

OK
L
NTS
CITED
MAN.

purest,
apest
to the
Royal
your
receive

BB.

WRY,

WERIES



TOBA.

ger,
rter.

Try
ULT'S
stic
am

Positive Care
used. Takes
ere action.
m Horses
CAUTERY
or blemish
satisfaction
uggists, or
ll directions
reuire.
leveland Q

YAL
IL
EAMSHIPS
OUNTRY.

e of safety.
er of this
class, and

nd Quebec
or Liver-

0 Return.
Sing. Ret.
\$100 \$185
\$ 80 150
11.
5 Return.
11.
Return.

ears. free.
\$21.
10.
f passage.

KERR.
Winnipeg.
Montreal.

J. G. Hetherington, V.S. 1893

MANITOBA AND WESTERN EDITION

THE FARMER'S ADVOCATE

AND HOME MAGAZINE



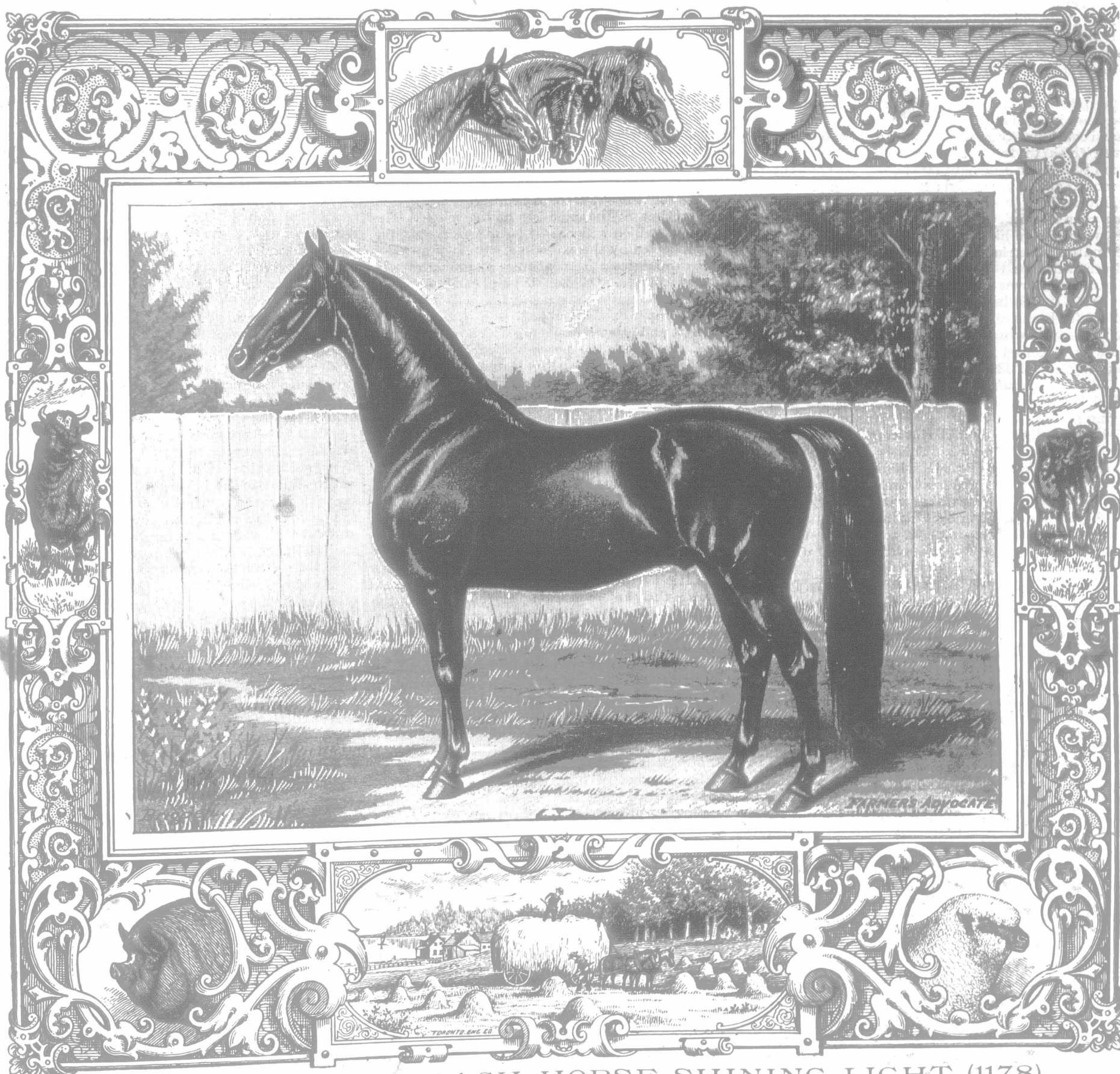
* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE. *

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

VOL. IV.

LONDON, ONT., AND WINNIPEG, MAN., JANUARY 20, 1893.

No. 38.



THE YORKSHIRE COACH HORSE SHINING LIGHT (1178),
THE PROPERTY OF MR. A. C. McMILLAN, ERIN, ONTARIO.

The Yorkshire Coach Stallion, Shining Light.

The horse that is portrayed upon our plate page in this issue is one of the best specimens of the popular breed to which he belongs. Those who have watched the show ring for the past few years will have noticed that in the carriage class, which is open to all breeds of horses as long as they comply with the standard in height, it has been animals of the Yorkshire Coach and Cleveland Bay type that have won the principal prizes. The length of time that these breeds have been established has made them wonderfully prepotent, and therefore they impress upon their progeny the good qualities for which they have so long been held in repute. Therefore colts and fillies that have one, or, better still, two crosses of this breeding are hardly distinguishable in appearance from the imported animals.

Shining Light is one of the handsomest horses in America. He has a grandly formed neck and head, immense style, is beautifully turned above, his top being superbly finished, good hind quarters and shoulders, and a capital middle, and although he has been fitted for show so many times, his legs are smooth and clean, and his feet and pasterns faultless. He has abundance of hard bone below the knee and hock, while his coat, as his name so aptly expresses, is magnificent. When we last saw him, in a box stall, ungroomed, in mid-winter, he was remarkably smooth and sleek.

It is not surprising that he has been successful in the show ring, having won every year since his importation, and in the highest company, having competed with as many as twenty horses in a single class, yet he was never placed lower than third, and that on only one occasion. At succeeding shows he was placed before the horses that had previously beaten him. The fact is, few horses in any class have continued to win year after year and again return fresh to the conflict with the success that has attended this one. In 1888 he won first as a three-year-old and silver medal; in 1889, in his four-year-old form, he won second in his class, but the following year succeeded in beating the winner. In 1890 he won third in his class. In 1891 he won second at Toronto Industrial, and in 1892 he won first and a silver medal for the best horse of any age, beating one of the horses that had been placed before him in 1890. In 1892 he also won a first prize at Toronto of \$60 for best stallion and five of his progeny, beating the noted winner, Prince Alexander, one of the best stock horses in Canada, and sire of the silver medal group of 1891.

