the Province at the local exhibitions. This was lost, after some discussion.

Considerable discussion ensued as to the cattle stables, the unanimous feeling being that the Shorthorn barn is the only one at all suitable for exhibiting cattle.

It was resolved, on motion of R. D. Foley, seconded by J. Barron, that, in the opinion of this Association, the cattle stables should be changed as according to previous motion passed by this Association, which was that they should be modelled after the plan of the Shorthorn barn and made ten feet wider and floored throughout.

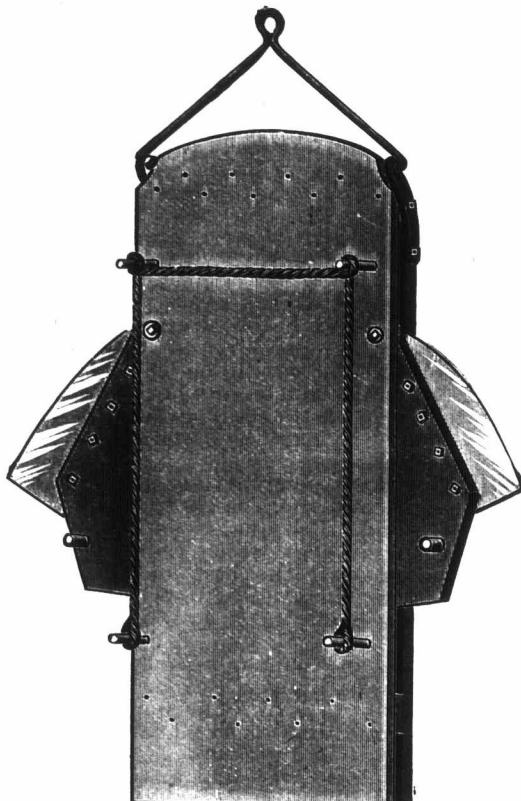
On motion of Jas. Bray, seconded by Joe Lawrence, a vote of thanks was passed to the railway companies for free transport, and it was resolved that the Secretary be instructed to ask the companies to give the same privileges another year, and point out that it would be impossible, otherwise, to hold a successful exhibition, as there would be no stock brought in.

The meeting adjourned until 9 o'clock next morning, when Superintendent O. H. Gregg, of the Minnesota Institute system, and Prof. Shaw, of the Minnesota State College, gave lectures, using the animals as object lessons. Mr. S. J. Thompson, Provincial Veterinarian, also gave an address on the subject of tuberculosis.

FARM.

Filling the Silo.

The time of year will soon arrive for securing the silage supply for the coming season. Harvesting should commence when the ear has reached the glazed stage, or a little before that time if there is a large amount to be handled. Immature corn means sour ensilage; over-ripe corn, dry, mouldy silage. Opinions differ widely concerning the methods of cutting. The corn sled represented by the accompanying illustration has been found very efficient when the crop is standing well, but when the stalks are broken and twisted about a good deal, there is no better method than hand cutting with a good sharp corn-hook, of which there are various styles. Even when the corn stands well, rapid and neat work can be done with the hooks. Cut near the ground, long stubble being a nuisance. The sled consists of two flat runners, 5 feet 2 inches long, and beveled in front like the runners of a stone-boat. They are made of hardwood, and are 2 1/2 inches broad and 5 inches high. They are kept in place by three cross-pieces. Over this frame is a covering of inch boards, 2 feet 6 inches wide. The wings on which the blades are fixed consist of two pieces of hardwood shaped somewhat like a V, with something like a piece of an old cross-cut saw bolted on the outer edge of each, which is sharpened and cuts the corn when the sled is in motion. The knives are hinged on a bolt in front, and the rear part may be pushed under the platform to adjust the width of the boat to any variation that may be found in the width of the rows of corn.



A HOME-MADE CORN-CUTTING MACHINE.

The knives are held in position at the rear by a bolt, which may be removed at will. The length of the knife is 20 inches, and the narrowest width at base 9 1/2 inches. The greatest width is 16 inches. Four stakes are placed in position, as shown in engraving, and a rope attached to these a short distance above the platform to protect the two men who stand inside and catch the corn in their arms as it is cut, allowing it to fall in bundles of sufficient size to be conveniently handled.

From the time the harvesting commences, "dispatch" should be the watchword. Enough hands and teams should be secured to keep a continuous stream of corn running into the silo. In some localities two or three farmers have found it very satisfactory to own a large ensilage cutter in partnership, and where horse-powers are not at their disposal a threshing engine can often be secured to run the machine. By the partnership plan all the hands of the farmers owning the machine can be made use of,—in the field, hauling to the barn, feeding the cutter and levelling and tramping in the silo. The ensilage cutter should stand out doors if possible, so that there will be abundance of room to drive up with the loads and handle the corn with freedom. It is thought by some practical men that to allow the corn to wilt before hauling is an advantage, but others who have tried it have not found it entirely satisfactory. Mr. John Gould, of Ohio, who delivered an able address on the silo at a Western Dairymen's Association, stated that he "does not believe in cutting corn over five minutes before it goes on the wagon."

Hauling the Corn.—For drawing the corn to the silo any form of low truck with a flat rack, or an ordinary rack floored over, will answer very well. The top of the rack should not be much higher than the wheels. Sometimes two long scabbings or poles are suspended under the axles of a wagon at any desired height. Boards are then placed across these to make a platform, on which the corn is loaded. The number of men necessary depends upon the distance the corn has to be hauled.

When the field is close at hand, about seven men, one of whom may do the directing, can keep things going nicely. Every man should have his place and do his own work. The platform of the cutting-box should be from a foot to a foot and a half below the top of the rack. Then, have an extension table 12 feet long, and 2 1/2 feet higher at the back end than the front. There is a good deal in proper loading. To build the loads with corn crosswise, butts all one way, has been found very satisfactory. The bundles can then be taken from one end of the load first, and followed in succession down the inclined extension table, without any delay whatever. By this plan just one man is required to feed the machine. There is a plan now in vogue by means of which the man in the silo can be done without. Says Mr. Gould, in his address to the Dairymen's Association: "Which is the heavier, a man or the next load of ensilage?" The plan is this: To take some boards and make a little table 3 1/2 feet square, and lay it across two poles over the silo, right under the top end of the carrier. As the ensilage falls on the table it will form a pyramid about four feet high, and as the rest follows it is thrown by this slant clear over to the walls of the silo. By-and-by the corners will be found a little slack; then turn your table quarter the way round, and the corners will fill. Once in a while it may be necessary to get in and do ten minutes' tramping and spreading, because a little straightening up is necessary now and then. When within two loads of the end of the day's work, the table should be removed, and the corn allowed to fall in the centre, then spread out level and left to settle over night. The pressure will then be where it is most needed. Mr. Gould has practiced pouring on 20 pails of water at the close of each season's filling, for two years, and in this he thinks he has found the ideal covering for the silo. After the last load is in, gather up the litter, spread it over nicely and tramp the corners down close. After two days, tramp it down again, and do it well. Now is the time to pour on the water, about 20 pails for a silo 15 feet square. The work is now completed, and if the silo has been properly constructed and now in good condition, there need be no fear about the quality of the ensilage when wanted for the stock. Sometimes, when a silo is very rapidly filled, after being tramped round the sides and corners and leveled, it will, in a few days, settle down six or seven feet, and may then be refilled to the top. Once it settles down, the top should not be disturbed. If holes are made, there will be spots of "bad" ensilage. Therefore, in refilling, considerable fresh-cut corn should be run in before a man steps in again. If the corn be over-ripe, some recommend sprinkling on water freely occasionally.

Fall Wheat Reports.

(Continued from page 301.)

THE CROP AS SEEN BY OURSELVES.

East of London, on the C. P. R., we found many fine fields of Golden Cross, which seemed to be a favorite with many between London and Galt. The Manchester and Democrat still hold a place. As we continue east and north we find the old White Clawson the popular sort. We saw several splendid fields of this kind. On other farms in the Eastern and Northern fall wheat sections the Canadian Velvet Chaff does well. Some promising fields of American Bronze were here seen. On the farm of the Hon. John Dryden was a field of twenty acres, all American Bronze, a most promising crop—tall, thick, well headed, and very pure. On an adjoining farm, owned by Mr. D. Dyer, Columbus, was another large and promising field of this variety; also a quantity of Pride of Genesee, one of Mr. Jones' latest cross-breeds, and a large strip of Genesee Giant. The first named is a gigantic grower; the heads were in several cases seven inches long, but coarse and open; the straw was quite five feet high. The habits of growth are like the Clawson; the head bends over and the straw is inclined to lean; it tillers freely; from one stool we counted 28 well-developed heads. Though so vigorous a grower, we are not prepared to pronounce it a desirable sort. The Genesee Giant was more promising. This sort presented a splendid appearance; in its habits of growth and in the straw it resembles the Golden Cross, to which it is closely related.

Essex, S. R.

W. J. BALDWIN, Colchester.—Hybrid Mediterranean, White Surprise, White Clawson and Michigan Amber are the leading wheats in this vicinity. My seven acres of Surprise promised well, but suffered to some extent with rust. Red Clawson, Walker's Reliable and some other new sorts are grown, but fall behind in the race with the former mentioned sorts.

Oxford, S. R.

GEO. SIBBEN, Ingersoll.—Red Clawson and Volunteer are mostly grown about here. The former gives best results, having larger heads and plumper grain than the latter.

J. W. COHOE, New Durham.—Manchester, Clawson and Democrat are among the leading varieties of wheat grown in this locality, and, with favorable conditions, yield about in the order named. Democrat, however, seems to be able to withstand adverse conditions, with less injury than the others named. American Bronze and Canadian Velvet Chaff have been tried, but have never grown in popularity.

Bruce, E. R.

JAMES TOLTON, Walkerton.—Garfield, American Bronze, Golden Cross, Red Clawson, Democrat, Bearded Velvet Chaff and some of the older sorts are grown in this locality. My experience in growing the first three named places them in value in the order named. All varieties seem to stand the winter and spring equally well. Garfield inclines to be weak in the straw. The Bronze grows a rank and stiff straw, inclined to rot on rich land. Garfield, Democrat and Red Clawson are all popular with my neighbors.

JOHN CUNNINGHAM, Greenock.—My crop of Golden Cross, although injured by spring rains, will yield well. It promises from twenty to twenty-five bushels per acre in this vicinity. Michigan Amber has done well; it will yield even better than Golden Cross, but is somewhat lighter per bushel. The old Clawson continues to give good yields in this locality.

Huron, W. R.
W. W. FISHER, Benmiller.—Early Red Clawson, Michigan Amber, Surprise and Scott are mostly grown in this section. Of these, Clawson is most popular, and Surprise the least. My Clawson averaged thirty-seven bushels per acre this year, being seven bushels more than last year's yield.

Brant, N. R.
R. S. STEPHENSON, Ancaster.—Fall wheat is turning out well with us. American Bronze seems to be the leading variety of the new red wheats. Red Clawson was largely sown here last fall and did well. Genesee Giant, a new sort, has been grown here one year and promises well.

Waterloo, S. R.
JOHN TAYLOR, Jr., Galt.—Dawson's Golden Chaff has about first place in the estimation of the farmers of this locality. Early Red Clawson, too, has many admirers. Velvet Chaff and Jones' Winter Fife have lost favor during the last two seasons.

York, E. R.
H. REEVE, Highland Creek.—Jones' Winter Fife and Early Red Clawson are largely grown in this section, both of which have many admirers and have given good returns. Surprise, Genesee Giant and Early White Leader have been grown by farmers in this section, and are all found to possess good qualities. Of these, Genesee Giant seems to be the favorite.

Brant.
JAS. MILLER, Paris.—I may safely put Golden Chaff at the head of the white wheats, turning out from 30 to 40 bushels per acre; good, strong grower; stiff straw and standing up well; not subject to rust; weight from 60 to 63 lbs. per bushel. Red Clawson leads the red wheats, but is not so stiff in the straw as Golden Chaff; Manchester is shorter in straw, and more inclined to go down. Millers do not like it.

Farm Water Supply.

In reply to the enquiry of Mr. Clark in your issue of July 16th, would say that the usual way for arranging water supply outfits for farmers and suburban residents is to place the wind-mill at the well or spring, or wherever the best supply of water is, and raise the water from the well and convey it by means of pipes to the tank, no matter how far the tank may be from the well. In some cases we have located tanks several thousand feet from the wind-mill and source of water supply. The distance the tank is from the wind-mill does not matter, as the wind-mill is sufficiently powerful to draw the water out of the well and force it into the tank. Of course, height of elevation and distance, also depth of well, must be taken into consideration when deciding size of wind-mill. We have pumps for this purpose which are so arranged that water can be drawn at the well the same as with ordinary pumps, or at the will of the operator can be forced to the tank a distance away.

There is not the slightest difficulty in arranging a satisfactory outfit for Mr. Clark, or anyone desiring to do such work. The probable cost, including tank, piping, etc., or a job such as Mr. Clark would require, would be about \$120. Of course this is a rough estimate, as we do not know exactly what he would require, but think it would be in that neighborhood. There is no doubt whatever but there are thousands of farmers in Mr. Clark's position, and if they knew they could have a plentiful supply of water at such a low cost, and no expense whatever after once erected, they would not be without it for a single day. Many do not realize the value of having plenty of water for use at any time. We believe farmers are wasting their strength and a large amount of money every year by not having some such system such as we have tried to explain.

GOULD, SHAPLEY & MUIR.

Brantford, Ont.

Gypsin—A New Insecticide.

A new and very effective insecticide has lately been discovered by F. C. Moulton, of Maldon, Mass. Arsenate of lead was the substance used, which was prepared by dissolving 10 oz. acetate of lead and 4 oz. arsenate of soda in 150 gallons of water. These substances quickly dissolve and form arsenate of lead, a fine white powder which is lighter than Paris green, and while being, it is said, as effective in its operation in destroying insect life, is far preferable for several reasons. One of these is that it can be used much stronger than Paris green, without injury to foliage, which is greatly in its favor. It is only fair to say that, properly used, Paris green will not destroy foliage, but the tendency is to use it too strong. Many have not at hand proper scales for weighing it, and in order to "fix the insects sure," they throw in a little extra. Some have paid very dearly for such carelessness or recklessness. "Enough is as good as a feast,"—in this case better. It is far more readily seen on the trees than Paris green, and being lighter, does not settle nearly so quickly in the water, and therefore can be distributed more evenly over the foliage. The addition of two quarts of glucose or molasses to 150 gallons of water causes the mixture to adhere to the leaves a much longer time.

Silage as a Food.

According to exhaustive experiments carried on for three years, at the Woburn Feeding Experiment Station, England, silage does better for older than for younger beasts. Silage made from good grass very nearly approached roots and hay, but never quite reached it. "Sweet" and "sour" ensilage seem to be of equal value. Grass from two and two-fifth acres, made into silage, equalled hay from two and four-fifth acres.

DAIRY.

Some Interesting Facts Regarding Practical Dairying in Ontario.

BY J. W. WHEATON, SECRETARY D. A. W. O.

A few weeks ago there were sent out from the office of the Western Ontario Dairymen's Association, circulars to factorymen, asking a number of questions concerning some leading features of dairying. Some of the answers have been returned, and show many interesting facts regarding the profits of the dairyman, the working of the Babcock test system of paying for milk, and other new features in dairying.

TWO KINDS OF DAIRYMEN.

One of the strong lessons learned from these returns is the very wide variations in the amounts of money, per cow, received from the factories by different patrons. The smallest amount so far is \$12 per cow for the season, while the largest amount is \$65 per cow. It may seem impossible that any patron of a cheese factory would keep such inferior cows, or would take the trouble to supply milk when the total returns for the season only averaged \$12 per cow. It is doubtless true, however, as there is the same amount mentioned in the returns from three or four factories. A number of others gave from \$14 to \$18 per cow as the smallest amounts received by the patrons. Even these amounts are very low, and are a long way below the line of profit. A dairyman whose cows return him no more than the amounts quoted above, during the cheese factory season, had better go out of the business unless he can give some reason that does not appear in these returns. His calling is evidently not that of the dairyman. Either the man or his condition may be better fitted for some other line of agriculture. True, there may be certain conditions which materially effect the returns, such as a very small factory, where it costs a large amount for hauling milk and manufacturing cheese, and where the season is much shorter than in the section where the \$65 per cow man lived. We find, however, that at the same factory with the \$12 per cow man, the largest amount of money received per cow by any patron was \$35. These figures are for the cheese season of 1893. If one man, under the same conditions, can realize a large profit out of his cows, there does not seem to be any valid reason why there should be a \$12 per cow man at all. What one can do, others can do under the same conditions.

Wherein lies the difference between the \$35 man and the \$12 man? We do not have to draw very much upon our imagination to find out a cause for this wide variation. We picture the \$12 man as a careless, shiftless farmer, without system or order in his work, who keeps cows because his neighbor does, or because his grandfather did, or, perhaps, because the cow was one of the animals Noah had in the Ark. He does not think cows pay, or that there is any money in dairying or in supplying milk to a cheese factory. He has a few dilapidated, ill-bred, ill-cared-for cows, and because the milk wagon passes his gate he sends his milk and gets back his share of the whey and the money, and feels that he is doing his duty, and, perhaps, fulfilling his destiny. He does not think it pays to keep cows well, or to care for them during the winter when they are not giving milk. Consequently, he is not very particular about providing warm, comfortable stables for his cows, and allows them to shiver and hump up their backs around the straw-stack during the greater part of the day and night, when the temperature is a long way below freezing. Being of this mind, he thinks that any kind of food will do for his cows during the winter. Therefore he neglects to lay in a supply of suitable, nourishing food. His cows have to whet up their appetites in order to be able to indulge in a bill of fare consisting of

WHEAT STRAW FOR BREAKFAST.

oat straw for supper, with a wisp of hay sandwiched in between. These cows always give their owner a great surprise in the spring. He is surprised because his neighbor's cows are thrifty, sleek and hearty, while his cows are weak, unthrifty, and frequently need aid in getting into a normal position for walking. This \$12 man never has a large amount of forethought, and never thinks of providing supplementary feed for his cows during the dry weather of July and August. Consequently, his cows, with no large supply of milk to boast of at any time, begin to shrink in their milk till it is difficult to get enough to make the can stay on the milk wagon during its journey to the factory. Then this \$12 man begins to consider, and he makes a vow that another year he will do better and make provision for his cows both winter and summer. But another season comes around and brings no change, just because he fails to take action and neglects to put skill, intelligence and good judgment into the business.

What about the \$35 man who is in the same factory with the \$12 man?

We picture him as a man who means business. He is not keeping cows for nothing, or because somebody else did. He is keeping cows because he thoroughly believes that there is money in it, and patronizes a cheese factory for the same reason. He does not believe in keeping poor cows, but puts his skill, his intelligence and his good judgment

into the selection and keeping of the best cows to be had for the production of milk. He believes in using a cow well during her holiday season. He aims to have her comfortably housed and fed when not milking. Consequently, you will always find near his stables a supply of chop, corn ensilage, corn fodder, roots, etc., to tempt his cows' palate during the cold winter months. Neither does he ask his cows to walk half a mile or more through snow banks to drink out of a "hole in the crick" all winter; nor does he compel them to quench their thirst at a slimy pond hole during the summer. He does not believe in neglecting his cows during the summer, and therefore always keep them supplied with good, nourishing, succulent food during the milking season. He never handles his cows roughly or ill-treats them. He always gives the best of care to the cows' product in preparing it for the cheese factory.

THAT \$65 DAIRYMAN.

It may seem very improbable to many that a patron of a cheese factory should receive \$65 per cow for one season. In fact, the \$65 man, in a way, creates a great deal more surprise than the \$12 man. The greatest surprise, I think, is that one man could make over five times as much per cow out of the factory than another man. The fact that there is a \$65 man is a convincing argument of the effect superior skill, superior intelligence and superior business ability have, when applied to the business of dairying. There are not many \$65 men supplying milk to the cheese factories of Ontario. But the existence of one shows us the great possibilities there are in intelligent, systematic dairying. No doubt the \$65 man had some advantages that the \$12 man has not had. He supplied milk to a large factory, where the cost of manufacturing cheese was less than one-half what it was where the \$12 man supplied milk. This large factory also ran for a longer season and secured the highest price for its cheese. In the same factory with the \$65 man, the smallest amount of money received by any patron is \$35 per cow, the same as the largest amount received at the factory with the \$12 man. Here, under similar and favorable conditions, we find one man getting nearly twice as much money per cow as another. These variations show that success in dairying depends more upon the individual dairyman than upon anything else. Unless a man is determined to keep only the very best cows, and to give them the best of care and the best of feed, he need not rely on making any extra profit out of his cows, or of securing the best results for the time and money he expends on the business.

THE COST OF MAKING.

In the cost of manufacturing cheese there is a wide variation shown, but this is not so surprising. It varies from 1 1/2 cents to 2 1/2 cents per lb. of cheese—these figures including drawing and total cost of making. At the large factories in the old dairy sections, where every farmer makes dairying more or less a specialty, the cost of drawing the milk is a comparatively small item, and the cheesemaker can afford to work at a much lower rate per 100 lbs. But in those sections where dairying is a side issue, and the milk has to be drawn eight or ten miles, with every other farmer sending milk, the cost of drawing comes very high; in fact, too high for profit. Besides, where only a small amount of milk is received at the factory, the cheesemaker must have a higher rate per 100 lbs. for his work, which will increase the total cost.

The returns for the cost of drawing show a very wide variation, ranging from 3 cents to 17 cents per 100 lbs. of milk. At the factory where the milk is drawn for 3 cents, the total charge for manufacturing and drawing is only 95 cents per 100 lbs. of cheese to stockholders, and \$1.35 per 100 lbs. to non-stockholders. It is difficult to see how a manufacturer can afford to make cheese for 2 1/2 cents per lb. and furnish everything, and pay 17 cents per 100 lbs. for drawing milk. The manufacturer who only charges 1 1/2 cents for making, and pays 3 cents per 100 for drawing will be in the better position.

Hauling the milk is one of the economic problems that is agitating many of the managers of our smaller factories. When the cost of drawing milk to any factory is more than 10 cents per 100 lbs., there is not much profit in carrying on the business, unless the patrons are willing to pay a very high rate for manufacturing. When such conditions exist, there must be something radically wrong with the business or with the dairymen in the locality. They are not making the best of their opportunities, and are only patronizing the factory because they have a little bit of milk which they do not know what to do with during the warm weather. In such sections, if every patron would make an effort to keep three or four more cows, and would commence sending at the beginning of the season, and continue till the close, they would get the milk drawn much cheaper, have a larger make at their factory and lessen the total cost of manufacturing. A lessening of the total cost of making means more money in the patron's pocket. In large factories the cheese usually sells for a higher figure. The buyer can afford to pay more, as there is not so much expense in shipping. All these things increase the profits of the man who supplies milk, and are some of the advantages to be gained by those who make a business of dairying.

From returns already received, the average cost of drawing milk for 1893 was 8 1/2 cents per 100, and for 1894 about the same. Many of the factorymen in the outlying districts will consider this a comparatively low average. There are included in it

returns from a number of large factories, where the cost of drawing ranges from 3 to 5 cents. There are also a number ranging from 10 to 15 cents.

