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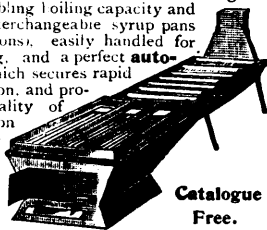
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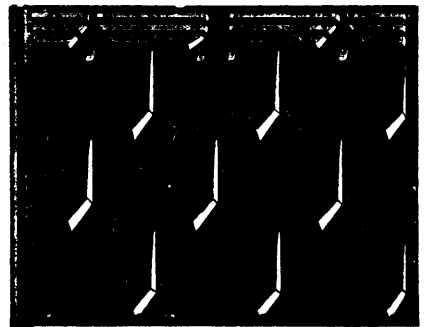
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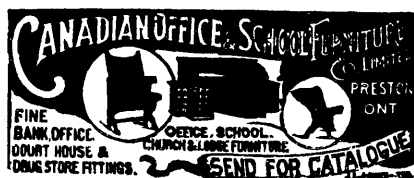
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FARMING

VOL. XVII.

DECEMBER 26th, 1899.

No. 17

A Happy New Year

What a world of meaning is contained in these three words? To be truly happy for a twelve-month is to have one of the greatest blessings that this world can bestow. And this is the measure of our best wishes at this festive season to our many friends and patrons. We wish you a happy and prosperous New Year.

A Good New Year's Resolution

A good resolution to make at the beginning of the year is to renew your subscription to FARMING without delay. Like many other resolutions formed at the dawn of a new year, a resolve to remit your subscription early may be delayed. Do not let this be the case at the beginning of 1900. Renew your subscription at once, and make both the publisher and yourself happy.

FARMING for 1900 will undoubtedly continue to be the leading agricultural paper of the Dominion. It will contain all the important features that have been added to the paper during the past year, as well as many new ones. More space will be given to the "Farm Home," and that department will be made to do much greater service for the farmer's wife and the young people of the farm than has been the case since its inception in May last. The Farm Implement branch has already proven to be one of the most popular and useful features of FARMING. It will be given special attention during 1900, and if suitable arrangements can be made will appear oftener than once a month. The Agricultural Gazette department will not be neglected. The officials of the live stock associations and the Farmers' Institute system, who have full control of the pages comprising this department, are determined to make it more valuable than ever to Institute officers, breeders and others interested. Then there is the market review, the correspondence column, the editorial comment, the question and answers department, to be considered. These will in no way be forgotten and will be given more special care and attention than heretofore. Special attention will be given to the illustrations. Those which have appeared in FARMING during the past few months have received very favorable comment. We are open at any time to receive good photos of farm scenes, etc., for reproduction.

The year just closing has been the most successful, financially and otherwise, in the history of FARMING. From all sides come words of praise and commendation. During the past few days only we have been congratulated by many of the leading farmers and breeders for the excellent character of our publication. One farmer says: "FARMING is a grand paper." And scores of letters containing similar phrases have been received during the past few weeks. With this splendid record behind us and with energetic and well-laid plans for the continued improvement of the paper, is it any wonder that we look forward to 1900 with so much confidence, and with the strong conviction that FARMING will

be able to do better work than ever before for its readers? It is for this reason also that we would urge an early renewal of all subscriptions. No farmer can afford to be without FARMING during 1900.

Competition in Live Stock Breeding

The Hon. Sydney Fisher, Minister of Agriculture, Ottawa, in addressing the live stock breeders at London a week ago touched upon a point in farming economics that is well worth further consideration. In discussing live stock conditions in England and Canada he showed that in the former breeders produced animals which had taken their names from the shires of England, and when one wanted a good animal of a particular breed he knew exactly where to go and get it. In Canada the opposite was the case. Everywhere animals of every breed could be found and there were no sections of the country specially devoted to the breeding of any one type.

The Minister's statement is no doubt correct. This condition as found in Canada may, however, be due to the fact that this is a new country and has not lived long enough for any one special line of breeding to be followed in one locality. But be that as it may, the fact remains that all kinds of cattle, sheep, swine, etc., are kept in every district, and a buyer wanting any particular breed cannot find a locality where it is produced nearly altogether to the exclusion of others. It would certainly be a benefit to the country, as well as to the individual, if this were as largely true in regard to Canada as to England.

There are some who are afraid of the competition that such a condition of affairs would give them. They fail, however, to recognize the fact that buyers of nearly any kind of commodity like to go where there is a large supply, and where there is a large number of good animals, etc., to choose from. Because the Niagara district is given up largely to fruit-growing, buyers of fruit like to go there when they want any. The cheese buyer does not locate in a section where there are a few factories, but where the most cheese is made in order that he may have a wider choice in making his purchases. The same thing holds good in nearly every line of trade. In discussing this question with a leading breeder the other day he referred to the time when his father purchased the first Shorthorn cow brought into the county in which he lived. He found a little trouble in selling her first calf and was beginning to wonder where he would get sale for his young stock if his breed increased and if his neighbors engaged largely in the same line of work. After a few years several of his neighbors went into the breeding of Shorthorns; but this, instead of glutting the market, was the means of creating a better and wider market. The section became known far and wide for good Shorthorns and buyers came from longer distances, thus greatly extending the market.

This line of reasoning will hold good in many instances as well for large districts as for small ones. Canada is to-day noted for her cheese production, and because of this we have very little difficulty in disposing of all we can make. The Canadian bacon trade is also capable of attaining to the same position if we obtain a reputation for

producing large quantities of the kind of product wanted in the British market. Also, if we obtain a reputation for producing certain kinds of pure-bred stock of a high quality it will certainly widen our market and make it possible for more to engage in the business. There is a tendency to-day, among many new breeders especially, to breed something that no one else is breeding with the hope, no doubt, that there will be a better market for this particular kind on that account. But a serious mistake is made in doing so, and such breeders soon find themselves out of the "swim," so to speak, and engaged in producing a kind of stock which no one wants and for which there is no regular demand. About the only place where they "shine" is in the show ring where there is no competition in their class and where they can carry home all the prize money. But honors won in this way do not help to build up one's business or to increase his sales. To succeed, the breeder must produce the kinds that are largely wanted in connection with the trade of the country and which are known to meet the requirements of the beef, mutton or bacon trade.

The Decline of the Statute Labor System

At the meeting of county councillors to discuss good roads, a report of which appeared in last week's *FARMING*, several of the leading speakers condemned in very strong terms the statute labor plan of keeping up the roadways. The general consensus of opinion was that it had outlived its usefulness. One speaker referred to it as "a relic of barbarism" that should be abolished.

These are strong statements, and coming as they do from men thoroughly conversant with the working of the statute labor system in this country for many years, mean a great deal. They show how public opinion is changing in regard to this whole question of roads, and mark a step in advance in which those interested, and upon whom the maintenance of the roadways of the country depends, are willing to adopt more improved and up-to-date methods in securing good roads. It is not so very long ago when, if a speaker at a similar gathering to the one held last week had made the statement that the statute labor system should be abolished, he would not have been listened to for a moment. In fact, we remember being at several gatherings of farmers, in the initial stages of the good roads agitation, when the leaders of the movement spoke strongly, not of doing away with statute labor, but of utilizing it in a better way than had been the case previously.

But how things have changed! Statute labor has been weighed in the balance and found wanting. During the seven or eight years that have elapsed since the beginning of the movement some potent influence has been at work for good, and to-day statute labor is beginning to be looked upon as a back number, and no longer the system to be adopted for bringing about good roads. And so it should be a back number. It no doubt was a convenient method in the early history of this country, and served a useful purpose in helping to build and maintain roads, though in a somewhat primitive fashion. But we have reached a stage now when more systematic and permanent methods are needed, and we may well rejoice that such a body of men as were represented in the delegates at the county councillors meeting have come to the sensible conclusion that the statute labor system must be replaced by some more modern plan of improving the roadways of this country.

But if statute labor is done away with, what will take its place? This is the question many are asking. The deliberations of the convention referred to throws some light on the subject. Two resolutions were carried with but few dissenting voices; one endorsed the principle of provincial aid to highways assumed by the counties, and the other favored the assumption by the counties of the main roadways within their borders. Some years ago the County of Hastings took over nearly all the main roadways

in its borders with very satisfactory results. The people there have had better roads to travel on, and have secured them at comparatively little cost. Here we have a plan that has been successfully tried, and is one that should give permanency and system to road improvement, a thing that it is impossible to obtain through statute labor. The assumption of the leading roadways by the counties should be a lively topic the coming year, and those interested should see that candidates for municipal honors are prepared to take some action in regard to it.

Important Shorthorn Sale

Fine Stock — Tall Prices — Numerous Buyers

The public sale of pure-bred Shorthorn cattle held at Hamilton, Ont., December 20, by W. D. Flatt, was without doubt one of the best sales of its kind that has taken place in Canada for the past 25 years. It reminds one of the days when John Miller, Birrell & Johnston, Thompson Bros., and Bow Park held sales of pure-bred stock, or of the time 30 years ago or more when F. W. Stone, of Guelph held his annual sales of stock. As a Shorthorn sale Mr. Flatt's is perhaps one of the best, if not the best, that has ever been held in Canada and certainly marks a new era in Ontario Shorthorn development. Prices compared very favorably with the early sales and as regards young stock were perhaps better. The sale throughout was very satisfactory, both financially and otherwise, and must have been very gratifying to Mr. Flatt, who is deserving of special commendation for his energy and enterprise in undertaking so important an event, and one that means so much to the live stock interests of this country. Sales of this character help to advertise Canada abroad and it would be beneficial to our pure-bred live stock interests if more of them were held. We understand that it is Mr. Flatt's intention to make this sale an annual affair, and the success of the one just held certainly justifies him in doing so.

The attendance at the sale was large and representative, there being breeders present from half the States in the Union, extending from Virginia to Missouri. Ontario breeders turned out in full force, and we are glad to say, purchased a goodly share of the best animals sold. The sale was held in a large tent on the grounds of the old street car stables, Hamilton, and the arrangements were complete in every way. The auctioneer was Col. F. M. Woods, Lincoln, Neb., the leading live stock auctioneer of the Western States, who was ably assisted by Captain T. E. Robson, Ilderton, Ont. The total receipts from the sale amounted to \$22,935. Forty-two females brought \$16,740, an average of \$400 each. Fourteen bulls sold at \$5,065 or an average of \$362 each. Leaving out four calves sold on the side and which are included in the grand total, we have the splendid record of 56 animals averaging \$390 each. The highest priced animal was Sir Wilfred Laurier, an imported 4 months old bull calf son of Marengo which sold for \$900, to go to West Virginia. The highest price paid for a female was \$630 for Linda (Imp.) to go to Buffalo, N.Y. H. Cargill & Sons, Cargill, Ont., were the largest Canadian buyers and secured several fine animals at good round prices. While the imported stock brought good prices, Canadian bred stock considering everything sold equally as well, if not better. This must have been very gratifying to Mr. Flatt and was an acknowledgment of his skill as a breeder. Below will be found a complete list of the animals sold, the purchaser and the prices paid:

Cows.

Maud 11th (Imp.), Geo. Harding and Sons, Waukesha, Wis., \$400.
 Blossom (Imp.), Robins and Son, Horace, Ind., \$360.
 Northern Empress (Imp.), A. P. Alton, Appleby, Ont., \$435.
 Celia 8th (Imp.), T. J. Wornall, Mosby, Mo., \$500.
 Flora 7th (Imp.), R. J. Thompson, Iowa City, Iowa, \$510.
 Vinella 13th (Imp.), " " " \$445.
 Primrose 4th (Imp.), Geo. Mitchell, Port Hope, Ont., \$420.

Jenny Lind (Imp.), and bull calf, J. M. Gardhouse, Highfield, Ont., \$530.
 Duchess (Imp.), J. T. Gibson, Denfield, Ont., \$270.
 Victoria (Imp.), W. B. Campbell, Campbell Cross, Ont., \$430.
 Mercia (Imp.), James Waters, Mineral Point, Wis., \$460.
 Nonpariel Lassie (Imp.), H. Cargill and Son, Cargill, Ont., \$460.
 Roan Empress (Imp.), F. A. Gardiner, Britannia, Ont., \$375.
 Crissy (Imp.) R. J. Doyle, Owen Sound, Ont., \$300.
 Strawberry (Imp.), Allan Bros., Oshawa, Ont., \$290.
 Rosewood 77th (Imp.), R. J. Thompson, Iowa City, Iowa, \$310.
 Augusta 93rd (Imp.), H. Cargill and Son, Cargill, Ont., \$600.
 Nonpareil 34th (Imp.), A. E. Hoskin, Cobourg, Ont., \$600.
 Clipper 2nd (Imp.), H. Cargill and Son, Cargill, Ont., \$350.
 Marina (Imp.), Hon. Thos. Greenway, Crystal City, Man., \$400.
 Mary (Imp.), James Waters, Mineral Point, Wis., \$255.
 Sophia (Imp.), Robins and Son, Horace, Ind., \$235.
 Montford Honeycomb 6th (Imp.), Geo. Kirk, Linwood, Ind., \$300.
 Countess 3rd (Imp.), H. Cargill and Son, Cargill, Ont., \$450.
 Sunny Blink 5th (Imp.), John Isaac Markham, Ont., \$430.
 Avarice (Imp.), Lannigan Bros., Goose Lake, Iowa, \$300.
 King's Magic 4th (Imp.), J. G. Robbins and Sons, Horace, Ind., \$460.
 Belladonna (Imp.), H. Cargill and Son, Cargill, Ont., \$510.
 Craibstone Baroness (Imp.), H. Cargill and Son, Cargill, Ont., \$610.
 Daisy 2nd (Imp.), } Geo. Harding and Sons, Waukesha, \$500.
 Ruddington Daisy, }
 Linda (Imp.), P. C. Rumsey, Buffalo, N.Y., \$630.
 Empress of India (Imp.), H. Cargill and Son, Cargill, Ont., \$500.
 Emma 29th (Imp.), T. J. Wornall, Mosby, Mo., \$435.
 May Bloom, Wright & Boyden, Delhi Mills, Mich., \$175.
 Rose of Trout Creek, J. L. Higgins, Detroit, Mich., \$225.
 Rose of Trout Creek 2nd, " " " " \$260.
 Princess of Brant, Wright & Boyden, Delhi Mills, Mich., \$260.
 Lady Brant, } Capt. T. E. Robson, Ilderton, Ont.,
 Lady Brant 2nd (calf), } \$350.
 Idylwild, W. A. Boland, Grass Lake, Mich., \$350.
 Missie of Springfield, R. Miller, Stouffville, Ont., \$325.
 Canadian Duchess of Gloucester 31st, C. Hentz, Treemont, Ohio, \$400.
 Village Lily 3rd, T. J. Wornall, Mosby, Mo., \$335.

Bulls.

Sir Wilfrid Laurier (Imp.), C. S. Lewis and Sons, Point Pleasant, Virginia, \$900.
 Precious Stone (Imp.), W. C. Renfrew, Stouffville, Ont., \$800.
 Proud Crescendo (Imp.), T. J. Wornall, Mosby, Mo., \$705.
 Master of the Clan (Imp.), J. G. Robbins and Sons, Horace, Ind., \$550.
 Quarantine King (Imp.), Allan Bros., Oshawa, Ont., \$235.
 Prince Louis (Imp.), John Isaac, Markham, Ont., \$400.
 Sittytton Style (Imp.), Jacob R. Lawrence, Ohio, \$365.
 Royal Archer (Imp.), Lannigan Bros., Goose Lake, Iowa, \$600.
 Mainspring, James Chinick, Chatham, Ont., \$210.
 Masterpiece, Jas. E. Silverthorn, Rothwell, Ind., \$500.
 Golden Prince, Geo. Luxton, Warton, Ont., \$155.
 Gloster Duke, Geo. Harding and Sons, Waukesha, Wis., \$155.
 Duke of Scarborough, W. and J. Watt, Salem, Ont., \$150.
 Golden Hero, S. B. Gorwell, Fanshawe, Ont., \$185.
 Golden Treasure, S. E. Cunningham, Penn., \$150.
 Klondike 2nd, Mr. Henders, Hamilton, Ont., \$135.

The Smithfield Show.

The great Smithfield show held at London, England, early this month was an exhibition of average numbers and merit. The entries were not as large as last year, which was the centenary meeting of the society, and therefore drew a larger number of both entries and visitors. Besides, the classes for steers over two years and under two and a half years had been abolished which lessened the total numbers. The following summary and comments on the show by the London *Live Stock Journal* will be found interesting to Canadian breeders:

"The championship in the cattle classes worthily fell to the Hereford steer bred by Her Majesty the Queen at the Flemish Farm, Windsor, and the victory was most popular and deserved. The reappearance of a Hereford as champion after an interval of fifteen years was very acceptable to the patrons of that variety, and the success of this fine old breed was welcomed by all. The incident also affords another proof of the natural benefit arising from the impartial support extended alike to Shorthorns, Herefords, and Devons at Her Majesty's farm at Windsor, these varieties in turn obtaining all the advantages of the skilful management in breeding and feeding that is carried out at the Royal establishment. The cross-bred

cattle were also, as usual, in strong muster, the reserve for the best steer or ox being a cross-bred, as was also the best heifer which was the reserve for the championship. In the carcass competition for cattle, Her Majesty the Queen again received the champion prize, this time with an Aberdeen-Angus steer, bred at her Abergeldie Mains Farm in the North of Scotland. H.R.H. the Prince of Wales's champion prize for sheep fell to specimens of the Suffolk breed, Southdowns from Sandringham being reserved for the honor; while the champion prize for the Longwool breeds went to Blackfaces, the Lincolns being reserved. In the carcass competition for sheep, the Mountain breed also gained the special prize. The Duke of York's Champion Plate for pigs went to cross-breds between the Large White and Berkshire. In alluding to the pigs, we should mention that there does not seem any reason why they should not be weighed and the figures published the same as for cattle and sheep.

"For the first time at any large show in this country the system of single judging was adopted throughout, and the experiment was watched with considerable interest. The result was, on the whole, satisfactory. The work was accomplished most expeditiously, the judging being completed in about two hours less than formerly. In the breed classes the plan worked very well, but it was thought by some that for the large classes of cross-bred cattle, with so many varying types, two judges with an umpire might have been retained, and, though the judge in the champion contests for cattle gave popular decisions, it may be that single judging in these is not the system that will always be followed. The success of the plan generally at this show is not unlikely to have considerable influence throughout the country. Time was clearly saved, and there was a uniformity of type selected for the honors, which is not always observable when two judges, having different tastes and ideals, officiate together.