Shining Light's colts are coming to the front at all the principal shows, and have succeeded in carrying more than their share of winnings. Among these is Sunlight, the first colt sired by him, owned by B. Rothwell, Ottawa. This is one of the best carriage stallions in Ontario, winning first prize and sweepstakes two years in succession at Ottawa, beating the imported sweepstakes winner, Argyle.

A yearling gelding by Shining Light also won silver medal at Toronto, 1892, a two-year-old filly winning second, a two-year-old stallion winning third.

Shining Light was imported by Messrs. Irving & Christie, Winchester, Ont., and has been owned and travelled on the same route for the past four seasons by Mr. A. C. McMillan, Erin, Ont., his proprietor, with immense success. In fact, so well pleased are his patrons that they are now urging Mr. McMillan to place another Coach horse within their reach, in order to continue in the same line of breeding. For this reason only Mr. McMillan may sell this grand and impressive sire.

Shining Light, we believe, is the only horse of his class that has won sweepstakes twice at Toronto. He is registered in the Yorkshire Coach Horse Book; is a beautiful bay, free from white, black points, mane and tail, stands 16½ hands high, weighs 1,400 pounds, has capital action. He was bred by Mr. Dale, Otterington, Eng.; foaled June 10th, 1885; sired by Wonderful Boy (534); g. sire Wonderful Lad (911); sire of dam, Herod (218); sire of g. dam, Champion (85), all of which were celebrated prize-winners in their day.

Artificial Fertilizers.

Since our last issue, a gentleman representing Freeman's Fertilizer Works called on us. He reports that this firm sold to farmers during last season over six hundred tons of artificial manures; that their output has doubled each year since the works were opened. This being the case, a great many farmers and fruit growers must have given these manures a fair trial. We invite those who have tried them to send us a report of their experience. We would be glad to receive all such testimony not later than February fifteenth.

Agriculture in the Schools.

A very important bulletin, issued by the Hon. Mr. Dryden's Department, has just reached this office. Its subject is the "Teaching of Agriculture in the Public Schools"; it is based upon the excellent address delivered last fall in Toronto by Mr. C. C. James, M. A., Deputy Minister of Agriculture, before the Provincial Association of School Trustees. That body requested the publication of the address, and the Bulletin is the answer to the request.

SHOULD AGRICULTURE BE TAUGHT IN THE PUBLIC SCHOOLS?

The twenty-two interesting pages of this pamphlet are devoted to answering three questions:—

1st. Should agriculture be taught in the public schools?

2nd. Can agriculture be taught in the public schools?

3rd. How can agriculture be taught in the public schools?

One would think, in an agricultural province like Ontario, to ask the first question is to answer it, at least so far as the rural schools is concerned; but experience seems to throw doubt on the opinion that even the farmers of Ontario believe that agriculture should be taught in the rural schools. For, were the belief seriously entertained by a considerable number of them, they would at least attempt to use the means provided by the Education Department for the teaching of the subject. The trustees of the schools are farmers, the teachers are mostly the sons and daughters of farmers, the subject has had for at least six years a place on the curriculum of studies, there is a text-book provided and one of the "special directions" in the Regulations (page 110), is that "the authorized text-book on this subject (agriculture) should be introduced into every rural school, that special attention should be given to such points as how plants grow, how farms are beautified and cultivated, . . . the relation of agriculture to other pursuits, etc.," and yet we have good reason to believe that in the majority of rural schools the text-book is not introduced, and the subject, even if it has a place on the time-table, gets no place or time in the exercises of the school. This statement, which will hardly be questioned, is further supported by the exceedingly small proportion of the candidates at the entrance examination who take agriculture. Of the 337 rural candidates who wrote last July at points near this city, only seven tried the paper on that subject.

These, and other statements which might be adduced, emphasize the necessity for the discussion of the first question which Prof. James proposes in the Bulletin, and justify his occupying half its space with accumulation of argument to prove that agriculture *should be taught*. When the farmers of this province become fully seized of that opinion, they will find or make a way to have the subject receive its proper share of attention in their public schools.

We have not space to state and review Prof. James' premises and arguments. In brief, he shows that a large proportion—fully two-thirds—of our people either reside in the country or are intimately associated with the rural districts; that 69 per cent. of Ontario's school population belong to the rural schools; that an undesirable movement from the township to the city is in progress, resulting in an estimated loss to Ontario's rural population in ten years of 368,605; the capital invested in Ontario in agricultural interests amounts in round numbers to one thousand million dollars, being 5½ times the investment in manufactures in Ontario and 3 times the investment in manufactures in the whole Dominion; that a large part of the surplus produce of Canada comes directly from its tilled acreage, and that our yield per acre, of wheat, for example, is decreasing instead of increasing. The conclusion is that the farm would become more attractive and profitable if proper instruction were given in the science of agriculture, and that therefore it should, if possible, be taught in all our rural schools.

CAN AGRICULTURE BE TAUGHT IN OUR PUBLIC SCHOOLS?

The Bulletin answers this question mainly by quoting official reports of what has been accomplished since 1879 in the elementary schools of France. At that date it was made compulsory on every Normal College to provide agricultural instruction for the teachers-in-training, and subsequently agriculture became a compulsory subject in the primary schools. Eighty-six Professors of Agriculture have been appointed to instruct the teachers, to hold conferences with the farmers, and to carry out investigations suggested by the government. The course of study in each class is stated, one step of which is particularly worthy of mention, viz., practical lessons in the *school garden* for children

from seven to nine years of age. The British Board of Agriculture last year reported, that in France the success achieved is encouraging and worthy of imitation. Professor James thinks that, judging by the success of the Agricultural College at Guelph, Ontario need not fear to enter on a course that France has shown to be practicable and advantageous.

The difficult question is—

HOW CAN AGRICULTURE BE TAUGHT IN OUR PUBLIC SCHOOLS?

The author of the Bulletin grants that the teacher should receive some training before undertaking the work, "otherwise it were better to leave it alone." France began its work by training the teachers in its 160 normal institutions. We have two normal schools, turning out only about 400 teachers per year, while our model schools are yearly recruiting the profession at the rate of 1,200 or more; to be exact, the figures per last report were, respectively, 442 and 1,379. Hence it is clear that the normal schools cannot meet the necessities of the case. The short 12-weeks' term at the model schools is already crowded, and can not give much attention to the subject. The intending teacher, as a rule, spends two years at the high school and three months at the model, therefore it seems to us that under the present system of licensing teachers in Ontario, agriculture must be taught in the high schools before it can be successfully introduced into the rural schools. Anyone who admits the force of Professor James' answer to the first question would not deny that every high school undertaking to train teachers and receive government aid therefor should be properly equipped to teach scientific agriculture.