THE BABCOCK TEST.

Some interesting facts have been received regarding the working of the Babcock Tester, and paying for milk according to quality. But as we have already transgressed in taking up time and space, particulars regarding them had better be deferred for another occasion. Suffice it to say that the Babcock system is giving pretty general satisfaction, with one or two exceptions. Reports from one or two factories where winter dairying has been carried on are very satisfactory concerning this new feature of dairying. These, however, will be considered more fully at another time.

Summer Feed for Cows.

I like the way the *ADVOCATE* has been hammering away at those who neglect to provide soiling crops to feed in summer. We can tell the farmers who have a good supply just now by meeting them on the way to the cheese factory—they are wearing a well-satisfied sort of smile on their faces. I find vetches and oats the best. A change for a few days to corn lowered the quality of the butter we make. I am losing confidence in immature corn for soiling. We can easily grow two crops of vetches the same season on the same ground. I have a second crop (the first was sown on May 19th) well up and looking splendidly, on ground from which I already have taken a large crop. Wishing the *ADVOCATE* all success, I remain, etc.,

JAMES H. ESDON.

VETERINARY.

Dentition and Dental Diseases of Farm Animals.

BY DR. MOLE, M. R. C. V. S., TORONTO.

(Continued from Page 303)

Dental diseases of animals have received very great attention during the past few years by veterinary surgeons, so that we only propose to give a few of the many derangements due to irregularities of the growth of teeth or disease. The lips and teeth are the organs of prehension and mastication. The food is first grasped by the lips and passed backward by a peculiar formation in the horse's tongue to the level of the molar teeth, then pulverized and ground previous to swallowing. The teeth are liable to at least three forms of derangement—irregularities of growth, injuries of a direct nature, or a disease.

Irregularities of Growth.—We mentioned that at two years and a-half the fifth molar tooth should appear, and it is at this period of the animal's life when most attention should be paid to his teeth. The horse at three years old not only casts twelve temporary teeth, but at the same time gets sixteen permanent teeth, viz., four central incisors, first and second molars on each side, above and below, and the fifth molars. About this time the animal is brought in from pasture and put to work. What with the dental irritation at this time, and his new mode of living, is there any wonder that some animals suffer, and need we be at all surprised to notice at this period the commencement of certain nervous disorders in horses. Having had ample opportunities of attending shows and inspecting animals, from foals upwards, as exhibited, we have never seen any instance of chorea, shivering, stringhalt or clickleg until the animal is three years old. Therefore, we may say that, when a horse is rising three years old, it is the most critical period of his life, as we are inclined to the opinion that "strangles" in young animals will many times be induced by this sudden change of diet, stables and dentition. Should you find an animal not doing well at this period, examine the mouth, and, if necessary, remove the shells of the temporary teeth. The lower ones, as a rule, are shed sooner than the upper. The upper molar teeth in horses and cattle are much larger than the lower ones, the upper being a fixture to give a broader surface for the side rotatory movement of the lower jaw, thereby causing, in some instances, uneven wear and overgrowths, which have to be removed by the rasp or shears. Sometimes the tooth will be split from a piece of stone being mixed with the grain, or a piece of iron, in the shape of a nail. Here, removal of the loose portions will effect relief, but the opposite tooth becomes elongated, and should be cut off or rasped periodically.

Parrot mouth animals have to be closely watched, and teeth dressed when necessary. These malformations are due to mal-position of the condyle of the lower jaw allowing a too free movement backwards and overlapping of the upper incisors. In cattle, the incisor teeth are shovel-shaped and loose in the sockets. The crowns or

wearing surface of the molar teeth are not flat, as in the horse, but have sharp elevations, fitting into depressions, for the purpose of cutting or tearing down the rough fibrous grass. The constitutional disturbances cause a good deal of trouble, particularly from one year and nine months to two years and three months, by the temporary shells not being cast, often setting up dentition fever, with dribbling of large quantities of saliva, and, in many instances, diarrhoea. When suffering from this cause unthrifty conditions are generally manifest—dirty skin, watery and gummy eyes, appetite capricious, drinking large quantities of water. In all cases, at this age the mouth and teeth should be examined.

Crib biting in horses may be termed a dental disease, inasmuch as it affects the front teeth. Having fixed the jaws, a sudden, and more or less involuntary, contraction of the muscles of the lower part of the neck takes place, a clucking or belching sound is heard. The horse performs the act alone and undisturbed in a cool, deliberate way, as if he enjoyed it, and by imitation the other horses will learn the same trick. Support on a fixed point is essential for the performance of this act. The height of the manger is important; if it is too high, or even low, the act cannot be performed; on the ground it cannot be done, nor yet when the horse is lying down. There is some variety in the manner in which it is carried out by different horses, but the appearance of the incisor teeth affords good reliable evidence of its existence. Feeding from a nose-bag will prevent it, or the use of a throat strap or muzzle. If seen in the early stages, before the habit is confirmed, passing a fine tooth saw between the incisors will often cure this objectionable vice.

Caries of the teeth.—In our experience we have met with very few cases of caries of the teeth, but in some parts of the country animals were called "rotten," from the foetid smell of imprisoned decomposing food becoming entangled in the teeth. Many hundreds of young cattle have been sacrificed from this cause. They have actually died of starvation, although in the midst of plenty, and death has been said to be due to caries, but we are inclined to think it is due to the unshed temporary teeth. Horses do not seem to suffer to the same extent. The grain that they are fed on causes the loosened crown to come away and fall into the manger in a natural manner; this, no doubt, owing to the method of growth; the teeth growing from below meet at the apex, forming a complete table, preventing the food from passing down between them. There is no doubt in my mind that this is one of the particular methods of conservation to prevent accumulation of food between them, for we always see that when teeth decay it is between each other, and not from the crown or surface of the table.

Veterinary dental surgery has of late years excited deep interest with the veterinary profession, although our opinion is that a good deal of unnecessary detail has been imported into this particular study. Still, there are many cases where a knowledge of the derangements and diseases is absolutely indispensable. A number of ingenious instruments have been invented to facilitate the work of the operator. We were not acquainted with half the number until very recently. The saw tooth chisel, Thompson's tooth shears, with one or two chisels, rasps and forceps, comprised the whole of the outfit of an ordinary veterinary surgeon's dental equipment in the Old Country. The modern horse dentist travels with a complete armory of chisels, forceps, gouges, speculums, and many instruments that we have no knowledge of the use, and doubt very much if there can be. However, we are informed that they find plenty of employment, and make some good use of their instruments, so that we must not traduce the characters of those whom we cannot refute, and for all we know, they may perform very useful services when required. Conditions which give rise to a certain amount of trouble are often due to kicks received at pasture. As a result of such an accident, paralysis of the lips often occurs. Examine the teeth, and often it will be found due to the upper portion of the tooth being fractured, more commonly the fourth than any other. In the earlier stages the discharge is from one nostril only, occasionally foetid and often tinged with blood. These symptoms are followed by a bulging of the bones of the face, dullness on percussion; "an increased discharge from feeding the animal on the ground is diagnostic;" a certain amount of glandular enlargement, due to the irritation.

All of these symptoms have been mistaken for glanders, a specific contagious disease, but there is no foetid smell, and the discharge is constant. The submaxillary gland is adherent to the jaw, and not movable, as when due to injuries to the teeth. Now, as to diagnosis. When a horse has a discharge from the nostrils, due to the teeth, the only method on which reliance can be placed is by the exploring needle, after a small hole has been bored by a gimlet. If placed in healthy tissue and withdrawn a little blood may be seen. On the other hand, if we find pus, our diagnosis is complete and treatment perfectly clear.

Having made your diagnosis, the sooner you let out the pus the better. We know pretty well the distribution of the sinuses, so all that we have to do is to boldly saw out the piece of bone, punch out the tooth, and practically cure our patients in the majority of cases.

QUESTIONS AND ANSWERS.

[In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Veterinary.

HENS DYING OFF.

R. L. A., Treherne, Man.:—"My hens have a peculiar sickness. They seem well one day and the next are stupid and dull, and in a few hours are dead. The only form of disease I notice is dysentery, the discharge a yellowish green. Can you give me any cure?"

[Damp and improper food is most likely the cause of the disease. Change the diet. Give a teaspoonful of castor oil. This will tend to clear the intestines of irritating matter, and afterwards give twice a day: Chalk mixture, two teaspoonfuls; tincture of opium, three drops.

W. A. DUNBAR, V. S.]

LEUCORRHOEA.

SUBSCRIBER, Napinka:—"I have a driving mare, about fifteen years old, which urinates very frequently when driving, and also passes a white discharge, as if 'in season.' This weakness is not continuous, and perhaps for two or three days at a time these symptoms are not present, at least very slightly. When going a moderate gait the swaying in and out of the rectum and its surroundings endanger the driver to a spatter of urine or discharge. There is less danger when under high speed. I may add that after driving a good distance it ceases to a great extent, but is produced at once by a big feed or heavy draught of water on the days when the symptoms are plain. Please prescribe."

[The symptoms are those of leucorrhœa, "whites" in a mild form, accompanied by an irritated condition of the vagina and urethra. Give morning and evening in food for ten or twelve days: Iodide of potassium, one drachm, and pulverized cinchona, two drachms. Inject with a syringe four ounces of the following lotion into the vagina once a day until the symptoms disappear: Zinc sulphate, half an ounce; soft water, one pint; give moderate rations of easily digested food.

W. A. DUNBAR, V. S.]

INDIGESTION.

FARMER, Florenta, Man.:—"I have a big, heavy horse, six years old; does plenty of work and gets plenty of good feed, both hard and soft; but he seems to be troubled very much with his water in the spring and fall of the year, but not in winter. Symptoms: When he takes sick he will lie down any place and groan as if in pain, and will not touch water or food of any kind. When I see him like this I give him a dose of saltpetre or sweet nitre, and in about an hour he will make his water and is apparently all right, and will take to his feed again. Please give me cause and cure?"

[The few symptoms you have mentioned would indicate some disorder of the digestive organs, rather than an ailment of the urinary apparatus. Prepare the horse for a purgative by feeding exclusively on small bran mashes for sixteen hours, and then give the following: Barbadoes aloes, seven drachms; calomel, one drachm; ginger, two drachms; soft soap, sufficient to form a ball. Continue the bran mash diet until the physic has ceased to operate. After this give morning and evening, in food, for ten days: Bicarbonate of soda, gentian and nitrate of potass., of each two drachms; pulverized nux vomica, half a drachm.

W. A. DUNBAR, V. S., Winnipeg.]

DISEASE OF THE OMASUM, OR THIRD STOMACH OF THE OX.

HENRY MARCH, Cowichan Lake, B. C.:—"A five-year-old cow was discovered to be unwell, and I gave her a pint of linseed oil, and repeated the dose on the fourth day. She evacuated sparingly each day. About the fifth day she began to grind her teeth almost incessantly until the eighth day, when she began to purge badly. On the ninth I found her delirious, banging about in a dangerous manner. I let her go out into the yard, when she began to turn round in a circle, knocking into anything that was in the way. When she repeated the movement twice, I shot her. When I opened her the paunch was full of grass; the other stomachs had each something in them. The lining of the paunch had a reddish tinge; the inside coat easily pulled off. She fed in the bush, and on a piece of burnt chopping sown to timothy."

[The *post mortem* should have revealed a large quantity of food, dry and very hard. The masses of food lying between the leaves of the omasum resemble bruised cake, and will often break and crumble between the fingers; the lining membrane is inflamed; a numerous quantity of patches, worn like holes, together with considerable inflamed tissue, will be found in various parts of the intestines. For treatment, a veterinary surgeon should be called as early as possible, as only the first stages of the disease are amenable to treatment, when it may be relieved by administering repeated doses of purgative medicine. Epsom salts in combination with Barbadoes aloes, which, by its special action on the third stomach, will often prove successful. This disease more often ends fatally. It is often caused by cattle eating tough, wirey grass which has been subjected to a winter's weathering on the ground.

DR. W. MOLE, M. R., C. V. S., Toronto.

COW POX.

H. MACLEAN, Salmon Arm, B. C.:—"I have a valuable cow with the cow pox for six weeks. Have used turpentine and oil. Is that the best treatment? Same cow had a swelling in udder, a hard lump with soft place in it; milk from teat nearest lump has been bloody for a week, but seems all right now. The cow has been failing in condition all the time. Has run out in bush on good pasture and plenty of fresh water."

[Bathe the udder morning and evening with tepid soft water, and after each bathing apply the following lotion: Sulphate of zinc and tincture of opium, of each one ounce; carbolic acid, half an ounce; water, one pint. Give morning and evening for a week, in sloppy, easily digested food: Hyposulphite of soda, one ounce. Keep the animal housed during the hot part of the day. Paint the lump with tincture of iodine three times a week.

W. A. DUNBAR, V. S.]

ERYTHEMA.

S. WHITTOCK, Glen Adelaide, Assa.:—"I have a cow whose nose has turned from white to black or dark brown, skin hard and dry; similar change came on her teats, and they are badly cracked and very painful. She gives about the same quantity of milk as before, and is well otherwise. 1st. Name the trouble? 2nd. What is the cause? 3rd. The cure? 4th. Is the milk fit food for man or beast? 5th. Is the trouble infectious?"

[1st. A superficial inflammation of the skin, technically called erythema. Some cows are very subject to this affection. 2nd. Sometimes obscure. Pasturing on low, wet land, where the grass is long and coarse, will often cause it; also irritation from flies, etc. 3rd. If the cause is known, remove it. Apply to the sore parts, morning and evening, a liniment composed of collodion and glycerine, equal parts. 4th. If the cow is healthy in other respects, the milk is fit food for either man or beast. 5th. No.

W. A. DUNBAR, V. S.]

G. P. LIDFORD, Man.:—"Cow, seven years old, got sick four days ago. Nose dried and cracked; teats began to crack. Wants to be in the stable all the time. There are a good many similar cases around here, one proving fatal. What is the cause, and cure?"

[See answer to S. Whittock.]

ACUTE INDIGESTION.

H. D., Lena, Man.:—"Can you explain the causes and remedies of the following illness of calves. Several calves were attacked, ages ranging from six weeks to two months. They were fed on skim milk, and were running in pasture apparently in a thriving condition. The first symptoms were foaming at the mouth, grinding of the teeth, hanging out of the tongue and violent twisting of the neck. They afterwards ran round in a circle as fast as possible, then bellowed and kicked and almost immediately died. Some lingered two days, but one died in one. The symptoms were very much like those of poisoning, but no poison has been used on the place for four years."

[The trouble with your calves was gastritis, or acute indigestion, probably caused by injudicious feeding. Too large rations of skimmed milk is especially difficult of digestion. The treatment consists in the administration of from four to eight ounces of castor oil, and from three to six ounces of lime water, according to the age of the calf. Injections of warm water and raw linseed oil may be given with advantage. Fomenting the abdomen with hot water for the space of two or three hours, or longer, is often of great benefit. Half the above quantity of the castor oil and lime water may, if necessary, be given every four hours until three or four doses have been administered.

W. A. DUNBAR, V. S.]

Miscellaneous.

ALFRED A. FRASER, Cross Point, Bonaventure P. Q.:—"In your next issue please mention the best pump for farm for watering about 50 head of stock; well about 15 feet deep; iron pump now in use, but it does not draw fast enough. Are not wooden ones better?"

[Most wooden pumps throw a larger stream than iron ones. A good serviceable pump can be secured from any reputable maker. For watering that number of stock there should be economy in having a small windmill erected to do the pumping.]

FAILURE OF STRAWBERRY CROP.

G. E. GIBBON, Parry Sound:—"A year ago last spring I planted four rows of Wilson and Sharpless strawberries, mixed; rows 100 feet long and three feet apart, plants one foot apart in the rows. The ground was manured the previous fall with farm yard manure, and was in fine condition. The rows were kept clean and the plants made a splendid showing. This season the plants bloomed to such an extent as to give the rows an almost solid white appearance. The fruit appeared to set, but amounted to nothing. On the whole there was not more than four quarts of berries. Can you or some of your correspondents give the reason of failure?"

[The above case seems a remarkable one. Had the fruit not set we would attribute the failure to the plants being almost all pistillate, but the most probable cause seems to our minds to have been too low a temperature just at the critical time. No doubt Mr. Gibbon's good treatment has brought the plants along earlier than the climate in that section could protect. We are aware of several strawberry crop failures this season, occasioned, it is believed, by frost. We would like to receive the views of practical growers on the above case.]

THE FRENCH-CANADIAN COW.

DAIRYMAN:—"I would like to secure, through the FARMER'S ADVOCATE, some special information regarding what are known as 'Quebec Jersey' cattle. 1. What are their principal characteristics? 2. How long have they been bred pure? 3. To what extent have they been recorded in a herd book? 4. How have they succeeded at the Experimental Farm, Ottawa? 5. For what price do mature cows of the breed usually sell in Quebec? 6. What records have they made for butter production?"

[1. The principal characteristics or points of Quebec Jerseys may be described as follows:—Head short and broad, horns generally turned inward and slightly upward, with dark tips; muzzle surrounded by silver gray or yellowish circle; ears medium size and covered with short hairs, and inside orange colored; tongue black; neck thin; back straight to tail head; chest deep, forming an almost straight underline with the belly and thighs; loins broad and long; barrel well hooped and deep at the flanks; thighs long and wide apart; tail thin and reaching below the hocks; legs short and fine; skin thin, mellow and covered with an abundance of soft hair; color black, brindle, fawn or red dun; the dark colors often have a fawn stripe down the back, round the muzzle, inside of thighs and lining of ears; udder free from hair and fleshiness, running well up behind and extending well forward; teats long, well apart and squarely placed; milk veins large and tortuous, entering large aurifices; general appearance rather bony than fleshy; average weight, 700 pounds.

2. According to Professor Barnard, of the Agricultural Department, Quebec, the first of these cattle were brought from Brittany and Normandy in the 17th century, and have since then been bred pure.

3. In 1886 a French-Canadian herd book, "*Le Livre de Genealogie de la Race Bovine Canadienne*," was established. It was opened under the auspices of the local Government of Quebec Province, under a special commission, the secretary being J. A. Couture, V. S., 60 Des Jardins street, Quebec. Over 1,700 cows and 300 bulls have been recorded in that herd book.

4. French-Canadian cattle have been kept at the Central Experimental Farm, Ottawa, since 1890. Prof. J. W. Robertson said of them at a farmers' meeting that they were the sort of cattle which dairymen of Quebec, or any other country having a like climate, should keep for profit. The Professor also stated at another meeting that steers of this breed fatten readily. In actual comparative tests they did themselves great credit.

5. The present demand for Quebec Jerseys is very brisk. A good registered cow usually brings from \$35 to \$50, while common, unregistered stock usually bring about \$25 in the fall and a little more in the spring.

6. From a list of ten cows' official records, taken by the Quebec Dairy Association, we summarize as follows:—

Pounds of milk in 7 days, from 191 to 295 lbs.
Pounds of milk in 1 day, from 32 to 41 lbs.
Pounds of butter in 1 week, from 10.4 to 13.4 lbs.
Pounds of milk per lb. of butter, from 16 to 25 lbs.
Pounds of butter per 100 lbs. milk, from 3.36 to 6.25 lbs.

The following table gives the performance of a whole herd of 24 ordinary registered cows, owned by a farmer who does not give any extra care to his cows. Their feed consisted of dry hay, dry straw, and ordinary pasture and a little wheat bran:—

EXPENSES.	
Hay, at \$6 per ton	\$268 80
Straw, at \$3 per ton	67 20
Bran, at \$16 per ton	10 32
Pasture, at \$5 per head	120 00
Total expenses	\$466 32

RECEIPTS.	
Cheese	\$531 19
Butter	323 20
Milk Sold	100 50
Three Fattened Calves Sold	12 00
Six Calves Raised	18 00
Total receipts	\$985 89
Total expenses	466 32
Net Profit	\$497 57

The cost of winter feeding the cows was .074 cents per day for 210 days; that of summer rations was .033 cents per day for 155 days, giving a very low average cost for the year, while producing 112,718 lbs. of milk, at a cost of about .14 cents per 100 lbs. It is calculated that the manure pays for the labor.]

We are indebted to Mr. J. C. Chapais, St. Denis, Kamouraska Co., Que., Assistant Dairy Commissioner for the Dominion, for the above information.

Mr. W. S. Hawkshaw, of Glanworth, Ont., writes us as follows regarding two cows of this herd, which he brought from Quebec last year:—"I am well satisfied with them as buttermakers. One of them, a cow seven years old, calved April 1st, 1891. One week after, the milk tested 5 per cent. butterfat; one month later, 4 1/2 per cent. They seem to sustain their milk flow better than the ordinary cow. In fact, they seem to me to be identical with the regular Jersey (barring color). The old cow is milking much better than she did last year. I have a young heifer coming in that I have great hopes of."

GARDEN AND ORCHARD.

Apple Growing in Ontario.

BY G. C. CASTON.

Now that it has been proved beyond a doubt that the Province of Ontario has the soil and climate adapted to the production of apples of the highest quality, the importance of this fact should stimulate the growers to make this branch of industry one of the most important in the country.

There is no doubt that the area over which the best quality of apples can be grown is very limited, on this continent at least. It may be roughly stated as lying between the 40th and 45th parallel of latitude, or, more strictly speaking, that part of Ontario between the 43rd and 45th, and not extending very far past the boundaries of this Province, with the exception of part of York State, and the Annapolis Valley in Nova Scotia in the East, and part of the Michigan Peninsula in the West, that part of Ontario and York State lying south of the 43rd parallel being better adapted to the growing of grapes, peaches, pears, and the more tender varieties of fruit; so that each locality will have its speciality in the future. And for the central belt of Ontario, that part already described as lying between the 43rd and 45th parallel, the speciality will be the growing of apples, for in this tract of country lies the best apple growing district in the world. It needed not the Chicago Fair to prove this. Look at the accounts of prices received by any dealer in the British market for apples, and compare the prices of American, Nova Scotian and Ontario apples, and the latter are always the highest, the difference being often several shillings a barrel. There is one apple, however, grown in New York State that is an exception, and that is the Newton Pippin, which sells for the highest price of any, but is grown successfully only to a very limited extent over a very small section. With this exception, our apples always range higher in price than any others, on account of the superior quality.

Now, if we are to make the most of our opportunities in this line, we must aim to maintain the excellence of our fruit, and produce only the best. The best in size, evenness, color, quality and packing, and the question of a future market need never trouble us, as that problem seems already solved. There are certain mistakes to be avoided, and attention must be paid to the details of the business, and skill and good judgment exercised in order to succeed well in this line, as well as any other branch of agriculture.