Toronto Poultry Show.

The Toronto Poultry Show, held in this city last week from December 19th to 23rd, was in many ways a superior one. There was a very fine display of the larger breeds of fowls, and those best suited for the farmer. One barred Plymouth Rock cockerel, shown by J. E. Bennett, of this city, is said to be the best one of its kind seen at a Canadian poultry show for many a day. There was an excellent display of pigeons, while what are known as the fancy breeds of fowl were well represented. A number of guinea fowl, guinea pigs, cats, canaries, etc., served to make the exhibit an attractive one for sight-seers and children. The exhibit throughout was a very complete one, that would have shown off to much better advantage had a building been secured for holding the show in which there was better light.

A good list of prizes had been provided, consisting of a large number of valuable special prizes, among which were the Governor-General's Challenge Cup and a beautiful trophy presented by the Hon. Geo. A. Cox, Toronto. Some fifteen pieces of silver plate were offered as specials, and every class had some special sweepstakes prize to offer winners. The show compared very favorably with the Provincial Show held in Toronto last January. At that show the total entries were 2,411, while at the Toronto last week there were some 3,300 entries in all. There were exhibitors present from all parts of the province, and in some instances from across the line.

The classes were pretty well filled, and the following are some of the leading winners in a few of the classes:

Brahmas.—Dr. Hutton, Welland; Barker & Muir, Weston; C. J. Daniel, Toronto; M. T. Burn, Tilsonburg; W. C. Wilson & Son, East Oro.

Cochins.—C. A. Stewart, Dr. A. W. Bell, Toronto; L. G. Pegnegnat, New Hamburg; W. C. Wilson & Son, J. M. Ramsay, Malvern.

Langshans.—E. J. Dewey, Fullarton; W. E. H. Mas-

sey, Coleman; Ben Harris, Woodbridge; Geo. T. Mitchell, Cobourg.

Wyandottes.—G. S. Oldreive, Kingston; J. H. Magill, Port Hope; C. J. Daniel, J. M. Ramsey, Henderson & Billings, St. Mary's; J. Dorst, Toronto; Ben Harris, L. P. McConnell, Watford; Chas. Grimsby, Toronto; W. C. Wilson & Son, M. T. Burn, Mrs. J. H. Shales, Toronto; L. Saunders, Guelph; James Dundas, Deer Park; Chas. Massie, Port Hope; and F. A. Powell, Norway.

Rocks.—A. H. Lake, Toronto; J. E. Bennett, Toronto; Henderson & Billings, J. S. Jeffrey, St. Catharines; T. Brown, Durham; McCormick & Millard, Rockton; S. Wicks & Son, Mt. Dennis, Ont.; J. H. Parsons, Osaco; T. C. Hare, Whitby; H. C. Bonnick, Eglington; W. H. Bessey, Columbus; Wm. Ellerby, Weston.

Leghorns.—Jno. Ramsay, Owen Sound, and Barker & Muir.

The other sections were equally as well filled, but we have not space here to give any further list. There was a fair exhibit of turkeys, geese and ducks, the chief winners being: In turkeys, Mr. McDougall, Milton, and T. Brown, Durham; in geese, O'Brien & Colwell, Paris; and in ducks, John Colon, Guelph, and O'Brien & Colwell. There was a good show of poultry supplies, incubators, etc., and all seemed to be doing a good business.

The Stoney Creek Women's Institute

By Mrs. F. M. Carpenter, Fruitland, Ont.

The Women's Institute of Saltfleet held their regular meeting at the hall on December 14th, when the minutes of the previous meeting were read and adopted. Then, after preliminary business, Miss Reichter, of Hamilton, played an instrumental solo in her usual delightful style, after which Miss Rose, of the O.A.C., Guelph, who by her pleasing and affable manner has won many friends in Stoney Creek who are always pleased to welcome her and hear what she has to say, gave us a very interesting talk on milk, showing it was a perfect food, wonderfully adapted for the office it is naturally intended to discharge, inasmuch as it is a perfect food containing caseine, a nitrogenous matter nearly identical in composition with muscular flesh, fat, sugar and various salts, the most important constituent of the latter being phosphate of lime. She, by chart, exhibited the composition of milk, giving the constituents in the different proportions, having a sample of each component part in small bottles. She impressed on mothers the benefit to be derived by encouraging their children to drink milk as much as possible, and by no means to give them strong tea. She gave some useful suggestions as to the care of milk, absolute cleanliness being a very important factor as it was very susceptible to taints of any and every kind. She took up butter-making, the care of the stables, how the milk is secreted in the udder of the cow, how the quantity and quality of the milk is very dependent on the manner in which the cow is treated, that the kindness and consideration shown them should be second only to that shown to their own family. Her address contained a fund of practical hints which we hope may prove a benefit to all who had the pleasure of listening to her. Mrs. Gordan, of Hamilton, then, in her beautiful clear, soprano voice, sang "The Soldiers of the Queen," which was most appropriate at this particular time. After an intermission of five minutes Miss Reichter again favored us with a piano solo, which was followed by Miss Rose, answering the contents of the question drawer, which were principally on subjects relating to the home, after which Mrs. Gordan sang "Home, Sweet Home." A committee was appointed to draft a letter of regret to Mr. F. W. Hodson, our late superintendent of Farmers' Institutes, also a letter of congratulation to Professor Creelman on his appointment as successor to Mr. Hodson, copies of which I herewith enclose for publication. Our very interesting

meeting was brought to a close by singing the National Anthem.

To F. W. Hodson, Esq.,
Dominion Live Stock Commissioner,
Ottawa.

DEAR SIR,—The Women's Institute of Saltfleet have learned with regret of your retirement from the position of Superintendent of Farmers' Institutes for Ontario, a position which you have filled during the last five years with so much credit to yourself and advantage to the public generally.

It was during your management of the Farmers' Institutes that our Women's Branch at Stoney Creek was established, and we have always felt grateful to you for the assistance which you so cheerfully rendered us in the formation of our society.

While we regret your severance from our institutes, we must also congratulate you on your well-earned promotion to a broader field of usefulness in the position of Live Stock Commissioner for the Dominion of Canada.

Allow us to again thank you for your kindly interest in our Women's Institutes.

Signed on behalf of the Institute.

MRS. F. M. CARPENTER.
MRS. ERLAND LEE.
MRS. G. M. HILL.

To Prof. G. C. Creelman,
Superintendent of Farmers' Institutes for Ontario.

DEAR SIR,—The Women's Institutes of Saltfleet wish to congratulate you on your appointment to so important a sphere of usefulness as Superintendent of Farmers' Institutes for Ontario. Although institute work has made great progress during the last few years, we feel that a wonderful future is before us. Our people are waking up to the necessity of adopting more modern methods in every branch of industry, and we feel that woman has her work in assisting to bring about that result.

Our work applies more particularly to the home life on the farm, and anything that we can accomplish by way of better sanitation of our homes and hygienic methods in the preparation of foods, etc., more scientific care of children, with a view of raising the general standing of the health of our people, mutual improvement.

Anything and everything that will conduce to the welfare of our people, and the elevating of our homes, is work that we, in our Women's Institutes, can very materially assist in bringing about.

Our Women's Institute of Saltfleet extend to you a hearty welcome, and wish you every success in your new and wide field of usefulness.

Signed on behalf of the Institute.

MRS. ERLAND LEE.
MRS. G. M. HILL.
MRS. F. M. CARPENTER.

A Farm Water System

A Quebec subscriber, a few weeks ago, asked for information in regard to running water in stables for stock. The subject is a good one, and we should like to see it discussed. In the meantime the following description of a farm water system, by a writer in the *Michigan Farmer*, will be quite *apropos*:

"The pollution of our creek by sewage from a near by village forced us to seek other means of securing a supply of pure water. After thorough examination, aided by an expert, it was decided to erect a windmill, with tower 12x12 feet at base and 60 feet to top of mill, so as to catch the wind from every quarter. The mill stands between house and barn, for convenience of pumping to both, and of watching and adjusting in frequent passing. Also, since it was in so prominent a place, to make it tasteful as well as useful, it was done off in five stories—first, the pump room; second, tool and storage room; third, open outlook; fourth, tank room; fifth, wheel attachments.

In the pump room a three-way anti-freezing hand and windmill force-pump was placed four feet below the platform, beyond the reach of frost. A two-inch stand-pipe, thirty feet in height, extended up to the tank, holding seventy barrels. The force pump was connected with four sources of supply and six places of distribution. The wheel is thrown out of gear automatically when the tank is full, or when the wind blows too strong. Also by hand if desired.

Two hundred feet north of the windmill are the barn and barn well, about thirty feet deep, rock bottom, and walled with stone, six to eight feet in diameter, in impervious clay, but subject to summer droughts, and therefore with the eaves water from both sides of the barn, 75x30 feet, piped to the well, which holds water like a cemented cistern. In ordinary seasons it stands full of water. Two hundred feet south of windmill, at the foot of a sloping hill, is a living spring, which overflows ten months in the year. To supplement that source of supply, an underground cistern was placed, holding 150 barrels, filled from the overflow.

These sources of supply—well, spring, and cisterns—

than the heavens give, so it is supplied through a fountain in the front yard, and hose connections, with sprinklers, reach to the farthest corners. We also have a water garden, fitted with the fair water lily, the gorgeous sacred lotus of the Nile and other aquatics, supplied with water from the overflow of the spring; but it often needs additional supplies from our irrigating system. We also have a gooseneck and hose connections for garden irrigation.

With our tower tank kept full of water, we can force water into every room in the house, and with our 200 feet of rubber hose, could throw a stream with considerable force over any part of our house, barn and other outbuildings in case of fire. Nothing on Springdale farm gives us more satisfaction than our farm water system and house fire department."

Variety in the Diet of Fowls

Fowls under domestication may be divided broadly into three classes, so far as the conditions under which the



A Scene in a Canadian Lumber Wood.

were connected to windmill force pump by $1\frac{1}{2}$ inch suction pipe, and from it water is forced through 1-inch pipe laid below freezing to a reservoir trough in the stock yard; also to hog and poultry yards into automatic cut-off troughs. This supply is supposed to be ample for our herd of 15 or 20 Jerseys, 4 head of horses, a dozen hogs and 100 hens.

Instead of pumping direct to the watering troughs the water may be forced into the tower tank and from it sent to any place desired, at any time when the wind is off duty.

In addition to the windmill system above we have an independent family supply from a house well, brick cistern and a galvanized house tank, both supplied from the roof, or from the windmill system when necessary; or water can be drawn by the hand pump in windmill direct from the spring for house use.

In addition to the stock and house supply windmill connection has been made with the abandoned creek 600 feet distant for irrigating purposes. We have a lawn, bordered with choice shrubbery, which often needs more moisture

exist are concerned: (a) Fowls on unlimited range; (b) fowls in enclosed grass runs of limited area; and (c) fowls in small gravelled or sanded runs.

Before entering minutely into the variety of food necessary in each of the above cases, we must consider carefully what is really meant by the term "food." To the student of physiology the answer is simple enough. In the first place there is in every animal a certain amount of wear and tear—a constant using up of animal tissue. This must be replaced from some outside source, or, in plain words, must be rebuilt. The material necessary for such repairs is very different in its composition to that which goes to furnish the heat and energy of the animal as a "going concern." When the engineer repairs his engine he makes use of such things as steel, iron, brass, phosphor bronze, etc., etc., but when this engine has to be driven it is the coal in the boiler furnace that is the source of power. In the case of animal life, the repair of worn-out tissue is brought about by the nitrogenous or albuminoid contents of the food it partakes of, and the animal heat and muscular energy is maintained

by the carbonaceous portion of its food—this carbonaceous or carbohydrate portion of food is also the source of fat.

If what has been said has been said more or less clearly, we are brought face to face with the fact that animals (fowls included) require their food to supply them with material to replace waste of tissue, and to keep up the supply of energy. In their simplest form, we should have at the head of the list in tissue (flesh) forming food, lean beef; and at the head of the list of heat-giving and fat-forming foods, we should have such things as Indian corn, rice, and pure starch. Now "lean beef" and "pure starch" are a bit outside the usual dietary of the poultry yard, and are simply cited as extreme examples.

Putting aside, for a moment, the effect of variety in diet on appetite, we may formulate the question: "Is there any one natural food that would keep fowls in perfect health?" The answer is in the negative. We may now ask ourselves what substances can be used, either separately or in mixture, so as to furnish our fowls with all they require, and in what proportions should they be given? Without wishing to attach too much importance to the actual figures, it may be said that the ratio between carbohydrates and albuminoids—that is, between heat-giving and fat-forming to flesh and egg-forming materials—is somewhere about four or five of the former to one of the latter. As an example, for one day's feeding, the following substances would approximately contain, for the whole day, about $4\frac{3}{4}$ carbohydrates to 1 of albuminoids: Breakfast—1 part pea-meal, 1 part potatoes, cooked. Supper—1 part corn.

The above example is taken from the late Mr. Baynes' pamphlet on "Poultry Feeding." This useful little work contains some dozen and a half examples of morning and evening meals, in which the percentage of carbohydrates to albuminoids is maintained nearly at the ratio already referred to.

Every variety of grain and seed in general use as poultry food contains an ample amount of heat-producing and fat-forming constituents. In fact, the proportions of these substances present in most grain is in excess of what is required by the fowl if fed on such grain exclusively. For instance, Indian corn contains nearly 11 to 1 of fat-formers, etc., to 1 of flesh-formers, which is nearly double of what is necessary, and therefore Indian corn is about the very worst food that can be given regularly, but in proper proportions to other food given is useful enough. Perhaps the best food in the way of grain for long continued use is oats. Here we have a ratio of about $3\frac{1}{2}$ to 1, carbohydrates to albuminoids, and if such things as boiled potatoes and barley meal are used as soft food, the amount of heat-giving and fat-forming foods will be ample. As to the amount of flesh-forming constituents contained in various grains and seeds, peas and beans are at the top of the list with 25 per cent. of albuminoids, and rice at the bottom with 7 per cent.; oats at about the middle of the list with 15 per cent.

Now to return to our birds kept under the three conditions already named, that is (a) absolutely free, (b) restricted grass run, and (c) confined in gravel run, it is reasonable to suppose that it is the last division (c) that is most likely to suffer for want of variety of food. Fowls kept in a wired-in gravel run are entirely dependent on the hand that feeds them. They are entirely robbed of their natural surroundings, and as fowls in their natural state consume a very large quantity of insects, worms, etc., which is the source from which their supply of albuminoids (flesh-formers) is principally derived. This deficiency must be made up. Hence the necessity for some kind of animal food in combination with vegetables cooked or given in their fresh state. Briefly, fowls in a confined gravel run require a greater amount of variety in the food given them than fowls kept under either of the two other circumstances mentioned. The fowls in a large grass run would require somewhat less variety, and those on unlimited range less still.—*Fowls for Pleasure.*

What do I learn from the nail? The farther 'tis hammered the firmer it holds.

Lameness in Horses

The following, from a correspondent of the London *Farmer and Stockbreeder*, is worthy of consideration:

Among the causes of lameness are weak conformation of bones, muscles, etc., tissues being too frail to stand the strain; the fetlock may be too long, causing an extra strain on the tendons; the hock may be too angular, predisposing the animal to curb, or too straight up and down, predisposing to spavin; the hoof may show too high a heel, favoring contraction; or too low a heel, favoring corns, puncture, bruises, inferior shoeing—that is, fitting a shoe while too hot; having the shoe press upon the sole instead of the walls; overtaxing muscles, tendons, and ligaments by pulling a heavy load over rough and muddy roads; constant jerking and blows from the wagon pole and harness—all these are causes of lameness.

How to discover when a horse is lame or where he is lame is not so easy a matter as some may imagine. It is best to observe the animal first standing. If the horse points persistently—that is, places the foot in front of the normal position—the lameness is very apt to be below the fetlock. If the knee is affected it is often kept in a bent condition, while in shoulder and fetlock lameness the toe generally rests upon the ground. After examining the horse standing, allow him to go in a slow trot to and from the observer, holding the halter strap about a foot and a half from the head. Watch carefully the animal's head and ears while he is trotting toward you. He will attempt to protect the lame leg by throwing the most of his weight on the sound one, and if the lameness is in front will nod his head when the weight is thrown upon the sound one. When the animal trots away from you, if the lameness is behind, he will attempt to protect the lame leg by throwing his weight heavier on the sound one.

Having determined which leg is lame, the next thing is to locate the seat of the lameness. If there is any doubt about whether the animal is using its legs properly, take a sound animal and trot it up and down, and compare its actions with those of the lame one. Shoulder lameness is evident by limited action of the entire shoulder. The animal seems anxious to keep stationary, and in bringing the leg forward does so by an outward swinging motion. The horse that is knee-lame aims to keep the knee as stiff as possible, and in moving the leg forward bring the shoulder muscles into play. The leg is advanced in a dragging manner, the toe is hardly leaving the ground, and the leg is bent as little as possible.

Fetlock lameness is manifested by a short, jerky step, the animal stepping on the toe or often hopping on three legs. Lameness caused by sore or enlarged tendons is similar to shoulder lameness, and is best examined with the animal at rest, as then the swelling, heat or pain is generally detected along the course of these parts.

It is more difficult to diagnose foot lameness. The best thing is to pick up the foot and tap it lightly with a hammer and notice the flinching when the sore spot is touched. If the animal is nervous it will require great care to distinguish between the actual pain and the nervousness.

Hip lameness is known by a peculiar hopping gait. The animal while trotting turns the hock of the lame leg in and stifle out.

Stifle lameness shows itself by the difficulty the animal experiences in elevating this part and bringing it forward, which is usually done in a dragging fashion. The stified animal either has the lame leg stretched out behind or stands firmly on the sole. In the first case he cannot back, and in the latter he cannot move the lame leg forward.

The greatest ill is to die without having lived; the greatest good to live only after having died; the noblest end to fulfill one's part.

The largest planet has its sun; the smallest hair casts its shadow.

CORRESPONDENCE

Purchasing Tread Powers

To the Editor of FARMING:

I would like to give a word of advice as to the purchase of tread powers; not that of any particular maker, but as to the size to select for farm work. I believe that the three-horse size is the more preferable for the following reasons: For example, we calculate the power of one horse is taken to run the machine up to its working speed, the power to cut or grind being delivered from the second horse, therefore double the working power will be derived out of a three-horse tread power. To get additional power out of a tread power, the rule is to increase the elevation. So a three-horse opens the way to decrease the elevation and add to the comfort of the horses, and a three-horse power operated by two horses will generate as much power as they will on a two-horse power, and not the chance to crowd one another and the first cost is not much more. I give this out as general information, as we are so often asked for our opinion.