The friends of agricultural education, recognizing the need of some special training of the teachers, rejoiced to read the proposition made by the Hon. Mr. Dryden, at a meeting in Whitby, about the beginning of last month. He proposed to invite teachers to spend four weeks of their summer holidays at the Agricultural College at Guelph, to hear special lectures on various subjects connected with agricultural pursuits, such as the nature of soils, plant and animal life, etc., and to observe the methods pursued and experiments undertaken at the farm. Judging by the attendance of teachers at the special classes in drawing, music and science, held at the Education Department halls two or three years ago, we should expect from 50 to 100 teachers, of the best men and women in the profession, to avail themselves of the excellent opportunity offered by the Minister of Agriculture. It would be a boon to holders of second-class certificates who do not expect to again attend any training institution.

As other means of reaching the interest and sympathy of teachers, we would suggest to Farmers' Institutes the propriety of appointing delegates to attend their respective county Teachers' Associations, not to give lectures on agricultural themes, but to stimulate the interest of the teachers, to confer with them as to what is doing, and what more can be done to make agricultural instruction general and efficient, and to ask for suggestions as to how the institutes, trustees and parents may co-operate with the teachers to further the good work.

Could not township councils or agricultural societies devote a grant sufficient to carry on a series of lessons for a month or two in some one of the largest and most convenient schools in each township? A competent teacher might do much in this way for many of the advanced pupils in the municipality, besides aiding such teachers in the neighborhood as would care to attend classes on Saturdays. Be the means what they may by which the teachers receive their training, we agree with Prof. James that "all or nearly all depends on the (trained) teacher."

And yet not quite all, for, as our author says, trustees must be willing to provide necessary means. They must recognize in his salary the increased expense incurred by the teacher in fitting himself for this work. They must put house and grounds in such conditions of size, arrangement, fencing, drainage, etc., that will make the best teaching possible.

School sections which earnestly undertake this work, likely to be of so much benefit to the country, deserve recognition from the government. As long ago as 1871 the late Dr. Ryerson, to whose wisdom and foresight our excellent school system is the monument, proposed that a special legislative grant be made to every school taking up agricultural chemistry and the kindred sciences; and he went so far as to establish a special course of study, examination and certificate for teachers. To be eligible to share in the proposed grant, a school was to be in charge of a teacher possessing one of these special certificates and to hold classes for this instruction. A number of teachers studied the course and passed the examination, but the legislature never voted the

grant, and a wise and beneficent scheme fell through. That, or something like it, might now be revived.

Prof. James urges that an agricultural coloring be incidentally given the teaching of composition, history, drawing, reading and arithmetic. The suggestion is practical. The wonder is that it needs repetition. Even though the teaching of agriculture was not thought of, the live teacher would, so far as he is able, draw on the children's interests, occupations and experiences for the groundwork of his illustration and instruction. The problems based on yesterday's market reports have a stimulating freshness compared with those copied from a five or ten-year-old arithmetic. Dr. McLellan used to tell a good story about a boy who had gone through the arithmetic, but failed to solve a problem involving the profit on a sale of turkeys. "I can't do it," said he, "there are no turkey sums in the arithmetic I ciphered in."

The reader of the Bulletin will not need to be told that the author attaches little or no value to the mere memorizing of terms, formulæ and technicalities from a text-book. The teaching, to be worthy of the name, must be by the scientific method. He does well to quote with approbation these two paragraphs, from Professor Huxley's address to an agricultural club. They are well worth repetition and careful study:—

"There are some general principles which apply to all technical training. The first of these, I think, is that practice is to be learned only by practice. The farmer must be made by thorough farm work. I think I might be able to give you a fair account of a bean plant, and of the manner and condition of its growth; but if I were to try to raise a crop of beans your club would probably laugh consumedly at the result. Nevertheless, I believe that practical people would be all the better for the scientific knowledge which does not enable me to grow beans. It would keep you from attempting hopeless experiments, and would enable you to take advantage of the innumerable hints which Dame Nature gives to the people who live in direct contact with things."

"And this leads me to the general principle which I think applies to all technical training of school boys and school girls, and that is that they should be led from the observation of the commonest facts to general scientific truths. If I were called upon to frame a course of elementary instruction preparatory to agriculture, I am not sure that I would attempt chemistry, or botany, or physiology or geology as such. It is a method fraught with the danger of spending too much time and attention on abstraction and theories, on words and notions, instead of things. The history of a bean, of a grain of wheat, of a turnip, of a sheep, of a pig, or of a cow, properly treated—with the introduction of the elements of chemistry, physiology and so on, as they come in—would give all the elementary science which is needed for the comprehension of the processes of agriculture, in a form easily assimilated by the youthful mind, which loaths anything in the shape of long words and abstract notions, and small blame to it."

We heartily endorse the aim as well as the method of teaching agriculture briefly set forth by Professor James. Not the "how"—the technique, but the "why"—the science of the subject, aiming in the process to create a sentiment in favor of farm work and love for rural life, and to arouse ambition to become an intelligent, industrious, successful farmer, and, consequently, highly worthy of the respect and honor of every member of the community.

Report of the Ontario Commission on the Dehorning of Cattle.

The practice of dehorning cattle appears from the evidence to have been introduced into this province in the year 1888, by Messrs. Kinney and Johnson, South Norwich, Oxford Co. It was not adopted by farmers to any extent till February, 1890, when Mr. Smith, a farmer's son, of Dereham, Oxford Co., returned from a visit to the State of Illinois, where the practice of dehorning cattle had obtained to a considerable extent. This gentleman dehorned his father's herd. This example was followed by several of his neighbors. The practice raised considerable controversy in the district as to the cruelty and pain involved in the operation. In February, 1891, Mr. W. V. Nigh, of Avon, Middlesex Co., was prosecuted at London before two Justices of the Peace on a charge of cruelty to animals by dehorning them. The case was dismissed, on the evidence of ten witnesses that the suffering was of short duration and the results were beneficial.

The practice continued to extend in the district, Messrs. Smith and W. A. Elliott being the chief operators, and within a year they had dehorned about 650 head of cattle, chiefly in the counties of Oxford, Norfolk and Elgin. These operations became the subject of general conversation in the community, and opinions were very much divided on the subject. Those who had adopted the practice justified it as being beneficial and advantageous to the comfort and safety of the animals. Those who opposed the practice held the view that it was cruel and inhuman, and no corresponding benefit derived. The controversy increased, and in many cases became very sharp between the two contending parties. This led to "The Dehorning Case" being brought before the courts.