It is a mistake to plant an orchard on land that has been already exhausted by a long-continued system of grain growing, without first bringing the land to a proper state of fertility. This often accounts for the lack of thrifty growth, black-hearted, moss-covered trunks and early decay, of which we often hear complaints and the evidence of which we often see; for a young tree, like a young animal, when once stunted, is never worth much after. There are three elements principally required in the soil for the growth of the wood and perfection of the fruit, viz.: potash, nitrogen and phosphoric acid. Where barnyard manure cannot be got in sufficient quantities, the nitrogen may be easily supplied without it, by sowing thickly with clover, and when at its best, ploughing it under. It is quite possible and easy to supply sufficient nitrogen to the soil in this way. The other elements, potash especially, is absolutely necessary in the growth of healthy, hardy wood tissue, and the perfection of fruit of the best quality. These can be supplied most cheaply in the form of hardwood ashes, and where they cannot be got they can be purchased in some form of commercial fertilizer. But we cannot place too much emphasis on the value of ashes for the orchard.

It is a mistake to plant too many varieties, and a very foolish one indeed, yet one too often made, especially in planting too many early varieties, unless sure of having a market for them. They will no doubt pay well for they, as a rule, bear earlier and more abundantly than the late varieties) where markets and shipping facilities are favorable. But where these are uncertain, it is best to rely chiefly upon the late-keeping winter sorts. It is a mistake to plant varieties not suited to the climatic conditions of the locality; it is time and money thrown away, even if those varieties are valuable market apples. Only the hardiest should be planted, and any desirable and valuable market varieties that are at all tender should be top-worked on hardy stock, and they will grow to great perfection and with more profit in this way than in any other.

It is a mistake to neglect a little annual pruning and to let the trees grow as they will for several years and then butcher them unmercifully in trying to repair the wrong.

It is a fatal mistake to grow grain of any kind in the orchard, or grass either, except it be a crop of clover for ploughing under for fertilizing purposes. It is a mistake not to have a shelter belt of trees of some kind (evergreen preferred) on the north and west sides of the orchard. The fruit trees should be

scrubbed with weak lye, at least once in two years, all over the trunk and branches. This removes the bark lice, prevents borers and other insects from laying their eggs in the bark, and stimulates the growth of the tree.

On the subject of spraying, there is a difference of opinion as to the results obtained by those who have tried it extensively. However, if properly done, and at the proper time, it is no doubt efficacious in preventing, to some extent, the ravages of the codling moth and fungus scab. Prof. Baily, of Cornell, N. Y., advises the keeping of sheep in the orchard, after the trees have attained bearing age; sufficient animals to be kept to keep down all grass and weeds and eat all wormy fruit as it falls; some other food to be given them as well, such as bran, oil cake, etc., and thus fertilize the orchard by their droppings. This is his remedy for the codling moth, and for keeping up fertility as well. I am inclined to think it would be more effective than all the spraying one could do. But the trees would need to be high standards—very high indeed, or when the trees were laden with fruit, the sheep would not bother with wormy, dropped apples, as long as they could reach the others. But why not use hogs instead of sheep? I think they would be just as effective, and could not reach as high to get at the fruit of laden trees. Besides, they would do a good deal in way of cultivation, by rooting over the ground. With respect to the efficacy of spraying for fungus, there is such a difference of opinion and experience on the subject that it is difficult to arrive at any definite conclusion on the matter. Some seasons it is not necessary, as we have clean fruit without it, and we owe it entirely to the peculiarity of the season; the weather at no time during the season being favorable to the propagation of the spores of the fungus. Other seasons, in spite of all the spraying we can do, we will still have a large percentage of scabby fruit, although some report a great degree of success in the use of fungicides. Prof. Saunders proposes to carry on a series of experiments, in order to determine more definitely the efficacy of fungicides in preventing damage to apples by the fungus scab, and when the Professor takes anything of that kind in hand he does it thoroughly, so that we may expect some valuable information from this series of experiments. But as an ounce of prevention is worth a pound of cure, I would advise planting and growing as many valuable market varieties as possible that are not susceptible to the disease—and there are many. Lastly, in putting up for market, let the packing be up to the mark, or all our trouble will be in vain. Every large grower might as well market his own apples as to let anyone else do it; but whether he does or not,—whoever packs them, let the middle as well as the ends of the barrel be according to brand. Keep up our reputation, and there need be no fear of the future of this important branch of our agricultural industry.

Irrigation.

When irrigation is spoken of the idea generally conveyed is that it is a process only applicable to arid plains or elsewhere in the far West, where little or no rain falls during the summer months, little thinking that it might be made use of on many of our own farms, especially on the garden plots. Perhaps no one suffers more from drouth in this country than market gardeners; we therefore appeal especially to them to give this matter their thoughtful consideration. It seems not too much to say that in four summers out of five the rainfall through July, August and September is far too light to enable a gardener to grow more than half the crop that sufficient moisture would enable him to produce. Colman's Rural World records a Nebraska man's experience, which we give, as it looks reasonable and applicable to ordinary conditions:—

"A 14-foot wind-wheel is used, with an eight-inch pump, that throws 1,400 barrels of water per day in a medium wind. Two reservoirs are used, one 60x150 and the other 80x150 feet. With this plant from ten to fifteen acres can be watered. He claims that reservoirs are necessary so as to have a larger volume of water whenever you irrigate. By this means more pressure is obtained and more land can be watered and in a very short time. There are places where reservoirs would be quite in order, where a non-leachy soil can be obtained in which to excavate the necessary space. In such a case, the following method may be adopted: By means of a plow or scraper take the earth from the inside dimensions, and use it for banks. When the work of construction is completed, allow the water to enter slowly; at the same time use horses to tramp the entire bottom into a soft mud, two or three inches deep. This will close all the pores of the ground and stop very nearly all the seepage. The whole outfit should not cost more than \$250."

In localities where the soil is of a leachy nature, tanks, such as usually accompany wind-mills, will answer the purpose well. This has the advantage of being able to be raised as high as desired. In irrigating fruit orchards, berries, vegetables, etc., furrows or small ditches should be used, instead of flooding the land. On a ten-acre plot of fruit and vegetables an irrigating outfit will pay for itself in one dry year.

The Flower Garden—Preparing for the Fall.

Many of the flower beds that are now very beautiful will soon become bare and unsightly, except something be done at once to fill the vacancies which will be caused by the first frost. The garden can be filled with plants whose flowers will withstand the first frost and remain beautiful until December. Provision should be made for these when the garden is looking its best. Pansy seed should be sown while the bed is in full bloom; they will then afford a splendid show quite late and come into early blooming next spring. Mignonette, too, should find a place in every spare corner where the earlier plants are sure to drop out as soon as their work is finished. Calendula, of which seed has been scattered in vacant places, will have an opportunity of showing its usefulness when the frost has destroyed nearly all else. The Cosmos will not bloom till quite late, no matter how early it is sown. It will endure a few degrees of frost, and, with a little protection, will enhance the beauty of Indian summer. In the craze for the new chrysanthemums, the old hardy sorts are quite apt to be forgotten, which should not be the case, because they will answer the purpose of bed culture much better than many of the new varieties. Fall bulb catalogues will soon be making their appearance. Secure early copies and make a study of the sorts offered, in order to get selections a little later on.

POULTRY.

Poultry on the Farm.

BY MRS. IDA E. TILSON, WEST SALEM, WIS.

"Now what is wrong?" the fancier cried,
As one more chick lay down and died—
Lice!

"And why no eggs?" the housewife said,
"And why is this young pullet dead?"—
Lice!

And thus it goes, and thus it will,
Until you find a way to kill—
The Lice!

—Woman's Farm Journal.

During my recent Institute work through Minnesota, I met with great interest in poultry, and, on an average, better hen-houses than I expected, but found considerable need to explain the necessity of often cleaning houses and inmates. There are living on hens three kinds of pediculidae, or lice—grey, yellow and tawny; with three acarina—the red mite, infesting nests and walls; that microscopic mite which burrows into the crevices between the scales of legs, causing what is called "scaly leg," and another mite, as small, which works at the base of feathers and on scales of the skin. Besides these, there is sometimes one of the hemiptera to fight, namely, the common bed-bug, brought, perhaps, by martins and other swallows. When the above parasites were all identified and named, I thought their long scientific names would kill them, but they did not. According to good scientific authority, none of them, except the last, and possibly the red mite, have any disposition to feed on man; therefore it is very easy to keep ahead of them, if we only once get ahead. When I first began poultry culture, I knew nothing of their existence till my fowls and houses were somewhat overrun. I have, accordingly, tried both plans—keeping clean and not keeping clean—which some readers have not; hence I know the value of the former course. If parasites devour our fowls, we are really feeding the former, actually toiling and sweating to raise wheat for them. Egg-making is hard work, so bidly cannot do that and support a crop of parasites, too. Spurgeon says: "Hundreds would never have known what they had not first known waste." Wasted food and want of eggs are often found associated. Learning to make every bit of food and labor count and bring its profit is the art of poultry culture.

At one Institute a woman who had been very successful with poultry, but this season experienced an almost total lack of eggs, having one hundred hens and only from three to twenty-five eggs daily, came to ask my advice. The fowls were not present, nor was I a clairvoyant, so, Yankee like, had resort to questions. I found thereby that the hens did not, in her opinion, suffer from lack of green food, of grit, or of exercise, nor from inbreeding, concerning which I was convinced on hearing that the eggs hatched well in spring. Finally I learned that the preceding year her hen-house was new, while her present fowls were then pullets, and discovered the house had not been cleaned at all. When it was new, and the fowls were young and active, they were naturally little infested. I, therefore, prescribed a thorough whitewashing of house, which was promised, a good dust-bath for the fowls and a careful culling of the flock, to make room for her chickens. After trying, as for sawdust, a perforated pan, then an old steamer, I, myself, finally use a coarse sieve from the tanning mill to sift my ashes. The coal clinkers and the wood charcoal, thrown out by themselves, are both good eating and medicine for hens, but, mixed through ashes, they cut the hens and prevent their taking as effective a cleaning. The dust-bath is to a fowl what the mud-bath is to a pig, or the water-bath to man. Freely and constantly supplied, bidly will mainly rid herself of pests. The other day, when at the hen-house, I saw a pretty sight. Three hens in one dust-box, two in another, with a third wait-

ing bird perched on its edge. Their appreciation of my efforts to provide dust-baths pleased me.

At another Institute I found a man who, during three years past, from his 300 hens, had gotten the groceries and clothing for a family of five, and whose reputation as a poulturer was extensive and excellent in his vicinity. He practiced whitewashing once a month. When I suggested movable nests and roosts as the secret of easy and thorough cleaning, he saw the value at once, though he had never happened to think of it before. Fortunately, most of the best principles and plans are simple enough when we once learn them. Like a boy who said to a companion: "That is my father," pointing out the man; "Do you know him?" The second boy replied: "No." Said the man's son: "Why, I know my father just as easy as can be."

With movable furniture, so conducive to thorough cleaning of hen-houses, twice a year will answer farmers very well. I saw one house with small dry goods boxes for nests on tables, and poles in grooves, but, alas, in spite of such convenient and adjustable arrangements, the walls had never been whitewashed, and there were some sick chicks, about which my opinion was asked. At still another place, a gentleman asked the familiar question: "What ails my hens?" Their symptoms, whirling around and falling down dead, were like apoplexy. Before I mentioned showering the head, I inquired about the bowels, and found their condition all right, with appetite natural. I thought insufficient food with chills might be the cause, but the amount fed was liberal and varied, and the hen-house, as he told me, was in one corner of his barn, evidently a warm location. Nothing remained but to prescribe a little less grain and to ask about the cleanliness, when it came out that the quarters had never been cleaned, and the barn became so old its owner was planning a new one. Another poulturer, a lady, came several miles to attend, and ask the cause of failure in egg production, when feeding liberally and regularly. "What more could I have done?" she cried, "and, unless they do more for me, I have decided to give fowls up." She was evidently "killing with kindness," feeding so much they were laying on fat instead of making eggs, and I felt sure her quarters and pullets needed looking over, too. People have frequently said: "There are none of these pests in sight." Yes, because their deeds are evil, and they seek darkness rather than light.

Random Notes.

BY JOHN J. LENTON.

Without cleanliness in the poultry house, all efforts to produce the best results are fruitless.

Give early chicks a little extra care, as they may be prize winners.

Keep plenty of fresh water before your fowls, and prevent them from drinking from stagnant pools.

Remember that shade is essential in hot weather, and you cannot expect good results without having it in all your yards.

If you never have bred fancy poultry, now is a good time to start, as good stock can be purchased at reasonable prices.

Market your early hatched chicks as soon as possible, as they will bring as much at ten weeks as they will bring six weeks later.

Give young birds the double benefit of dry quarters, free from vermin. One means health and the other means freedom from worrying. Both mean eggs.

We believe the selling of young chicks, instead of eggs, will prove more satisfactory to breeders, as the buyers can then secure the new stock without running the risk of not getting anything for their investment.

Do not try to raise twice as many chicks as you can care for. Fifty chicks, well cared for, will bring better results than 100 neglected ones, and not cost near so much.

Did you ever see a hen's teeth? If not, look for them in the gizzard when next you kill a fowl. You will find them in the form of gravel and grit. Don't refuse your fowls a good supply of teeth.

Wheat, bran and skim milk are each, chemically considered, quite close in resemblance to the white of the egg, which fact suggests their use in the food for laying hens.

The hatching season is over, and good breeding stock can be bought for less money than at any season of the year. Those who want to start in the fancy business will do well to get their breeding stock now for another year.

A dairy farmer will get up at 4 o'clock, clean out his stable, feed, milk, market the milk daily, make up the bed and milk and feed again, with a bare profit; but it is hard work even to clean out a poultry house once a month for some folks.

A damp roosting place is an abomination, and yet fowls prefer a wet roost, free from lice, to a dry one covered with vermin, which sap their blood and strength. This will explain why some people's chickens prefer to roost on trees.

Don't allow birds with serious faults to go into your breeding yards under any circumstances. You can't breed out bad points by doing so. Of course our breeding pens are not faultless. Such pens do not exist. But we must breed only the best if we want to get first-class stock.



Story from the Diary of a Doctor.

BY THE AUTHORS OF "THE MEDICINE LADY." Continued from page 305.

and before I could approach him, he had fallen over the cliff sheer down that awful height! My absolute surprise stunned me for a moment—then I ran up to the spot where he had fallen, and throwing myself on my face and hands, looked over the cliff, in the hopes that he might have clung on to something. The moon was bright, but I could not see him. Looking down from that height made me dizzy, and I saw there was nothing for it but to retrace my steps as fast as possible to the shore. I ran quickly, and was breathless when I got up to him. He was lying on his back, with his arms stretched out—some blood was oozing from his mouth. I wiped it away and called to him, and putting my arms under his head, tried to lift him. He moaned and moved faintly. I felt his limbs—they seemed all right. I had a wild hope that he was only stunned, and tried to drag him along the shore. He was too heavy for me, however, and I feared that I was only injuring him in my attempt to get him back to the house. I laid him as easily as I could on a piece of sand above high-water mark, and then ran back to Penporran. It was on my way back that the awful idea first occurred to me that Barbara would think I had killed him. I seemed to see all the circumstances of his terrible death with preternatural clearness, and I felt sure that the gravest suspicion would attach to me. I have come to this room now to tell you both, before Heaven, and in the presence of the dead man, the solemn truth. Of course, I cannot compel you to believe me.

"Oh, yes, you are right to abuse me," she said. Go on, go on. I am so unhappy that nothing you can say will add to my pain. My cup of misery is full. I have ruined the man I love. "The man you love?" I queried, looking at her in astonishment. "Nay, you must not be too hard on yourself. You surely are not accountable for Randall's tragic end. If Carleton's story is true, he died from sudden vertigo. You were kind to him while he lived—you have nothing to reproach yourself with on that score." "Yes, I have," she answered, with sudden passion. "I deceived him. I made him think that I loved him; in reality, he was nothing to me. It is Ronald Carleton whom I love." "Then in the name of the Evil One—" I began. "Yes, you may well quote the Evil One," she retorted. "I think he has been about the house all day. I think he entered into me this morning when poor Ronald spoke to me. The Evil One held me back then from telling him what I really thought. I gave him to understand that I— I hated him, and all the time I loved him—I loved him then—I love him now—I shall love him for ever! The dead man is nothing to me; less than nothing!" She began to walk up and down the room; fever spots burst on her cheeks; her eyes looked wild; she clenched her right hand. "What can I do for you?" I asked, after a pause. "You have been good enough to confide in me; you must have done so for a reason." She stopped her restless walk and came close to me. "This is not the first time you have been asked to help, people in trouble. I want you to help me—will you help me?" "With all my power, if I can." "You can. Find out what killed Mr. Randall. Save Ronald Carleton." "I wish I could," I said, reflectively. "Oh, it won't be difficult," she replied. "I looked at her in surprise. "What can you mean?" I asked. "To my amazement, she flung herself on her knees at my feet. "You can invent something," she said, clasping my hand and pressing it frantically between both her own. "Oh, it would not be a crime—and it would save a life—two lives. Say you saw symptoms of apoplexy. Say—oh, you will know what to say—and you are a great doctor, and you will be believed." "Get up," I said sternly; "I will forgive your wild words, for circumstances have excited you so much that you do not quite know what you are saying. Believe me that nothing would give me more sincere satisfaction than to be able to discover the real cause of poor Randall's death. But you mistake your man utterly when you make the suggestion you do. Now I must leave you. It is almost morning, and I have promised to meet Brabazon downstairs at an early hour." I went back to my own room, where I sat in anxious thought until the time which Brabazon had appointed for us to meet arrived. I then went down to the smoking-room, where I found him. He looked harassed and ill—no wonder. The subject we had met to discuss was how best the news of their only son's death was to be broken to Lord and Lady Hartmore. The Hartmores' place was situated about a hundred miles away. Brabazon said there was nothing whatever for it but to telegraph the unhappy circumstance to them. "And I fear doing so very much," he added, "for Hartmore is not strong; he has a rather dangerous heart affection." "Don't telegraph," I said, impulsively; "I will go and see them." "You!" exclaimed Brabazon. "That would be an immense relief. You will know how to break the news in the least startling way. I should recommend you to see Lady Hartmore, if possible. But she is a strong-minded woman, and has a fine character. But at best the shock will be terrible—it is good of you, Halifax, to undertake so fearful a mission." "Not at all," I replied. "Will you come with me?" "I fear I cannot. My wife is very much shaken, and I ought not to leave her with a house full of people." "Probably; still, for the time being, they are here. Then there is the inquest, which will most likely take place to-day." "I was going to propose," I said, "that a post-mortem examination should precede the inquest." Brabazon raised his brows—he looked annoyed. "Is it necessary?" he asked—"a post-mortem examination will only add needlessly to the sufferings of the unfortunate parents. In this case, surely, the cause of death is clearly defined—fracture of the skull?" "The cause of death is clearly defined," I answered, "but not the cause of the sudden vertigo." The sudden vertigo, according to Carleton's account, corrected Brabazon. He did not say anything further for a moment—nor did I. After a pause, he continued: "As you are good enough to say you will go to Tregunnael, I will ask you to take poor Randall's last letter with you. I went into his room yesterday evening, and found one directed to his mother on the writing-table. She will prize it, of course. Now I had better look up your train." He did so, and half an hour afterwards I was driving as fast as a pair of horses could take me to the nearest railway station. I caught an early train to Tregunnael, and arrived there between nine and ten that morning. A cab conveyed me to the castle, which stood on a little eminence above the sleepy-looking town. My errand was, in truth, a gloomy one. During the journey I had made up my mind for every reason to see Lady Hartmore first. Then the servant opened the door, I asked for her, and giving me the man my card, told him that I wished to see his mistress alone on a matter of urgent importance. I was shown into a morning-room, and in a very short time Lady Hartmore came in. She was a tall, fine-looking woman, with a likeness to her dead son about her kindly, well-opened eyes and pleasant mouth. My name and the message I had sent to her by the servant naturally startled her. She gave me a keen glance when she entered the room, which I returned with interest. I saw at once that her heart was strong enough, her nature brave enough, to stand the full weight of the terrible calamity without breaking down. "I have come to see you on a most painful matter," I began at once. "I am just now visiting the Brabazons, at Penporran." "Then it is something about my son," she exclaimed, instantly. Her face grew very pale; she pressed her hand to her left side, and looked hurriedly towards the door. "Lord Hartmore may come in, if you are not quick," she said. "He was in the breakfast-room when the servant brought me your card and message. Please tell me what you have got to say at once—I can bear shock, but he cannot." "Poor wife! poor mother! Her eyes looked at me with dumb entreaty, while her lips uttered the words of courage. "Women like you, Lady Hartmore, I could not help uttering, impulsively, 'are always brave. It is my terrible mission to inflict a great blow upon you—your son has met with an accident.' "Is he dead?" she asked. She came close to me as she spoke, her voice had sunk to a hoarse whisper. "He is dead," I replied, instantly; "sit down." I motioned her to a chair—she obeyed me. "Lock the door," she said; "Lord Hartmore must not—must not know of this—quite yet." I did what she asked me, and then went and stood with my back to her in one of the windows. As I did so I felt in my pocket for the letter which Brabazon was to have given me. It was not there. I then remembered that in the excitement of my getting off in time to catch the train we must both have forgotten it. After a time Lady Hartmore's voice, sounding hollow and low, reached my ears. "Tell me the particulars," she said.

and before I could approach him, he had fallen over the cliff sheer down that awful height! My absolute surprise stunned me for a moment—then I ran up to the spot where he had fallen, and throwing myself on my face and hands, looked over the cliff, in the hopes that he might have clung on to something. The moon was bright, but I could not see him. Looking down from that height made me dizzy, and I saw there was nothing for it but to retrace my steps as fast as possible to the shore. I ran quickly, and was breathless when I got up to him. He was lying on his back, with his arms stretched out—some blood was oozing from his mouth. I wiped it away and called to him, and putting my arms under his head, tried to lift him. He moaned and moved faintly. I felt his limbs—they seemed all right. I had a wild hope that he was only stunned, and tried to drag him along the shore. He was too heavy for me, however, and I feared that I was only injuring him in my attempt to get him back to the house. I laid him as easily as I could on a piece of sand above high-water mark, and then ran back to Penporran. It was on my way back that the awful idea first occurred to me that Barbara would think I had killed him. I seemed to see all the circumstances of his terrible death with preternatural clearness, and I felt sure that the gravest suspicion would attach to me. I have come to this room now to tell you both, before Heaven, and in the presence of the dead man, the solemn truth. Of course, I cannot compel you to believe me.

I did so. I sat down near her and told them as briefly as possible. She listened attentively. When I had finished she said, in a puzzled tone:

"I cannot account for the sudden giddiness. Arthur always had excellent health." Then she looked me full in the face. "Do you believe the story, Dr. Halifax?"

"I thought for a moment and then said, emphatically: "Yes, I believe it."

She did not speak at all for the best part of a moment. Then she gave a heavy sigh.

"After all," she said, "the thing that effects us is the death. He is dead. The inevitable has overtaken him. It scarcely matters how it happened—at least not now—not to me."

"Pardon me," I interrupted, "it matters a great deal how it happened. The cause of your son's death will be a question of anxious investigation—of the gravest and most searching inquiries. I fully believe the story which Carleton told us last night, but there are others who will—who must—suspect him of foul play. Is it possible, Lady Hartmore—is it in any way within the province of woman, so completely to forget herself in this moment of terrible anguish, as to live for another? You can do nothing now for the dead, but you can do much, very much, for the living."