D. THOM,

Manager Thom Imp. Works.

Walford, Ont., Dec. 15th, 1899.

Pure Bred vs. Grade Poultry

To the Editor of FARMING:

As poultry keeping is creating a little interest amongst farmers of late, I decided to carry on a small experiment to ascertain whether there is money in fattening young poultry or not. On October 3rd I selected eight male birds about five months old, as equal in size as possible. Four were pure bred B. P. Rocks, and the others were grades by a pure bred B. P. Rock cock and Cochin and Langshan grade hens. They were shut up in coops 2 feet by 3½, and 16 inches high, with four birds in each coop. They were fattened for four weeks, and given all they would eat of fine ground oats and barley softened with skim-milk. They were fed three times a day, and had all the milk they would drink, no particular record being kept of the food consumed.

The birds were weighed at the beginning of the experiment. The pure bred Rocks weighed 21 pounds, and the grades 20 pounds. Four weeks later, at the close of experiment, the pure bred weighed 32 pounds, and the grades 26 pounds. They were left without food for twenty-four hours, and then killed and dressed for market. From the time they were fat and had their last meal until ready for market they lost a pound a head.

The grade birds were then sent to Toronto, and sold by a commission man at 60 cents a pair; the pure bred found a ready sale in the town of Mildmay at 7 cents a pound. There was a decided difference in quality in favor of the pure bred birds when ready for the market. The grades consumed as much food as the pure bred.

F. X. BEINGESSNER.

Mildmay, Ont., Dec. 8th, 1899.

Barred Rocks the Best

To the Editor of FARMING:

I have pleasure in replying to your questions as follows:

1. From 100 to 200 laying fowl can be kept on the average Canadian farm without interfering very much with other farming operations.

2. The most profitable fowl for the farmer to raise for egg production is the Barred Plymouth Rock. This is also the most profitable for fattening purposes, although the Wyandotte is a very close second. I say this after having experimented with Leghorns and Minorcas, as well as the Rocks. The Leghorn will lay more eggs in a year, as a rule, but the Barred Rock will outlay it in the winter months, when eggs are worth the larger price.

3. I have had no experience in keeping fowls without a proper hen-house, but I know that they must be regularly attended to, and a modern hen-house reduces the labor required to a minimum. I should say that to obtain the best result an up-to-date coop is a necessity.

4. The average farmer ought to be able to produce on the farm all the feed required in fattening poultry, with the exception of green bone, which is a necessity to produce the greatest growth in the shortest time, unless plenty of milk is used.

5. A fair income for a farmer to realize every year from his poultry would be from \$1 to \$2 per hen.

6. There is no reason why a farmer should not fatten poultry as successfully for the British market as for the Canadian market. In preparing fowl for the former, however, care must be taken not to use any feed that will give a yellow tint to the carcass, the white skinned fowl having the preference there.

London, Ont.

G. W. MILLER.

Women's Institutes

To the Editor of FARMING:

In a late issue you asked for suggestions as to which would be the better plan,—to have women meet with the men at the Farmers' Institutes, to which institute lecturers could be invited to lecture upon subjects of particular interest to women, or the other plan of holding meetings quite separate and distinct. I wish to present a few reasons why the latter system is much to be preferred. We have in this township the first Women's Institute, which was started in February, 1897, and has met regularly twice a month since, except for about four months in the hottest and busiest part of the summer, when no meetings are held. I have watched this new departure with much interest, rather fearing their interest would flag, but whether the directors are a more enthusiastic and persevering lot than the average I know not, but as a matter of fact the interest seems as keen as ever, though many of the members think monthly meetings would be better, as not requiring quite so much strain upon the directors to prepare a good programme. I must say that I have been somewhat surprised at the average attendance, which has been good, and that in spite of the fact that no effort whatever is made to secure membership, and that members are not even notified of the meetings, and that frequently, owing doubtless to pressing cares at home, a good programme is not prepared. This all goes to show me that if members were drummed up, and an amount of work put upon the preparation of a programme, as is usually done by men, that this Women's Institute would have a crowded house once a month the year around. Doubtless some will sneer and say, "Oh, yes, they like to go to gossip." But as a matter of fact there is no time for that. The meetings open at 2.30 and close at five o'clock, and the time is fully occupied with the programme. Now what is the programme? Is it anything that would likely interest farmers? Quite likely much of it might, but I do not think farmers, as a rule, would go to hear a paper on bread-making, with the ensuing discussion. Miss Rose gave one on that subject to the Women's Institute, and over a hundred women listened. I notice Miss Rose lectures at Farmers' Institutes and often no women attend. They do not wish to sit all day listening to addresses and discussions on ensilage, under-draining, cattle feeding, or other subjects of interest to farmers for the sake of at last having one lone lecture on a subject of interest to themselves. Neither would a farmer go very far to hear a lecture on bread-making or children's clothes. It seems to me that by trying to combine the two things upon one programme, the whole meeting is seriously injured. A farmer would say: "I am not going to drive five miles to hear a lecture on ensilage and then sit there and listen to a lingo about bread, and *vice versa*," and so neither go, whereas if the whole day was occupied by subjects of interest to him, he might attend and *vice versa*. I know that before such a thing as women's institutes were heard of, a strong argument could be put up in favor of ap-

portioning a part of the programme of Farmers' Institutes to subjects of interest to our better halves, and where no Women's Institutes exist such an argument has much force, but in view of the great success attending the Women's Institute here, with no effort at all at attracting membership, I feel they fill a great gap that lay open too long. If men require to meet together to discuss their farm operation and listen to lectures upon farm subjects, why should not women also require similar opportunities? Is it because they have nothing to learn? I think none will claim that. Their round of duties are equally important with that of their husbands. As the spring cannot rise above the fountain head, so the race cannot rise above its mother. The women of the land have in their hands the destinies of Canada. Whether the succeeding generation shall be weaker physically or stronger than the last in a wonderful measure depends upon the intelligence of the mother. Has she not much to learn? Are our young Canadians stronger and more robust than their fathers ever were? If not, why? That is a subject of more importance than corn and hogs, for, if the race grows weaker each succeeding generation, what has this nation not lost? A weakened vitality brings in its train countless evils. It means the subservience of this nation to all other civilized nations that have surpassed us in this particular. Let the women of this land rear a generation of men stronger vitally than the preceding and then let them see to their education in a better manner, mentally and morally, and keep up this improvement for a half-dozen generations, and this nation will outstrip every other nation that does not do likewise, for the battle is with the strong and the race with the swift, now even more than of yore. Does this question not afford scope for enquiry and discussion among our Canadian women? It includes scores of dependent subjects, sanitation, food and its values, cooking and allied subjects, youthful training, schools, environments, companions and their effects. Then aside altogether from this paramount question there is economical household management, a subject relative to the husband's subject of farm economics. Is there not room for improvement? Then aside altogether from these again, is decorative art, which in every home, however humble, has a daily more important place. Is there not room for improvement here? A visit to many homes will testify to the need, and yet another very important feature is the getting away from routine cares for a few hours once a month, and meeting others in discussion—a great good in itself. As a rule our farmer's wives tie themselves far too closely at home; very few indeed can be accused of "gadding about." Where one of the latter class can be found, a thousand of the former exists. I trust a strong Women's Institute will be formed in every township; nothing but good can come of it, and I see no reason whatever for combining them with the Farmers' Institute. Let them be run quite separate and distinct, and let the Government be generous in the matter of lecturers, but of course the women cannot depend upon the Government except occasionally for lectures. The Farmers' Institute only get them about once a year, but get three at once. If each Women's Institute had three or four lectures during the year, at different meetings, I think they would much prefer that.

Winona, Ont.

Yours truly,

E. D. SMITH.

Manures for Grain Crops.

To the Editor of FARMING:

Your correspondent, "Veritas," page 266 in FARMING, November 7th, asks for information re manures for grain crops. I prepared the accompanying article on the subject last week for the *Field*. It has not yet been published, but I venture to send you a copy.

PHOSPHATE INFLUENCE ON CEREAL CROPS.

There is a rather widespread impression that it is nitrogenous manures only which are beneficial and can be advantageously applied to cereal crops, particularly the wheat crop. And it is often asserted that cereal crops, especially

wheat, find for themselves a sufficient supply of mineral food naturally in the soil. Under existing conditions, such opinion is in many cases a great and grievous mistake, although under some circumstances, such, for instance, as the land being already amply stored with available phosphoric acid, the nitrogenous theory might work successfully, but unfortunately a very large proportion of the land under cultivation is not thus stored with the essential phosphate, and what is even more unfortunate is, that what moderate stock there is, is becoming smaller by degrees, though not beautifully less.

Possibly, certain appearances in connection with the world-famous Rothamstead experiments may have seemed to give some support to the nitrogen only, for wheat, theory; yet, if we consider the Rothamstead figures a little more closely, we may find that many other factors enter into the calculation, and that mineral manures are as essential to serial crops as is nitrogen. I was led to a more exact enquiry into this important subject, and it is an important one, through observing the differences in the quality of grain on the many farms I have had the honor of being allowed to inspect during the last fifteen years. I had previously heard a popular agricultural tenant-right valuer boasting of his acumen in disallowing a poor devil of a ruined farmer for two tons of spare "turnip manure," afterwards applied to the wheat. He, poor fellow, is dead, but neither from him nor from any one else have I yet been able to learn what constitutes the actual and proper difference between so-called "turnip manure," "cereal manure," or any other "special manure," although I have travelled hundreds, aye, thousands of miles to hear collegiate professors, government science and art examiners, and other such learned men discourse on the subject.

What I personally observed on the farms of many practical men was that where there had been a more than ordinarily free application of phosphate or phosphate and potash, the grain yield was more satisfactory both in quantity and quality. From this, and the disappointment I had so often experienced in my own crops, I was led to believe that many of the unprofitable crops being grown in the meantime might have proved remunerative had they received a dressing of mineral manure.

Having become most earnestly impressed with the conviction that Britain's most immediate necessity is to keep her own powder dry, or, in other words, to maintain the possibility of producing a home-made bread loaf at need. I do say that any means conducive to that end are worthy of general consideration; and the above is one of them.

Wheat has certainly been realizing only a low price compared with the prices of 30 and 40 years ago, but fertilizers are equally reduced in price, and by their judicious use, much may be done by an increased yield to compensate for the low price. It is futile for our statesmen to flatter showy audiences in luncheon speeches by saying the future of British farming is "specializing." We cannot all be fancy stud stock breeders, nor is it desirable that we should.

Whatever may be said to the contrary, general food-producing agriculture must and will be maintained in Britain, and wheat-growing will continue to find a place in the curriculum, because, as a very cautious and experienced Warwickshire farmer observed to me some time ago, we have no other crop that can occupy the place in the rotation with such general service to both farmer and the public.

In the elaborate Broadbalk Field experiments at Rothamstead, where the growing of wheat consecutively for 50 years has been demonstrated under a great variety of conditions, there are two plots, Nos. 3 and 5, the former being unmanured for all these years, the latter having been annually dressed with mixed mineral manures. There has been no very material difference in the yield of these two plots, although the mineral manure-dressed lot has maintained the lead, yet not sufficiently so to in itself justify the cost, were there not collateral circumstances. It has frequently been argued from the basis of these two plots that mineral manures had no influence on cereals, but that is not a correct deduction. The fact is that there was but lit-

tle more nitrogen present than could be utilized by the mineral food already contained in the soil, consequently any further application would lie dormant. If nitrogen were now to be applied to plot 5, I have no doubt but that it would yield triple the produce of lot 3.

If we refer to the report of Messrs. Lawes & Gilbert, we read :

"Mineral manures alone gave very little increase; nitrogenous manures alone gave considerably more than mineral manures; but the mixture of the two gave very much more than either separately." This is sufficiently conclusive as to the efficiency of the phosphatic element in the cereal crop, but a word or two may be desirable as to the nitrogenous manure alone giving better results than the mineral manure alone. Well, the mineral constituents of a soil are a stable quantity natural to the soil, and not readily to be exhausted, while the nitrogenous element is a more or less transitory introduction more easily eliminated than retained. Last spring, when visiting Rothamsted, Sir Henry Gilbert remarked to me that as regarded the prevailing idea that land was exhausted by nitrate of soda, he, Sir Henry, considered that the immediate fertility would be much more injured by exhausting the nitrogen with repeated dressings of superphosphate. There was something in this reversion of the original idea which opened out for me new lines of thought. Of course it is not difficult to supply the soil with durable phosphate, but the furnishing it with durable nitrogen, as humus, is a harder matter to fight. It is a noteworthy fact that in the Rothamsted Park experiments, and some others of the series, the more durable *basic slag* has for the last two or three years been used as a source of phosphate instead of the acidulated phosphate.

But to return to the question; a certain goodly supply of mineral plant food was in this Rothamsted soil 50 years ago, also a useful supply of humus, but the immediate supply of readily available nitrogen had been exhausted by a course of previous cropping. Consequently, as the humus slowly decomposed and came into action, its nitrogen found a sufficient balance in the mineral matter already in the soil; any further addition of mineral matter but slightly affecting the business. When nitrogenous salts were added, they would immediately exert an influence on both the humus and the store of mineral food, thus for a time appearing to have a more beneficial effect than had the mineral manure. Yet really this is but the difference between tweedledum and tweedledee, as each, separately, sooner or later, comes to an end. And as the sages of Rothamsted say, "the two gave very much more than either separately." They do not say that one was better than the other, they report the facts, which are that both are required, and that the combination is "very much better." How can it be maintained after such proof that phosphatic manures are not beneficial to the wheat crop!

It may be well, however, to compare the exact figures for a year or two. We will take 1871 as a season of medium yields; the no manure plot, No. 3, yields but 9 bushels per acre; mineral manures alone, 11 bushels; ammonia salts alone, 10 bushels; nitrate of soda, 17 bushels; while the mixture gives the fairly good yield of 34 bushels per acre. These are fairly in sequence with the entire series, for if we take lots 17 and 18 where mineral and nitrogenous manures have been used alternately in alternate years, we find where the minerals have been applied that year a return of 16 bushels, and where the nitrogen has been applied we get 28 bushels; but here we must remember that where nitrogenous salts only had been applied continuously, the ammonia and nitrate yielded but 10 and 17 bushels respectively. Then how do we account for the 28 bushels on plot 18? Why, simply because it had been dressed with phosphate and potash in the previous and other years, and that there was a considerable remaining residue to draw upon. If we now pass on to that worst of years, 1879, we find after about 40 years wheat growing, that no manure yields 4 bushels, or 1 sack per acre; mineral manures alone under equal conditions, were but able to raise this by 1 bushel, yet even this was more than any of the nitrogenous salts were able to accomplish, they all three being each credited

with the normal sack, while mixed minerals and nitrogen brought out 22 bushels in one instance, and 20 in another. The alternating plots 17 and 18 yielded 3 bushels and 20 respectively; this latter again looks bad for minerals, until we remember that the conversion of the 4 bushels into 20 is due to the previous phosphatic dressings; and that the poor show of 3 bushels is due to the fact of the nitrogen having exhausted itself in producing the good yield of 29 bushels on the same lot in the preceding year.

So far I have only referred to the question of quantity. It would require a lifetime to examine the thousands of samples at Rothamsted, but I had ample evidence placed before me to satisfy me that the phosphatic influence had added materially to the quality and market value of the grain. I passed along to Woburn, and there found the foregoing evidence corroborated. I also examined the samples reported on in the Journal of the R.A.S.E., where the beneficial influence of phosphate on the market value of the grain is officially appraised at from 3 per cent. to 5 per cent. per quarter. I consider that if submitted to the selling test it would have been even more.

These remarks have been so lengthened out that I can but refer to one or two more examples, and will first take the Glasgow Technical College experts, as being a prominent series, and dealing with the manuring of cereals question, oats being there given preference, as the prevailing corn crop. I will take the Laurieston Hall Home Farm as my example, because it is described as a poor, sandy, gravelly soil; No. 1 plot, unmanured, only yielding 620 lbs. of dressed grain per acre, and 18 cwt. 3 qrs. of straw and chaff; but with a dressing of 1 cwt. nitrate of soda, 2 cwt. superphosphate, and 1 cwt. of kainit, the yield was raised to 1820 lbs. of grain and 32 tons of straw. We have now to consider to which of these factors the increase is due in particular, if to any. The increase of kainit to 2 cwt. made no difference, but when increased to 4 cwt. there was an increase of grain by 300 lbs. but when the kainit was again dropped to 2 cwt. and the super increased to 6 cwt. the yield rose to 2520 lbs. of grain, with 43 tons of straw. This clearly shows that whatever influence the nitrate of potash may have exerted, the phosphate was a necessary and powerful factor. This is further proved by the fact that another form of phosphate—*basic slag*—has worked out to even better advantage; 1 cwt. nitrate, 2 cwt. kainit, and 226 lbs. of basic slag produced the same amount of grain as the 6 cwt. of super; but when the *basic slag* was increased to 453 lbs., the other factors remaining the same, the grain yield was raised up to 2940 lbs. and the straw to upwards of 50 cwt. It is impossible for us to credit the greater share in this last splendid return to the nitrogenous influence, because with the aid of 2 cwt. of super, and 2 cwt. kainit, the 1 cwt. of nitrate was only able to produce an increase of 1,200 lbs. of grain and 14 cwt. of straw; with the same nitrate and an increase of phosphate (4 cwt. slag phosphate) it made the above wonderful increase of 2,320 lbs. of grain, and 31 cwt. of straw; in fact nearly three times the quantity of straw and four or five times the yield of grain; which is indeed remarkable on "poor sandy land." There is, of course, an enormous amount of evidence from practical farmers in support of these views, which cannot now be dealt with; but we find the University College, Reading, gives the following advice:—"When the soil is in good condition a top dressing of 1 cwt. nitrate of soda per acre, or an equivalent amount of a good guano, may prove useful, but this should not be applied if the corn is likely to lodge. On soils in poor condition 1 cwt. nitrate of soda and either 2 cwt. superphosphate, or 3 cwt. basic slag may be applied per acre." The Wiltshire County Council further support the principle of phosphatic manures for cereals, and complete their report by recommending for barley 1½ cwt. nitrate, and 4 cwt. of basic slag per acre. The same mixture has also given the best results on the oat crop; somewhat singularly, this is practically the same manure which achieved that great Scottish success at Laurieston Hall.

The Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep, and Swine Breeders' Associations, and of the Farmers' Institute System of the Province of Ontario.

THE DOMINION CATTLE, SHEEP, AND SWINE BREEDERS' ASSOCIATIONS.

Annual Membership Fees:—Cattle Breeders' \$1; Sheep Breeders', \$1; Swine Breeders', \$2
BENEFITS OF MEMBERSHIP.

Each member receives a free copy of each publication issued by the Association to which he belongs, during the year in which he is a member. In the case of the Swine Breeders' Association this includes a copy of the Swine Record.

A member of the Swine Breeders' Association is allowed to register pigs at 50c. per head; non-members are charged \$1.00 per head.

A member of the Sheep Breeders' Associations allowed to register sheep at 50c. per head, while non-members are charged \$1.00.

The name and address of each member, and the stock he has for sale, are published once a month. Over 10,000 copies of this directory are mailed monthly. Copies are sent to each Agricultural College and each Experiment Station in Canada and the United States, also to prominent breeders and probable buyers resident in Canada, the United States and elsewhere.

A member of an Association will only be allowed to advertise stock corresponding to the Association to which he belongs; that is, to advertise cattle he must be a member of the Dominion Cattle Breeders' Association, to advertise sheep he must be a member of the Dominion Sheep Breeders' Association, and to advertise swine he must be a member of the Dominion Swine Breeders' Association.

The list of cattle, sheep, and swine for sale will be published in the third issue of each month. Members having stock for sale, in order that they may be included in the Gazette, are required to notify the undersigned by letter on or before the 9th of each month, of the number, breed, age, and sex of the animals. Should a member fail to do this his name will not appear in that issue. The data will be published in the most condensed form.

F. W. HODSON, Secretary.
Parliament Buildings, Toronto, Ont.

FARM HELP EXCHANGE

The Farm Help Exchange has been started with the object of bringing together employers of farm and domestic labor and the employees. Any person wishing to obtain a position on a farm or dairy, or any person wishing to employ help for farm or dairy, is requested to forward his or her name and full particulars to F. W. Hodson, Secretary Live Stock Association. In the case of persons wishing to employ help, the following should be given: particulars as to the kind of work to be done, probable length of engagement, wages, etc. In the case of persons wishing employment, the following should be given: experience and references, age, particular department of farm work in which a position is desired, wages expected, and where last employed.

These names when received together with particulars will be published FREE in the two following issues of the "Agricultural Gazette" and will afterwards be kept on file. Upon a request being received the particulars only will be published, the names being kept on file.

Every effort will be made to give all possible assistance to the end that suitable workers, male or female, may be obtained. Every unemployed person wishing to engage in farm or dairy work is invited to take advantage of this opportunity.

Help Wanted.

Wanted, married man to work on farm, wife to act as housekeeper. Must be temperate. Yearly engagement to right persons. References required. State number of family. No. 228. a

Wanted, capable man as working foreman. Must understand all lines of dairy farming, root growing, etc. and be able to take charge of men. Yearly engagement, \$240. Also wanted cattle man. Would engage at once. Wages \$200 a year, with \$3 a month off if house is required. No. 229. a

Wanted, good man as general farm hand. Will pay \$168 a year and will pay \$7 towards railway fare. No. 230. a

Wanted, general farm hand. Will pay \$120 a year. No. 231. a

Strong boy wanted, about 16 or 17 years of age, to learn farming. One that has had some experience with bush work and that is not afraid to work, preferred. Wages \$5 a month until May 1st, and increased afterwards. Board and washing included. Would engage for a year. No. 232. a

Farm foreman wanted. \$250 a year will be paid to a suitable man to commence with. Convenient home furnished. No. 233. a

Young man, 18 to 24 years old, wanted for general farm work. Permanent place to, suitable man. No. 234. a

Reliable man required to do general work on a 150 acre farm. One who would be permanent preferred. No. 235. a

General farm hand required. Would pay \$120 a year and board and washing. No. 236. a

One or two general farm hands required. Preference will be given to one who understands feeding stock and milking cows. No. 237. a

\$120 a year will be given to a suitable young man about 22 years of age, who understands general farming. If married he could have a house. No. 238. a

Man wanted to look after stock and drive a team. Steady employment to suitable man. Have at present in our employ hands that have been with us from two to twenty years. No. 239. a

A married man wanted to work on a farm. Steady job to suitable person. No. 205. b

Married man with small family and some capital wanted to furnish or purchase one half interest in stock and implements and work 100 acres of land with good buildings and orchard, on shares. Send references. No. 206. b

Man wanted to do general farm work, mostly tending to stock in winter. Farm 100 acres. No. 207. b

Man wanted to do general farm work on a small farm. Not much work in winter but chores. No. 209. b

Man wanted to do all sorts of work on a farm of 150 acres, tending stock principally in winter. Must be able to plough well. No. 210. b

Man wanted in a month or six weeks to work a farm and especially take care of stock. No. 211. b

Young man wanted to go to the Northwest to do general farm work. Good wages to suitable man, also board, washing, and lodging. No. 212. b

Young man wanted to do general farm work. Must be able to drive young horses. No. 213. b

Single man of good character wanted for general farm work. Liberal wages to right man. No. 214. b

Young man wanted to do general farm work, more particularly care of stock in winter. No bush work. Would engage for a year and promise a comfortable home. No. 215. b

Young man wanted to do general farm work. Would want him to start work on the 8th of January, 1900. References as to character required. No. 216. b

Young man wanted to commence work January 1st, 1900, by the year. Must understand all kinds of work and give good references. No. 217. b

Single man wanted to do general farm work. Would have to work among cattle at times. Must be willing, honest, and quiet. Will hire by the year. No. 218. b

Young man wanted as general farm hand. Will be required to work in the stables in the winter. Wages \$15 per month without washing. No. 219. b

Young man wanted to do general farm work. References required. No. 200. b

Experienced young man wanted to do general farm work. Good references required. No. 222. b

Good, honest man wanted by the year, to do general farm work. Must give first class references as to character. Not afraid of work and agreeable around the place. Wages \$16 a month and board. No. 223. b

Experienced young man wanted to care of stock and do milking. Keep 10 head of stock generally, and 2 or 3 horses. Have a little bush and would require stove wood out of it in winter. No. 224. b

Young man for general work on a farm of 200 acres in Michigan. Raise

a good deal of stock and keep a dairy of 20 odd cows. No. 225. b

Married man wanted to work on a farm by the year to do general farm work. Must also be used to pruning fruit trees. Farm, loamy soil in the township of Wainfleet, county of Welland. No. 227. b

Situations Wanted.

By single, young man of first-class education; uses neither liquor nor tobacco. Has handled all kinds of stock for years and is familiar with the best methods of caring for the same, especially poultry. Past season spent on prominent poultry farm in New England. Would prefer to act as working assistant to foreman of up-to-date poultry concern. No. 240. a

Married man, 21 years of age, who has worked for the last two seasons as a general farm hand, is honest and sober, wants position on farm. Was raised and brought up on a large stock farm, and has a good business education. No. 241. a

Position as farm foreman required on farm where a convenient house and firewood are supplied and a cow kept. Would also like pen for two pigs. No. 242. a

Unmarried man, accustomed to farm implements and threshing, wants a place on a farm. Wages \$14 00 a month, board and washing. 24 years of age. No. 243. a

Man used to live stock and farm work, 40 years of age, married and with six children, wants place on a farm. State wages. No. 244. a

Farm foreman wants situation. Understands farming perfectly and is well recommended. State terms. No. 245. a

Position wanted as gardener and to assist in caring for stock by married man with small family. Good references. No. 208. b

Young man, 25 years of age, weight 160 pounds, wishes a position on a farm for the winter. Always lived on a farm and understands taking care of stock. No bad habits. Good references. Wages expected, \$10 a month and travelling expenses. No. 221. b

An experienced poultry man wishes a position as manager of a poultry farm. Has had a large business experience. State terms and length of engagement in writing. No. 188. b

Domestic Help.

Situation wanted as working housekeeper for bachelor or widower, by middle-aged woman. Good references supplied. No. 228. b

Situation wanted by married woman, 28 years of age with one child, 6

years of age. Good cook, well acquainted with housekeeping and dairy work. No. 226. b

N.B.—Where no name is mentioned in the advertisement apply to F. W. Hodson, giving number of advertisement.

Words of Encouragement.

The following letter was recently received at the Parliament Buildings, Toronto:

Ontario Agricultural College,
Chemical Department,
Guelph, Dec. 9th, 1899.

DEAR SIR,—I have just been reading over the programme of the Provincial Fat Stock Show and of the numerous other meetings of stock men held in London during the same week, and have been very much impressed with the immense amount of information that may be gathered; gathered, too, from such practical sources that it will not be easily forgotten. Allow me to congratulate you upon the splendid programme you have prepared for the week.

I regret very much that I cannot attend these various meetings.

Yours truly,
R. HARCOURT, B.S.A.,
Assistant Chemist.

The programme advertised was carefully carried out in detail, and it is safe to say that the last Ontario Provincial Fat Stock, Dairy, and Poultry Show was the most successful agricultural educational gathering ever held in America. This view of the case has been freely stated by Professor Craig, of Iowa Agricultural College, and many other prominent, foreign visitors.

Some Lessons From the Fat Stock Show.

The Provincial Fat Stock Show for 1899 has come and gone, but the lessons learned there by those who attended it will continue to bear good fruit. As an educational medium it has never been surpassed, and its lessons were of the practical kind which could be learned by all present.

The Block Tests.

The block tests had an interest for every one in the show, exhibitors and visitors alike. All wanted to see how the sheep and pigs, which had been judged alive and placed in the order which seemed to them best by the judges on live stock, would rank at the hands of the experts who judged the carcasses. In several cases the order was changed. It was surprising, especially in the sheep classes, to see on some of the carcasses a mass of useless fat, which, though it did not lower the quality of the meat, yet reduced the price to such an amount as to make the returns unprofitable to the

feeder. Without doubt, the feeder of such an animal had not looked at it in that light when he so lavishly fed it up to show off well alive at the Fat Stock Show. Now, however, he can see that the market does not call for the overfat sheep or hog, and so he will regulate his feeding accordingly.

Among the swine, the block tests were equally instructive. Pigs of nearly all breeds were entered here. Some of the carcasses were clearly overdone; some were too much over the proper weight for bacon hogs, and, consequently, could not be scored as of best quality. Others were plainly under-fed, in the hope that this method of treatment would cause them to be lean, and so rank as bacon hogs. As regards this, such feeding must result in a carcass which turns out soft bacon. It is somewhat in line with the Irishman's method of producing fat and lean, who fed his pig well for a week and then starved it for a week, so that the fat and lean would (as he thought) be laid on alternately in the carcass. It cannot be too strongly impressed on those who feed for the export trade, that feed of a suitable nature must be fed generously from birth to slaughter. We must get pigs of a proper type, feed them suitable rations, and market them when they are ready for the block (from the packer's point of view), and then we shall not only secure good prices for our hogs, but also enable our packers to get a more satisfactory share of the British markets for bacon.

Breed not Everything.

Speaking of breeds at the show, one fact was quite evident, that it was possible to feed pigs of such breeds as Yorkshires and Tamworths (which the bacon curers have so often told us, are pretty near the ideal as bacon breeds) so as to have the carcasses rank quite low on account of the thickness of fat on the back, shoulder and flank, and also as regards width of back and quality of flesh. Breed is thus not everything; feed is just as important, and it is evident that some have yet to learn how to feed bacon hogs. We shall see continuous improvement in this respect from now on, because this year's block test has set feeders thinking to some purpose.

Dressed Poultry.

The majority of the dressed poultry would have looked, and shown, to much better advantage had they been properly dressed. Many of the birds had not been subjected to pressure in order to squeeze down the breastbones, and consequently, their breastbones stood up, in some cases like monuments, whereas, a little pressure would have brought these down, and made the carcasses plump and tempting.

The addresses as to feeding, killing, dressing and packing poultry, both for home and export markets, which were given daily by Prof. and Mrs. Gilbert, W. R. Graham, J. E. Meyers

and Mr. and Mrs. Yuill, cannot fail to be most profitable to all who heard them. The object lesson, as to the influence of feed on the carcass, provided by Mr. Graham in the case of birds from Guelph was striking enough to arrest the attention of even the most shiftless farmer and make him think. The chart attached to this case, which appeared in the report of the show in our last issue, bore invaluable testimony to the importance of proper feed, of the proper length of time to feed birds, and of the waste of money in marketing poultry anyhow.

Dairy Department.

The extraordinary performance of Rettie Bros.' Holstein cow amid all the excitement of a fair ground would lead one to believe that we have not yet reached the limits of production of milk and butter, and that selection will accomplish much yet.

The gasoline engine attached to the separator, apparently gave general satisfaction, running smoothly and without trouble.

Raising Good Calves Economically.

(Continued from last issue.)

RAISING CALVES FOR STOCKERS.

All the foods previously mentioned are equally suitable for use when the animal's destination is the block, and very fair veal calves indeed have been raised on skim-milk, oil meal, oatmeal, shorts and bran. The principal objections urged by butchers against veal calves thus raised are that their flesh is somewhat darker than that of whole milk calves and also they are not so fat. As, however, we are dealing principally with calves to be raised for stockers we need not consider these objections here, although it may be said that after all they are not very serious ones because no consumer would be able to recognize any difference in the taste of veal from calves raised on either system. The principal difference between feeding calves for beef and dairy purposes is that in the former instance we are not so limited in the choice of grains or other rations which can be fed in addition to the skim-milk, whey, or their substitutes. We need not be afraid of the animals getting too fat because the chief object is to push them on as quickly as possible and get our returns from them before they get so old that each additional pound of gain is made at too high a cost.

CORNMEAL AS PART OF THE RATION.—Corn at once suggests itself as a suitable grain adjunct to skim-milk, to force calves forward. We have seen above that dairymen have been able to use cornmeal to advantage when it was fed in small quantities, but that if it was fed more heavily it caused the dairy calf to become too fat. As this is not a disadvantage,

but the contrary, with beef calves, corn is, therefore, an excellent food for such, and its cheapness in many localities furnishes another excellent reason why it should be used as part of the young animal's food.

Prof. Curtiss, of the Iowa Experiment Station, has been carrying on a series of experiments in calf feeding, using skim milk in conjunction with various grains and feeding substances. In these tests the milk has been fed warm from the separator with the several grain rations used. Cornmeal and ground flaxseed, oatmeal and oil meal were tested. Very uniform results were brought out. In each of the three experiments oil meal gave lower and more expensive gains, and was in every way less satisfactory than either oatmeal or cornmeal and flaxseed for supplementing the skim-milk ration, and also pure cornmeal proved superior to pure oil meal. The results are directly contrary to the prevailing opinion as to the relative values of these feeds, but Prof. Curtiss does not consider it unnatural that a carbonaceous grain such as corn should be more suitable for feeding with skim-milk than a highly nitrogenous product like oil meal. Separator skim is, as stated above, also a nitrogenous feed, and, therefore, when we use both combinations, we have a one-sided ration. Corn or oatmeal give much better results and are safer than ground flaxseed. In these experiments the flaxseed contained 55 per cent. of fat. It was used to the extent of about 10 per cent. of the grain mixture. The average daily gain during these three experiments was as follows: When oil meal was fed, 1.47 pounds; for oatmeal and milk, 1.57 pounds; for cornmeal, flaxseed and milk, 1.56 pounds. It will thus be seen that cornmeal and also oatmeal are very beneficial foods for young calves destined for feeding, and in these experiments both have surpassed oil meal in efficacy and also in cheapness, although this latter feature might be considered altered in a district further removed from the great corn-growing belt. Experiments as to the respective values of cornmeal and other meals as adjuncts to skim-milk in calf feeding could be conducted by our experiment stations with great profit to the farmers of the Dominion.

CALF MEALS.—The use of calf foods, which have been specially prepared to take the place of milk and grain combinations, and thus enable the farmer to dispense altogether with the feeding of milk, is rapidly extending and so great is the demand for them in Great Britain that one manufacturer has a journal dealing with general farm topics which is issued quarterly in the interests of his meal, and which gives from time to time illustrations of animals which have been reared on it, some of which we have reproduced in connection with this article. The exact composition of the

calf meal, is of course, largely kept a secret by the firms which manufacture them, but through the kindness of some of the proprietors, we learn that linseed meal, wheat flour, oat meal, locust beans, pea meal, and very small portions of aromatic seeds enter more or less, in varying proportions into most of the best known preparations although, of course, the exact proportions of each constituent cannot be ascertained. It is, however, sufficient to know that in their composition the manufacturers have striven to introduce all the elements to be found in new milk, so as to make these calf foods approximate as closely as possible to nature's food for the calf. That the makers have been successful in this is shown by the results obtained from the use of calf meals of high reputation where these have been fed intelligently.

HOW THE CALF MEALS ARE FED.—The meal is measured according to the directions which accompany each package, then mixed with cold or tepid water to a fine paste, care being taken that it is quite free from lumps, then boiling water is added until the mixture is of the consistency of starch. It is then well stirred and allowed to stand so as to get thoroughly soaked. At feeding time enough warm water is added to increase the feed for each calf up to about two quarts, and also to warm the mixture to the temper of the new milk. As the calf grows, the gruel is increased. When it is older, the meal can be fed dry in conjunction with ground oats or corn. It will thus be seen that the feeding of these calf meals is a very simple matter and can be well attended to by any intelligent person. Cleanliness in the vessels used, careful mixing and feeding at a suitable temperature are the three principal requisites.

SATISFACTORY RESULTS FROM THE USE OF CALF MEALS.—There are very few farmers in Canada who purchase large numbers of calves to rear for the dairy or for stockers, and we know of none who purchase very young calves and feed them on milk substitutes without a drop of milk. This is, however, practised in Great Britain, and we know of farmers in Wiltshire who raise annually 130 to 140 calves, which do not receive a drop of milk from the day they are brought home from the markets where they are purchased, but are fed on calf meal and water until they are old enough to eat freely of hay, grain, and roots, when the calf meal is mixed dry with the other grain. And, notwithstanding, these calves are as thrifty, well-shaped, contented looking a lot as one could wish to see and are not pot-bellied or scraggy, nor have they large, ungainly heads; and this is the case in spite of the fact that the farm is not well suited for calf raising, being at a high elevation and in every way more suited for sheep than for heavier stock, while the buildings are

quite out of date. If, then, success can be attained under such unpromising conditions, what could be done with better surroundings? The discussions that have taken place of late in Great Britain at agricultural meetings respecting these calf foods have directed great attention to these substitutes for milk and have resulted in an increased demand for them. But, to come nearer home, although the feeding of these calf foods has not been largely adopted in Canada as yet, there is, nevertheless, a steady and ever-increasing demand for them, and they have been very successfully used by many farmers both alone and in combination with skim-milk. As will be noticed above, Mr. Robt. Ness, Howick, Que., one of our most advanced dairy farmers and a breeder of Ayrshires, is well satisfied with the calf meal he used, and his experience is the same as that of many others who have tried one or other of the high-class calf foods which are on the market. In dairy sections, especially, they must be of great value to the farmer who disposes of his milk and has none for calf-raising purposes.