The late Charles Hutchinson, Crown Attorney of Middlesex County, acting on behalf of the opponents

of the practice, instituted proceedings in January, 1892, against Messrs. Wm. York, sr., W. A. Elliott and Edward York, charging them with cruelty to animals by cutting off the horns of Mr. Wm. York's cattle. The case was called at the Interim Sessions, London, Ont., on 6th January, before Messrs. Smythe and Lacey, Justices of the Peace for the County of Middlesex. Mr. C. Hutchinson conducted the prosecution. Messrs. E. R. Cameron and R. M. C. Tooth conducted the defence. Ten witnesses were examined for the prosecution—two veterinary surgeons, one medical doctor, two butchers and five farmers. None of these witnesses had ever seen the operation performed, but believed from the structure of the horn the pain would be very great.

Seven witnesses were examined for the defence—four veterinary surgeons and three farmers—all of whom had either seen or performed the operation, and were convinced the benefits were great and the suffering of short duration. The case rested for a time at this stage, the defendants withdrew their defence, and they, with a number of others, waited upon the Ontario Government at Toronto on February 2nd, 1892. The deputation, which consisted of Messrs. E. B. Brown, J. A. Brown, B. Hopkins, of Brownsville, and seven other representative farmers of the district, with Mr. E. R. Cameron, solicitor, London, was introduced by Dr. McKay, M. P. P. South Oxford.

They were received by Sir Oliver Mowat, Attorney-General, Hon. John Dryden, Minister of Agriculture, and Hon. Messrs. A. S. Hardy, G. W. Ross, J. M. Gibson and Richard Harcourt. Mr. E. R. Cameron was speaker for the deputation. He begged the government to interfere and save the defendants from further costs, and asked that a commission be appointed to investigate the whole question of dehorning cattle. As there was no precedent to govern the courts in this matter, it was unfair to place the whole cost of defending a prosecution upon two or three men, besides branding them as criminals in the event of conviction, which seemed probable in this case.

The Attorney-General, in reply, pointed out they were making a most unusual request in asking the Executive to interfere in the administration of justice. He added, however, that he and his colleagues were much impressed with the arguments in favor of an official enquiry, and if, after this matter was concluded, they thought fit to make a like application it would be favorably considered, but the Executive did not feel justified in taking any action at present.

On February 3rd the case was resumed at London, and adjourned for judgment until February 8th, when judgment was given as follows:—

1. The horns referred to were cut off by W. A. Elliott, assisted by E. York, and ordered by Wm. York, the owner.
2. Thus cruelly torturing the cows, and no precautions were taken to lessen the pain, nor to protect the cows afterwards from cruel treatment.
3. It does not appear to us there was any necessity to cut off the horns of these cows.
4. Neither does it appear that doing so was any advantage, but the whole evidence leads to the conclusion that it was a decided disadvantage to each cow.
5. There being no advantage to the cows to compensate for the torture and suffering endured by them, there should be adequate advantage to the public generally; in our opinions it does not appear that such is the case.
6. On the contrary, cutting off the horns of milch cows and other cattle may be the means whereby fraud may be perpetrated on the public, by removing that which is the best means of knowing the age of a cow, and of judging of its breed and other qualities.

The decision is, that each of the defendants be fined \$50 and costs forthwith, and in default of payment, one month in the county jail.

Notice was given that the judgment would be appealed against at the next General Session of the Peace.

This case caused a widespread newspaper controversy, which aroused public attention to such an extent that on the 9th of March a commission was issued by the Ontario Government to the Hon. Charles Drury, R. Gibson, D. M. McPherson, A. Smith, H. Glendinning and J. J. Kelso, authorizing them "to obtain the fullest information in reference to the practice of dehorning cattle, and to make full enquiry into and report with all reasonable speed the reasons for and against the practice, and to collect all the accessible evidence of experts and others in connection with any trials which have taken place in England, Scotland and Ireland, or any other useful information from any quarter ob-

tainable." The Hon. Chas. Drury was appointed chairman; J. J. Kelso, secretary.

The Commissioners, on the invitation of Dr. Smith, visited the Ontario Veterinary College on the 20th April and examined the anatomy of the horn, and the same day at the Parliament Buildings received evidence from the following gentlemen:—Ex-Ald. G. Frankland, cattle exporter; A. J. Thompson, cattle exporter; W. W. Hodson, lessee Toronto cattle market.

On May 10th the Commissioners met at Tilsonburg, and received evidence from seven farmers and one V. S., L. A. Brown, Aylmer.

May 11th the Commissioners, accompanied by the Hon. J. Dryden, Minister of Agriculture, visited several farms in the district where dehorning had been practised, and the owners expressed themselves satisfied with the results. On the same day they visited the farm of Edward York, Brownsville, and witnessed the operation of dehorning performed on six animals by W. A. Elliott, assisted by E. York and a farm hand. The operation was done with a fine tenon saw, eleven teeth to the inch, well sharpened and oiled; each horn was cut off in about an average of six seconds. After the operation, the cattle were turned into a yard, in order that the Commissioners might see the result of the operation. They say, no doubt that during the operation there is considerable pain, but after the operation is over the cattle did not seem to show any symptoms of severe pain. The same afternoon the Commissioners received evidence from six farmers.

May 12th Commission received evidence at Town Hall, Tilsonburg, from fourteen farmers and one V. S., Wm. Brady, Tilsonburg.

The Commission met at Harrietsville and received evidence from sixteen witnesses.

June 1st the Commission met at London and received evidence from seven witnesses.

June 2nd, at London, received evidence from ten witnesses, one M. D., and one V. S.

June 3rd, Mr. Chas. Hutchinson, Crown Attorney, was examined, and a deputation was received from the London Humane Society, who gave their views to the Commissioners.

On June 14, 15 and 16 the Commission examined twenty witnesses in Toronto, all connected in some way with the cattle trade, except two Drs. and two V. S's.

June 17th the Commissioners visited the Toronto cattle market to see for themselves the extent of the injuries which the cattle had received in transit. There were some injured and some had broken horns.

July 7th the Commissioners visited the Experimental Farm at Ottawa. Fourteen steers that had been dehorned in the spring and previous fall were seen, and evidence taken from Prof. Robertson and the herdsman. In the afternoon a meeting was held at Ottawa, and evidence given by W. C. Edwards, Esq., M. P., and Senator Read, of Belleville.

July 20th the Commissioners met at the Town Hall, Ingersoll, and received evidence from ten witnesses, all farmers in the district.

Whatever opinion people may have about the dehorning of cattle, only one opinion can be held about the work of the Commission. They have spared no labor in investigating the matter and collecting all available evidence that could be had.

We think the Commissioners are entitled to the respect and esteem of all parties connected with cattle raising and feeding for all purposes, for the very painstaking, careful and full investigation which they have made of the whole subject. They cite in their report a number of decisions given in the higher courts of England, Scotland and Ireland on the same subject, even these lords of session were not agreed and of one opinion as to the legality of the operation, and whether it comes within the scope of the Act against cruelty to animals or not. We also think the farmers generally will agree with the conclusions which the Commission have arrived at and their recommendations:—

1st. That the practice of dehorning be permitted where performed with reasonable skill, with proper appliances, and with due regard to the avoidance of unnecessary suffering, and that the Ontario Government should bring to the attention of the Dominion Government the desirability of amending the law relating to cruelty to animals, so as to give effect to this recommendation.