"You mean for my husband?" she inquired.

"Not alone for your husband—not even principally for him. You can do much for the man who will be accused of the crime of having murdered your son. I can only repeat my firm conviction of his innocence, but the grounds for my belief, at present, go for nothing; circumstances prove a grave case against him. Your son, to all appearance, was much attached to the girl whom Carleton loved and loves. Yesterday morning Carleton received what he considered a final rejection from Miss Farnham. She spent the day with your son; she gave him every encouragement. Carleton was morose, gloomy, jealous. His jealousy and gloom were noticed by every member of our party. Carleton and your son both absented themselves from the drawing-room after dinner. It was during that time that the accident, which deprived your son of his life, took place. There will, of course, be a coroner's inquest. At the inquest the circumstances which I have just alluded to will come out, and there is no question but that Carleton will be arrested on suspicion and sent to trial—unless, indeed, you will help me."

"How can I help you?" she asked. "What am I to do? You ask me to share my belief, which seems to me to be based on nothing. Suppose I cannot share it?"

I was silent for a moment.

"I will tell you what I want you to do," I said then. "I want you to join me in insisting on having a post-mortem examination."

She gave me a glance of horror.

"Why?" she asked. "Why must the sleep of the dead be disturbed?"

Before I could answer her, Lord Hartmore's voice was heard at the door.

She was a brave woman, but at the sound of her husband's voice her courage for a moment deserted her.

"How—how can I break it to him?" she gasped. "Oh, please, don't leave me."

"No," I said. "I will stay with you."

I unlocked the door myself, and a white-headed, feeble-looking man came querulously into the room.

His wife rose to meet him. She put her arms round him and some way, somehow, conveyed the terrible tidings to his mind. I need scarcely linger over the hour that followed. At the end of that time I was accompanying the Hartmores back to Penporran. During the journey my companions were almost completely silent. Lady Hartmore kept her veil down, and I felt sure, wished to avoid speaking to me. The old lord was completely prostrated with grief. Not by word or hint had either parent given me the slightest clue by which I could insist on a post-mortem examination. Their son had evidently enjoyed perfect health during his brief life. I saw that circumstances were very black against Carleton.

It was evening when we reached Penporran. Lord and Lady Hartmore went at once to a private suite of rooms which had been got ready for their reception. As soon as I could, I sought an interview with Brabazon.

"Most of our visitors have left us," he said. "But Miss Farnham and, of course, Carleton, remain. The inquest is to take place in the library at an early hour to-morrow."

I was silent for a moment, then I said abruptly:—

"Even at the risk of annoying you, Brabazon, I must repeat my strong desire that a post-mortem should precede the coroner's inquest."

"Have you spoken to the Hartmores on the subject?" inquired Brabazon.

I told him that I had mentioned my wish to Lady Hartmore.

"And what did she say?" he asked.

"She shrank from the idea with horror," I was obliged to confess.

"You can scarcely blame her," said Brabazon. "Why should the poor fellow's body be unnecessarily disturbed? The fact is, I have the greatest faith in your judgment, Halifax, but I think in the present instance you carry your sympathy for Ronald Carleton too far. The cause of death in the case of poor Randall was so absolutely apparent that I do not think you will get the coroner to consent to a post-mortem."

"There is one thing that occurred to me," I said: "if of a struggle at the spot where he fell over. Randall would not tamely submit to murder—he was a big man and muscular. Has the path along the cliff been carefully searched?"

"Yes," replied Brabazon, "and there is no trace anywhere of a struggle. A little blood had been discovered on a sharp point of rock just where Carleton described the fall to have taken place. The marks of a heavy body being dragged along the sands above high-water mark have also been seen. All these evidences are, of course, in accordance with the story consistent with Carleton's story. The blood on the rock indicates also the exact spot of the accident."

"That was where the vault of the skull was broken," I said. "By the way, you forgot to give me poor Randall's letter to his mother. Doubtless Lady Hartmore would like to have it without a moment's delay."

Brabazon started, and put his hand in his pocket.

"I put the letter here," he said, "intending to give it to you as you were starting; of course, I forgot it. Here it is; no, though, there is nothing in my pocket. Surely I can't have dropped it anywhere. I know I put it here this morning. I rushed up to the poor fellow's room to fetch it just when the brougham was coming round."

"You did not give it to me," I said; "that letter ought to be found: it may be of the utmost importance. Was that the coat you wore this morning?"

"Yes, I have not been out of it all day; you don't know what a rush and confusion the whole place has been in."

"You will look for the letter, won't you, Brabazon? I cannot quite tell you why, but it will give me a sense of relief to know that it has been found before the inquest takes place to-morrow morning."

Soon afterwards we parted. I went into one of the morning-rooms, where I found Mrs. Brabazon. I made inquiries with regard to Carleton and Miss Farnham.

"I have not seen either of them," replied my hostess. "I believe Mr. Carleton has spent the day in his room, and a servant told me that Barbara Farnham was not well. I hear she has not risen at all to-day."

"Poor girl!" I ejaculated.

Mrs. Brabazon looked at me with languid interest—she was a very lethargic person.

"Yes," she ejaculated, after a pause—"this tragedy will be a sad blow to Barbara. She is as ambitious as she is handsome. She would have made a regal-looking Lady Hartmore."

I said nothing further—I could not betray the poor girl's secret, nor let Mrs. Brabazon know what a small place high position and greatness occupied just now in Miss Farnham's thoughts.

Just before the inquest the next morning, I asked Brabazon if the missing letter had been found.

"No," he said—"I cannot tell you how vexed I am about it. Every conceivable hole and corner both in the house and out has been searched, but no trace of the letter has been discovered. What I fear is that when I was down on the shore yesterday making investigations, it may have dropped out of my pocket and been washed away with the incoming tide. I cannot think of any other cause for its absolute disappearance. I beg of you, Halifax, not to say anything to Lady Hartmore about it for the present."

"Of course not," I answered, in some surprise at the request.

I then ran up-stairs. I must, of course, be present at the inquest, but I had still a moment at my disposal. I went boldly to Miss Farnham's door and knocked. After a very brief pause she opened it herself and stood before me. She was fully dressed. Her face was of a dead white—all the beautiful warmth of color had fled.

"I am told I must be present at the inquest," she said. Is it time for me to go downstairs? Have you come to fetch me?" She shuddered visibly as she spoke.

"I have come to ask you to help me," I said, eagerly. "I will manage to account for your absence in the library. Put on your hat and go out at once."

"What do you mean?" she asked, in astonishment.

"I will tell you," I said. "On the day of his death Randall wrote a letter to his mother. That letter has been lost. Brabazon had it in his pocket and has dropped it—no one knows where. There is no saying, Miss Farnham, what important evidence that letter may contain. I am sure it is not in the house. Brabazon believes he dropped it when exploring the coast yesterday. Will you go at once and look for it? The moment you discover it, bring it to the library. Now, be as quick as ever you can."

"Yes," she replied, the soul in her eyes leaping up with a sudden renewed joy. She turned, pinned a hat on her head, wrapped a shawl round her, and ran downstairs. Her woman's hand aided touch the sheet reverently. She had the attitude of one who was protecting the body from intended violence. Her position and the look on her face reminded me of Rispah.

I looked again from her to Carleton. It was necessary for me to glance at the poor fellow, and to notice the despair on his face, to enable me to go up to the coroner, and urge upon him the necessity of a post-mortem preceding the inquest. He did not grasp my suggestion kindly.

"The cause of death is abundantly evident," he said, with irritation. "I cannot counsel a post-mortem examination."

"And I will not hear of it," said Lady Hartmore, looking at me with eyes full of reproach.

"Pray say nothing more about it," exclaimed Carleton. I bowed, and sat down.

The inquest was conducted with extreme care, but soon Miss Farnham's presence was found necessary, and her absence commented upon. I saw Carleton start when her name was mentioned, and a look of extreme distress filled his eyes.

"I will go and find her," said Mrs. Brabazon, leaving the room.

She returned in a moment to say that Miss Farnham was not in her room, and that no one seemed to know anything about her.

"I have sent several servants into the grounds to look for her," she said.

As Miss Farnham was an important witness, having spent almost the entire day previous to his death with poor Randall, proceedings were delayed during her absence.

The case, however, seemed as black as could be against Carleton, and I had not the least doubt that the coroner would order a warrant to be issued for his arrest on suspicion.

My one last hope now hung on Miss Farnham's being able to find the missing letter, and then on the letter containing evidence which would give a medical cause for poor Randall's extraordinary death.

I seldom found myself in a more torturing position than during this time. Relief, however, was at hand. I heard the sound of light and quietly-moving feet in the hall. The door of the library was opened, not softly and with reverent hush, but with the eager, impetuous movement of someone in hot haste. Miss Farnham came into the room with a wild color in her cheeks and a wild, bright light in her eyes. Her skirts were dragged and wet, her hair was loosened and fell over her shoulders—she had cast away both hat and shawl.

"Here, she said, going straight up to Lady Hartmore; "there's your letter—the last letter your son ever wrote to you. It was lost, or supposed to be lost, but I found it. I walked along the cliff, close to the edge—very close. There is a part where the cliff is undermined. I lay on my face and hands and looked over. I saw, far below me, a tiny ledge of rock; there was a bush growing there, and, sticking in the bush, something white—it might be a useless rag or a piece of torn paper, or it might be anything else. The tide was coming in fast; still, I thought that I had time. I put wings to my feet and rushed down a narrow path which led to the beach below. The tide had already come up and was wetting the base of the rock above which the bush which contained the white paper stood."

"I waded through the water and climbed the cliff and got the paper. I scrambled down again. When I came back, the water was up to my knees. I crossed it safely, and mounted to the higher cliff again. Then, for the first time, I examined my prize. Yes, it was a letter—it was open. I don't know what had become of its covering. I sat on the grass and I read it—yes, I read every word. Here it is now, and you can read it. Read it aloud, please, for it is important—it explains—it saves! Ronald, it saves you. Here the excited girl paused in her eager narrative, and turned her full gaze upon Carleton, who was bending forward to listen to her. "It saves you," she repeated; "it exonerates you completely!"

The commotion and interest which Miss Farnham's words and manner excited can be better felt than described. Lady Hartmore stood up and confronted the breathless girl. She held out her hand and clutched the letter, which was torn and dirty from its long exposure to wind and weather. She held it close and looked at it. It was in the beloved writing of the dead. The dead man was her only son—the letter was addressed to her, his mother. It contained a last message from the brain now silent—from the heart now still.

Tears filled her eyes.

"I must read this letter in private," she faltered. "This last letter of my boy is too sacred for anyone but his mother to hear—I must read it alone."

"No," interrupted Miss Farnham, "it contains important information. I call upon the coroner to insist on its being read aloud. I risked my life to get it. Another life hangs upon the information it contains. Dr. Halifax, you are a medical man—you will insist on this letter being read aloud."

I went up to Lady Hartmore and said something to her in a low voice. She listened attentively—she considered my words. After a pause she put the letter into my hands.

"If it must be, it must," she said. "This is the last drop in the bitterness of my cup."

She sat down, and flinging out her two arms, stretched them over the body of the dead man. Once more her attitude and manner reminded me of Rispah.

Miss Farnham stood close to Lady Hartmore. She forgot her dishevelled hair, her disordered appearance. All her soul filled the eyes which she raised expectantly to my face.

I glanced hurriedly through the letter—then I spoke.

"There is a good deal in this sheet of paper which is strictly private," I said, "and need not be read for the benefit of the coroner and the jury; but there are some sentences referring to the state of Mr. Randall's health which are, as Miss Farnham remarked, of the utmost importance. I will now proceed to read that portion of the letter."

I did so in a loud, clear voice.

These were poor Randall's words:—

"As far as I can tell, I am in perfect health, but for the last week or so I have been suffering, at intervals, from a strange form of giddiness. I feel as though I were made to turn round and round, or against my will impelled to go forwards, or backwards, or to one side. Sometimes the giddiness takes another form—I fancy that objects are revolving round me. I am perfectly conscious all the time, but the giddiness is generally accompanied by a distinct sensation of nausea. Very often the act of closing my eyes removes the vertigo completely for the time being. When the attack goes off I feel perfectly well, only I fancy I am suffering from continued deafness in my right ear. I don't know why I am impelled to tell you this—it is not worth making a fuss over. If I were to consult a medical man, he would probably set it down to a form of indigestion. I had a slight attack this morning at breakfast. If it continues to get worse, I will take the opportunity of consulting a London doctor who happens to be in the house."

I did not read any more, but folding up the letter returned it to Lady Hartmore. Both Carleton and Miss Farnham had approached each other in their excitement.

I looked beyond them to the coroner.

"I am sure," I said, "that I now express Lady Hartmore's sentiments as well as my own, when I demand that this inquest be adjourned until a post-mortem examination has been made on the body of the dead man. The symptoms which he describes in the letter, which I have just read aloud, distinctly point to a disease of the inner ear, well known to the medical faculty, although not of common occurrence. I will ask the coroner to take immediate steps to get the services of two independent doctors to conduct the post-mortem, at which I should wish to be present."

My words were followed by a slight pause—the coroner then agreed to my wishes, and the inquest was adjourned.

The post-mortem took place on the afternoon of the same day, and the results amply accounted for the strange symptoms which poor Randall had so faithfully described in his last letter to his mother. On the right side of that portion of the base of the skull which contains the delicate organs of hearing we found a small, bony excrescence growing down into the labyrinth or inner ear. This, though small, was undoubtedly the cause of the terrible attacks of vertigo which the poor fellow complained of, and in one of which he met with his tragic death.

The coroner's inquest was resumed on the following day, and, of course, Carleton was abundantly exonerated.

It was two years afterward, however, before I accidentally saw in the *Times* the announcement of his marriage with Miss Farnham.

—*The Strand Magazine.*

WINNIE MAY'S DEPARTMENT.

PRIZE ESSAY.

Woman in the Light of History.

BY BETA, ST. MARY'S, ONT.

I want a lyre with other strings,
And undebased by praise of meaner things,
That I may sing thy worth in honor due,
In verse as musical as thou art true.

—*Cooper.*

The heroism of knights of old has ever been a favorite theme for song and story. Their noble bearing and their adventurous conflicts are graphically described, and the knights themselves lauded to the skies. Not so the faithful squires, who bore their masters' swords and bucklers. The sturdy retainers are kept in the background. So, in the history of the world, man has always had a part to play in the public drama of life. He has a profession in which he may win glory, or a trade in which he may earn distinction and battle his way to fame and fortune. But from how many fields of public life is woman debarred by the constitution of her sex and by that of society? It is not hers to thunder in senates, to marshal armed hosts, to usurp dominions or to explore new worlds.

But the female mind has always exercised a powerful influence over its surroundings. Admiration and respect are ever the reward of pure, self-sacrificing womanhood. The greatest men of our race have freely confessed that their success was primarily due to the early training and pious example of a mother, or to the sage counsel and loving sympathy of a wife. The experience of the world has been that man cannot debase woman without being himself degraded, nor exalt her without sharing her refinement. An eminent historian testifies that "the great centre upon which the machinery of society turns is the conduct of woman." One half of the Old World—the East—is groping about without enlightenment, beneath the burden of barbarism—there woman is a slave. The other half—the West—steadily advances toward a fuller civilization—there woman is free and honored.

Is woman's mental capacity inferior to that of man's? Her attainments in art and in literature, and the increasing confidence which society is placing in her, have already decided the question. What more polished or refined poetry has been given to the world than that of Sappho or Mrs. Browning? What fiction has excelled George Eliot's, or stirred up deeper feeling than Mrs. Stowe's? What delineation of nature can compare with Rosa Bonheur's? Whose deeds of heroism have equalled those of Pocahontas or of Joan of Arc? What reformers more zealous or more untiring than Mrs. Elizabeth Fry or Frances E. Willard?

Woman's character, as revealed in history, is as manly as it is beautiful. Her sins have been many, her guilt has been deep. But what an atonement! What a wealth of patient self-sacrifice and of loving sympathy! What a constancy was the Empress Josephine's, who loved so tenderly, even when dishonored and divorced! What piety and resignation is shown in the scaffold scene in the life of Mary Stuart!

How to woman's Entwining and braiding
Life's garland with roses forever unfading

THE QUIET HOUR.

"The Dove in the Heart, or the Perfect Peace of God."

(Continued from page 306.)

"A peaceful life, and this I hold to be A life that finds its springs of peace in Thee; Then outer cares are outer things alone. And do not jar the quiet undertone Of heavenly joy, that through the passing years Sings to the soul, unheard by worldly ears. So winter, summer, spring, and all the days Pass in a calendar of prayer and praise— Now loud, now soft, half whispered, it may be. And heard, oh, Father! often but by Thee; Till the still soul, like a calm summer's sea, Reveals the Saviour's image perfectly. May this sweet life be mine! Oh, Jesus, keep My soul in peace, sure, undisturbed and deep; Calm, tho' expectant in its hope, until It sees Thy face, some new dawn, fair and still."

2. "The peace of God shall keep our hearts." The unrest of the heart is found in unsatisfied love and longing. The soul of man is like the dove that Noah sent out from the Ark; it finds no resting-place for its foot, except in God. This world is covered with a flood of sin and sorrow; not one mountain-top rises above the deluge of waters to furnish a standing-place for the weary, longing soul; there is not even a branch of consolation to offer a resting-place. Augustine was right: "Thou, O God, hast made us for Thee, and our heart is restless till it rests in Thee." The Book of Ecclesiastes is the wail of human disappointment. Solomon sought satisfaction outside of God. With royal resources at command, he undertook to solve the problem whether there is "any profit under the sun;" and there was nothing under the sun that he did not try in his experiment. He tells us the result of his trial, summing it all up in one of the saddest sentences ever put on record: "Whatsoever mine eyes desired I kept not from them; I withheld not my heart from any joy. Then I looked on all the works that my hands had wrought, and on all the labor that I had labored to do; and behold, all was vanity and vexation of spirit; and there was no profit under the sun."

"What can the man do that cometh after the King?" Here was an experiment conducted in a scientific spirit and on scientific methods. The opportunity was ample and the apparatus was complete; so was the experiment exhaustive. No man will ever be more favorably situated than he to conduct this trial, and God meant that his failure should for all time prove to man that man's life, viewed from this world only, is a failure; that any human career that leaves out God and the world to come, is not only vanity (emptiness), but vexation. Man is TOO BIG FOR THIS WORLD TO FILL. His heart is made to hold God, and the utmost this world can give leaves it still void. Every cup of pleasure may be drained to the dregs, and yet the thirst of man be unquenched; and, like Xerxes, weary even of self-indulgence, he will be offering a reward for the invention of some new pleasure. Man is a half-hinge, and God is the complement of his being. . . . There are growing

wings beneath the rude cocoon of the caterpillar, that are a prophecy of the butterfly. And so Solomon says:

"Let us hear the conclusion of the whole matter; Fear God and keep His commandments: For this is the WHOLE OF MAN."

Not the whole duty of man, but the secret of a whole or complete manhood. Without piety, without God, you have at best but a hemisphere—not a sphere; there is a fatal lack—no symmetry, no completeness, no satisfaction. Turn from Ecclesiastes to Solomon's Song, and here you may find the love song of the believer, who, having found this world too small for his heart, now finds One who not only fills, but over-fills his lack and longing; and for the first time the heart finds what is too big to be wholly contained—an infinite joy crowding itself into a finite capacity. The Epistle to the Colossians is the Canticles of the New Testament. It bids the disappointed, discouraged heart of man set the affections on things above, and not on things on the earth, and assures all believers on Jesus:

"In Him dwellth all the fullness of the Godhead, And ye are filled full in Him."

As George Williams whispered in the Earl of Shaftesbury's ear, when the beloved Earl was dying: "COMPLETE in Him." Complete—that is, nothing lacking. The smallest baylet or inlet of the sea is as full at high tide as the ocean bed itself. In Christ, the life and love of God always reach and stand at flood mark; and he who is "in Christ" partakes of all the fullness of God; his life is full, his heart is overflowing. With the Psalmist, he cries:

"Whom have I in Heaven but Thee? And on earth there is none to be desired In comparison with Thee."

And so the peace of God keeps the heart that is satisfied in God. Worldly cares, annoyances, vexations, sorrows, cannot long intrude where God's love fills the soul. The expulsive power of this new affection drives out intruders, as Nehemiah drove the merchants and sellers of wares who broke up his Sabbath rest and peace—first outside the walls of Jerusalem, and then altogether away, even from the outside of the shut gates.

(TO BE CONTINUED.)

"My presence shall go with thee, and I will give thee rest." —Exod. xxxiii: 14.

"My presence shall go with thee." Yea, my Lord, Faith listens till that noiseless step is heard. As each new day breaks open, shine revealed, O Christ, by fear's long morning mist concealed, O let me daily know that glorious rest, Of leaning hourly on a Saviour's breast; Yea, but to know Thou knowest—this is best! —C. A. For.

"The tissues of life to be, we weave with colors all our own, And in the fields of destiny we reap as we have sown." J. G. Whittier.

"You cannot dream yourself into a character,— You must hammer and forge yourself one." Froude.

"Be a man! Bear thine own burdens; never think to thrust thy fate upon another." Robt. Browning.

UNCLE TOM'S DEPARTMENT.

Puzzles.

PRIZE PUZZLE.

1—HALF SQUARE. My first is gained by practice, My second is great spaces of time, My third is to ask with earnestness, My fourth is five times in this rhyme, And my fifth is always in time.

THOS. W. BANKS.

2—SQUARE WORD.

1. A small piece. 2. Raw. 3. Belonging to the country. 4. To make fit. 5. Skins.

W. E. GILROY.

3—DIAMOND.

1. A consonant. 2. A part of the verb to be. 3. Animated. 4. Primitive. 5. Klude. 6. Before. 7. A consonant.

W. E. GILROY.

4—ILLUSTRATED REBUS.



1—CHARADE.

Into the Two he descended, With suicidal intent; And these are the words he muttered, As over the water he bent:

"What is the use of living? For my TWO ONE none doth care; My ONE is poor, I'm never Two; With death the Two I'll share."

"But what is the use of dying? My TOTAL will never be heard, The ONE is worse, the TWO is deep, And nobody's heart be stirred."

Then he plunged, And o'er his head And about him the waters did roll; "What COMPLETE to the body, but, ah me! Would it COMPLETE with the soul!"

CHARLES EDWARDS.

Answers to July 16th Puzzles.

1—News-paper. 2—Mend-i-cant. 3—A key.

TOM TOPER POPULAR MELON RAN R

5—Penitentiary.

HORACE N. CROSSLEY,

PROPRIETOR OF THE SANDY BAY STOCK FARM, Importer and breeder of SHIRES, HACKNEYS, AND COLLIE DOGS.

The above stud, though only commenced in 1890, has achieved unparalleled success at all the leading Canadian shows, such as Montreal, Toronto and London, also at the CHICAGO WORLD'S FAIR. The most notable in this stud are, the Shire horse Bravo II, 12835, winner of first at Toronto, Montreal and London, and also beating all Clydes at the latter show in the sweepstakes. Hackney, Fireworks No. 302, winner at Chicago, Toronto and London. Shires and Hackneys always on hand for sale. For further particulars apply to the Proprietor, ROSSEAU, Muskoka. 10-y-om

1864. HILLHURST FARM. 1894.

HACKNEY HORSES, Shorthorn and Aberdeen-Angus cattle, Shropshire and Dorset-Horn sheep.