COMPARATIVE COST OF CALVES RAISED ON NEW MILK AND SUBSTITUTES.—Some of the experiment stations on this continent have investigated the respective cost of raising calves on new milk and skim-milk. The Iowa Station reports that the cost of producing a pound of gain (estimating new milk at 87 cents per 100 pounds, skim-milk 15 cents per 100 pounds, grain at 1 cent per pound, hay at \$5 per ton, and flaxseed meal at 3½ cents per pound) was 7.6 cents for whole milk, and 5 cents for the skim-milk ration. The Pennsylvania Station estimated that it cost 9.9 cents for each pound of increase when whole milk was fed, and 3.4 cents when skim-milk was fed. In this case the former was considered worth \$1 per 100 pounds, and skim-milk 12 cents per 100 pounds. At the Mississippi Station calves fed on 10 pounds of skim-milk gained nearly as much as those which received 8 pounds of whole milk. The Utah Station figures out a loss by feeding whole milk to calves. We are not aware that any experiments in the line of a comparison between the cost of feeding calves whole milk and milk substitutes have been carried out on this continent, but in a Scottish experiment at Castlemill new milk calves cost £3 os. 8d. per head to rear, those raised on cod liver oil £1 13s., and those fed on Bibby's Cream Equivalent £1 9s. 10d. per head. In this case the cod liver oil was bought in a dear market. And not only did the artificially-reared ones cost much less to raise, but after they had all been kept on regular farm diet for some time, the animals raised on the milk substitutes sold at as high a price as those that had been fed whole milk. Artificially rearing calves is thus proved to be not only in the highest

degree successful, but extremely economical as well.

The Latest Discoveries in the Treatment of Parturient Apoplexy (Milk Fever.)

The enormous fatality among parturient apoplexy patients coupled with the unrelaxing demands upon the dairy cow has forced the more enquiring minds into greater and untiring activity with the result that the most encouraging reports come from the results of a treatment advanced by a Danish veterinarian, Schmidt Von Kolding. Heretofore the veterinarian's attention has been directed to the uterus (womb) as being the medium through which the poison was admitted to the circulation and carried to its seat of operation (great nerve centres) where its death-dealing depression was exhibited, and although very vigorous efforts were pursued to combat its further introduction into the system, and counteract the evil effects produced, the results attained were at best most unsatisfactory and discouraging.

Without attempting to enter upon lengthy details regarding the malady, we may state that the result of the new Schmidt treatment, coupled with close observation along experimental lines has demonstrated beyond all doubt that the udder is the true origin and seat of the disease. Decomposition of the secreting cells in that organ takes place when the milk secretion begins, immediately after calving. A leucomaine (depressed poison) being ormed from the cholesterol bodies and rapidly absorbed into the circulation is the direct cause of the disease. How and why Prof. Von Kolding turned his attention to the udder we are not told, but since attention has been thus directed, various interesting and highly instructive experiments have been tried, and it has been clearly demonstrated that decomposing milk injected into the udder at any time produces in from twelve to thirty-six hours conditions identical with those of milk fever in the usual way, and post-mortem examinations point out almost identical abnormalities with that of milk fever, especially when the duration of sickness has been brief, proving conclusively that milk fever can be induced.

Treatment and Mode of Application.—As the symptoms of a well-marked case of milk fever are already well known to experienced dairymen we deem it unnecessary to repeat them fully. When a good milking cow in high flesh just before or soon after calving becomes restless, paddles with her hind feet, lies down and rises with difficulty, the udder becomes soft and flabby, it is time to become suspicious that all is not right and immediate action should be taken. The herdsman, already provided with a liberal

quantity (3 sixty-grain doses) of potassium iodide, carbolic acid and udder syringe of proper design, procures a liberal supply of freshly-boiled water. The udder and teats should first be well bathed with warm water to which has been added a tablespoonful of carbolic acid to each quart. All milk should be drawn from the udder and one drachm (60 grains) of potassium iodide should be dissolved in one quart of hot water (freshly boiled) with one dram of carbolic acid and injected into the udder through the teats—an equal amount into each teat. The patient should be kept dry, warm and free from excitement or noise, and in no consideration should drenching be done so long as any acute symptoms are present. The patient should be turned from side to side every four hours, taking care to avoid injuring the udder, and the udder injection given again in six hours, if signs of return to consciousness are not present.

In the hands of European veterinarians reports come to the effect that ninety per cent. of 412 cases so treated made complete recovery, and in Canada, to the writer's knowledge, fifteen out of seventeen cases came through to complete recovery, with the possible exception of slight irritation in the udder, due probably as much to external injury as to the irritating properties of the treatment, all of which became normal within the reasonable period of a few days. Various doses were experimented with, varying from one-half to one drachm of the drug, and although the smaller dose was repeated at shorter intervals the one drachm doses gave best results, while a double amount produced alarming symptoms and did not appear to exert any more favorable influence than one-half the quantity, which appears perfectly safe.

How does potassium exert its influence in such cases?—Long before potassium iodine was associated in this way in the treatment of milk fever it was a well established fact that it exerted a stimulating influence upon the base of the brain and great nerve trunks when administered in large doses, and it is in this action that it counteracts the depression present in that malady. It also, no doubt, arrests the decomposition in the udder (having antiseptic properties) when brought into direct contact with it (udder content.) Having a powerfully stimulating effect upon the lymphatic glands, it also hastens the elimination from the system of the offending poison, hastening recovery.

Form of instrument most suitable for its application.—Various instruments have been recommended for the application of the udder injection, but an instrument has been invented which seems to fill the greatest number of requisites with fewer objectionable features than any other we have seen. A large glass bottle,

holds the required amount (half pint) for one quarter (one teat.) This bottle can easily be cleansed. It can be brought to the proper temperature by immersing in hot water for a few minutes previous to its use. A rubber tube is connected over the end of a glass tube which runs to the bottom of the glass bottle thus minimizing the danger of air being pumped into the udder with the solution. The remaining portion of the instrument consists of a bulb syringe to which is attached a milking tube which can readily be detached for the purpose of cleaning, previous to inserting the silver tube into the teat. The bottle, should be filled with the prepared solution at 102 degrees F. and the syringe pumped full, which also forces out the air, and as soon as the contents of the bottle are emptied the operation of the bulb should cease, so as to avoid the introduction of air into the udder, as air hastens decomposition and thus delays recovery. Great caution is also necessary to avoid the introduction of foreign substances, hay-seeds, etc., which may drop into the vessels containing the medicine, as such will produce damaging results upon the udder. Everything must be kept scrupulously clean to secure the best results.

Horse Breeding.

By Prof. J. Hugo Reed, V.S., Guelph, Ont.

Since the year 1892 until the present time the general cry among farmers has been "there is no money in horses," and consequently breeding operations were almost suspended. About that time there was a financial depression in most countries that afforded markets for our horses, and about the same time electricity came into use as a motive power for street cars, and other purposes for which a certain class, or rather kind, of horses had been used. These two factors had a material influence upon the market for this kind of horse, and also affected to a considerable extent the market for the higher classes. But even during the time when the market was the most depressed there was not a time when a good individual of any of the recognized classes would not fetch a fair price; and in my opinion, the time is far distant, if it ever comes, when such will be the case. During the years of 1893 to 1896 inclusive, nearly every farmer in the country had an overstock of unsaleable horses on his farm; horses, that while sound, or practically so, and good, useful animals for certain purposes, at the same time had no class, and nobody wanted them, even at the very low figures. The consequence was, farmers came to the conclusion that the horse market was gone forever, and they quit breeding and disposed of their surplus stock as best they could; some were destroyed, some given away, and others

disposed of for trifles. In these and other ways the surplus stock was got rid of. During this time, at Institute and other meetings, the speakers, who had given considerable thought to the subject, foresaw the result, and advised farmers to keep on breeding, but to be careful and breed good horses, stating that the surplus stock was being disposed of and young ones were not being produced, that if this condition of things were to continue there would be trouble when the present stock became lessened by disease, accident, and other causes. The question then would be, "How are we going to get horses?" The farmers would not believe us, and in many cases actually laughed at us. The present state of the horse market verifies the truth of the predictions then made. To-day horses are scarce and hard to purchase. A horse that will now sell for from \$50 to \$100 could four or five years ago be bought for \$25 or \$30, and the end is not yet. As far as I can see, this condition must last for three or four years longer, as we may say that only at the present time is the farmer realizing the fact that there is a scarcity, and consequently he is again turning his attention to breeding. Present conditions point clearly to the fact that horse breeding can be carried on with a reasonable prospect of fair profit. I do not mean to advise farmers to go exclusively, or even extensively, into horse breeding, but to have one or more mares breeding every year, as I think any person following mixed farming should. While to-day even the horse of no particular breeding or characteristics to particularly recommend him (the mongrel, we might say) will command a fair price, I do not recommend his production. The time for the patronage of the impure bred sire at a low stud fee is past. Considerable pressure has been used upon the Government endeavoring to get it to pass an act prohibiting the use in the stud of all impure or unsound sires, and forcing the owners of sires to obtain a certificate of soundness and individuality from inspectors appointed by the Government, before he is allowed to use his horse. The Government has not seen fit to pass such an act, and probably it is as well so. If breeders refuse to patronize horses of this kind their owners will soon see that their chance of profit from that source is gone, and will withdraw them from the stud, and this, I think, is a better way to deal with such men than to endeavor to force retirement by an act of parliament. In order that a man may successfully and profitably breed horses, a few things are essential. In the first place, he must be a fair judge of a horse, he must understand the desirable conformation, action, and characteristics of the horse he is trying to produce, and the greater his knowledge of the internal economy—as bones, muscles, ligaments, nervous, thoracic, and abdominal organs—the

better. He must, provided he intends breeding for the market, carefully study the horse markets and ascertain which classes of horses are in demand at fair prices. Then he must decide which of those classes his particular tastes or fancies, conditions and environments, warrant him in endeavoring to produce. He must fix in his mind a definite standard and then work up to that standard.

He must not expect to reach his ideal all at once, he must have patience and perseverance, must not become discouraged if he be disappointed in his first attempt. Success in breeding horses, as in all other departments of farm management, must be measured by the actual value of the products and the profits that may be derived from them. The relative value of animals depends upon their adaptation to a particular purpose, and the returns they make for expense incurred and food consumed. The man who contemplates breeding horses for profit should carefully study the "Laws of Breeding." He must recognize that reproduction is governed by certain laws. There is no such thing as chance in breeding. All occurrences that appear as such can be explained if we are acquainted with the history of the sires and dams for generations back. We will now mention a few of the principal laws of breeding, some of which the breeder can control, others he cannot.

The Law of Heredity or Similarity.

—The greatest and strongest law of breeding is the law of heredity or similarity, or, in other words, "like begets like." But we have deviations from this law which are often hard or impossible to explain. The law is not absolute. It is necessary for the maintenance of species. In this respect it is absolute; the law of variation is necessary for the improvement thereof. Breeds have been improved and new breeds developed by crossing. The law of heredity is so strong that it teaches us to be careful in the selection of both sires and dams for breeding purposes. It is claimed by many that the intellectual and nervous points of the offspring are imparted to a greater extent by the dam, and the external conformation and constitution more by the sire. (This is a disputed point.) Not only are desirable qualities, as conformation, constitution, disposition, etc., transmitted from the parent to the offspring, but also undesirable qualities, and also diseases, or, at least, a tendency or hereditary predisposition to diseases, such as ophthalmia, spavin, ringbone, and other bone diseases, roars, heaves, chronic cough, etc. Youatt says there is scarcely a disease but is to a certain extent hereditary. If we accept these as facts we will readily perceive the importance of exercising great care in the selection of animals for breeding purposes—both sires and dams.

(To be Continued)

The Farm Home

Christmas at the Old Home- stead.*

By Megyra.

Nothing is more fitting for this old-time festival than the long-established, old-time dinner, with the family party in the old farm house. On this, as on every other holiday, circumstances and surroundings must govern the nature of the entertainment, and we read of, though we do not see, the table graced by the boar's head, though the roast beef and plum pudding still hold their own against newcomers, while the Christmas turkey has grown to be almost a necessity at the Canadian Christmas dinner. In the old home-stead, early in the day, all the children and grandchildren assemble. Each one is filled with the joyous spirit of the day, ready to please and be pleased.

On this one day the ornamental front is taken from the old fireplace, and a glowing fire of wood is kept brightly burning. Around this the children cluster; to most of them it is a novelty, and as they watch the dancing flames the eager chatter of child-voices is heard, comparing notes on the gifts of Santa Claus, while from the depths of many pockets Christmas sweets and treasures are produced.

The grown-up people are just as eager. The daughters and daughters-in-law are soon gathered in the kitchen and pantry, discussing the important affairs being transacted there, peeping into the oven to see the "done-ness" of the turkeys, getting the vegetables boiling, keeping hot the steaming puddings.

The sons and sons-in-law are making room and preparing comforts for the many horses, looking at the favorite cows, and visiting the haunts of boyhood days. Perhaps the son, who, since, with his bride ten years ago, he went to Manitoba has for the first time returned, is thinking of the days of long ago, when with the hay-fork rope he put up a swing for the children on a pleasant Christmas Day, or even when as boys they used to climb to the pigeon hole in the gable end of the barn and after repeating the words,

"One, two, three, the bumble bee,
The rooster crows and away he goes,"

jump far down to the straw below, or of how they used to dig pits and build forts in the hay and straw.

The dinner table, or rather several tables united, extends down the long kitchen and presents an inviting appearance with its snow-white cloth. Its big, blue platters on which the steaming, well-browned turkeys rest in com-

*[This article arrived too late for insertion in last week's issue, where it properly belongs. It is, however, well worth reading, even now, when Christmas is past.—EDITOR.]

pany with an array of vegetables and sauces cooked in the old-time manner. After dinner the grown-up children with their skates and sleighs start for the hills and creek just as their fathers and mothers did a decade or two earlier.

The men (strange to say) produce their guns, set up a target and try their skill at shooting, and perhaps induce their sisters and wives also to try their skill.

As this is the children's day, it is only fitting that they should spend the afternoon in playing the old-time games, and the question arises, "Who'll be it?" "It" is decided by all standing in a row, when one repeats, passing from one child to the next at each syllable, the old rhyme,

"Eeny, meeny, miny, mo,
Catch a nig-ger by the toe;
When he hollers let him go,
Eeny, meeny, miny, mo."

When this has gone around until only one person is left, who is blindfolded, and a merry game of blind man's buff is played. This is followed by "Pussy wants a corner" and "The needle's eye". This game is played by the two largest choosing each some favorite edible, as apples, oranges, nuts or candies. Then they face each other and elevate their clasped hands to form an arch, which forms "the needle's eye," through this the other children pass in a continuous procession as those forming the eye repeat or sing—

"The needle's eye, that none can tie,
The thread is running through
I have caught many a bonny lass,
And now I have caught you,"

when the hands are suddenly lowered, catching some child, who makes a choice between the sweets, and is placed behind the leader. When all are caught a tug of war takes place, which usually ends by a break in the thread, and all fall in a heap on the floor, from which they emerge laughing and ready for a game of "Hunt the Slipper," or "Hide and Seek," which brings to light the basket of fine snow apples and Northern Spys that were saved for this especial occasion. By this time the young folks return, eyes sparkling, cheeks glowing and rosy as the pyramids of apples which the children have arranged on the already-prepared supper table. After supper, when all are assembled, the children sing and recite or more quiet games are played until at an early hour all disperse wishing all a Happy New Year.

"Why did you marry?" asked the old maid of the wife who was generally believed to be unhappy. "Among other reasons," was the pointed reply, "I may mention the fact that I was invited."—*Chicago Post*.

Pleasant Evenings.

It rests with the women of the household to make arrangements by which the evenings may be made pleasant for the entire family, young and old.

Happy evenings at home are strong antidotes to the practice of looking for enjoyment abroad, and in seeking pleasure in forbidden places; for relaxation and recreation will be indulged in somehow by young people, and sometimes by husbands. Happy are they of the home circle who can furnish the needed diversion. A lively game, an interesting book read aloud, or, in musical families, a new song to be practiced, will furnish pastime that will make an evening pass pleasantly. A little forethought during the day, a little pulling of wires that need not appear, will make the whole thing easy; and different ways and means may be provided for making the evening hours pass pleasantly, and a time to be looked forward to with eager anticipation. Each member of the family can help in doing this. We visited once in a large family where it was the duty of each sister, in turn, to provide the evening's entertainment, and there was a pleasant rivalry between them as to whose evening should be the most enjoyable. The brothers entered fully into the spirit of the simple home entertainments, and were as loth to be obliged to spend an evening away from home as their sisters and parents were to have them absent. No wonder the family was a peculiarly united one.

HELEN.

Mending Broken Legs.

Young chickens and other birds frequently break the bones of their legs, and, if properly attended to, these ruptures can be easily cured with very little trouble. As soon as the trouble is noticed the fractured leg must be carefully cleaned and washed with warm water, and then wrapped with a bit of antiseptic cotton. Splints are then prepared for the fractured limb, preferably of split elderwood, the pith of which was taken out. These splints are fastened to the cotton with a drop of glue, and held tightly in place by being wound with linen thread. The bandage and dressing are left undisturbed for from three to four weeks; then the leg is soaked in tepid water until the bandage comes off easily. The fracture will have completely healed up in that time. Canaries and other pet birds can be similarly treated in case of a fracture of a leg, only the elder splints are substituted by pieces of cardboard, and the bandage is left but two weeks on the little winged patients.

Pin Money.

A "Woman Farmer" writes on the above topic in *Home and Farm* as follows:

"An old woman wants to give the farmers' wives a little of her experience in making a little pin money, for there is not one but what would like to handle a little money of her own. If you have good range for turkeys they are profitable. I raised eighty last year, and sold them from 8 to 10 cents per pound, making \$1 apiece. The only thing is to keep the young free of vermin. Use insect powder and a little lard rubbed on the head. Feed bread, add a little black pepper when very young. You must have small grain and peas on a turkey farm.