2nd. That the Ontario Government should direct the management of the Ontario Experimental Farm to experiment with chemicals on the horns of young calves, and also cutting out the embryo horn, with a view to ascertaining whether these methods are more desirable than sawing off the horns when they have obtained their full growth.

We hope the result of the work of the Commissioners will set at rest this question, and that we shall hear no more of farmers being prosecuted for practising dehorning of cattle, if they see fit to do so. A copy of the report may be obtained by applying to the Department of Agriculture, Toronto.

Live Stock for the World's Fair.

The Pure-bred Cattle Breeders' Association having taken the initiatory steps towards a live stock exhibit from the province of Manitoba and the Territories, for the World's Fair, W. S. Lister, Secretary of said Association, acting upon advice of the Minister of Agriculture, advertised for a meeting of "all parties interested in having an exhibit of live stock of all kinds at the Chicago Exposition to be held on January 4th, 1893, in the city hall, Winnipeg."

In response to this advertisement there was a fairly representative meeting. Among those present from the outside points were: Dr. Rutherford, M. P. P., Jas. Bray, Portage la Prairie; W. S. Lister, Middlechurch; S. A. Bedford, J. D. McGregor, Robert Hall, Brandon; Leslie Smith, Wawanessa; John Hettle, M. P. P., John Kinettle, Boissevain; R. D. Foley, Manitou. Many of the prominent breeders and owners of stock living in the city were also present at the meeting.

Robert Hall, President of the Cattle Breeders' Association, was elected to the chair, and W. S. Lister, Secretary of the Cattle Breeders' Association, was appointed secretary.

After fully discussing the advisability of making a cattle exhibit, in which Mr. Bedford, of Experimental Farm, Brandon, and Mr. Greig, of the "ADVOCATE," favoured sending an exhibit of steers only, but the majority of those present thought that Manitoba should be represented by breeding cattle, a resolution, moved by R. D. Foley, seconded by J. D. McGregor, to that effect, was carried.

The horse interests were next discussed, and a petition, asking the Government to send an exhibit of horses, was moved and seconded by Dr. Hinman, V. S., and David McGregor, respectively, and carried.

It was also resolved to request the Government to send exhibits of sheep, swine, poultry and dogs, on motion of Dr. Hinman, seconded by James Bray, Portage la Prairie.

The list of men considered capable of selecting the cattle exhibit was published in December issue of the "ADVOCATE." The following were named by this meeting as suitable men to make selections in the respective classes:—

STANDARD-BRED HORSES.

Dr. Little, Winnipeg; David McGregor, Winnipeg; Dr. Hinman, Winnipeg; George Cochrane, Morden; Nat. Boyd, Carberry; Dr. Smith, Winnipeg.

THOROUGH-BRED AND OTHER LIGHT HORSES.

W. L. Puxley, Winnipeg; Dr. Mat. Young, Manitou; T. G. Ferris, Portage la Prairie; J. Jenkinson, Winnipeg; Adam Paterson, Winnipeg; David McGregor, Winnipeg.

HEAVY DRAUGHT HORSES.

Wm. Risk, Winnipeg; J. D. McGregor, Brandon; James Elder, Virden; J. Carruth, Portage la Prairie; R. D. Foley, Manitou.

SHEEP AND SWINE.

Leslie Smith; A. A. McArthur; R. D. Foley; James Glennie.

The following resolution, was proposed by Dr. Rutherford, that an Executive Committee, consisting of five members, be elected, to look after the work. The idea was acted upon, and W. S. Lister, George H. Greig, Dr. Hinman, Wm. Risk and H. H. Chadwick, were appointed the committee, and instructed that their work should be to ascertain where the best live stock in the country was, and to keep members of the association and breeders well posted as to progress of arrangements, also to do everything to expedite matters and make the exhibit a success. Carried. The meeting then adjourned.

The Executive Committee met immediately on the close of the meeting, and elected Geo. H. Greig Secretary. They decided to interview the Minister of Agriculture next day, January 5th, the Secretary to arrange a meeting. Adjourned.

The Executive Committee, as arranged, interviewed the Minister of Agriculture on January 5th. That gentleman expressed himself as pleased with the prompt action taken by the breeders, and also by the appointment of the Committee, and desired them to take immediate steps to ascertain the names of all those who had stock they wished to enter for the World's Fair, and also stated that he would do all in his power to have an exhibit worthy of the Province. Breeders who have eligible beasts are respectfully requested to send their names and addresses, also the number, age and breed of their animals, to George H. Greig, Winnipeg, Manitoba.

It is a pity similar action had not been taken a year ago—better late than never. A good exhibit from Manitoba will do more to advertise the country than could be obtained by expending ten times or perhaps twenty times the amount in any other way. Now is Manitoba's chance. Why have not the farmers of each of the Western Territories and British Columbia taken action long ago? Settlers are wanted in all these countries; it is to the farmers' interests that they be brought in. The Governments are ready and willing to give any reasonable assis-

tance, but they are the servants of the people, and desire the people to make their wishes known. If the inhabitants, the farmers, the livestock men, do not want the country advertised; if they are opposed to such a course; if farmers do not want settlers or neighbors; if they do not want their lands to grow in value, which they will if the population grows more dense; if the live stock men do not want to extend their markets for pure-bred animals, why should the cabinets stir themselves? These bodies watch the temper of the people; if the country makes a demand, these gentlemen recognize it, and give the necessary assistance. We cannot expect aid unless we try earnestly to help ourselves and make our wants known.

How Best to Overcome the Present Agricultural Depression.

(A Paper read before Brandon City Institute by D. F. Wilson.)

Agricultural depression may arise from one of two causes—a failure of crops or an over-production, which causes prices to fall below a paying figure; or, as is the case with us, the two combined, for while the wheat crop of Manitoba has been a very poor one, our market is governed by the wheat product of the world.

I believe one of the causes of the present state of things in this province has been the craze for wheat-growing; with many farmers it seems to be their one idea, and they will invest their all in it, and often a good deal more, paying a ruinous interest for the accommodation and then running the risk of dry weather, frost, etc.

What has been the result?

If it were possible to get the figures and make the calculation, I believe it would be found that the wheat crop of the last ten years has cost the farmers more to produce than the wheat has sold for. It is true, some men have made money at it, but they are comparatively few, and have generally been confined to small districts; but numbers of unsuccessful wheat-growers are to be found all over the province. This is a very serious state of affairs, and if I am correct in my opinion, it is not to be wondered at that the subject of to-day's discussion was thought a suitable one.

It has generally been conceded by agricultural authorities who live in, or who have visited this province, that Manitoba is eminently suited for mixed farming, but we cannot say that it has been practised, and we now find that making a specialty of growing wheat has placed many of our farmers in a not very enviable position.