M. H. COCHRANE, 16-2-y-om HILLHURST STATION, P. Q.

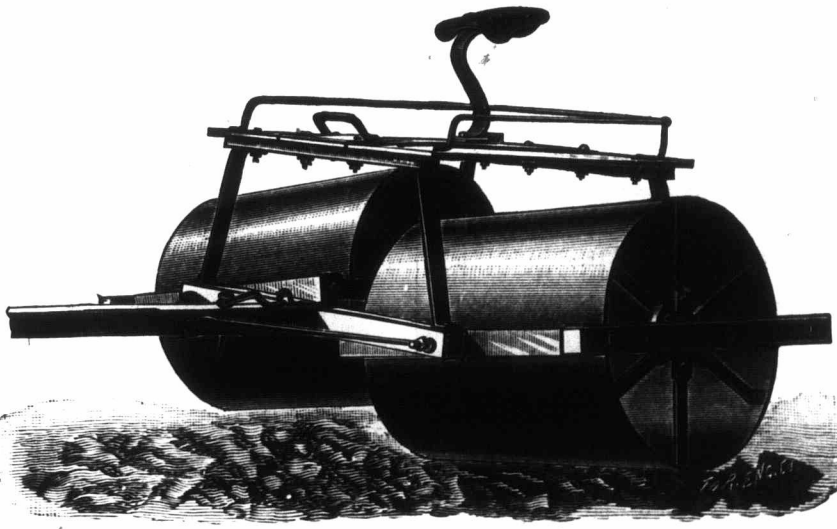
CLYDESDALES & HACKNEYS

We have a few choice, young stallions that will be sold away down. Also a number of superior fillies bred in the most popular lines, in foal to our sweepstakes winner, Grandeur. We will make prices right. Come and see us or write for particulars to D. & O. SORBY, - GUELPH, ONT. 6-2-y-om

IS AT THE HEAD OF OUR STUDD.

The DALE PIVOTED LAND ROLLER (Patented)

A Steel Roller, the drums of which oscillate on pivots and adapt themselves to the unevenness of the ground.



The bearings are the only wearing parts, and are guaranteed to last from Ten to Fifteen Years, and can be replaced at a nominal cost. It rolls all the ground, no matter how rough. There is no axle shaft, no strain, and consequently no wear. It is easily oiled between the drums.

If your local agent does not supply you, write direct to T. T. COLEMAN, SOLE MANUFACTURER, SEAFORTH, ONT. Mention this paper. 2-om



SHORTHORNS.

I have FOR SALE two Shorthorn heifers and two bull calves of fine breeding, fine colors, fine form and carriage, in fine condition, at fine cut prices. Also one or two cows. D. ALEXANDER, BRIDGE, Lambton Co., Ont.

A. J. C. SHAW & SONS, Thamesville Breeder of Shorthorn Cattle (Daisy Chief =13674. Heads the Herd), Cleveland Bay Horses, Berkshire Pigs and Cotswold Sheep. Young stock for sale at low prices. 2-2-y-om Farm near Thamesville.

GUERNSEYS

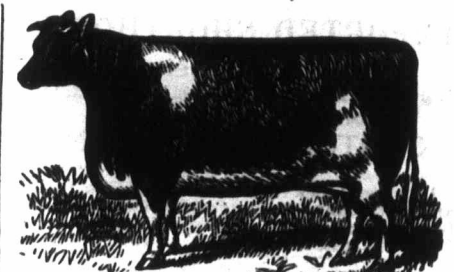
This is the Dairy breed for ordinary farmers. Large, vigorous and hardy, giving plenty of rich milk. Imported Bull Beaufit, son of Vice-Pres. Morton's famous butter cow Bienfaitrice 4th, heads the herd. Address: SYDNEY FISHER, 16-2-y-om Alva Farm, Knowlton, P. Q.

IT PAYS TO ADVERTISE:

FARMER'S ADVOCATE

ARTHUR JOHNSTON,

Greenwood, Ont.



GRAND YOUNG BULLS.

Offers for sale at very moderate prices, a number of exceedingly good young bulls fit for immediate service, and a number of excellent young cows and heifers, all fit to show at leading exhibitions. Send for Catalogue, Greenwood P. O. and Telegraph Office, Claremont Station on the C. P. R., or Pickering Station on the G. T. R. Parties met at either station on shortest notice. Come and see my cattle. 4-2-y-om

DEEP MILKING SHORTHORNS.

For sale, young cows and heifers. Fair Maid of Hullet, which produced 3,520 pounds milk and 150 pounds butter in the 90 days' test at Chicago, is a specimen of what this herd can do. WM. GRAINGER & SON, Lonsboro, Ont. 13-y-om

CARCILL HERD OF SHORTHORNS.

Stock from imp. bulls and imp. and home-bred cows. Catalogue now in printer's hands. Send for one. H. CARCILL & SON, CARCILL, ONT. 11-y-om

I HAVE ABOUT

1,500 LBS. SUMMER HONEY. Extracted and in the sections, that I will sell in bulk, cheap. Also cocks now, and cockerels and pullets later, of the following breeds: Lt. Brahmas, B. Leghorns, G. Dorkings, B. Spanish. Correspondence solicited.

CAPT. A. W. YOUNG, 17-y-om Tupperville, Ont.

FOR SALE.

A choice lot of Shorthorns—bulls & heifers—of good quality and of the most approved breeding. Show animals a specialty. The accompanying cut represents one of the animals now offered for sale. Come and see us, or write for particulars.



16-2-k-om JOHN MORGAN & SONS, KERWOOD, ONT.

WESTRUTHER PARK

Herd of Bates Shorthorns, consisting of Oxford Barrington, Waterloo, Gwynne, Darlington, and other families, has outgrown the place and must be reduced in numbers. Four yearling bulls and a number of females for sale, at lowest prices and on liberal terms. Farm a mile from the station.

JOHN IDINGTON, Stratford

SHORTHORNS, BERKSHIRES,

Shropshires, Plymouth Rocks & Bronze Turkeys. Write me for prices on the above. I have a grand litter of Berkshire Pigs now ready for sale. H. CHISHOLM, Montrose Farm, Paris, Ont.

SHORTHORN BULLS

Sired by imp. Prince Royal, and from dams with all imported crosses, also cows and heifers. J. & G. TAYLOR, Rockwood P.O. & Station.

SCOTCH-BRED SHORTHORNS FOR SALE

6 Choice Young Bulls And the Imported Cruickshank Bull

ABERDEEN HERO, Their sire. Also some nice

Young Heifers, From one year old up. Prices to suit times.

20-2-y-om SHORE BROS., White Oak.

SHORTHORNS, SHROPSHIRE AND BERKSHIRES

10 choice Shropshire yearling rams, 15 yearling ewes, 20 ram lambs, and 20 ewe lambs, all from the (imp.) Bradburne ram, for sale at prices to suit the times. Inspection invited.

W. G. PETTIT, 13-y-om Freeman P. O., Burlington Stn., G. T. R.

SHORTHORNS.

We have seven bulls from twelve to fourteen months old, from our best sires and dams, of choicest Scotch breeding, that, for hair, color, size, feeding qualities, constitution, general style and character, cannot be equalled, and we will sell them low. Also some show heifers for sale.

JOHN MILLER & SONS, Brougham, 12-2-y Ontario.

IMPORTED SHORTHORNS.

D. D. WILSON, Ingleside Farm, SEAFORTH, Ont. IMPORTER AND BREEDER OF

SCOTCH SHORTHORNS.

Imported stock from the herds of Wm. Duthie and W. S. Marr for sale; also Canadian-bred from imported bulls and out of imported dams. Farm one mile from G. T. R. station. 13-L-om

Craigieburn Stock Farm (25 miles N. E. of Toronto, G. T. R.) FOR SALE.—Two splendid roans and one red bull fit for service this spring. Got by imp. Guardsman and good Scotch-bred cows. A few choice heifers, grand daughters of the celebrated American hero Abbotsburn. Prices right and

correspondence promptly answered. 12-2-y-om GEO. A. BRODIE, Bethesda, Ont.

A. CRUICKSHANK SHORTHORNS

of the Duchess of Gloster family. A few straight-bred young bulls and heifers by imp. Duke of Lavender. THOS. ALLEN & BROS., OSHAWA, ONT. 8-2-y-om

HOLSTEIN BULLS FOR SALE.

Three extra fine bulls from 12 to 14 months old, sired by McMaster, whose dam had a record of 86 lbs. of milk per day; write for prices. WM. SUHRING, 16 c-om Sebringville, Ont.

HOLSTEIN-FRIESIANS AND TAMWORTH PIGS.

Four very superior young bulls for sale, ready for service. Prize winners at the Industrial. Sired by our prize-winning bulls and out of rich-bred dams. Other stock of all ages for sale. Bargains to quick buyers. Place your order with us for choice Tamworth imp. and Canadian bred Pigs of best quality, bred of prize-winning stock.

A. C. HALLMAN & CO., New Dundee, Waterloo Co., Ont. Shipping Stations: Petersburg, G. T. R., and Ayr, C. P. R. Send for catalogue. 12-2-y-om

ISALEIGH GRANGE FARM, DANVILLE, P. Q.

SOLD AGAIN! Three of the four Guernsey bulls advertised by us are sold and delivered. We still have one more, the 3rd prize calf at the World's Fair, now fourteen months old—a dandy. Lowest price, \$200.

IMPROVED YORKSHIRES.—We claim to have the longest, deepest and most typical LARGE YORKSHIRES in AMERICA, and the reason is we have paid more money and imported more pigs from the best herds in England than any two Yorkshire breeders on the continent. Orders booked now for spring pigs. Two very handsome COLLIE BITCHES, seven months old, \$10 each. Address, 9-y-om J. Y. ORMSBY, Manager.

HIGH-CLASS IMPORTED AND HOME-BRED AYRSHIRES FOR SALE.

Having decided to reduce our herd, we offer for sale a few very choice animals of different ages. This will give those who intend to exhibit at the fall fairs an excellent opportunity to strengthen their herds and secure fresh blood without the risk and expense of importing. This herd has taken first prize wherever shown, also gold and silver medals, and the "Farmer's Advocate" Cup for the best three dairy cows of any breed. The original herd of twelve was selected for us by one of the best judges of Ayrshires in Scotland, Mr. John Caldwell, of Bogside, Dundonald, whose judgment we find sustained by the gentlemen appointed by the Ontario Government to select stock for the recent World's Fair at Chicago, one of whom makes the following report of this herd:—"They are, without doubt, the best show herd of Ayrshires I ever saw owned and exhibited by one man." DAVID MORTON & SONS, Proprietors, HAMILTON, ONT. 15-h-om



JERSEY CATTLE FOR SALE

Bred for butter. G. sons and g. daughters of "Massena," the greatest cow of her age in the world,—8,000 lbs. milk and 654 lbs. butter in her 16th year; also stock from "Signal of Belvedere," whose dam made 20 lbs. 6 ozs. butter in one week on second calf. Also stock from the greatest living prize bull, Canada's Sir George, whose dam made 263 lbs. butter a week and 67 lbs. milk a day. Splendid bulls, six months old and registered, \$100 each.

MRS. E. M. JONES, Brockville, Ont., Can. Mrs. Jones' great book, Dairying for Profit, 30c. by mail. Address, ROBT. Y. BROWN, Agent, Box 324, Brockville, Ontario, Canada. 8-y-om

CHOICE HOLSTEINS FOR SALE

I have a few very nice pure-bred registered Bulls and Heifers for sale at very reasonable figures. Write, or come and see me. Correspondence solicited. Address, JOHN A. LINE, Sherwood, Ont. Richmond Hill Station. 6-2-y-om

SUNNYSIDE HOLSTEIN-FRIESIANS

Choice animals, either sex, all ages, for sale at any time. Correspondence solicited. Address, McDUFFEE & BUTTERS, Stanstead, P. Q. 16-y-om

THE GREAT MILK AND BUTTER HERD OF HOLSTEIN-FRIESIANS.

SMITH BROS., Credit Valley Stock Farm, CHURCHVILLE, PEEL COUNTY, ONT., (24 miles west of Toronto).



This is the place to get stock of best quality at reasonable prices. We have seventy-five head, including prize-takers; best strains, cows and heifers, with large milk and butter records young bulls of superior quality. Send for catalogue. 8-2-y-om

MAPLE HILL HOLSTEIN-FRIESIANS.

The fine yearling bull Netherland Consul, a son of the silver medal bull Netherland Statesman's Cornelius, and the great cow Polianthus imp., that gave 13160 lbs. milk in a year at two years old, now for sale. He should go to head a herd. OLEMONS, ST. GEORGE, ONT. 12-y-om

FOR SALE 2 EXTRA GOOD AYRSHIRE BULL

Calves, nearly ready for service; one out of Second Prize Cow at World's Fair, the other out of Cow that took two Second Prizes at Montreal; sire Hamilton Chief out of one of Messrs. D. Morton & Sons' best Imported Cows, by Imported Bull Royal Chief; also some Poland-China Boar Pigs. W. M. & J. C. SMITH, FAIRFIELD PLAINS, ONT. 2-2-y-om

J. YULL & SONS, Meadowside Farm,

Carleton Place, Ontario

Our herd is composed of seventy-five head. Leonard Meadowside—1423—, first prize at World's Fair, heads the herd. Cows of the deepest milking strain, having won several medals at provincial tests. Shropshire sheep and Berkshire pigs. Young stock of both sexes for sale. Visitors welcome met at train. Give us a call. 7-y-om

JAS. McCORMICK & SON, ROCKTON, ONT. 20-2-y-om

GUERNSEYS AND LARGE YORKSHIRES.

FOR SALE: A choice bull calf, two months old, bred from heavy milking, high-testing stock. Also ten grand young pigs ready to ship. W. H. & C. H. McNISH, SPARTA, ONT. 15-d-0

ADVERTISE IN ADVOCATE

FOR SALE, JERSEY BULL,

About eight months old, from A. J. C. C. stock. Will be sold cheap. Address, 16-b-om S. DUBBER, St. Thomas, Ont.

JERSEYHURST FARM, LOCUST HILL, Ont.

ROBERT REESOR, importer and breeder of A. J. C. C. Jerseys of the choicest breeding, with the bull Jay St. Lambert 32313 at the head of the herd. Stock of all ages on hand and for sale. 16-2-y-om

GLEN ROUGE JERSEYS

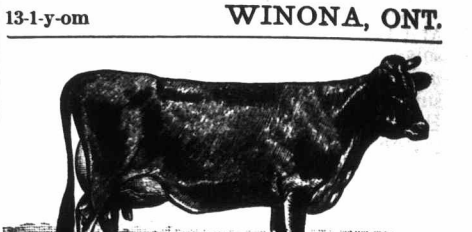
WILLIAM ROLPH, Markham, Ont., offers Twelve Jersey Bulls and Heifers (pure St. Lamberts), out of tested cows. Grand individuals. Prices right. 19-y-om

JERSEY-CATTLE

Of the heaviest milking strains. One of the largest herds in Canada; bred closely to the great dairy cow at Chicago, also the famous two-year-old. Sires of both were sold from this herd. Also Welsh Blood Ponies for ladies' and children's driving. Stock for sale always on hand. GEO. SMITH & SON, Grimsby, Ontario. 3-y-om

JERSEYS FOR SALE

At the head of the herd is the grand young St. Lambert bull, Nabob, son of Nell's John Bull. Stock of both sexes and different ages, and of choice breeding, now on hand. JONATHAN CARPENTER, 13-1-y-om WINONA, ONT.



Jersey Cows, Heifers and Calves, registered and High Grades, rich breeding and good colors. Our motto, "Individual merit by inheritance." Economy of production and value of product. Pedigrees written in butter. Come and see, or address, J. C. SNELL, EDMONTON, ONT. 8-y-om

FOR HEREFORDS

WRITE TO F. A. FLEMING, 5-y-om Weston, Ont.

Ingleside :-: Herefords.

ANXIETY 4th. and THE GROVE 3rd Strains, Prize Winners for '94!

SPECIAL OFFERING OF CHOICE YOUNG BULLS,

Registered calves of '94, \$40 to \$60 a piece. Also a very promising bull 21 months old. Address: H. D. SMITH, Farm, 2 1/2 miles, Ingleside Farm, G.T.R. Station. 18-2-y-om

MAPLE LODGE STOCK FARM.

We have a splendid lot of Leicester sheep—both sexes—for sale now. Some good young Berkshires also. JAS. S. SMITH, 5-2-y-om MAPLE LODGE P. O., Ont.

SHROPSHIRE SHEEP

Bred from imported Rams and Ewes, and the famous Campbellstock. Eight shearling rams, and lambs of both sexes for sale. Come or write to ISAAC JOHNSTON, Ravenna, Ont. 15-c-om

SHROPSHIRE SHEEP

Foreign buyers are invited to visit the Wolf's Head Flock, as there is always a good selection of ewes and rams for sale, and we handle none but the best, and can supply select specimens for breeding or exhibition purposes, and residing in the centre of the Shropshire Sheep Breeding District buyers are assisted in selecting from other flocks. Write for prices or visit us before going elsewhere. Visitors met by appointment at Baschurch Station, G. W. R. Address—J. & T. THONGER, Wolf's Head Farm, Nesscliffe, Baschurch, Shrewsbury, Eng. Telegram: Thonger Nesscliff. 2-2-y-om

SHROPSHIRE SHEEP

My whole flock of 90 head of Imported Rams and Ewes, a few home-bred Shearling Rams, and a choice lot of young Yorkshire Pigs. T. H. MEDCRAFT, Sparta, Ont. 18-y-om

SHROPSHIRE SHEEP

My whole flock of 90 head of Imported Rams and Ewes, a few home-bred Shearling Rams, and a choice lot of young Yorkshire Pigs. T. H. MEDCRAFT, Sparta, Ont. 18-y-om

SHROPSHIRE SHEEP

My whole flock of 90 head of Imported Rams and Ewes, a few home-bred Shearling Rams, and a choice lot of young Yorkshire Pigs. T. H. MEDCRAFT, Sparta, Ont. 18-y-om

SHROPSHIRE SHEEP

My whole flock of 90 head of Imported Rams and Ewes, a few home-bred Shearling Rams, and a choice lot of young Yorkshire Pigs. T. H. MEDCRAFT, Sparta, Ont. 18-y-om

SHROPSHIRE SHEEP

My whole flock of 90 head of Imported Rams and Ewes, a few home-bred Shearling Rams, and a choice lot of young Yorkshire Pigs. T. H. MEDCRAFT, Sparta, Ont. 18-y-om

SHROPSHIRE SHEEP

My whole flock of 90 head of Imported Rams and Ewes, a few home-bred Shearling Rams, and a choice lot of young Yorkshire Pigs. T. H. MEDCRAFT, Sparta, Ont. 18-y-om

BEAM - HOUSE - SHROPSHIRE

This is the Home of the Blue Bloods.

WM. THOMAS offers for sale Rams and Ewes from his famous flock, which has sent so many winners to our leading shows, and here also was bred Mr. A. O. Fox's noted ram "Blue Blood Yet," which so ably piloted Mr. Fox's flock of Shropshires at the World's Fair.



IMPORTED SHROPSHIRE EWES

And their lambs for sale by car lots; also a very choice Short-horn Bull calf, ten months old.



SHROPSHIRE EWES

A choice lot of Shearling Rams and Ewes, and this season's lambs from imported dams, and sired by a Beny ram, to choose from.



JAMES COOPER & SON, 14-2-y-om Kippen, Ont.

Imported OXFORD AND SUFFOLK SHEEP

CONSISTING OF 120 EWES & RAMS Selected with great care to combine size, quality and pedigree.

FROM THE BEST ENGLISH FLOCKS PRICES REASONABLE. Write and come and see my flock.

W. B. COCKBURN, Greenhouse Farm, 3-L-om Aberfoyle, Ontario.

Imported Home-bred LINCOLNS

The first Royal winner, Royal Chester, at the head of the flock. Ewes from the best English flocks, such as those of Dudding, Bales, Wright and Clark. Rams to head flocks a specialty.

R. W. STEVENS, LAMBETH, ONT. 5-y-om London Station.

BREEDERS OF Large Improved Yorkshire Pigs. Markham Baron, the sweepstakes Barrow over all breeds at the Guelph Fat Stock Show, 1892, bred by us.

T. TEASDALE, CONCORD, ONT., breeder of high class Berkshires. Some fine pigs October litters, both sexes, for sale.

YORKSHIRE PIGS Of the best type and breeding. Pairs not akin for sale at all seasons.

J. M. HURLEY & SON, Belleville, Ont. Box 442, 17-y-om.

IMPROVED : LARGE : YORKSHIRES

Over one hundred and fifty pigs on hand, of different ages, of the most suitable type. Every pig guaranteed to be as described.

IMPROVED YORKSHIRES, Sired from imported stock of Duckering, Sanders Spencer and Walker Jones breeding stock, of all ages, for sale; also a few Bates bulls of milking stock.

WM. COWAN, V. S., Galt, Ont. 9-y-om

HOW IS YOUR HORSE? IF HE'S SICK AND YOU CAN'T TELL WHAT'S THE MATTER He surely Needs MAUD'S CONDITION POWDER

PRICE, 25c. AND 35c. PER PACKAGE. We offer to mail for 10c. a regular 25c. package to anyone who wishes to try them before purchasing a supply.

DAVIS & LAWRENCE CO (Ltd.), - MONTREAL.

LARGE IMPROVED YORKSHIRE PIGS and Holstein Cattle.

We breed nothing but the best, and sell cheap, and guarantee satisfaction or ask no pay.

FLETCHER BROTHERS, Oxford Mills P. O., Ont. Kemptville S't'n, C. P. R. 6-2-y-om

Large Improved YORKSHIRES and ENGLISH BERKSHIRES

A few choice sows in farrow, last June, July and October pigs, also a few boars fit for service at once, also a choice lot of spring pigs.

WM. GODGER & SON, 11-y-o Woodstock, Ont. Box 160

LARGE ENGLISH BERKSHIRES

My herd are imported or bred from imported stock, and have carried prizes for years, including sweepstakes over all breeds at last Guelph Fat Stock Show.

THE HOME OF THE BERKSHIRES. J. G. SNELL & BRO., Edmonton, - Ontario.

Now is a good time to order pigs from litters farrowed this year. We never had so many sows to breed from as at present.

C. T. Garbutt, box 18, Claremont, Ont., imp. and breeder of Berkshire Pigs and Cotswold Sheep.

G. J. GILROY & SON, Glen Buell, - Ont., BREEDERS OF HOLSTEIN - FRIESIAN CATTLE

Large English Berkshires & Imp. Yorkshire Swine Bred from imported stock. Personal inspection solicited.

S. COXWORTH, CLAREMONT, ONT., Breeder and Importer of Berkshire Hogs

A choice lot of young pigs just fit to ship. Pairs supplied, not akin, sired by my three grand Stock Boars, "High Clear Prince," "King Lee" and "Champion Duke."