There is money in butter. A good article sells well, never less than 20 cents. I sold over \$4,000 worth to one man. He ran a boarding school. I made three and four hundred dollars a year. Now I am too old to attend to the dairy; it requires more work and cleanliness than any other business you can follow. I have one acre in Irish potatoes. I plant one acre every year and make some money. Use Paris green for bugs, and watermelons are treated with the same poison. I raised the second crop and got \$1 per bushel—potatoes, I mean.

Anyone living near town and with a family could make good money off strawberries. I have sold some at fair prices.

Late cabbage is very easy to dispose of. Have them come in in September before the Northern cabbage is shipped in. I must acknowledge that all I know about farming I learned from dear old *Home and Farm*. I have read it ever since it was first published, I reckon. May it continue to teach the young farmers for a long time to come."

Anecdotal.

The number of good stories that are floating about Forfarshire in connection with the late Provost Fyfe are legion. One day, when he was only a bailie, he was on the bench of the Burgh Police Court. The first case called was that of an old woman who toddled into court with the utmost concern. "Well, Janet," said the bailie, "fat's brocht ye here?" Officer of the Court—"Please, your Honor, she was caught stealing wood from Balmashanner plantation." Bailie—"That belongs to the toon, disn't it?" Officer of the Court—"Yes, your Honor." Bailie—"Then things hae come to an awfu' pass if we canna tak' a backfu' o' sticks frae oor ain plantins. Gae 'wa wi' ye, man; are ye no ashamed o' yersef? And Janet, ma wumman, whenever ye want ony muir sticks just gang the same gait and get them. Fat's the warid comin' tae?"

Sandy Finlay was plowman on a small farm where the servants got all their meals with the family. One day at dinner Sandy found the remains of a large black snail in his kail. A stormy altercation ensued between Sandy and the farmer, and so strong was the animosity occasioned thereby that subsequently they treated each with silent contempt. One warm afternoon, with a soft, drizzly rain, about three weeks after, the farmer met Sandy on his way from the stable, and, wishing to make friends again, said pleasantly—"This is a fine day for the kail, Sandy." "Yes," said Sandy, grumpily, "and a fine day for the snails."

David Harum's Remedy for a Balky Horse.

"The next day I hitched the new one to th' dem'crat wagin an' put in a lot of straps an' rope an' started off for the East road agin. He went fust rate till we come to about the place where we had the fust trouble, an' sure enough he balked agin. I leaned over and hit him a smart cut on the off shoulder, but he only humped a little, an' never lifted a foot. I hit him another lick, with the self-same result. Then I got down an' I strapped that animal so 't he couldn't move nothing but his head an' tail, an' got back into the buggy. Wa'al, born by it may 'a' ben ten minutes, or it may 'a' ben more or less—it's slow work settin' still behind a balkin' hoss—he was ready to go on his own account, but he couldn't budge. He kind o' looked around, much as to say, 'What on earth's the matter?' an' then he tried another move, an' then another, but no go. Then I got down an' took the hobbles off an' then climbed back into the buggy, an' says 'Cluck' to him, an' off he stepped as clipper as could be, and we went joggin' along all right mebbe two mile, a' when I slowed up, up he come agin. I give him another clip in the same place on the shoulder, an' got down an' tied him up agin, and the same thing happened as before, on'y it didn't take him quite so long to make up his mind about startin', an' we went some further without a hitch. But I had to go through the pufformance the third time before he got it into his head that if he didn't go when I wanted, he couldn't go when he wanted, an' that didn't suit him; an' when he felt the whip on his shoulder it meant bus'nis."

"Was that the end of his balkin'?" asked Mrs. Bixbee.

"I had to give one more go round," said David, "an' after that I didn't have no more trouble with him. He showed symptoms at times, but a touch of the whip on his shoulder alwus fetched him. I alwus carried them straps, though, till the last two or three times."

Saw the Point Himself.

The following story is told of a Philadelphia millionaire, who has been dead some years: A young man came to him one day and asked pecuniary aid to start him in business.

"Do you drink?" asked the millionaire.

"Once in a while."

"Stop it! Stop it for a year and then come and see me." The young man broke off the habit at once, and at the end of the year came to see the millionaire again.

"Do you smoke?" asked the successful man.

"Now and then."

"Stop it! Stop it for a year, and then come and see me again."

The young man went home and broke away from the habit. It took him some time, but finally he worried through the year and presented himself again.

"Do you chew?" asked the philanthropist.

"Yes, I do," was the desperate reply.

"Stop it! Stop it for a year, and then come and see me again."

The young man stopped chewing but he never came back again. When asked by his anxious friends why he never called on the millionaire again he replied that he knew exactly what the man was driving at. "He'd have told me that now that I had stopped drinking, and smoking, and chewing I must have saved enough to start myself in business. And I have."

Definitions.

Embarrassment—Unknown to some people.

Work—The only disease afflicting some individuals.

Affliction—What everyone can carry for someone else.

Mistake—What people with loud mouths never make.

Discontents—Like boys' snow balls rolling down hill, are increased by circulation.

Quarrels—Would be of short duration and soon forgot if the fault was all one sided.

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Conundrums

1. Why does a negro not have the cap on his knee that a white man does?
Because he has one of his own.
2. When does a cow become real estate?
When she is turned into a field.
3. When did the rooster crow where everybody in the world heard him?
In the ark.
4. What two letters do boys delight in, to the annoyance of their elders?
Two T's (to tease).
5. What relation is the door mat to the scraper?
A stepfather (farther).
6. Why was Paul like a horse?
Because he loved Timothy.
7. What is the best way to make a coat last?
Make the pants and vest first.
8. How did Jonah look when he saw the whale coming to swallow him?
He looked down at the mouth.
9. If you suddenly saw a house on fire, what three authors would you name?
Dickens—Howitt—Burns.
10. How do we know that they had beer in the ark?
The kangaroo went in with hops, and the bear was always bruin.
11. What comes after cheese?
Mice.
12. When was pork first introduced into the navy?
When Ham entered the ark.
13. Why was Joseph the straightest man in the Bible?
Because Pharaoh made a ruler of him.
14. Why is a pair of skates like an apple?
They have both caused the fall of man.
15. When does a bed become a vehicle?
When it is a little buggy.
16. What should a clergyman preach about?
About half an hour.
17. What is worse than raining cats and dogs?
Hailing cabs and omnibuses.
18. What toe would you rather kiss than the Pope's?
Mrs. Harriet Beecher Stowe.
19. Why was Dickens a greater man than Shakespeare?
Because Shakespeare wrote well, but Dickens wrote Weller.
20. Why is A like twelve o'clock?
Because it's the middle of day.
21. What is smaller than an ant's mouth?
What goes into it.
22. What table has not a leg to stand upon?
The multiplication table.
23. Why is gooseberry jam like counterfeit money?
Because it's not currant.
24. When may a chair be said to dislike you?
When it can't bear you.

DISPERSION SALE

—OF—
Shorthorn, Polled Angus and Jersey Cattle. We will offer our entire herd of Shorthorn Cattle, 17 females and 4 bulls; also 2 Polled Angus Bulls and 3 Jersey females, along with a number of choice Yorkshire Boars and Sows, by Public Auction, on Dec. 29, 1899, at 2 p.m. **BOWMAN BROS.,** Mt. Forest. Send for Catalogue.

BIG MONEY FOR AGENTS

THE STAR RIVETER



For MENDING HARNESS, BELTING, etc. Indispensable to Farmers, Liverymen and Threshermen. **STAR RIVETER** complete, with 50 tubular rivets, \$1.00. Best selling article ever introduced. Agents write for special prices and territory.

ENTERPRISE MAN'G CO., - TORONTO, ONT.

VICTOR HAY PRESS

AUTOMATIC FOLDER,



Double acting Perpetual Hay and Straw Press

One reason why these presses are the best. No lifting out of ground with lifting jacks, etc., and no telescoping of machines and power to bring same in condition for moving, as experienced by other presses.

THE STEVENS' MFG. CO.

Branch Winnipeg, Man.

LONDON, ONT.



WHAT-IS-IT?

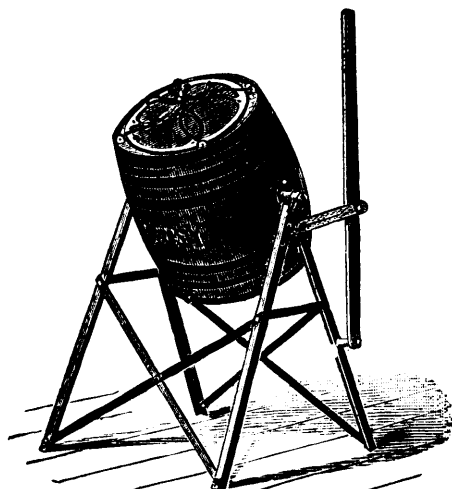
Most comical surprise. Made of vegetable ivory. Extended, measures over a foot. Closely resembles spotted reptile with shining eyes and red flaming tongue. Greatest fun-maker out. Sent postpaid for 10c. **JOHNSTON & MCFARLANE,** 71 Yonge St., Toronto, Can.



STAMPS

The daintiest little Stamp Box you ever saw. Made of silver aluminum in the form of a book. Your initials beautifully engraved on the cover free of charge. You will want a dozen for your friends when you get one. Sample postpaid ten cents. **Johnston & McFarlane,** Toronto, Can.

The "Daisy" Barrel Churn



Special features for season of 1900:—
Angle Steel Stand with extra patented centre brace. Patented Double Levers or Bow. Wheels on the feet. Hardened and Polished Steel Ball-Bearings. Patent cover and drip tube.
Sizes—No. 0, 1, 2, 3, 4, and 5.
The Barrels are made of the best imported white oak staves, and will last many years.
Manufactured only by

THE WORTMAN & WARD MFG. CO. LIMITED
Head Office, LONDON, Ont. Eastern Branch, 60 McGill St., Montreal

VIRGINIA FARMS for SALE—Good land, good neighbors, schools and churches convenient. Mild, healthy climate, free from extremes of both heat and cold. Low prices and easy terms. Write for free catalogue. **R. E. ORAFFIN & CO., (inc.)** Richmond, Va.

**Farmers,
their**

Your spare time can be very profitably used in a genteel money-making diversion right at home.

Sons and

We want your services, and will pay you liberally for the time you spend in the interest of our work.

Daughters

If you are interested in making money, write

J. L. NICHOLS & CO.
33 Richmond Street West,
TORONTO, CAN.

Cut this out.

When Writing to Advertisers kindly mention **FARMING.**

Bill Nye's Feeding Experiments.

Mr. Nye seems to be a farmer as well as a humorist. He feeds bran-mash to his cows liberally. He believes there would be no poor cows if they could all get enough bran-mash. Below I give his experience in feeding bran-mash to a sickly "taffy-colored" Jersey:

At first she would shove her nose into it up to the top of the lower eyelid; then, looking far away over the purple hills, she would blow the bran across the State, and what "did not go up the sleeves of my overcoat would freckle up the family carriage." But after awhile she ate it greedily, and soon the birds sang again in her sorrowing heart. She forgot her grief; had no more sour stomach, flashes of heat, ringing in the ears, dizziness, or tired feelings.

"Last fall she ate not only three meals a day, but also a scarlet geranium belonging to my wife; a Mackinaw straw hat of mine; two yards of brocaded ribbon from the costume of a young lady from St. Louis, who was patting her on her head; \$4 worth of gladiolis; a child's shirt, and a dish of blanc-mange, which was cooling on the rain-barrel for the pastor."

"Rob," said Tom, "which is the most dangerous word to pronounce in the English language?"

"Don't know, unless it's a swearing word."

"Pooh!" said Tom, "it's stumbled, because you are sure to get a tumble between the first and last letter."

"Ha, ha!" said Rob. "Now I've got one for you. I found it one day in the paper. Which is the longest word in the English language?"

"Incomprehensibility," said Tom promptly.

"No, sir; it's smiles, because there's a whole mile between the first and last letter."

"Ho, ho!" cried Tom, "that's nothing, I know a word that has over three miles between its beginning and ending."

"What's that?" asked Rob faintly.

"Belcaguered," said Tom.

"Well, little boy, what's your name?"

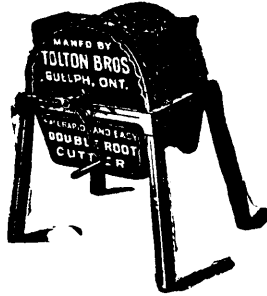
"Shadrach Nebuchadnezzar Jones."

"Who gave you that name?"

"I don't know. But if I find out when I get older they'll be sorry for it."

A Scottish divine was greatly upset by the frequency and freedom of the language used on the links by a much-respected elder of his church. He pointed out that such indulgence was unseemly, and suggested that every time he gave way to a strong word he should put a stone in his pocket as a reminder. At the close of play the elder walked up to his pastor, and slowly emptied his pockets of a little heap of pebbles, saying disconsolately: "These are the mono-syllables. I fear the others will need a cart!"—*Christian Life.*

**TOLTON
NO. 1 DOUBLE ROOT CUTTER**



Points of Merit :

1. To change from pulping to slicing is but the work of a moment.
2. There are two separate wheels, one for pulping and the other for slicing.
3. The united force of both wheels is always used in doing the work in either capacity.
4. The hopper is between the wheels, and does not choke.

THE ONLY DOUBLE ROOT CUTTER MANUFACTURED.

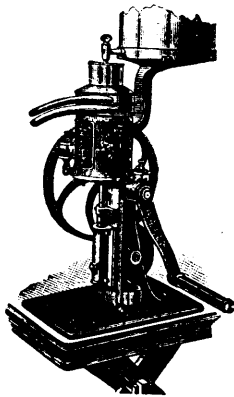
Fitted with Roller Bearings, Steel Shafting and all that is latest and best in principle, material and construction.

TOLTON BROS., - - GUELPH

Another Grand Victory at the Iowa State Convention

FOR

Alpha DeLaval



Out of 154 Separator-made butter entries, 145 were **Alpha DeLaval**

First prize and Grand Sweepstakes went to A. G. Armstrong Collins, who was owner of a **DeLaval** Machine.

You might as well try to make water run up hill from natural gravity, as to try to make any "hollow-bowl" Separator do the work of an Alpha Disc Machine.

Anyone who has the slightest conception of the principles of centrifugal separation, knows that no human agency can accomplish such a result. This is where the **Alpha DeLaval** differs from all others.

Full particulars and information with catalogue for the asking.

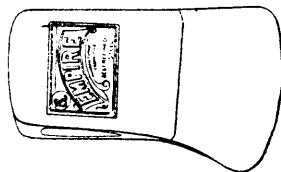
The Canadian Dairy Supply Co.

327 COMMISSIONERS STREET, - -

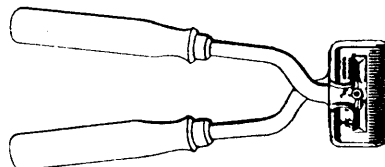
MONTREAL, QUE.

Seasonable Needs

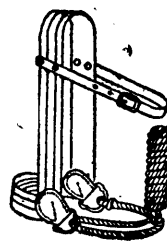
AT REASONABLE PRICES



Magnificent value in Axes from 49c each upwards.



A guaranteed Horse Clipper for 98c.
A good Horse Singe for 25c.



Halters and Headstalls, good heavy sial leather, 3 for 25c.

Splendid heavy Leather Headstalls, with leather shank, special value at 75c.

Cattle Chains



A splendid variety of the best makes and styles, at 10c each and upwards

Mail Orders receive prompt attention at . . .

RUSSILL'S AT THE MARKET

159 KING ST. EAST, TORONTO

GRATEFUL FOR HIS LUCK.

"And you swear you never accepted a bribe in the late election?" asked the Judge.

"I'd swear it all day long, Yer Honner!"

"Did you not have \$100 in your pocket on the morning of election, when you did not possess a dollar in the world previous to that?"

"I did, Yer Honner, but I found it in the big road nigh the candertate's house, an' when I tol' him 'bout it he said: 'All right—findin' is keepin'. Jest go 'long with it! An' I wuz so grateful ter him, Yer Honner, that I rolled up my sleeves an' give him the best votes I had in the family!"—*Atlanta Constitution.*

WHAT HE WAS LOOKING FOR.

"I tell you, sir," he said, "the girls of to-day are not properly educated. Before I marry I want to find a girl who is able to cook."

"Yes," returned the other disinterestedly.

"Dcn't you?"

"Can't say that I care particularly about that."

"What kind of a girl do you want, then?"

"What kind do I want? Oh, I want a girl who is able to hire a cook, and incidentally a butler and a coachman and a footman and all the rest that go to make life comfortable."—*Chicago Post.*

HE HAD REFORMED.

Colonel Bell, the United States consul at Sydney, caused some amusement in court recently. He was called as a witness in a divorce court to say whether a marriage certificate produced would be accepted in the American courts as proof of marriage.

"You are a lawyer, I think, Colonel Bell?" asked the Judge.

"Well, no sir," he said, slowly and thoughtfully; "I was once, but I have reformed."—*British Australasian.*

"It beats me!" he said, as he laid down his newspaper thoughtfully.

"Whut air ye talkin' about?" asked his wife anxiously.

"L'teratoor," he answered. "'Course we've seen it showed up in the newspapers, time and ag'in, how all an' editor does is ter set down with a pot o' paste an' a pair o' scissors, an' cut out things ter put inter 'is paper."

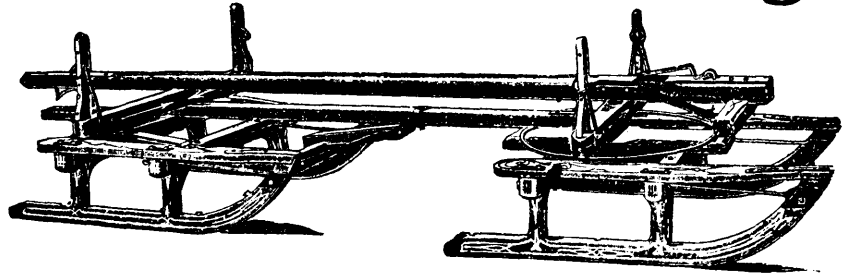
"Certainly. I don't see nothin' so beatin' about that."