If we look back at instances where countries have depended altogether on one crop, we find that it often ended disastrously. The famine in Ireland was occasioned by too much dependence being placed in the potato crop, and famines have occurred at different times in the East owing to the failure of the rice crop, which is staple food in several eastern countries.

But while mixed farming might have obviated our trouble to a considerable extent, still I think we may look deeper to get at the root of the matter.

The question is partly a political one, but it is not admissible to discuss it from that point of view here, nor can we at present expect much help in this line from our politicians, there being so few farmers among them, and they lack the fellow-feeling which farmers have or should have for each other.

Let us, by way of arriving at a solution of the problem, ask ourselves the question, Are the farmers of Manitoba agriculturists in the full sense of the term? I think not; our knowledge of our profession (for profession it should be) is, on the whole, very superficial. What would we think of a doctor who knew little of his profession as we do of ours? There are some farmers who say that they know all that there is to know about farming; when I come across one who says this, I put him down as knowing a great deal less than his neighbors, who think there is still something to learn. It will, I believe, always be found that those who know the most about agriculture are the ones that see that they have the most to learn. Take, for instance, Sir John B. Laws, of whom it may be said that there is no higher authority on agriculture in the world; he has spent his life, employing a large staff of assistants, in research and experiments connected with farming, and so far as thinking he has found out all about it, he has made arrangements for leaving £100,000 to continue the work after his death.

If we look around us at men of other vocations, we find them working in a different way to farmers. In conversation with a business man in Brandon the other day I said to him, "I suppose if you have any meeting in connection with your business, you will get there?" His reply was, "You bet we do."

I asked a farmer on one occasion to come to an institute meeting. He replied, "I do not want to go and hear so-and-so talk," naming one of his neighbors, a man who is known as one of the best farmers in the district, and who is not at all given to much speaking. Men who give such reasons as this for not attending are enough to cause agricultural depression in any country.

The different vocations have their associations which work for the benefit of their several trades and professions and they are supported by their members, but the government has to bonus the farmers in order to get them together; as someone has expressed it, "paying them for attending to their own business." We ought to be ashamed of ourselves.

Then, again, there are periodicals published in the interests of nearly all the trades and other voca-

tions. These papers are taken and read, the readers endeavoring to keep abreast of the times by learning all that is new in connection with their business. It is said that there are more agricultural papers taken in proportion to the population in Manitoba than anywhere else in America, which speaks well for the province, but still there is a very large percentage of the farmers who do take them who do not read them, but simply skim through them. Some time ago, on reading an article in one of the two very excellent agricultural papers that are published in the province, entitled "Plant food and plant growth," it occurred to me, How many of the thousands of so-called readers of this paper will read this article? I am afraid a very small proportion of the farmers read anything of this description. A neighbor of mine, a doctor, was a great talker, and among other scientific topics was very fond of talking about his profession. On one occasion he said to me, "When we go about curing a disease we first look for the cause, and that gives the key to the cure." Do farmers do this? Take, for instance, a failure of crop owing to dry weather; anyone knows it was for want of rain, but how few can give a satisfactory answer, if asked, in what way the want of moisture affects the crop. It is the knowledge of the why and the wherefore that teaches us how to farm successfully.

In order to make this a great agricultural province farmers need a deeper knowledge of their business, and this can, I believe, be best attained by the introduction of agriculture into our public schools. When a farmer has what is called a smart son, the probabilities are that he soon goes off to some town or city, for from what he has seen around him he does not see anything to expend his abilities on. Show such a boy that there is room for the exercise of his brains on the farm, and the probabilities are that he will stay there and be a help towards putting farmers in the position they should be in. If the boys are taught the first principles of agriculture, they will soon begin to see cause and effect in nature, which will give them food for thought. The fathers also will sometimes hear things said by their sons that may set them thinking.

This will not have effect on the present depression, as its working will necessarily take time, but will be more the nature of a permanent cure. Agricultural depression has existed before and will exist again, but if farmers thoroughly understand their profession, there can be no doubt that the trouble when it did come would be decidedly mitigated.

The more a man knows the more he is capable of learning; farmers seldom give their brains enough to do; once get them to go a little deeper into agriculture, and we will soon find them taking a pride in it, and it will also have the effect of causing farming to be carried on on business principles, a thing which, as a rule, is now entirely neglected.

If farmers would study agriculture more and think more, they would soon occupy a very different position in the country than that which they do at present.

Mr. N. Awrey's Address.

The address delivered by Mr. Awrey, M. P. P., Commissioner for Ontario, to the World's Columbian Exhibition, and President of the Agriculture and Arts Association of the same province, is undoubtedly one of the best annual addresses, if not the best, ever delivered by a president of that time-honored body. Not only is it of interest to Ontario farmers, but should be a stimulant to dwellers in Manitoba, the west and the provinces by the sea.

Ontario is looked upon as the banner province by many. In this speech we get a glimpse of the reason; we see why her stockmen are known throughout America. Among all the provinces of Canada, she was the first to take active steps to advertise our country to the world, formerly at Philadelphia and again at Chicago. What her people are doing is clearly portrayed by Mr. Awrey. What they hope to do and what they doubtless will accomplish, is also set forth by that gentleman. Manitoba is following in her foot steps as regards the Columbian Exhibition, yet we would have our people know what Ontario is doing, and what sort of a man her commissioner is. Let us all take note of his wise and patriotic words, and unite in placing Canada in the foremost rank among the nations. What he says of Ontario is doubly true of Manitoba. Her needs are greater and her efforts should be likewise.

We agree with Mr. Franklin when he says the scheduling of Canadian cattle is an outrage, and disagree with Mr. Awrey when he says it may be a blessing in disguise. It is not a blessing in any shape, nor will it ever be. True, it would be better if Canadians could fatten all store cattle and export them when finished, yet we all know that there are hundreds of men both east and west who cannot do this, and others who will not. The scheduling of the cattle goes only to make their condition worse. The fact remains that these men must now sell at a less price than heretofore, but the chief grievance is that although Canadians should feed their cattle and ship only the prime-fitted beasts, the order remains the same—these must also be slaughtered at arrival. It is a great mistake for public men to condone a mishap of this kind. Let them teach and encourage Canadian farmers to feed their cattle, but in no case should they call a national loss as this is a blessing; it is an evil without a redeeming feature, and should be so recognized and so spoken of by all our public men.

THE FARMER'S ADVOCATE & HOME MAGAZINE

THE LEADING AGRICULTURAL JOURNAL IN THE DOMINION.

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

The Farmer's Advocate is published on the fifth and twentieth of each month.

It is impartial and independent of all cliques or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for farmers, dairymen, gardeners and stockmen, of any publication in Canada.

Terms of Subscription—\$1.00 per year *in advance*; \$1.25 if in arrears; sample copy free. European subscription, 6s. or \$1.50. New subscriptions can commence with any month.