H. J. DAVIS, Woodstock, Ont., Breeder of High-class Large Berkshire and Imp. Large White Yorkshire Swine, Short-horn Cattle. - A grand lot of young pigs ready for shipment of both breeds; also boars fit for service from prize-winning stock.

BERKSHIRES AND YORKSHIRES. Choice stock for sale at reasonable prices. Orders filled in rotation. Inspection invited. Write for prices.

THE OXFORD HERD OF REGISTERED POLAND CHINAS Our herd of Improved Poland-Chinas won 36 first, 18 second and 6 third prizes in 1893, including the Herd prize at Montreal and Toronto, for best boar and two sows, any age.

W. & H. JONES, Mount Elgin, Ont. 15-y-om

ISRAEL GRESSMAN, New Dundee, - IMPORTER OF Large - English - Berkshires 4-y-om

IMPROVED SUFFOLK SWINE, THOROUGH-BRED HORSES, DURHAM CATTLE AND - SOUTHDOWN SHEEP.

A grand lot of Suffolk Pigs, all ages, for sale at prices to suit the times.

Duroc-Jersey Swine Are the best all-round hog known. No squealing; quiet disposition; good grazers; defeated the Berks and P. C. on all points at Mich. Agr. Coll. test.

DUROC - JERSEY FARM TAPE BROS., - Ridgetown, Ont. Importers and breeders of pure-bred Duroc-Jersey Swine. Stock for sale. Prices reasonable. Correspondence solicited.

O. I. CHESTER WHITES AND BERKSHIRES. I have on hand a lot of Feb. sow pigs of both breeds, that fill the bill for exhibition, and will soon have young pigs old enough for shipping.

GREAT SWEEPSTAKES HERD OF OHIO IMP. CHESTER WHITE SWINE. Our herd won more first prizes and sweepstakes than all others combined, including Toronto, Montreal, London, Thirty imported and home-bred sows for the spring trade.

MUNGER'S AMERICAN STRAIN. Breeding Pens for 1894. Mating and Breeding. 40 Grand Pairs and Eggs For Sale at all Times. Pairs, Trios and Breeding Pens. Mated for Best Results.

BREEDING STOCK FOR SALE. I have several White, Silver and Golden Wyandotte, and B. P. Rock hens for sale, at \$1.00 each.

PLYMOUTH : ROCK : CHICKS. TRIOS AT \$4. A fine cockerel and two choice pullets for only \$4, if ordered during August, for delivery Sept. 1st.

WANTED AT ONCE. We pay as high as 50c. a lb. for prime live Geese; 25c. for Duck. We also buy Chicken and Turkey Feathers. Write us what you have. First come, first served. It means money to you, for we pay cash.

Alaska Feather & Down Co., L'd., 10 St. SACRAMENT STREET, 7-L-om Montreal.

NOTICES.

In writing to advertisers please mention the Farmer's Advocate.

Silo filling will soon be in full blast, and half the success of the operation depends on having a good ensilage cutter. The Watson Manufacturing Co., of Ayr, Ont., are turning out a very superior one this season.

ANSWERS TO CORRESPONDENTS. FARMER: Yes, South Dakota furnishes an excellent field for diversified farming.

We wish to draw our readers attention to the importance of the Hot Air Wood Burning Furnace, manufactured by Clare Bros., and Co., Preston, Ont., advertised in this issue.

We clip the following from the report of the Royal Show at Cambridge, which appeared in a late issue of the London Live Stock Journal:

Messrs. R. A. Lister & Co., (limited) of Dursley, have an immense collection of their dairy appliances, grinding mills, horse-gears, etc.

STOCK GOSSIP. Dr. J. Y. Ormsby, manager of Isleigh Grange Stock Farm, Danville, Que., reports business as being exceedingly good.

One pair to the Trappists Monks, Oka, Que.; pair, Joseph B. Donald, Richmond, Que.; J. C. Stockwell, Danville, Que.; boar, S. Delester, Cop Sante, Que.; pair, S. Senoc, boar and two sows, H. C. Sharp, Ida, Ont.; boar and two sows to E. P. Ball, Rock Island, Que.; boar, to J. M. Hurley, Belleville, Ont.; pair, A. Dubois, Chambly Basin, Que.; boar, W. J. Driver, Jasper, Ont.; sow, W. Oliver, Oliphant, Ont.; boar, S. H. Jones, Sabrovois, boar, Wm. Wilson, Wilson's Mills, Que.; pair, H. Merand, St. Leon; boar and two sows, G. A. Foster, Knowlton, Que.; sow, Joseph Ell, La Fotheringhay, North Wiltshire, P. E. I.; boar, M. H. Parise, Sussex Mills, N. B.; sow, Chas. Bennet, Danville, Que.; two boars, H. & D. La Lahbertie, St. Albert, Que.; boar, E. Lorguet, St. Hyacinthe, Que.; boar, T. Watson, Springfield, Ont.; boar, L. M. Howard, Thurso, Que.; boar and two sows, on May 2nd, 1894, to L. McCrae, Grosvenor, N.Y., U.S.A.; two sows, to the same man, in June, and two more have since been ordered for delivery in September.

After many years handling and feeding all sorts and conditions of hogs, Mr. W. H. Odell, of Belmont, Ont., when delivering a lot at the establishment of J. L. Grant & Co., Ingersoll, by the appearance of a number of Tamworths, perhaps more from the novelty of their color, smallness of head and shoulder, compared with the extent of side and ham, than anything else.

As our readers are aware, the Grant Company made a considerable importation, not as a speculation, but simply in order to improve the bacon qualities of Western Ontario hogs.

Mr. Odell made a small investment, and as he says, the more he knew of them the better he liked them. Their advantages, he thinks, were very well summed up as follows, by a writer in an English agricultural journal, recently:

Famous for early maturity, percentage of lean meat very high, flesh pink and of delicious flavor, good strong legs, sows prolific and excellent mothers, and boars exceedingly prepotent, and so long as there is a demand for lean bacon, so long will there be a keen demand for Tamworths.

Finally, Mr. Odell decided to keep Tamworths, and Tamworths only. His herd now includes nine mature breeding sows, and taken altogether they are an admirable lot, very smooth, easy feeders, and carrying their meat in the right places.

Lack of space will not allow us to particularize, but Lily, No. 177, farrowed May 17th, 1893, should be mentioned, as having now attained a weight of some 400 lbs. The principal stock boar is Rodman, No. 106, farrowed July 12, 1893, sire Buffalo Bill, No. 143, dam "Eggy," 48, by Revell's boar (imp.) 196. He is a smooth, quiet dispositioned animal of the popular conformation.

The docility of Mr. Odell's herd, old and young, was very noticeable. His plan is to feed the sows well until the young are weaned after which the former go on grass alone, plenty of water being supplied. On such a ration, they were really in surprising condition. As a "grass hog," he has never yet seen anything to equal them, in order to be prepared for the demand, Mr. Odell was fortunate enough recently to secure a number of young sows, and is prepared to furnish pairs not akin. Mr. Odell's farm is well located about a mile from Belmont, on the Credit Valley Branch of the C. P. R., which is his post and telegraph office. Readers in search of Tamworths would do well to communicate with Mr. Odell, and examine his stock.

STOCK GOSSIP.

In writing to advertisers please mention the Farmer's Advocate.

Mr. J. C. McCorkill, though enjoying a good law practice in Cowansville, Que., is an enthusiastic farmer, and finds time to attend to his farm at Farnham Centre. He recently purchased the choice young two-year-old Guernsey bull, Roseberry Duke, from the Isleigh Grange Stock Farm, and also from the same place a pair of young Yorkshire swine, bred from imported stock.

Capt. A. W. Young, Tupperville, Ont. writes us that his stock of fall pigs—Poland, China—are all sold except one choice boar, and that his young stock from Wilkes Nominee will please anyone. Molly 2nd, No. 767, a daughter of Nominee 2nd, 429 (bought of J. J. Payne), farrowed a litter of 4 sow pigs on July 12th. These are beauties, and for sale. See change of advertisement in this issue.

ARKFAST GRANGE.

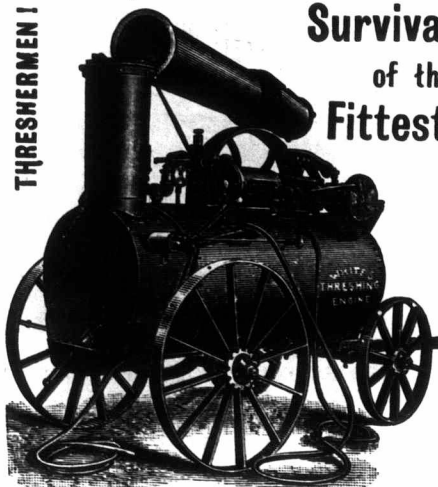
Mr. Geo. G. Foster, a prominent law practitioner of Montreal, has recently purchased a stock farm of 300 acres on the shore of the beautiful Brome Lake, and within one mile of C. P. R. Station at Knowlton, Brome County, Que. He has stocked the farm with a fine lot of Jerseys, both pure-bred and grade, and hogs, and will make a specialty of producing choice Jersey butter and pure bred swine. He has present some superior Chester Whites, from the herd of E. D. George, Putnam, a pair of choice Yorkshires from the Isleigh Grange Stock Farm, and also a few of his favorite breed, the Tamworth, which were purchased from H. George & Son, Crampton. Mr. Foster has been fortunate in securing as Manager, Mr. L. B. Jenkins, who has long been known as a successful farmer in the vicinity of Knowlton.

MR. WM. GRAINGER'S DEEP MILKING SHORTHORNS.

Three miles from Lonsborough Station, on the G. T. Railroad, is the home of Fair Maid of Hullet, the cow that produced 3,520 pounds of milk and 150.31 lbs. butter, at a net profit of \$44.80, in the 90 days' test at the World's Fair. Mr. Grainger began breeding Shorthorns twenty years ago, and believing that this breed could milk with any of the specialized dairy breeds, he early made milk production a principal feature in his breeding, with the result that his cows are all good milkers. Among the number we might mention Red Britanic, a five-year-old cow, out of The Fair Maid of Hullet, that gave 48 pounds per day throughout the summer, at a test of 3.06, on grass alone. The herd numbers 16 in all, composed of animals of the choicest milky strains, headed by the grand young bull, Golden Nugget, got by Gen. Booth, and bred by Mr. Biggans, Clinton, Ont., dam Golden Queen.

MR. W. G. PETTIT'S SHORTHORNS AND BERKSHIRES.

The stock farm of Mr. W. G. Pettit is pleasantly situated about two miles from Burlington Station, on the Toronto and Hamilton Branch of the G. T. R., and about seven miles from Hamilton. Mr. Pettit is a veteran in the breeding of Shorthorns, having been engaged in the business for the past twenty-five years. The farm consists of 200 acres of the finest land, directly on the line of railroad, while a short time ago 200 additional acres were purchased, thus making it one of the largest and best stock farms in that section. In the stable we were shown the stock bull, Grand Fashion - 15104 - bred by Arthur Johnston, of Greenwood, and got by the imported Sittytton bull, Hospidar, afterwards sold to go back to the Old Country. His dam was Fashion VII. This bull is a red roan, and is justifying the high commendation which we gave of him a year ago in the superiority of the stock which he is leaving. We also noticed three choice young bulls, sired by Grand Fashion, and from cows of the Mina family, which should not be long in finding customers. At the recent Bow Park dispersion sale Mr. Pettit purchased two cows, Duchess of Clarence, a thick, even red cow; at her side was a beautiful red heifer calf by the Duke of Hillsdale. This is a calf of wonderful development, and should make a prize-winner. The other is a four-year-old heifer, Julia, also red. She also has a heifer calf by her side, sired by Waterloo Banner. The cows are both of the thick, fleshy kind. We were struck by the general uniformity in color, form and appearance of the animals in the herd, due to the impressive powers of the bull which had been previously used, viz., the Premier - 614 - a bull of one of the Sheriff Hutton families, bred by Arthur Johnston, of Greenwood. On this farm much attention has been paid to the selection of bulls of good milking families, and the bull now in use is from a cow which was specially noted as a producer of milk. The result of this care in selecting is shown in the cows and heifers, which all possess good feeding and milking qualities. About five years ago, Shropshires were added to the stock kept on this farm, by the purchase of twelve ewes, from the flock of J. P. Phin, Hespeler. The next year an imported ram, bred by William Thomas, was purchased. This sheep had won first at several important shows in England that season, and also won first in his class at Toronto. Two years ago a fourth addition was made by the importation of four ewes, bred by T. & S. Bradburne, and selected by Mr. Robert Miller, of the firm of John Miller & Sons. The stock ram at present at the head of the herd was also purchased of Mr. Robert Miller, and was bred by T. & S. Bradburne. He was a first prize-winner in England, beating, as a lamb, the ram which was first at Chicago. Both the above rams, we were told, were closely connected in breeding to several of the most celebrated rams on the continent. In looking over the flock we were surprised by the number of superior animals which it contained, which can be largely accounted for by the great care which Mr. Pettit has always bestowed upon the selection of stock. The eight shearing rams are particularly worthy of notice, and we would advise any one in need of a stock ram to give this flock a call. The Berkshire swine on this farm have received the same attention, and are of equal merit with the other lines of pure bred stock.



Survival of the Fittest

ENGINEERS and Threshermen pronounce the **WHITE ENGINE** unsurpassed for **Durability, Power, Economy, Simplicity, etc.**

Guaranteed to give satisfaction.

GEO. WHITE & SONS,
LONDON, - ONTARIO.

RUN DOWN WITH DYSPEPSIA

STOMACH AND HEART Affected. Almost in Despair. But Finally CURED By Taking **AYER'S PILLS**

"For fifteen years, I was a great sufferer from indigestion in its worst forms. I tested the skill of many doctors, but grew worse and worse, until I became so weak I could not walk fifty yards without having to sit down and rest. My stomach, liver, and heart became affected, and I thought I would surely die. I tried Ayer's Pills and they helped me right away. I continued their use and am now entirely well. I don't know of anything that will so quickly relieve and cure the terrible suffering of dyspepsia as Ayer's Pills."—JOHN C. PRITCHARD, Brodie, Warren Co., N. C.

AYER'S PILLS
Received Highest Awards
AT THE WORLD'S FAIR

A Good Two-Horse Harness for \$13.00
A Good Two-Horse Plow or Team Harness for \$13.00

COLLARS, Hog skin. Leather lines of full length and good quality. BRIDLES, open or blinds. BACK BANDS, 3/4 inch heavy strap with TRACE BEARERS and BELLY BANDS attached. MARTINGALES and BREAST CHAINS for neck yoke. HAMBES, best white oak, 3 loops and overtop. Warranted to satisfy.

Single Harness, same Quality. \$6.50

This harness will serve as well, and last longer, than a \$40.00 harness.

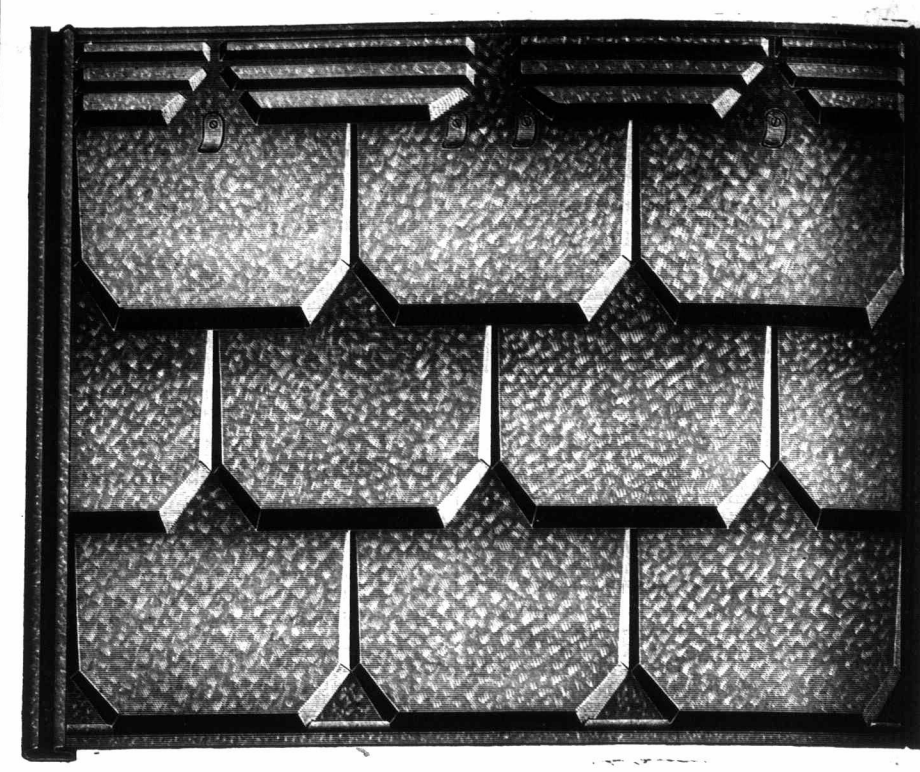
Address, **THE SUPPLY COMPANY,**
Niagara Falls, Ontario.

Fresman's FERTILIZER

FALL WHEAT.
JONAS GROOM, Beamsville: "Used your 'Sure Growth' Fertilizer on fall wheat the past two years, at the rate of about 300 lbs. per acre, sown with drill. Left strips through the field without fertilizer, and it looked like a road through the piece, the grain and straw being much better where it was used than where it was not. Would recommend from 100 to 500 pounds per acre for best results."

The W. A. FREEMAN CO.,
Hamilton.

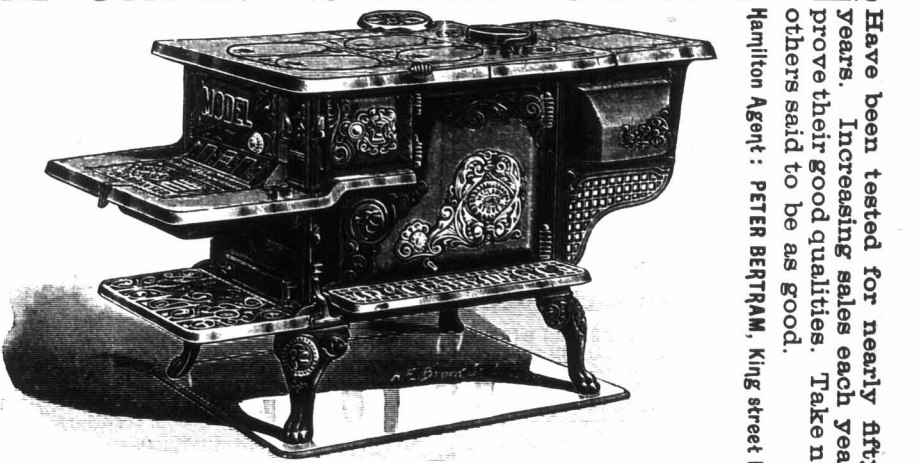
"EASTLAKE" STEEL SHINGLES



GALVANIZED OR PAINTED. THE SHINGLE OTHERS TRY TO IMITATE. HAS NO EQUAL. CAN BE LAID BY ANYONE. FULLY GUARANTEED. FIRE-PROOF, DURABLE, ORNAMENTAL AND CHEAP.

Sole Manufacturers—**METALLIC ROOFING COMPANY (Ltd.),**
Cut out and send us this advt. and we will quote you special prices. . . . 10-y-o 82, 84, 86, 88 and 90 YONGE ST., TORONTO, ONT.

McCLARY'S FAMOUS STOVES



"MODEL," FOR WOOD—2,000 SOLD ANNUALLY.
THE McCLARY MFG. CO.
LONDON, TORONTO, MONTREAL, WINNIPEG, VANCOUVER.

THE DENNIS POTATO DIGGER

The only satisfactory low-priced digger. Will dig potatoes as fast as the team can walk, and is guaranteed to do its work well. Send for circular and prices.
THE DENNIS WIRE AND IRON WORKS,
London, - Ontario.

GREENER'S RENOWNED CLOSE SHOOTING GUNS FOR GAME AND PIGEONS

May be obtained through MESSRS HINGSTON SMITH ARMS CO., WINNIPEG, or any gun dealer or store-keeper in Canada. PRICES RANGING FROM \$60. These guns are specially noted for their fine shooting qualities and strong breech action, and have won more valuable prizes and made higher scores than any guns in the world.

Before ordering a new gun, read Greener's latest book; 3rd edition now ready; price, 5s.; 270 pages; copiously illustrated. It may be obtained from Messrs. B. & S. H. Thompson, Merchants, Montreal, or from the author.

WM. GREENER, ST. MARY'S SQUARE, BIRMINGHAM, and 68 HAYMARKET, LONDON.

Dr. Warnock's ULCERKURE FOR SORES.

Send 10c. for large sample and Dr. Warnock's Treatment of Wounds, to A. E. WELDON & CO., Calgary, Alb.

otterville, Ont. I am well pleased with your Ulcerkure. FRANK CLARE.
Palmerston, Ont. Ulcerkure is the best healing medicine I have ever used. J. D. MERRYFIELD.
IT HAS No equal for Cuts, Sore Shoulders, Galls, Scratches, and Skin Diseases.
25 applications in a bottle, for \$1. Sold by dealers, or mailed on receipt of price.

ADVERTISE in the ADVOCATE.

CANADA'S GREAT EASTERN EXHIBITION

WILL BE HELD AT:-

SHERBROOKE, QUE.,
Sept. 3, 4, 5, 6 & 7, 1894.

Five Full Days of Fair.
From Monday morning, the 3rd,
until Friday evening, the 7th.

Largest and Best Display of Live
Stock, Dairy, Agricultural, Horti-
cultural and Industrial
Exhibits ever gathered
together in the
Province.

TROTTING & RUNNING RACES.
\$1,500 in Purses. See Programme of Races.

Magnificent Programme of Attractions on Plat-
form in front of the New Covered Grand
Stands, from two to six each after-
noon, by troop of 16 Variety Per-
formers, including Male and
Female Acrobats, Trapeze
Artists, Jugglers, Jap-
anese Specialists,
Etc., Etc.

Balloon Ascensions, Leaps and Races each day by
Prof. Walcott and Nellie LaMount.

BICYCLE RACES, ETC., ETC

Cheap rates and excursions on all railways.
Entries in Live Stock Departments close
Aug. 27th; in all other departments, Aug. 29th.
For Prize Lists, Entry Forms and other in-
formation apply to

HON. JOHN MCINTOSH, **H. R. FRASER,**
16-b-o President. Secretary.

PROVINCIAL EXHIBITION, QUEBEC,

September 10th to 15th, 1894.

AGRICULTURAL AND INDUSTRIAL LIBERAL PRIZES!

SPECIAL ATTRACTIONS!
For Prize Lists and all information
Apply to

R. Campbell,
Sec. Treasurer,
Quebec Exposition Company,
Parliament Buildings,
July 23, 1894. 13-f-o Quebec.

EQUAL TO THE BEST OF THEM!
THE CENTRAL CANADA EXHIBITION, AT OTTAWA,
Sept. 21st to 29th, '94

Upwards of \$15,000 offered in Prizes, be-
sides a List of Specials, including Gold and
Silver Medals, Silver Cups; also Special
Cash Prizes. Largest List of Specials offered
by any other Exhibition. Improved Grounds
and Enlarged Buildings.