"But this is the question. Some feller hez ter git them pieces up in the fust place. It never struck me afore, but I'd like ter know who the feller is that starts in an' gits up them there things for the editors ter cut out."—*Detroit Free Press.*

The Speight

Improved Ontario

Two * Bench * Sleigh



—Adapted for General Farm Work
—in all parts of Ontario.

2-inch Runner, 2x½ Steel Shoe.

Full Circle and Bolster Plates, Clips on Benches.

Log Bunks and Clevises Furnished Extra if Required.

Width between Bolsters 40 and 42½.

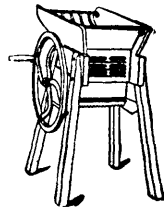
Write us for Prices and Terms.

The Speight Wagon Co., Markham.

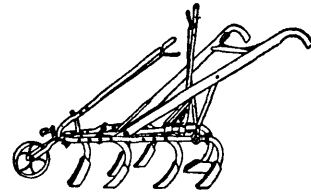
Toronto Warehouse, 102 FRONT E.



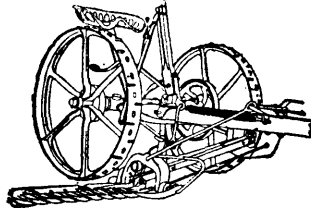
THE MAXWELL BINDER.



ROOT CUTTER.



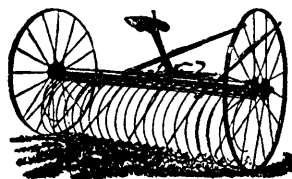
SCUFFLER.



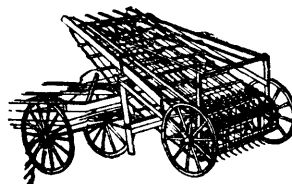
THE MAXWELL MOWER.



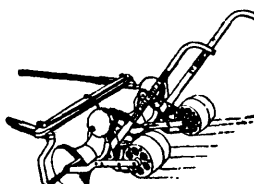
TEDDER.



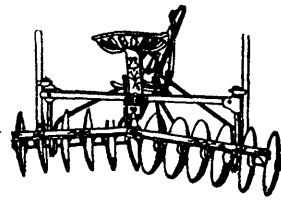
STEEL HORSE RAKE.



LOADER.



TURNIP SOWER.



DISK HARROW.

David Maxwell & Sons

ST. MARYS, ONTARIO, CANADA

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REAPERS, HAY RAKES, HAY TEDDERS,
HAY LOADERS, SCUFFLERS,
DISK HARROWS, TURNIP SOWERS, ROOT
CUTTERS, WHEELBARROWS, ETC.

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UNOCCUPIED TERRITORY.

Farming.

A PAPER FOR FARMERS AND STOCKMEN.

Managing Director, D. T. McAINSM
Editor, J. W. WHEATON

Farming is a paper for farmers and stockmen, published weekly, with illustrations. The subscription price is one dollar a year, payable in advance.

Postage is prepaid by the publishers for all subscriptions in Canada and the United States. For all other countries in the Postal Union add fifty cents for postage.

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Advertising Rates on application.

Letters should be addressed:

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CONFEDERATION LIFE BUILDING,
TORONTO.

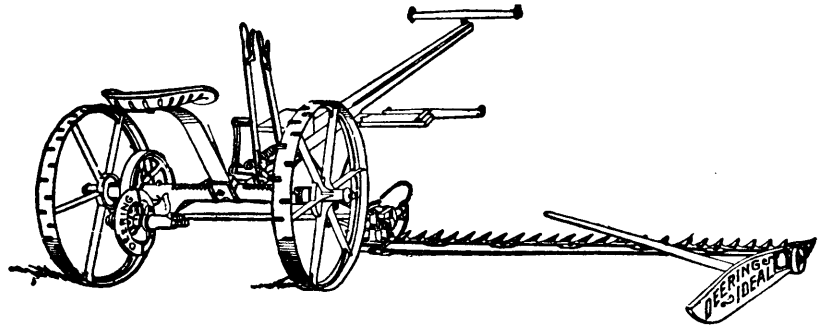
Eastern Dairymen.

The twenty-third annual convention of the Eastern Ontario Butter and Cheese Association, will be held at Madoc, Ont., on January 10, 11, and 12, 1900. A good programme has been provided. One good feature, we notice in connection with it is that fully half the time of the convention is allowed for discussion. It is a mistake to have too many addresses on an occasion of this kind. Among the speakers who are to address the gathering are: Hon. Sydney Fisher, Minister of Agriculture, Ottawa; Hon. John Dryden, Minister of Agriculture, Toronto; Sir McKenz'ie Bowell, Prof. Robertson, Prof. Dean, C. C. James, Deputy of Agriculture, Toronto; Dr. Mills, Dr. Connell, Prof. Grisdale, Prof. Heart, A. W. Campbell, Provincial Road Instructor, and others. For programme giving full particulars *re* reduced railway rates, etc., write R. G. Murphy, Secretary, Elgin, Ont.

School of Horticulture.

If the number of applications warrant the undertaking, a short school of horticulture will be held at the R. I. College, Kingston, R. I., beginning February 26th, 1900, and continuing two weeks. The plan will be to crowd all the clear-cut, practical instruction possible into this brief space of time. To that end, the aid of practical men who, have made a success in different lines of horticulture, will be elicited. Special effort will also be made to familiarize students with horticultural literature, in order that they may know where to look for information when needed. The work will include a study of soils, fertilizers, plant life, fruits, vegetables, ornamental gardening, propagation, spraying, etc. Especial attention will

The Machines that made America Famous



DEERING IDEAL MOWER

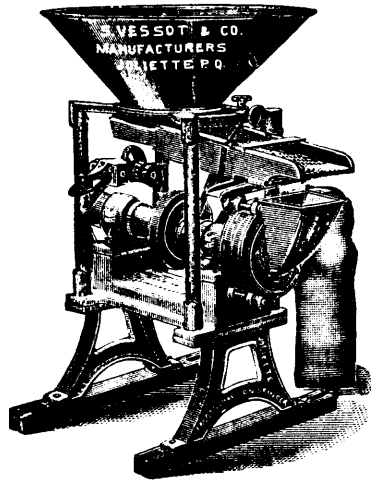
When you see a Mower cutting, in the harvest, toughest grass without backing the team or bending a straw, you will find the name "DEERING" on it. That is why

It Pays to use DEERING Machines.

THE DEERING HARVESTER CO.

Main Office & Factory:
CHICAGO, ILL.

Permanent Branch Houses:
TORONTO, ONT.
LONDON, ONT.
MONTREAL, QUE.
WINNIPEG, MAN.



We make the Best Grinder

ON EARTH.

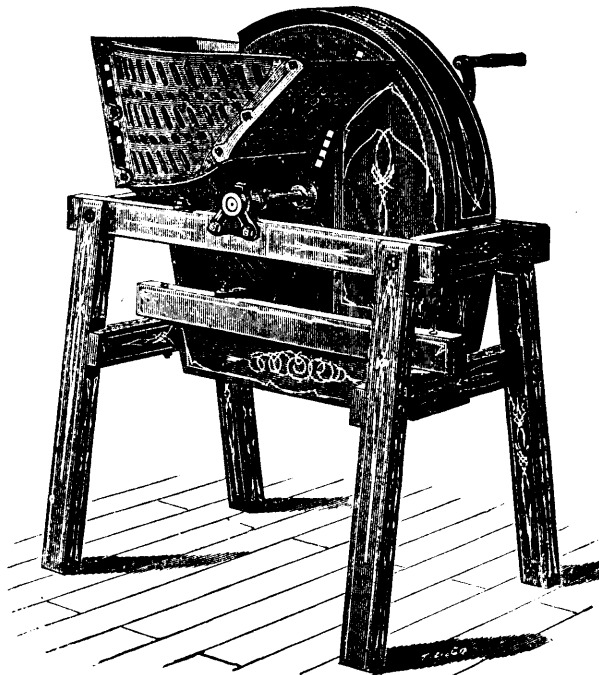
Don't take our word but read what people say:

"Please find enclosed settlement in full for 12-inch Champion Model 99 (Sectional Plate Grinder). I am perfectly satisfied with it and consider it worth its cost twice over more than any solid plate mill which I have used for five years. I have ground one thousand bags before sharpening the plates and five hundred since and they are doing well yet. I will let you know their limit when worn out."
Signed, J. S. ZEHR.
Wellsley, Dec. 7, 1899.

Ask for Catalogue and Price.

S. VESSOT & CO.,
Joliette, P.Q.

Sole Manufacturers.



THE NOXON CO. (LIMITED)

Ingersoll, Ont.

MANUFACTURERS OF

HIGH-CLASS FARM IMPLEMENTS

Please write for Price List and Descriptive Catalogue.

New Root Cutter (Pulper and Slicer combined)

be given to bush-fruits. Expenses moderate. For further information, address

FRED W. CARD,
Professor of Horticulture,
Kingston, R. I.

National Live Stock Convention

The third annual convention of the National Live Stock Association, which convenes at Fort Worth, Texas, on January 16th, 1900, promises to be the most important and most largely attended live stock meeting in the history of the United States. The leading authorities of the country will be present to discuss subjects of interest to every branch of the industry, and delegates and visitors from nearly every State in the Union will be in attendance.

Indian Wool Growers.

The Indian wool growers will meet in annual session January 2nd, 1.30 p.m., 1900, at Indianapolis, Ind., in the Capitol Building, and just now when the sheep interest is "expanding" and experiencing such a rebound from the deep depression of the past few years, sheep men should meet as do the cattle men, fruit men, and the parties interested in branches of live stock, and take council together. "All men know all things," and it is by communication that we learn. There is never any intelligent man who cannot tell some other man something new. Men differ as the leaves of the forest do—no two of which have ever yet been found precisely alike. So each of us looking at familiar things from different standpoints will take some distinct impression from them, and these will present the subject to others in a different way from that taken by them. We are enjoined "to do good, and communicate one with another," and in this way what one learns by his own experience he contributes to the general good-knowledge of his fellow-workers. A cordial invitation is extended to all; and let all the old members make an effort to bring his brother sheep-men along, and let us have a general good time, and like wool hang together in all things for a good meeting, and for the general good of all.

J. W. ROBE, Sec.

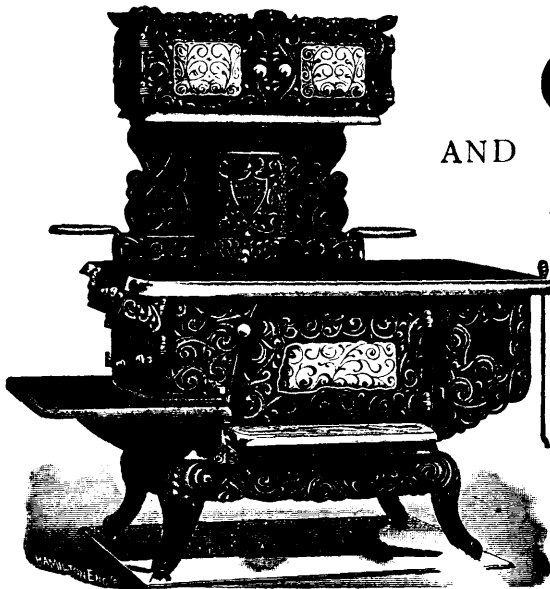
Buttermilk.

Buttermilk is occasionally fed to calves. Its feeding value is not very far below that of skim-milk, but it has to be fed with care, as it is apt to upset the digestion unless it is fed quite fresh, and, therefore, if possible, it should be kept for feeding to pigs, as they will do better on it than calves.

Some claim to have been successful in raising calves, even when the whey fed was soured, but this plan is not to be commended, and for everyone who meets success with feeding sour

The Aberdeen
FOR COAL AND WOOD.

The Victorian
FOR WOOD ONLY.



Quick
AND
Even

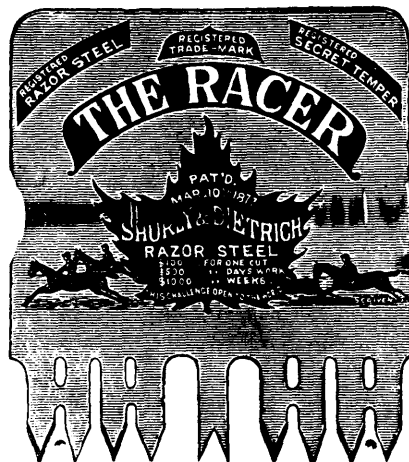
are essential points in an oven for satisfactory baking. You'll find these points will never fail you in these excellent ranges—perfect stoves in every way—right-down-to-the-hour in the latest improvements—bake well, cook well, draw well, economical in fuel, handsomest in design, and beautifully ornamented.

Write for Booklet telling what 159 people have to say about their good qualities.

The Copp Brothers Co., Hamilton
BRANCHES—TORONTO AND WINNIPEG

The Razor Steel

SECRET TEMPER, CROSS-CUT SAW



WE take pleasure in offering to the public a Saw manufactured of the finest quality of steel and a temper which toughens and refines the steel, gives a keener cutting edge and holds it longer than by any process known. A Saw, to cut fast, "must hold a keen cutting edge."

This secret process of temper is known and used only by ourselves.

These saws are elliptic ground thin back, requiring less set than any saws now made, perfect taper from tooth to back.

Now, we ask you, when you go to buy a saw, to ask for the Maple Leaf, Razor Steel, Secret Temper Saw, and if you are told that some other Saw is as good ask your merchant to let you take them both home and try them, and keep the one you like best.

Silver steel is no longer a guarantee of quality, as some of the poorest steel made is now branded silver steel. We have the sole right for the "Razor Steel" brand.

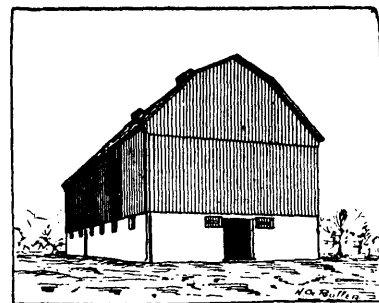
It does not pay to buy a Saw for one dollar less and lose 25 cents per day in labor. Your Saw must hold a keen edge to do a large day's work.

Thousands of these Saws are shipped to the United States and sold at a higher price than the best American Saws.

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SHURLY & DIETRICH
GALT ONT.

LIGHTNING WELL MACHY
IS THE STANDARD
STEAM PUMPS, AIR LIFTS,
GASOLINE ENGINES
WRITE FOR CIRCULAR AND
THE AMERICAN WELL WORKS
AURORA, ILL - CHICAGO - DALLAS, TEX.

**Thorold
Cement...**



Do you intend building Barn Basements, or Stable Walls, or Walls of any kind? if so, use "Battle's Thorold Cement," which can truly be called the

Farmer's Favorite Cement

Mr. J. V. Cooper, of Cedarville Stock Farm, Picton, Ont., the well-known breeder of Shorthorn Durhams and Oxford Down Sheep, who used a large carload, says: "Your cement is a credit to you, and I am more than pleased with my concrete walls."

Write us for
Free Pamphlet and Prices

ESTATE OF JOHN BATTLE
THOROLD, ONT.

SCHOOLS.

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CANADA BUSINESS COLLEGE

Hamilton, - - Ontario.

The leading Canadian Business College. Connected with over a thousand business firms through its graduates. For beautiful prospectus

Write—R. E. GALLAGHER, Principal.

STRATFORD.

Winter Term opens Jan. 2.

Central Business College

STRATFORD, ONT.

A large advertisement is not necessary to tell you that we have the best commercial school. Get our catalogue. It gives you full particulars. In one month 34 of our recent students notified us that they had taken good situations. We have a staff of nine male teachers.

W. J. ELLIOTT, Principal

TORONTO

Situations

In the business field are constantly opening to those who are qualified to fill them.

THE

Central Business College

TORONTO

received these calls for help within three days from Oct. 30th.—Bradstreet's Agency, lady, stenographer; H. H. Williams, Real Estate, young man, clerk and stenographer; J. D. King & Co., lady, stenographer; Gowans, Kent & Co., lady, bookkeeper; King, Darrell Produce Co., young man, bookkeeping and stenography. Our students secure such places as soon as they become qualified for them. It will pay to prepare for them. Correspondence invited.

W. H. SHAW, Principal

Prepare Yourself

For a good paying position by spending a short time with us.

Open the entire year—day and evening

INDIVIDUAL INSTRUCTION

NIMMO & HARRISON

Business and Shorthand College

Corner Yonge and College Streets,

TORONTO

why there will be ninety-nine whose calves will scour, be off their feed, and die. Nevertheless, if they can be obtained and fed to calves in a fairly sweet condition good success can be secured in raising them, if it is supplemented by a suitable food, such as oil meal. This furnishes a good proportion of muscle-forming food and of ash, which is made up of phosphate of lime, magnesia, potash, soda and other substances which are needed to build up the bones and frame of the calf. Later on, when the calf is about a month old, one-quarter pound of wheat bran, ground oats and barley to each gallon of whey is added. This extra food given with the whey is certainly not expensive, not costing more than \$5.50 to feed a calf on for six months supposing the calf takes four gallons a day. Calves thus fed have weighed 500 pounds at that age.

Stock Notes

KERRY CATTLE FOR BERMUDA.—Messrs. Alfred Mansell & Co., live stock exporters, Shrewsbury, shipped on Tuesday last from the port of London, per the ss. *Cayo Mono*, to the island of Bermuda five pedigree Kerry heifers and two Kerry bulls. The cattle are destined for the farmers of Bermuda, who occupy some of the poorest land, where there is practically no grass land, but rocky hillsides with but little soil and herbage. It is to be hoped the experiment will prove a success, and that the hardy Kerry has a future before it on the island.

The *Family Herald and Weekly Star*, of Montreal, in its issue of December 13th, states that "Mrs. Smith, of Roscommon county, Ireland, has sold her first prize bronze turkey gobbler at London Dairy Show for \$150." This bird was bred by W. J. Bell, Angus, Ont., and not from stock imported from the States, as above notice would lead one to infer. During the past five years Mrs. Smith has imported from Mr. Bell over fifty turkeys, and from the States just five.

OXFORDS IN DEMAND.—Smith Evans, Gourock, Ont., writes: Please send in my account for advertisement in FARMING as soon as my contract expires, which commenced in Toronto Exhibition number for 13 times. Then please withdraw the same for a time, as I sold all my surplus stock in October. I found FARMING an excellent paper for advertising stock. I had great success both in the show ring and in the way of sales this fall and could have sold a large number more if I had had them to spare. There has been a great enquiry for Oxford ewes and ewe lambs this fall. I have had orders since August for lambs for 1900 from three different parties. How is that for Oxfords? My Oxfords are coming into winter quarters in good shape. I have done very little feeding yet. It has been a fine fall for sheep.