Advertising Rates—Single insertion, 15 cents per line. Contract rates furnished on application.

Discontinuances—Remember that the publisher must be notified by letter or post card when a subscriber wishes his paper stopped. All arrears must be paid. Returning your paper will not enable us to discontinue it, as we cannot find your name on our books unless your Post Office address is given.

The Advocate is sent to subscribers until an explicit order is received for its discontinuance. All payments of arrears must be made as required by law.

The Law is, that all subscribers to newspapers are held responsible until all arrears are paid, and their paper ordered to be discontinued.

Remittances should be made direct to this office, either by Registered Letter or Money Order, which will be at our risk. When made otherwise we cannot be responsible.

Always give the Name of the Post Office to which your paper is sent. Your name cannot be found on our books unless this is done.

The Date on your Label shows to what time your subscription is paid.

Subscribers failing to receive their paper promptly and regularly will confer a favor by reporting the fact at once.

We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles. For such as we consider valuable we will pay ten cents per inch printed matter. Criticisms of Articles, Suggestions How to Improve the Advocate, Descriptions of New Grains, Roots or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.

Replies to circulars and letters of enquiry sent from this office will not be paid for as provided above.

All communications in reference to any matter connected with this paper should be addressed as below, and not to any individual connected with the paper.

Address—THE FARMER'S ADVOCATE, or
THE WILLIAM WELD CO.,
WINNIPEG, MAN.

CONTENTS.

- 21—Illustration. 22—The Yorkshire Coach Stallion, Shining Light; Artificial Fertilizers; Agriculture in the Schools. 23—Report of the Ontario Commission on the Dehorning of Cattle. 24—Live Stock for the World's Fair; How Best to Overcome the Present Agricultural Depression; Mr. N. Awrey's Address. 25—Our Prize Essays; The Agriculture and Arts Association. 26—A Change in the Chief of our N. W. Staff; How Best to Overcome the Present Agricultural Depression; Meeting of the Cypress Electoral Division Agricultural Society, No. 1. 27—A Cow for More Than One Purpose; Roll the Snow; Elaboration of Milk. 28—Weeds; How Best to Overcome the Present Agricultural Depression; January Work. 29—Wheat Grading System Discussed; Further Discussion of Wheat Grading; Hardy Cherries—2. 30—The Statute Labor Question; Enquiries re Shropshire Sheep; Legal Department. 31—Domestic Veterinary Treatment of the Animals of the Farm.—6. 32—The Bots; Veterinary Questions; Poultry on the Farm. FAMILY CIRCLE:—33. MINNIE MAY'S DEPARTMENT:—33 and 34. UNCLE TOM'S DEPARTMENT:—35. STOCK GOSSIP:—36 and 39. ADVERTISEMENTS:—35 to 40

Our Monthly Prize Essays.

CONDITIONS OF COMPETITION.

- 1.—No award will be made unless one essay at least comes up to the standard for publication.
- 2.—The essays will be judged by the ideas, arguments, conciseness and conformity with the subject, and not by the grammar, punctuation or spelling.
- 3.—Should any of the other essays contain valuable matter, not fully covered by the one awarded the first prize, or should any present different views of the same topic, and we consider such views meritorious, we will publish such essays in full, or extracts from them as we may deem best, and allow the writer ten cents per inch (one dollar per column) printed matter for as much of such articles as we publish. By this rule each writer who sends us valuable matter will receive remuneration for his labor, whether he be the winner of the first prize or not.
- 4.—We invite farmers to write us on any agricultural topic. We are always pleased to receive practical articles. For such as we consider valuable we will pay ten cents per inch (one dollar per column) printed matter. Criticisms of Articles, Suggestions How to Improve the Advocate, Descriptions of New Grains, Roots or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation, are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.
- 5.—Replies to circulars and letters of enquiry sent from this office will not be paid for as provided by rule 4.
- 6.—No anonymous communications or enquiries will receive attention.
- 7.—Letters intended for publication should be written on one side of the paper only.

A prize of \$5 will be given for the best essay on the method by which the Manitoba and Northwest farmer may better his condition and home life. Essays to be in this office by February 15th.

A prize of \$5 will be given for the best essay on the reasons why Arbor Day should be observed at Manitoba and the Northwest public schools, with suggestions for the programme of the day. Essay to be in this office by March 15th.

The Agriculture and Arts Association.

[An Abridged Report of the Annual Address of the President of the Agriculture and Arts Association, Delivered by Mr. N. Awrey immediately after the Banquet given by the Guelph Fat Stock Show, December 14th, 1892.]

It is a great many years since the Agriculture and Arts Association became one of the institutions of the province of Ontario, established for the purpose of advancing the interests of agriculturists and stock-raisers. I suppose that it is within the recollection of some present when the old Provincial Exhibition was held from year to year in different parts of the province. It naturally had a very beneficial effect on the people. It is true that in the opinion of many it had overlived its usefulness; or, in other words, enterprising places, like the city of Toronto, established exhibitions which were doing the work formerly done by the "Provincial". Then the question arose, as far as the members of the Board of the Agriculture and Arts Association were concerned, in what direction shall we devote our energies to accomplish some good to the people? because every person, and every institution, and every organization must give some reason to the people why they should be in existence, or otherwise the Legislature certainly will abolish them. It was wisely suggested, I think, that our work should be extended to holding, as they do in the old land, winter stock exhibitions. The result has been that for a number of years we have held an Annual Spring Show, and in the early winter a Fat Stock Show. After the experience of to-day, I believe that fat stock shows in the province are here to stay. I am not going to say where it will stay; it can be held successfully somewhere, and I do not see why it cannot be held here as well as in any other place. All will agree with me that the preparation of fat stock is one of the most important industries connected with agriculture. The fat stock of this province has been yielding, year by year, a very large revenue to the people. Anything that can be done by the Legislature, or by fat stock associations like you have in Guelph, or the Agriculture and Arts Society, to induce a spirit of emulation among the raisers of stock to breed better cattle for the shambles, is doing a great work. I am sorry to say that the business of

EXPORTING CATTLE TO THE OLD COUNTRY

this year has not been so very remunerative, yet there is no ground for discouragement. All we have to do is to produce the very best kind of a fat animal, and the people of England will purchase it at a fair price. British consumers like beef, and they like it to be good; and when they get it they are willing to pay a good price for it. In order to keep it to their taste we must raise the very best. I think there is room for an annual fat stock show very much larger even than you have had to-day—broader, embracing, perhaps, a great deal more than you have embraced within your present show, giving larger prizes—and, after all, the large prizes offered have not induced a large attendance. But it is the duty of the