Bridge connection with and Enlargement of Machin-
ery Hall. \$1,500.00 offered in Purses for Trotting, Pacing
and Running Races, including a 2.25, 2.38 and 2.50 Class;
also a Free-for-All. Entries in all Departments close
Sept. 18th. The Latest Developments in Electricity
exhibited in Main Building.

List of Special Attractions Unexcelled, including:
Robetta and Doretto, Chinese Emperors in their
"Heap Fun Laundry Act"; Robb & Lexington,
the original Burlesque Aerial Comiques, in
their Sensational Act, "Excitement"; "The
DeComas, the world's greatest and original
Aerial Bicycle Riders, from Crystal Palace,
London"; "The Du Crows, Millie Belotta and
Louie - Aerialists and Flying Meteors." Balloon
Ascensions, and a host of other Specialties too
numerous to relate.
For Prize Lists, Entry Forms, Race Programmes, and
all required information, apply to
A. MacLean, Pres. **E. McMahon, Sec'y.**
14-o 26 Sparks Street, OTTAWA

100 Rods BUCHANAN FENCE CO.
SMITHVILLE, O. \$35.00

8-L-om
ADVERTISE IN THE ADVOCATE

THE FARMER'S COMPANY

EVERY FARMER HIS OWN MANUFACTURER.

THE MERCER M'FG. CO. (LTD.)

UNITE THEIR INTERESTS WITH THEIR CUSTOMERS.

The problem solved how to secure cheap machinery. Every farmer co-operating with and taking stock in the Company secures his machinery at wholesale prices. No farmer can afford to miss this opportunity to secure his machinery and supplies at right prices and protect himself from designing combines.

The Mercer Manufacturing Company (Limited) is a chartered Company (under the Dominion Act granted January, 1894), and shareholders are only liable for the amount for which they subscribe. Shares are only \$10.00 each, and more than this amount is saved in one implement. Hundreds have already become shareholders, and every farmer studying his own interests will not delay in connecting himself with this Company.

LIST OF MACHINES MANUFACTURED AND SUPPLIED BY THE MERCER MFG. CO. (LTD.):
Binders, Reapers, Mowers Rakes, Tedders, Hay Forks, Cultivators, Seeders, Drills, Rollers, Walking, Sulky and Gang-Plows; Harrows, Disc Harrows, Spade Harrows, Cutting Boxes (three sizes), Root Cutters and Pulpers, Gran Crushers, Small Horse-Powers, Wagons, Democrats, Buggies, Carts, Sleighs, Cutters, etc., etc. In fact every implement required on the farm.

ALL MACHINES GUARANTEED.

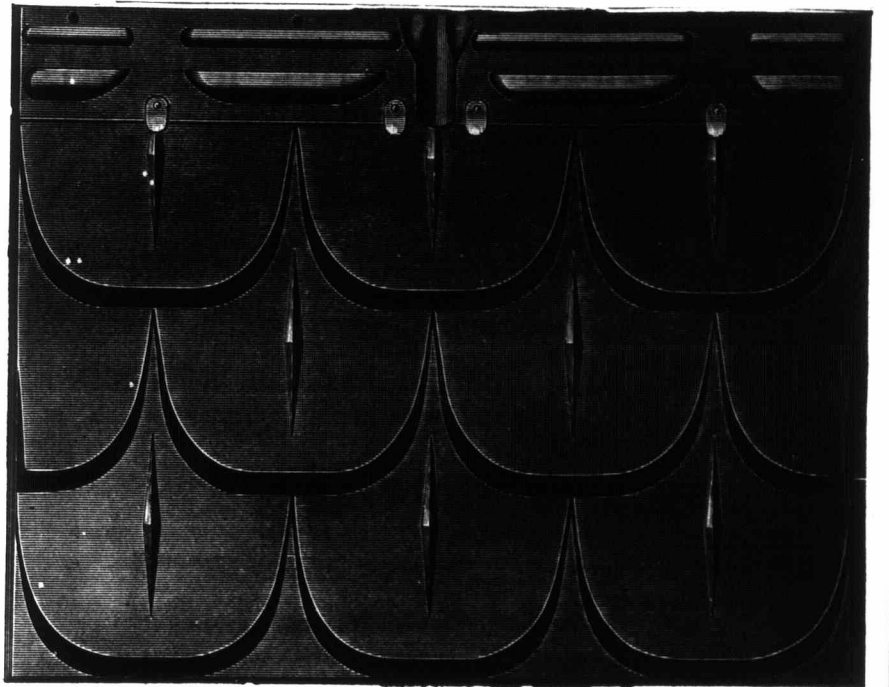
Pay no attention to agents of other companies, as we sell direct to the farmer, and our method of doing business has only to be looked into to be appreciated by any intelligent farmer. Write for particulars to

THE MERCER MANUF'G. CO. (LTD.)
Branch Offices and Warerooms, Head Office,
LONDON AND BRANTFORD. **ALLISTON.**

Foreign Agencies—London, England; Padston, England; Glasgow, Scotland; Kelso, Scot-
land; Ballarat, Australia; Dunedin, New Zealand; Cape Town, South Africa. 10-o

THE - PEDLAR - PATENT - STEEL - SHINGLE

WILL LAST A LIFETIME.



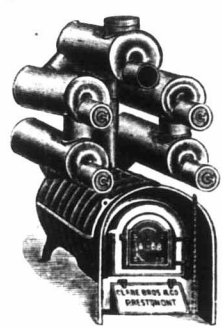
FIRE-PROOF, LIGHTNING-PROOF, WATER-PROOF. Nearly as Cheap as Wooden Shingles. Send for Illustrated Catalogue. Reliable Agents wanted in every vicinity.
ADDRESS—**THE PEDLAR METAL ROOFING CO., OSHAWA, ONT.**
1-y-o

Ontario Agricultural College

WILL RE-OPEN ON THE 2nd OCTOBER.

Full courses of lectures, with practical instruction, in
Agriculture, Live Stock, Dairying, Veterinary Science,
Chemistry, Geology, Botany,
and other subjects required by young men intending to be farmers.

For circular giving full information as to cost, terms of admission, etc., apply to
JAMES MILLS, M.A.,
Guelph, July, 1894. 14-c-o PRESIDENT.



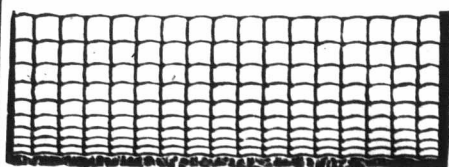
HEATING OUR SPECIALTY.

We have letters from all parts of Canada, saying
PRESTON FURNACES ARE THE BEST

Let us send you Catalogue and full particulars,
and you can **JUDGE FOR YOURSELF.**

CLARE BROS. & CO., - PRESTON, ONT.
16-c-om

ADVERTISE IN THE FARMER'S ADVOCATE.



CAN'T "TAKE A STUMP."

A man asked the Rural New Yorker what wire fence would hold his unruly bull. Several experienced readers answered that **THE PAGE FENCE** would do it, one stating that "nothing short of a traction engine would go through it." For an account of a test made with a traction engine, send for the latest number of the "Colled Spring," our illustrated monthly paper.

The Page Wire Fence Co. of Ontario, Ltd.
WALKERVILLE, ONT. om

LEADER CHURN.



Ask your dealer for the
LEADER :-: CHURN

WITH PATENT
GAS VENT.

Best Churn in the market, or write direct to manufacturers for Catalogue.

DOWSWELL BROS.,
HAMILTON,
MANUFACTURERS OF

Churns, Wringers, Washers & Mangles.
13-1-f-o

ENSILAGE CUTTERS.

We are the largest makers of
Ensilage Cutters in Canada.

EXCELSIOR ENSILAGE CUTTER,
With either concave or convex knives,
guaranteed to cut corn at the rate of 10
tons per hour.

WATSON'S AMERICAN GIANT ENSILAGE CUTTER,
16 inch knives, cylinder pattern. The
fastest cutter in Canada.

UNIVERSAL :-: CARRIERS,
Delivering in any direction from the cutter.
All lengths up to 50 feet.

We Make the Largest Line of Feed and
Root Cutters, Pulpers and Grain Grinders
in America.

Write for Catalogue and Price List.
Reliable dealers wanted to handle these
goods.

Watson Mfg. Co., Ltd.,
AYR, ONTARIO, CANADA. 16-o

JUST WHAT EVERY FARMER WANTS! A LOW DOWN WAGON

With Regular Height Wheels.

We are the first in Canada to introduce
HOLLEY'S PATENT STEEL DROP AXLE FARM WAGON

This has become immensely popular in the
United States, where it was first invented and
patented.

We mention only a few of its many good
features:-

The front wheels are so attached to the axles
as to prevent any whipping or slatting of the
pole when wheels pass over obstructions.

By the same arrangement the wagon may be
turned in a very short space.

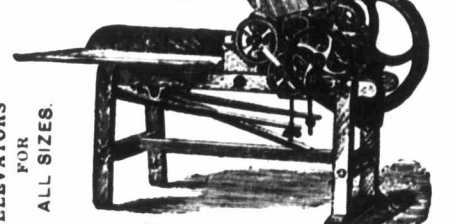
It can be used with or without a box, and,
by lengthening the gear, it is well adapted for
hauling lumber, poles, long timber, etc.

THE MOST IMPORTANT FEATURE is that the
BODY OF WAGON IS **HUNG LOW**, being only 15
inches from the ground.

It will be apparent to all that this makes it
the most perfect and convenient wagon for
Farmers and Teamsters ever before introduced,
especially when loading heavy material.
Please examine these wagons in our exhibit at
the principal fairs.

Write us for particulars. Address,
BAIN BROS. MANUFACTURING CO., LTD.,
BRANTFORD, ONT. 16-om

1 Bundle & 10 Tons.



If you only wish to cut one bundle at a time,
we can supply you with a suitable cutter. If
you wish to cut 10 tons ensilage per hour, we
can still supply you, and sizes all the way be-
tween. Write for catalogue.

M. MOODY & SONS,
16-o Terrebonne, Que.

PURE :-: WATER :-: FROM :-: ARTESIAN :-: WELLS.
Write for particulars to **WILLIAM SHARP, 184**
Hamburg Ave., Toronto, Ont. Practical Well
Driller. 2-2-f-o

WORK FOR ALL. \$15 a month salary and ex-
penses paid. If you want employment write
at once to **P. O. VICKERY, Augusta, Maine.**
6-2-y-o



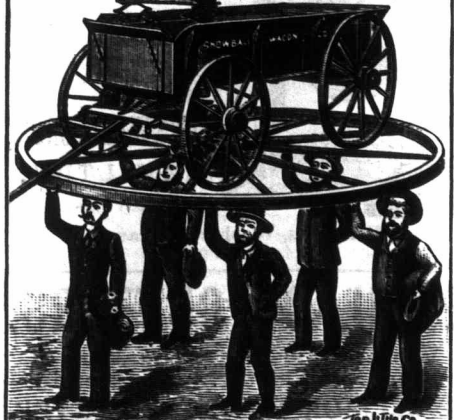
ALMA
The leading
Canadian Col-
lege for Young
Women.
**ST. THOMAS,
ONTARIO.**

Graduating
Courses in Lit-
erature, Music, Fine Art, Commercial Science and
Education. The efficiency of Canadian Colleges is con-
ceded by all. 30 professors and teachers. 200 students
from all parts of America. Health and home. **LOW
RATES.** Only 3 hours from Detroit. 60 pp. illustrated
announcement. President **AUSTIN, A. B.**

HAY, STRAW & CORN EXPORTERS
Consignments received by **JAMES SERGEANT,**
185 and 191 Derby Road, Liverpool. My stores
have been established 30 years, and are situ-
ated close to the Langton & Alexandra Docks,
Liverpool. References—Bank of Liverpool.
12-f-o

THE BEST WAGON ON WHEELS!

**THE SNOWBALL WAGON
STANDS TO DAY**



**HEAD & SHOULDERS OVER ALL OTHERS
SNOWBALL WAGON CO. ST. GEORGE ONT.**

The accompanying cut shows where the
SNOWBALL WAGON stands in the es-
timation of the
public. It has stood the test for fifty years, and to-day
1,000 of our customers advise their friends to buy the
SNOWBALL. We are very busy at present, and would
advise any one wanting a **SNOWBALL** to order early and
give us time to look carefully after the work.

Remember We Only State Facts.
Other firms may give you fairy tales. We never do. You
run no risk in buying a **SNOWBALL WAGON.** We know
farmers who have run a **SNOWBALL WAGON** for forty-
five years, and still in fair shape. Always address

**SNOWBALL WAGON CO.,
ST. GEORGE, ONT.**

10-g-o
**THRASHING MACHINES AND HORSE-POWERS
(One, Two and Three-Horse).**



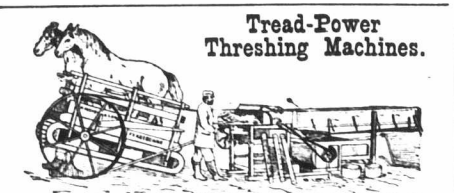
OLDS' PATENT
The best Tread Horse-Powers and Threshing
Machines made. Take the lead wherever in-
troduced. Also Drag and Circular Saws and
Ensilage Cutters. Agents wanted. **JOHN
LARMONTH & Co.,** Manufacturers, Pt. St.
Charles, Montreal, P. Q.; **E. G. Prior & Co.,**
Agents, Victoria, B. C.; **A. L. Gruggen, Agent,**
Moosomin, N. W. T. 10-j-o

**ALL KINDS OF
FRUIT PACKAGES AND BASKETS.**



APPLY TO
**OAKVILLE BASKET CO., Oakville, Ont.
11-L-o**

EVERY PRACTICAL FARMER should read the Planet
Jr. book for 1894. We
send it free. **S. L. ALLEN & CO.,** 1107 Market St.,
Philadelphia. 10-k-o



**Tread-Power
Threshing Machines.**
Threshes the grain, separates it from the
straw and cleans the grain fit for market. Is
not this what you need? Write for prices.
**M. MOODY & SONS,
TERREBONNE, Que. 16-o**

PORTABLE AND TRACTION ENGINES
First-class. Write for Catalogue. **N. C.
PETERSON & SONS, Sarnia, Ont. 15-f-om**

EXCELLING ALL OTHERS

**CANADA'S GREAT
INDUSTRIAL FAIR**

**TORONTO,
September 3rd to 15th, 1894**

**THE GREAT LIVE STOCK AND AGRICULTURAL
EXPOSITION OF THE DOMINION.
VAST IMPROVEMENTS DURING THE PRESENT YEAR.**

The largest list of prizes ever offered in Canada for every kind
of farm product.

No Agriculturist should miss attending this great Fair, and
bringing his family with him. Worth travelling many
miles to see. New inventions and
special attractions.

INSTRUCTION AND AMUSEMENT COMBINED.

CHEAP EXCURSIONS ON ALL RAILWAYS.

ALL ENTRIES CLOSE SATURDAY, AUGUST 11th.

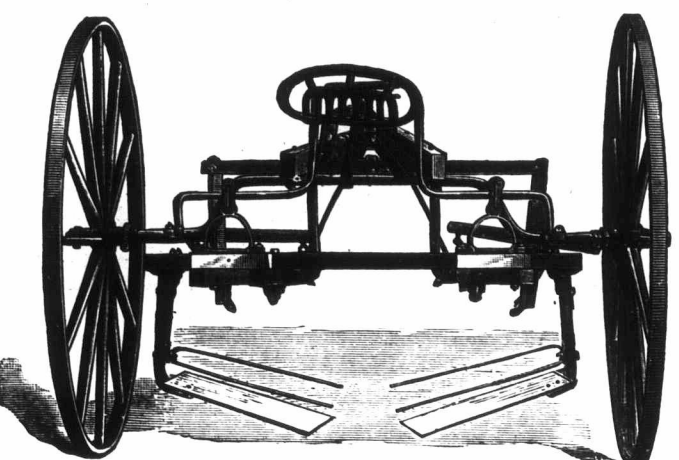
For prize lists, entry forms, and all information, drop a post card to

JOHN J. WITHROW, H. J. HILL,

13-d-o President. Manager, Toronto.

NEW AMERICAN WITH BEAN HARVESTER ATTACHMENT.

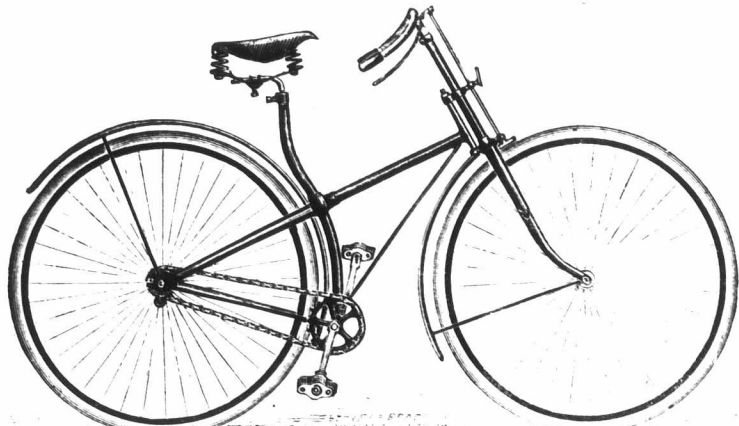
The Bean Harvester is an
attachment which is easily
put on to the New American
Harrow and Cultivator
after removing the sec-
tions. It pulls two rows of
beans at once, leaving them
in a perfect windrow, and
harvesting from 12 to 18
acres in a day. This machine
is indispensable to bean
growers, and is highly re-
commended by all who
have seen it. As a harrow
its work is perfect; the
teeth have reversible points
and can be locked down or
allowed to float. As a cul-
tivator the New American
has no equal; it cultivates
perfectly all crops planted
in rows, and with the Exten-
sion Arms two rows of beans
can be cultivated at once.
We sell the New American
either as a cultivator or
bean harvester. If you have
one of the machines you can
obtain the attachments for
making the other at a
small expense.



Knives can be Locked in any Desired Position.

**AMERICAN HARROW CO.,
Detroit, Michigan, or Windsor, Ontario.
10-m-o**

BARGAINS IN BICYCLES.



English Bicycles, built for Canadian roads. Only 15 left. Must
be sold at once. Procure one before they are all sold.

**The Bowman Hardware & Sporting Goods Co., Ltd.
HAMILTON, ONT.**
Send for gun catalogue—free.

ADVERTISE IN THE FARMER'S ADVOCATE.

CRADLE CHURN



It is a Labor Saver.
Is Always in Order.
The Easiest to Clean.
The Easiest to Oper-
ate.
Allows a Free Circula-
tion of Air while
Churning.

**CHURNS WITH HALF THE LABOR
REQUIRED BY ANY REVOLVING
CHURN.**

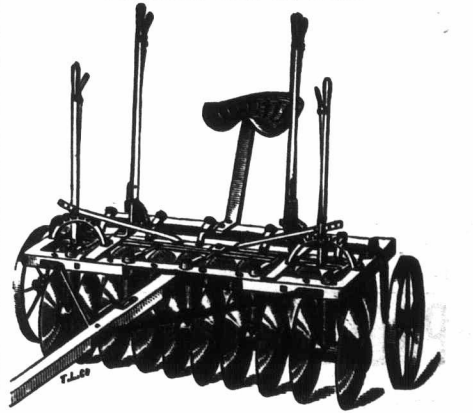
**TO BE HAD FROM ALL
LEADING DEALERS.**

The above cut shows the action of the cream
when in operation.

Address: **CHAS. BOECKH & SONS, Toronto,** or to the
WATSON MANUFACTURING CO., Ayr, Ont. 12-y-om



PATENT IMPROVED DOUBLE DISC HARROW
Patented Oct. 17, 1893.



Manufactured at Beamsville Agricultural
Implement, Engine and Boiler Works.
Write for Prices, Circulars, etc., to
H. TALLMAN, 13-r-o Beamsville.



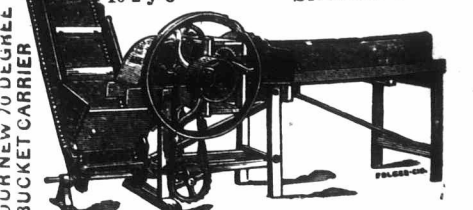
PIANOS, REED ORGANS & CHURCH PIPE ORGANS
THE STANDARD INSTRUMENTS OF THE WORLD.

Send for Catalogue.
**BELL ORGAN AND PIANO CO.,
Guelph, Ont. 17-1-y-o**

**TRY OUR NEW
STEEL GANG CHEESE PRESS**
All kinds of Cheese and Butter Factories
furnished with the latest machinery.

**THE "MONARCH"
ENSILAGE : CUTTER**

(Carries any length, angle or direct.)
Full line of Fodder Cutting Machin-
ery, Horse Powers, Grinders, Root
Pulpers and Agricultural Imple-
ments. Write for prices. Satisfac-
tion guaranteed. Address,
**RICHARDSON & WEBSTER,
10-2-y-o ST. MARY'S, ONT.**



OUR NEW 700 LBS. BUCKET CARRIER

HOW TO MAKE DOLLARS OUT OF WIND!



It will Save Many Dollars in Time and Trouble if you buy a CHATHAM FANNING MILL With Bagging Attachment. It Cleans Alsike Clover to Perfection; also Marrofat and Black Eye Peas.

1,000 Mills Sold, 1884; 1,330 Mills Sold, 1885; 2,000 Mills Sold, 1886; 2,300 Mills Sold, 1887; 2,500 Mills Sold, 1888; 3,600 Mills Sold, 1889; 4,000 Mills Sold, 1890; 4,500 Mills Sold, 1891; 5,000 Mills Sold, 1892; 6,000 Mills Sold, 1893.

Manufacture and solicit orders for Perforated Zinc; all sizes of holes for Threshing Machine and Clover Mill Riddle. Also Wire Cloth for all purposes. Send for circular. MANSON CAMPBELL, CHATHAM, ONT. For Sale by all MASSEY-HARRIS CO. Agents in Manitoba and N. W. T.

BRANTFORD



STEEL WINDMILLS With Internal Gear.

STEEL TOWERS—IRON PUMPS—WATER-TANKS—PIPING, ETC.

The IDEAL JR. Sectional Power Mill is a Wonder. Send for circulars, and mention this paper.