ROUND UP OF THE 19TH CENTURY.—John Jackson & Son, of Abingdon, Ont., have broken all previous records in the show ring; beginning with the Toronto Industrial and ending with the Provincial Fat Stock Show at London, have been awarded 102 first prizes, 37 seconds, 19 thirds, 3 fourths and 1 fifth on their Southdown sheep, with sales extending from Newfoundland to British Columbia, and in nearly every state from Maine to Kansas. Who can show a better prize record?

FINE BRONZE TURKEYS.—James Ford, Drumquin, Ont., has 60 head of first prize turkeys to dispose of. This testimonial taken from several will speak for itself:

"Friend,—Now hold your breath while I tell you the Bronze Tom I bought of you won first prize. Wishing you and your mammoth bronze a world of success,

I remain your respectfully,
Princeton, Ill." JAS. GARVIN.

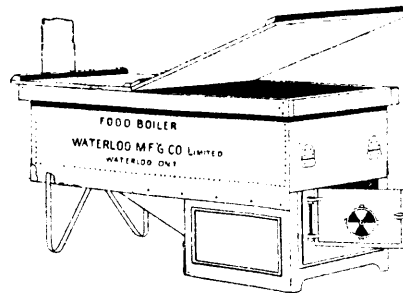
Leo, of our Jumbo strain, we proudly say is the best plumaged bird we ever saw. His marking is very clear and distinct, scoring 98 points.

Those who are looking for the best at reasonable prices cannot do better than correspond with James Ford, Drumquin.

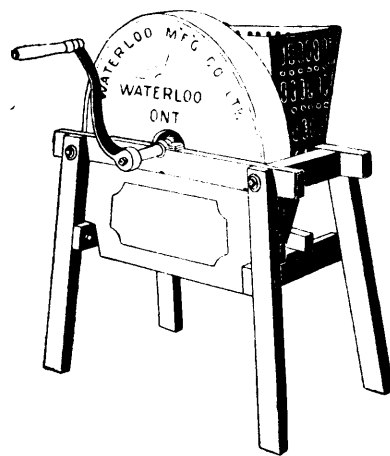
THE LARGEST PIE.

Probably the biggest pie ever baked was the big feature at a reception to Artie Phillips, a member of the Twentieth Kansas Regiment, on his return to his home in Mulvane. This soldier boy, in one of his letters from Manila, said he would give four years of his life for one of those apple pies such as his mother used to make. At the reception tendered him by the people of Mulvane he was presented with a pie measuring five feet one way by two feet the other. In the pie were two and a half bushels of apples, ten pounds of flour, ten pounds of sugar, six pounds of lard, two pounds of butter, and a commensurate amount of other truck which goes in this kind of pastry. The pie was cut and served, and it is said that "it didn't last longer than a keg of beer in a prohibition town."

Food Boiler



Root Pulper



Side Wheel or Cylinder—Steel Shafts fitted with roller bearings—Reversible Knives. Can be used as Slicer or Pulper.

Write for Circulars.

WATERLOO MANFG. CO.
LIMITED
WATERLOO, ONTARIO

Market Review and Forecast

Office of FARMING,
Confederation Life Building,
Toronto, Dec. 26th, 1899.

Stock-taking and balancing up accounts are now the order of the day in large business concerns, while the retailers are busy with the holiday trade. Merchants have every reason to be satisfied with the year's business and the prospect for the new one. There has been an enormous shrinkage in stock values during the week, and a panicky feeling at the leading American centres. Canada has not been exempt from this set-back, and some very heavy losses have occurred in Toronto and Montreal. These have, however, been confined to speculation. There is an unprecedented stringency in the money market.

Wheat.

The wheat situation shows little change of a permanent character. There was a flutter in the speculative market due to a rumor of a European combine against Great Britain. But as there is not more likelihood of this than there was ten months ago, any advance caused by it cannot be relied upon. Should there, however, be any foundation for these rumors, there would certainly be a rapid advance in prices. The world's supply in sight has decreased 639,000 bushels on the week to 78,893,000 bushels as compared with 57,119,000 bushels a year ago at this time. In the States farmers are still offering grain sparingly and seem to have confidence in higher prices. Speaking of the market situation the *Price Current* says: "All things considered, the elements which count for higher prices for wheat for some time to come appear to be confronted with factors of a counter nature calculated to be fully as influential in shaping the course of values." At Montreal No. 1 hard Manitoba has been in good demand for export. From 150,000 to 200,000 bushels of wheat are said to have been sold at Fort William during the week. The market here is dull and easy at 65c. for red and white west, goose 69c., and spring 65c. east. On the Toronto farmers' market red and white bring 68 to 69½c., spring 68 to 69c., and goose 70 to 71½c. per bushel.

Oats and Barley.

Canadian oats continue in good demand in Britain. There is considerable demand at Montreal for export. There is reported to be plenty of oats in the country but farmers are holding for better prices. The market here is steady at 25½ to 26c. west. On Toronto farmers' market oats bring 28 to 29c. per bushel.

The barley market is quiet, though a little more is doing at some Ontario points for export. Quotations here are 38c. for No. 2 west, and 35 to 36c. for feed barley. On the farmers' market barley brings 43 to 44½c. per bushel.

Peas and Corn.

Peas are a little quieter with not much business doing. 57½c. north and west are the quotations here for immediate shipment. On Toronto farmers' market peas bring 60c. per bushel.

The market for cash corn in the United States is firm, owing to feeding operations. American corn is quoted here at 40c. on track, Toronto.

Bran and Shorts.

Montreal market is firm, and Ontario winter wheat bran is selling there at \$15 to \$15.75 in car lots, Manitoba bran at \$14 to \$14.50 in bags, and shorts at \$16.50 to \$17.50 as to grade. City mills here sell bran at \$14 and shorts at \$16 in car lots f.o.b. Toronto.

Eggs and Poultry.

Canadian eggs sell well in England. At Montreal new-laid eggs are firm, and prices have advanced to 23 to 25c. in large lots. There is a good demand here, though receipts have been fairly large. New-laid eggs are quoted at 19 to 20c. and held stock at 17 to 18c. in large lots. On Toronto farmers' market new-laid eggs bring 30 to 35c. per dozen.

Dressed poultry has been in good demand at Montreal, and some choice dry-picked turkeys sold at 10 to 10½c. per lb., while ordinary lots sold at 9 to 9½c. per lb. Chickens have also been in good demand at 8 to 8½c. for choice dry-picked, 6 to 7c. for choice large geese, and 9 to 9½c. per lb. for choice ducks. Receipts have been large here, with a large proportion of small turkeys. Quotations in large lots are 8 to 9c. for turkeys, and 6 to 6½c. per lb. for geese; 25 to 30c. per pair for chickens, and 40 to 60c. for ducks. On Toronto farmers' market chickens bring 40 to 70c.; ducks, 60 to 80c. per pair; geese, 6 to 7c., and turkeys, 9 to 10c. per lb.

Potatoes.

Potatoes are quoted at 45 to 47c. per bag in car lots at Montreal. Prices are the same here at 37 to 40c. in car lots. On the farmers' market potatoes fetch 40 to 50c. per bag.

Apples.

The bulk of the apples are now in shippers' hands and out of the control of the grower. There is little change to report at Montreal, where quotations are \$2.75 to \$3.50 per bbl. for No. 1, and \$1.60 to \$2 for No. 2. On the Toronto farmers' market apples bring \$1 to \$2 per bbl.

Hay and Straw.

The hay trade continues active owing to the demand for South Africa. What is known as the *Lourey* bale has an additional value for this purpose owing to the economy in space it gives. At Montreal prices for baled hay are No. 1, \$9.50 to \$10.50; No. 2, \$7.50 to \$8; and clover, \$7.50 per ton. The *Trade Bulletin* has this to say on the hay trade with South Africa: "It is reported that about 2,000 tons of hay have been purchased in Ontario for shipment from New York to South Africa, but the price did not transpire, although it is said the hay was bought at cheaper rates than it could have been picked up in this province, where we know of over 400 tons having been bought at country points at \$6.75 to \$7 for clover and No. 2. Whether or not the above purchase of hay for the Cape in Ontario is correct, we know for a fact that Mr. Joseph Quintal, of this city, has just filled an order for 2,500 tons for the Cape, to be shipped from New York at about the prices quoted above at country points."

Prices here are about the same at \$8.50 to \$9.50 in car lots, and baled straw at \$4 to \$4.50 per ton. On Toronto farmers' market timothy brings \$10.00 to \$12.00; mixed, \$8.50 to \$9.50; sheaf straw, \$8 to \$9; and loose straw, \$4 to \$5 per ton.

Seeds.

Some Ontario clover seed is being shipped to England. Red clover is worth \$4.25 to \$5 per bushel at Montreal, Timothy \$1.35 to \$1.75, and flax seed \$1.25 to \$1.75. On Toronto farmers' market red clover brings \$4.25 to \$5.20, Alsike \$5 to \$7, and white clover \$7 to \$8 per bushel.

Cheese.

During the week trade in cheese has not been as active as was expected some time ago. The market is, however, strong, and the lull is said to be largely due to the holiday season.

The English market keeps steady, and stocks are light. Finest Septembers are quoted at Montreal at 12c. to 12½c., finest Octobers at 11½ to 12c., and Novembers at 11½ to 11¾c., and undergrades 10½ to 11¼c. per lb. These are satisfactory prices, but as all the make of 1899 is now out of factorymen's hands they will not benefit the producer much.

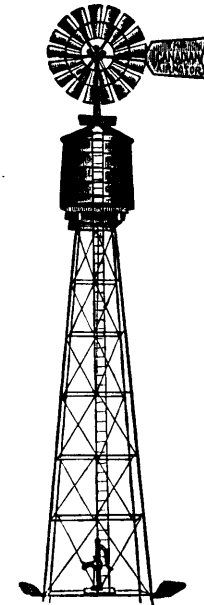
Butter.

The creamery butter market was slightly off during the week with prices a shade less than the week previous. The market is, however, steady. Sales have been made for export at 21½c., and for the local trade at Montreal at 22c. per lb. The *Trade Bulletin* London cable of Dec. 21st re Canadian butter reads thus: "During the past week prices have been very irregular, and these have been guided by the stocks in different dealers' hands. There is no choice Canadian offering, the winter creameries arriving being unsatisfactory in quality. A lot of well-kept October creamery sold this week at 106s., but this is no criterion of the market, as winter creameries are selling at 98s. to 102s. Australian arrives pretty freely." Western dairy butter continues scarce at Montreal where good quality brings from 17c. to 18c. in large lots. At Toronto there is not much change in the prices for creamery butter which is quoted at 21c. to 22c. in boxes and 22c. to 23c. in prints. Choice dairy butter is scarce and in good demand at 19c. to 20c. for lb. rolls, 18c. to 19c. for large rolls and 16c. to 18c. for tubs. On the farmers' market butter brings 20c. to 25c. per lb.

Wool.

It is reported at Montreal, that Canadian fleece wool is hard to get. As high as 21c. to 22 has been paid for fleece 2c. more than was paid the week previous. Country dealers state that they can get as much for fleece as for pulled. There is a little improvement here, where 16 to 17c. are the quotations for fleece and pulled.

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Pumps, Tanks, Grind-
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Basins.

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TORONTO, ONT.

Cattle.

The general cattle situation shows little change, with things quieter for all except prime Christmas beef. The run of live stock at Toronto market on Friday was light. General trade was only fair, with prime butchers' in demand.

Export Cattle.—Choice lots of these sold at \$4.75 to \$5, and light ones at \$4.25 to \$4.50 per cwt. Heavy export bulls sold at \$3.80 to \$4.75, and light ones at \$3.25 to \$3.50 per cwt.

Butchers' Cattle.—Choice picked lots of these, equal in quality to the best exporters, but not so heavy, sold at \$4.20 to \$4.40, good butchers' cattle at \$3.70 to \$4, medium at \$3.40 to \$3.60, common at \$3.10 to \$3.30, and inferior at \$2.60 to \$2.90 per cwt.

Feeders.—Choice, heavy, well-bred steers, 1,050 to 1,200 lbs. each, were scarce with prices firm at \$3.75 to \$3.85, and \$4 paid for some short keepers. Rough steers of the same weight sold at \$3.40 to \$3.60. Light steers, weighing 800 to 900 lbs. each, sold at \$3.20 to \$3.40 per cwt., and feeding bulls at \$2.75 to \$3 per cwt.

Stockers.—Buffalo stockers are easier. Yearling steers, 500 to 600 lbs in weight, bring \$2.60 to \$2.75, and white and black heifers and steers, \$2 to \$2.60 per cwt.

Milch Cows.—Prices for these are firm at \$30 to \$50 each as to quality.

Calves.—These have been in moderate supply at Buffalo where the demand is good. At Toronto on Friday calves sold at \$4 to \$10 each.

Sheep and Lambs.

The Buffalo market is active and higher for lambs with a good demand for handy sheep and yearlings. Heavy ewe sheep show little improvement. At Toronto stock market on Friday sheep were firm at \$3 to \$3.40 per cwt. for ewes and \$2.50 for bucks. Butchers' sheep sold at \$2 to \$2.50 each. Lambs sold at \$3.50 to \$4 per cwt., with a few choice lots of ewes and wethers for export selling at \$4.25 to \$4.40 per cwt.

Hogs.

Deliveries were rather heavy on Friday with steady prices. Best select bacon hogs, weighing not less than 160 nor more than 200 lbs each, unfed and unwatered, off cars, sold at \$4.50 per cwt., which is a shilling in advance of last week's quotations. Thick fats sold at \$4 and light ones at \$4.12½ per cwt. Unculled car lots sold at \$4.25 to \$4.35, and Essex and Kent corn fed hogs at \$4.25 per cwt. Prices are steady at Montreal at \$4.25 per cwt. The *Trade Bulletin's* London cable of December 21st *re* Canadian bacon reads thus: "The market for Canadian bacon has ruled weak and is lower under larger arrivals of Danish bacon. Lean sides are quoted at 38s to 41s."

HOW SHE RESTED.

They had been sitting together for half an hour.

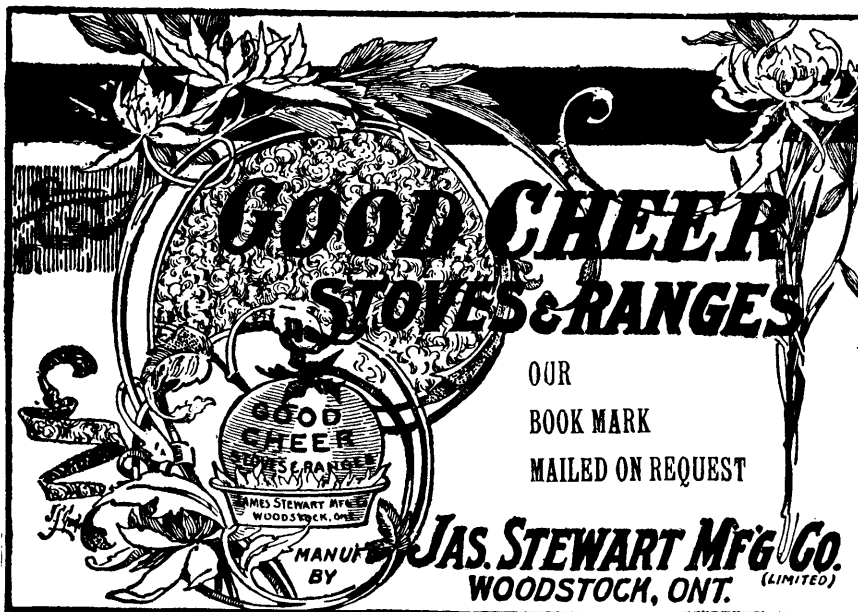
"I have enjoyed our conversation so much!" she exclaimed, as she rose to go. "It is so restful to talk with you!"

And after she had left him he remembered that he hadn't been able to get in ten words edgewise throughout the whole conversation.—*Somerville Journal*.

Mr. Isaacs—Now, Esau, I haf made my will and left everything I have to you.

Esau—Yes, vader!

Mr. Isaacs—Yes; and as you'll get all the benefits, I'll keep the cost of making the will out of your next week's salary.—*Harlem Life*.



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BOOK MARK
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WOODSTOCK, ONT. (LIMITED)

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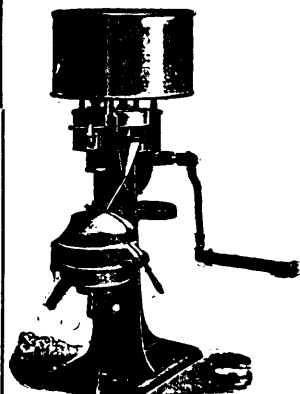
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QUEENSTON, Ont.

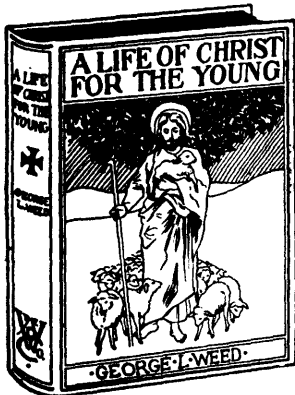
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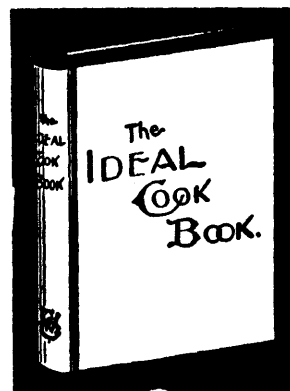
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The number of prizes obtained by users of

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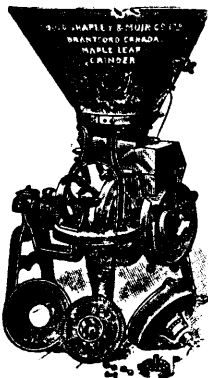
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Both have ball-bearing burr plates, relief springs and shake feed.



Grind fine and fast with least power. Always guaranteed. A trial given. Hundreds in use.

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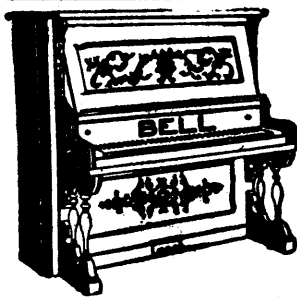
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