WE MANUFACTURE THE: GEM STEEL WINDMILLS, Steel Towers,

AND THE OLD RELIABLE: HALLADAY STANDARD PUMPING and GEARED WINDMILLS



Guaranteed to be the Best Made. Also Pumps, Tanks, Feed Mills, Haying Tools, Saw Tables, etc. Send for illustrated catalogue. Ont. Wind Engine & Pump Co. 367 Spadina Ave., TORONTO, ONT. Mention Farmer's Advocate. 10 y-om

The High Speed Family Knitter



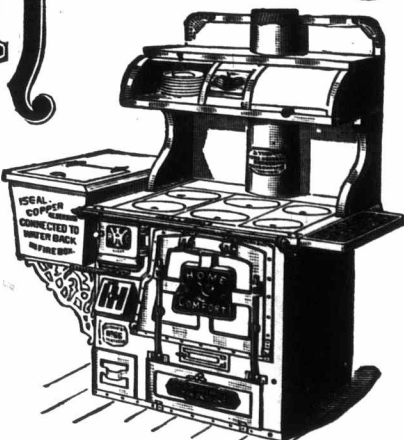
Will knit 10 pairs socks per day. Will do all work any plain circular knitting machine will do, from homespun or factory yarn. The most practical family knitter on the market. A child can operate it. Strong, Durable, Simple, Rapid. We guarantee every machine to do good work. Beware of imitations. Agents wanted. Write for particulars. Dundas Knitting Machine Co., Dundas, Ontario. 17-y-om

ADVERTISE IN THE ADVOCATE

FOUR GOLD MEDALS AT NEW ORLEANS EXPOSITION, 1885 SIX HIGHEST AWARDS at WORLD'S COLUMBIAN EXPOSITION, 1893, AND SIX GOLD MEDALS AT MID WINTER FAIR SAN FRANCISCO, 1894.

Were received by THE WROUGHT IRON RANGE CO., ON

HOME COMFORT STEEL



HOTEL AND FAMILY RANGES. CARVING AND STEAM TABLES, BROILERS, MALLEABLE WATERBACKS, ETC., ETC.

This Style Family Range is sold only by our Travelling Salesmen from our own wagons at one uniform price throughout Canada and the United States.

Made of MALLEABLE IRON and WROUGHT STEEL and will LAST A LIFETIME if properly used.

SALES TO JANUARY 1st, 1894, 277,188.

MADE ONLY BY WROUGHT IRON RANGE CO., MANUFACTURERS OF Hotel Steel Ranges, Kitchen Outfittings and "Home Comfort" Hot-Air Steel Furnaces. OFFICE, SALESROOM AND FACTORY, 70 to 76 PEARL STREET, TORONTO, ONTARIO, and Washington Avenue, 19th to 20th Streets, ST. LOUIS, MO., U. S. A. Founded 1864. Paid up Capital, \$1,000,000. 7-y-om

Use:- Queenston:- Cement

FOR BUILDING CONCRETE OR OTHER WALLS, Cisterns, Stable Floors, Hog Troughs, &c.

Write for Prices and Particulars. When parties use our goods, when necessary we will send a skilled man, at our own cost, to give instructions how to build. FARMERS can thus build their walls and save half the cost.

ISAAC USHER & SON, THOROLD, ONT.

Clabrough Patent Ejector...

J. P. CLABROUGH & BROS.

BIRMINGHAM, ENGLAND.



1894— Hammer Guns, Hammerless Guns, Ejector Guns, Martini Match Rifles.

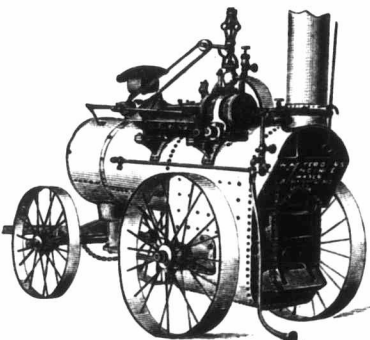
Are the Finest in the Market. May be had from all leading dealers in the Dominion. 14-j-om

CHAMPION ENGINES

Over 1700 Sold.

With their perfect Water Spark Arrester, simplicity and ease of management, thoroughly reliable construction, are still the

Favorite with Farmer and Thresher.



We build two styles of Horizontal Boilers—"Return Tubular" (same as cut) and the Economic, the latest and best portable boiler built. Consult your own interest.

A few Second-hand and Rebuilt Plain and Traction Engines in stock; will be sold or exchanged on favorable terms. Prices reduced to suit the times. Write us before buying.

WATEROUS, Brantford, Canada.

STOCK GOSSIP.

In writing to advertisers please mention the Farmer's Advocate.

Mr. Jas. S. Smith, Maple Lodge, Ont., makes a change in his advertisement in this issue regarding offerings of Leicester sheep and Berkshires. His stock is doing well. The lambs have grown well, and the shearing rams are in good shape. He will probably have a few sheep at some of the fairs this fall.

In our advertising columns, Mr. S. Dubber, St. Thomas, offers a Jersey bull for sale. Those who want a bull of that breed should write or give Mr. Dubber a call. To those who want a dairy sire and have not decided on the breed, remember the result of the Chicago Dairy Test, in which Jerseys came out decidedly in the lead.

The SS. Lake Superior, of the Beaver Line, which left Liverpool on July 17th, carried a valuable consignment of Shropshires for Mr. Mortimer Levering, the esteemed Secretary of the American Shropshire Registry Association, and several other American gentlemen. The shipment consisted of show ewes, show ewe lambs, stud rams, and a choice lot of yearling ewes, selected from some of the leading breeders.

Mr. John Dryden, Brooklin, Ont., writes:—"I reserved last year some of the choicest of my Shropshire ram lambs to meet the growing demand for yearling rams of this breed. There is not a cull among them. They have continued through the season in perfect health, and although our grass is somewhat limited, owing to the dry weather, they have continued to grow up to the present. They are the most uniform lot I have ever had at one time—uniform in size, weight, fleece, covering of head and legs and markings characteristic of the breed. These are bargains for somebody."

The Maud S. Condition Powders manufactured by the Davis & Lawrence Co., Montreal, are becoming more and more popular as their worth becomes known. The action of this preparation is to stimulate the appetite, purify the blood and put the animal in the best possible condition to make the very best use of the food consumed. This remarkable preparation is coming to be regarded as indispensable to those who are engaged in the growth or management of live stock of any description. One of its more striking merits is its efficacy in arresting the encroachments of disease in poultry and other stock. In fact, its virtues have passed into a proverb, and its sale has become enormous. It is peculiarly adapted to promote milk and meat production. Whenever these powders are used the general health is toned up, and stock of all kinds are said to become more prolific.

It is often said that Americans come over to Canada and take away much of the best stock for breeding. This is especially the case with horses. The Americans, however, are not the only people who keep their eyes open for something good wherewith to improve their studs. A short time ago Bonfire, one of the best hackneys that ever lifted a knee, was taken from Cleveland, Ohio, to Western House, Swaffham, England. Says J. A. Logan, in the Rider and Driver, New York: "This county has lost the use of as fine a specimen of the Hackney breed as it is possible to raise on this planet. His conformation is as near perfect as is possible to get in a Hackney of the old-fashioned Yorkshire 'rag type.' Bonfire was brought to Ohio when six weeks old, with his dam, Kilwick Lass, in 1887, and now returns to his native home for service at 10 guineas per mare."

D. D. Wilson, Seaforth, Ont., writes:—"My stock is doing very well, considering the flies and hot weather. The four two-year-old heifers I imported last year have all calved—three heifers and one bull, all bred by Mr. Duthie and after his champion bull at Aberdeen last year, Pride of Morning, and, barring accidents, will be champion at the Royal Caledonian this year. They are four very nice calves and promise well. The yearling bulls are going ahead fine. I have disposed of imported Prime Minister to Messrs. J. & W. Watt, of Elora, in whose herd he will be in the company of such grand females that I have no doubt but that the progeny will be heard from later on. Mr. J. Deane Willis' unrivalled success at the Royal, at Cambridge, winning three firsts, one second, and the championship, with his four bulls (a wonderful feat), all Scotch, or from Scotch-bred cattle—Cruckshank, Duthie and Marr—will doubtless still further stimulate the demand for stock from the famous herds at Collynie and Uppermill."

FOR THE BEST BERKSHIRE BARROW. Mr. N. H. Gentry, of Sedalia, Missouri, offers a premium of \$100, to be competed for under the following conditions:—

First—That the barrow entered in competition for the above prize must be recorded in the American Berkshire Record, farrowed in 1894, and weigh not less than three hundred pounds.

Second—That early notice of intention to compete for said premium must be filed with the Secretary of the American Berkshire Association, Colonel Charles F. Mills, Springfield, Illinois.

Third—That each competitor file with his entry a full and complete statement of the method of feeding the barrow, and detailed information concerning the care and attention given the barrow from date of the commencement of the feeding test to the date of slaughter.

Fourth—The above premium is offered for the purpose of developing facts of the greatest value to every farmer who fattens a hog, and too much care cannot be given to the preservation of data as to weight and variety of the rations fed the barrow entered in this competition.

Fifth—Entries on the form prescribed by the American Berkshire Association must be filed by competitors for the above premium with the Secretary of the Association, prior to December 31, 1894.

Sixth—The committee to award this international premium will consist of three interested and reputable citizens, to be selected by Hon. N. J. Coleman, ex-Secretary Department of Agriculture, U. S. A.; Hon. F. D. Coburn, Secretary Kansas State Board of Agriculture, and Prof. George E. Morrow, Dean Agricultural College, of Illinois.

Seventh—On the receipt of the report of the Committee on Awards, at the office of the American Berkshire Association, Springfield, Illinois, the premium will be awarded, and the pigs shipped to the successful competitor.

BREEDERS' DIRECTORY.

Cards up to six line space inserted under this heading, one issue a month, \$3 per line per annum; every issue, \$5 per line. Payable in advance.

ALEX. HUME, Burnbrae, Ontario, Importer and Breeder of Ayrshire cattle and Yorkshire hogs. 330-2-y

LF. BROWN, Bethel, Ont., breeder of Ayrshire Cattle, Shropshire Sheep and Leghorn and Dorking Fowl. 14-2-y

G. RICE, Curries P. O., Ont., breeders of Holsteins of the best butter strains. Write for prices. 357-

MANN, Bowmanville, Ont., breeder of Pure Galloway Cattle, Tamworth Swine.

M. & R. SHAW, Brantford, Ont., breeders of Galloway Cattle. Choice young animals for sale. 4-2-y

BLACKWOOD & McCALLUM, Martintown, Ont., breeders of registered Clydesdales, Shropshires and Yorkshires. 340-2-y

DANIEL BRIMS, Athelstan, P. Q., breeder of Durham Cattle, Clydesdale Horses and Shropshire Sheep. 315-2-y

A. CAMPBELL, Mayfair P. O., Ontario, D. Appin Station, Breeder of Registered Lincoln Sheep. Stock for sale. 2-2-y-om

D. G. HANMER & SON, Mt. Vernon, Ont., Shropshire Sheep and Berkshire Pigs. 2-2-y-om

FRED. S. WETHERALL, Compton, P. Q., breeder of Jersey Cattle and Shropshire Sheep. 340-2-y

JAMES STEPHEN & SONS, Brookhill Farm, Trout River P. O., P. Q., importer and breeder of Ayrshire Cattle and Yorkshire Pigs. Young stock always on hand for sale. 315-2-y

JAS. HUNTER, Alma, Ont., Canada, breeder and importer of Shorthorn Cattle, Clydesdale Horses and Shropshire-down Sheep. 322-y

JAS. TOLTON, Walkerton, Ont., importer and breeder of Oxford-Down sheep, also breeder of Shorthorns, Berkshire pigs and Bronze turkeys. 6-2-y-om

JOHN JACKSON & SONS, Abingdon, Ontario, Importers and Breeders of Registered Southdown Sheep. 322-y

JOHN LAIDLAW, Crosslea Farm, Wilton Grove P. O., Ont., breeder and importer of Border Leicester Sheep. Sheep for sale. Satisfaction guaranteed. 328-y

J. LEASK, Taunton, Ont., breeder of Clydesdales, Shorthorns, Shropshires and Berkshires. 20-2-y-om

JOS. CAIRNS, Camlachie, Ont., Breeder of Pure-bred Chester White Swine. 4-y

J. P. PHIN, Breeding and Importing THE GRANGE, SHROPSHIRE SHEEP, HESPELER, ONT. a specialty. 22

LEVI SKINNER, Tyrone P. O., breeder of Shropshires and Shorthorns. Well-bred breeding stock a specialty. Satisfaction guaranteed. 23-2-y

MAPLE RIDGE SOUTHDOWNS.—Guy Carr, jr., Compton Station, Quebec, also breeder of P. Rocks and Wyandottes. 16-2-y

PETER ARKELL, Teeswater, Breeder & Imp. of Registered Oxford-Down Sheep. 22-yom

ROBERT MARSH, Importer and Breeder of LORRIDGE FARM, OF SOUTHDOWN SHEEP. 14-y

SPRINGHILL STOCK FARM.—Wilfred Hansel, importer and breeder of thoroughbred Clydesdales. Stock for sale. Correspondence solicited. Thorold P. O., Ont. 22-2-y

T. GUY, Oshawa, Ont., Breeder of Ayrshire Cattle—prize winners at the World's Fair.

THOMAS IRVING, Montreal, breeder of Clydesdale Horses and Ayrshire Cattle. 8-2-y

W. P. McCLARY, Glenholm Farm, Compton, P. Q., breeder of Shorthorns. Young stock for sale. 16-2-y

W. M. STEWART, JR., Menie Stock Yards, Seymore, Ont., breeder of Ayrshire Cattle and Berkshire Pigs. 10-2-y

W. H. BEATTIE, Wilton Grove, importer and breeder of Shropshire Sheep, A choice lot of Collie Dogs and White Holland Turkeys. 319-y

W. M. SMITH, M.P., Columbus, Ont., breeder and importer of Clydesdale Horses, Shorthorn Cattle, and Cotswold Sheep. Stock for sale. Terms and prices liberal. 325-2-y

SOUTH SASKATCHEWAN LANDS.

500 FARMS FOR SALE (areas to suit investors), all choice selected lands near SASKATOON, in that fine district known as "The Temperance Colony," equal to anything on the continent for grain growing or mixed farming. The homesteads are mostly taken up by a superior class of settlers. Every farm is within easy distance of a C. P. R. station. Some of these farms have frontages on the Saskatchewan River. Torrens Titles. No restrictions of any kind. Prices moderate; now is the time to buy. Apply to C. POWELL, Manager, 6 Victoria St., Toronto, Or to OSLER, HAMMOND & NANTON, 21-y-om WINNIPEG, MAN.

THE NEW Chatham and Chautauqua Giant Wagon

With Unbreakable Axles and Unbreakable Arms.

THE BEST MADE ON EARTH. So said the Judges on Vehicles at the WORLD'S FAIR, Who awarded us a GOLD MEDAL AND DIPLOMA

Over the heads of numerous old and extensive builders in the United States and Canada. The axles are unbreakable, because Van Allen's Patent Giant Arms

Throw all the load directly on the arms, and the arms are also unbreakable, because they are the best refined MALLEABLE IRON,

Warranted as strong, more durable and lighter running than Steel Skeins. These Giant Arms completely revolutionize the building of wagons. Our 3-inch Malleable Giant Arm Wagon is

WARRANTED STRONGER, Though less in price, than any ordinary 3 1/2 to 3 3/4-inch cast-iron arm wagon, and our 2 1/2-inch Malleable Giant Arm Wagon is warranted stronger than any ordinary 3-inch cast iron arm wagon, and less in price.

THE DEMAND for these wagons is so great that though we are turning out 12 per day, we are taxed to the utmost to supply it. Send in your orders early.

TERMS AND PRICES LIBERAL. CHATHAM MANFG. CO. (LTD.) CHATHAM, Feb. 9th, 1894.

CANADA SHIPPING COMPANY. BEAVER LINE OF STEAMSHIPS.

SAILING WEEKLY

BETWEEN MONTREAL AND LIVERPOOL DIRECT. From Montreal every Wednesday at daybreak. From Liverpool every Saturday. These Steamers have First-class Accommodation for Saloon, Second Cabin and Steerage Passengers.

RATES OF PASSAGE MONTREAL TO LIVERPOOL: SALOON, \$40, \$50 and \$60; Round Trip, \$80, \$90 and \$110, according to accommodation. The \$40 Single and \$80 Return per Lake Nepigon and Lake Winnipeg only. SECOND CABIN, \$30; Return, \$65. STEERAGE, \$24.

Each steamer carries a duly qualified surgeon and experienced stewardess. The attention of Importers of Horses and Live Stock generally is directed to the fact that these steamers have the highest record for the successful carriage of the same, and a trial shipment is solicited.

For freight or passage, apply to E. W. ROBERTS, H. E. MURRAY, Manager, 21 Water St., General Manager, 8-L-om Liverpool, Montreal.

ALLAN LINES

THREE DISTINCT SERVICES FROM MONTREAL WEEKLY.

Mail Service to Liverpool, via Quebec, Rimouski and Derry, or via Portland & Halifax in Winter.

DIRECT SERVICE MONTREAL TO GLASGOW Direct Service Montreal to London.

These steamers are of most recent construction; are of the highest class, and their record for the safe carriage of cattle is unexcelled. Special attention paid to the best methods of stowing and carrying cheese, apples and other farm produce. For schedule of sailings, rates of passage or other information, apply to 18-y-om H. & A. ALLAN, Montreal.

DRS. ANDERSON & BATES, Surgeons of the Eye, Ear, Throat & Nose, 34 North James St., Hamilton, and 5 College St., Toronto. Sole agents for Prof. North's Karphone for the incurable deaf. A large assortment of artificial eyes on hand. 16-2-y

BOYS FOR FARM HELP

The managers of Dr. Barnardo's Homes will be glad to receive applications from farmers or others for the boys whom it is proposed to send out from England in several parties during the coming season. All the young immigrants will have passed through a period of training in the English Homes, and will be carefully selected with a view to their moral and physical suitability for Canadian life. Full particulars, as to the terms and conditions upon which the boys are placed, may be obtained on application to Mr. ALFRED B. OWEN, Agent, Dr. Barnardo's Homes, 214 Parley Ave., Toronto. 4-y-o

THE LATEST! A MUCH NEEDED INVENTION. THE Fly Horn Trap



WORKS COMPLETE. Guaranteed to remove and secure nine-tenths of the flies on a herd of cattle at a single stroke, 15 minutes for 20 cows. Township and County rights for sale.

H. GUTHRIE, PATENTEE, Paris Station P. O., Ont. 23-y-om

HARNESSES

We have just got out our new Catalogue of harness and everything required by a farmer in this line. It will pay you to send for one and examine it closely. We will guarantee to save you money and give you a No. 1 article, or no sale. ALL HAND SEWED. Deal with us and save middleman's profit. Send for Catalogue.

Farmers' Harness Supply Co., 104 Front St. East, TORONTO, 7-y-o ONT.



THE McLAUGHLIN CARRIAGE CO., Oshawa, Ont.,

Manufacturers of every description of fine Carriages, Broughams, Carts and Cutters, suitable for farmers and others.

"One Grade of work only, and that the Best." Write for Catalogues and prices. 7-L-o

FARMERS & SETTLERS, ATTENTION!

British Columbia offers at the present time the best field for farmers and settlers in any part of Canada. Beautiful Climate, Productive Soil, Ready Markets, Good Prices, No Drought, No Frosts, Sure Crops. We have on our books over 10,000 acres of the best farming lands in the Province at very low prices, and on easy terms of payments, in blocks to suit purchasers, and situated in the best localities. Several islands within easy reach of Vancouver, well adapted for sheep and cattle. Settlers settled on Government lands. Call on or address,

MACKINNON, DeBECK & CO., LAND, TIMBER AND MINERAL AGENTS, 11 Hastings St., 9-y-om VANCOUVER, B. C.

The FAVORITE CHURN

The most simple. The most durable. The most effective. The easiest to keep clean. Water-tight a specialty, and shipped to all points. Correspondence and shipments promptly attended to. All kinds of cooperage.

ST. MARYS COOPERAGE F. E. BUTCHER, St. Marys, Ont. 4-2-y-om

W. & F. P. CURRIE & Co.

Wholesale General Merchants, 100 GREY NUN ST., MONTREAL

IMPORTERS OF Scotch Glazed Drain Pipes, Chimney Tops, Vent Linings, Flue Covers, Fire Bricks, Fire Clay, Portland Cement, Roman Cement, Canada Cement, Water Lime, Whiting, Plaster of Paris, Borax, China Clay, etc., etc.

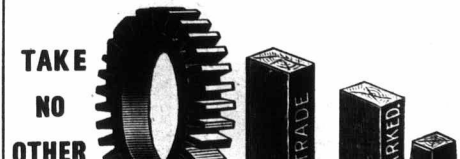
MANUFACTURERS OF BESSEMER STEEL SOFA, - CHAIR - AND - BED - SPRINGS A LARGE STOCK ALWAYS ON HAND.

WM. CURRIE, 7-y-o F. P. CURRIE.

ONTARIO VETERINARY COLLEGE

Temperance Street, Toronto. The most successful Veterinary Institution in America. All experienced Teachers. Session begins October 17th. Apply to the principal, PROF. SMITH, V.S., Edin., Toronto, Can. 18-2-y

FARMERS! "USE SOMETHING GOOD" ROGERS' PEERLESS MACHINE



TAKE NO OTHER It's made specially for your use. Saves wear; Machines run easy. (12 GOLD MEDALS.) Hardwares and General Stores all sell it. Best General Purpose Oil known. Ask for PEERLESS OIL. 14-f-o

400—Helderfeigh Fruit Farms Nurseries—400

(Four Hundred Acres in Extent.) Established 1882.

There is no place in Canada where the season is longer than here. Hence we get trees brought to the fullest maturity, capable of withstanding the severest cold. Having one hundred acres in fruit, from which cuttings, buds, scions, etc., are taken, I can safely guarantee the purity of my stock to be equal, if not superior, to any other nursery. The soil is specially adapted to produce vigorous, hardy trees, a grand lot of which are now growing and for sale. All the leading sorts of both old and new varieties deemed worthy of propagation. Catalogues free on application. Agents wanted in every township. 13-f-om E. D. SMITH, Winona, Ontario.

WINNIPEG DISTRICT FARM LANDS FOR SALE.

A few good Farms, improved and unimproved, from 7 to 20 miles from the city. Easy Terms. Prices to suit the times.

Now is your time to secure a good Farm near the best market in the Province.

Farmers are realizing that mixed farming is the only farming that will pay. Buy land where you can sell all you can produce for cash.

Apply to G. J. MAULSON, 195 Lombard St., WINNIPEG, MAN. 13-f-om

TRADE MARK. PLANT & ROUND CREAM SEPARATOR BELT'S



The Belt with the above trade mark is the only successful one made. Used all over the world. Ten years in the market. Not any experiment. Real manufacturer in NIAGARA FALLS, ONT., CANADA; SUSPENSION BRIDGE, N. Y., U.S.A., and DURSLEY, ENGLAND. For Catalogue, etc., apply to 10-y-om ANTHON CHRISTENSEN & CO.

USE RAMSAY'S Barn and Roof PAINTS.

For Fall Planting. FRUIT TREES, NEW KINDS AND OLD; ORNAMENTAL ROSES, ETC., ETC.

Clean and handsome. None better. They will please you. Be your own agent and save nearly one-half cost. Compare our prices and stock before placing your order; you will come again.

A. C. HULL & SON, Central Nurseries, 2-y-o St. Catharines, Ont.

GODERICH ORGAN

High grade, fine tone. Send for Catalogue. Made at Goderich, Ontario. 1-y-om

ADVERTISE IN THE ADVOCATE