AGRICULTURE AND ARTS ASSOCIATION,

from this time on, to hold annually a fat stock show, and pay very good prizes to the exhibitors of prize-winners. I take that as being the ground that should meet the approval of the farmers of the province. It is about nine years, I think, since we commenced holding these shows. They were very small at first, but they have grown year by year, until to-day I think we can say we have had a fairly successful one in the city of Guelph. But there is room yet to make it very much superior to what it is, and it is the duty of our Association to endeavor to make it more successful in the future than it has been in the past. Then I think work that is worthy of the attention of our Board is a spring show, where the purest bred animal and best of the various kinds and breeds should be got together, and, if you please, all kinds of cereals. We have more than one kind of show in the province of Ontario, and I think the sooner the old Agriculture and Arts Association shall devote its energies to holding purely agricultural exhibitions, without any side-show, the better; and if they do that there is a great future before the Association. I may say that I was one of those in the Legislature who believed that it was time that our

PROVINCIAL EXHIBITION CEASED,

and I think my opinion was a wise one, notwithstanding some of my colleagues thought differently. I think that the work that it did in times past is being done by other associations; but, as I said before, I think there is a purely farmers' work to be done by this institution that can be done by no other in the province. It has been the custom of the

PRESIDENTS, WHEN DELIVERING THEIR ANNUAL ADDRESS,

to refer to what has transpired during the past year in agricultural circles. We have not had a very successful year. Unfortunately for the farmers prices have ruled very low. Perhaps never in the history of the province, or at least for a quarter of a century, have as low prices ruled as do in our markets to-day; and it is true that we have had another blow.

OUR CATTLE HAVE BEEN SCHEDULED,

as far as entrance to the old land is concerned. Now, I may say I believe that out of the present evil a

great future good may arise to the people of Canada. I do not know, after all, that it is the very best thing for the farmers of Canada that their cattle should be sent to the old land in the shape that we call stockers. If we mature our cattle, feed them for the shambles on Canadian soil, a greater amount of wealth shall accrue to us than does from that of sending them over the water to be fed. Yet I am prepared, at the same time, to admit that it is going to be a hardship, and that many men who have been in the habit of selling their stockers for export feel aggrieved. I think the action taken by the British Department of Agriculture was unwarranted. I want to impress upon you, above all things, to be independent, if possible, and to say that out of your present evil you will strive to attain something that is better. Let every farmer decide that instead of selling his animal at an age when as yet it has not yielded a profit, but has taken out of the soil more than it returned, he will feed it at home and return to the land that which goes to keep up the fertility of the soil. If he does this I venture to say that it will be to his advantage, and yet I say it is a hardship at the present time, simply because there are some men not able to feed their cattle. Then it interferes with another class. Some of you, perhaps, who sell your cattle to other men to fatten, are going to be injured by our cattle not being allowed to enter the Old Country; because Mr. Dryden, for example, or Mr. Hobson, or any of the wealthy farmers, can do now what they could not do before the cattle were scheduled—that is, they can buy from you much cheaper, if you have to sell them, than they could before, because stockers cannot go to Britain to be fattened, and we are compelled to sell in a limited market. In this particular it has been rather unfavorable, prices ruling low, our markets the poorest they have been for years, our cattle scheduled, and wool being a very low price. All these things are calculated to make the farmers feel that their lines are hard, and yet I want to say to all, you have no reason to feel discouraged for the future of Ontario. I have travelled—some of you have travelled a great deal more. I think from the Atlantic to the Pacific oceans, from the furthest point south to the furthest point north on the American continent, that there is not so fine a country as we have in Ontario. Now I have led up to this point, because I want to induce you to believe that you are a great people, as you are, and have great possibilities in the future, because I want to talk to you about another subject, viz., your duty in assisting to make the exhibit from the province of Ontario at the

WORLD'S COLUMBIAN EXPOSITION

a creditable one. One of the officials of the Exposition said to me the other day, "The only province or the only country on the face of the earth that the American States are afraid of is the province of Ontario." Americans know the quality of our land—they have learned to appreciate the value of our flocks and herds. They have been taught by experience in the past that we have here a soil and a climate which enables us to produce grains which can compete with any part of the United States, and they have learned more than that—they have learned that here in Canada we have the finest climate, and as fine a country for the rearing of first-class stock. They know more than that—they know that the people of the Western States for many years back have looked to Ontario as the ground from which they could draw the best animals for breeding purposes; and, as one said, "We purpose to wrest from Canadians, if we can, at this Exposition, that prestige, so that in future one or two states may be considered the one point from which those desiring first-class stock can get their animals after this Exposition." Canadians will be unworthy of their past record if, with the opportunity they have, they do not show the people of the United States and Great Britain what they can do—if they allow this opportunity to pass by and do not avail themselves of it, and teach the Americans that after all we have the men, the climate, the means, the desire, and the determination to hold the country second to no other on the globe. I may say for your encouragement that in the

CITY OF NEW YORK,

at the horse exhibition, where the finest thorough-breds that tread the earth were assembled, where they offer the very largest prizes ever offered, that it was a horse owned by a Canadian that took the first prize over allcomers. This was creditable. Then let me tell you, at the Detroit Exposition, when it came to sheep, that in one of the classes Canadians took all the prizes—first and second, with one exception, and would have taken that but for the want of sheep to exhibit. I can tell you more; in poultry, that part of the farmer's stock so dear to the hearts of women, with the finest exhibits from the United States, where even one mar had gone to the expense of importing from England to beat Canadians, that out of twelve hundred dollars of prize money Canadians took about eight hundred, and would have taken more but that we sent not the hens and roosters to compete. Now, what we can do, and will do, depends altogether upon our farmers. If by united energy and determination to succeed they do the very best they can with the stock selected to be exhibited in Chicago, I venture to say that when the Exposition is over Canada will be known the world over better than she has ever been known before. I suppose that some of you who have sailed "across the herring pond" know the impression the people in many parts of Europe have of Canada—they think

it is a cold, barren, bleak country. Their impressions have been largely received from pictures of ice palaces and fur clad individuals. When they see our fruit exhibit it will show them and make them understand that we grow in great quantities delicate and delicious plums. Canada has peach orchards where the luscious fruit can be had for the picking. Our vineyards cover broad acres, the fruit being unequalled on the face of the earth. This will teach the people of Europe that here in Canada is the very spot where they should, and will, pour the thousands from their over-crowded borders. Here we have room where these can win for themselves homes, which will not only be pleasant, but where the land will produce that which will make them contented and happy. We in Ontario have

TWO THOUSAND JARS

of fruit, holding from a quart to a bushel and a-half, some of them so large that we can insert a branch of a pear tree with the fruit on it, where the foliage is kept in its natural color and where the bloom is retained on the fruit. We purpose to show them that, from the earliest strawberry up to the hardest apple, we have in Ontario lands where the tenderest fruits can be grown, and other places where the most valuable fruits for exportation can be easily produced almost without limit. I think this will be the best immigration agent that we can send out. Then let me tell you what you will have to compete against. There is not a state in the American Union, as I told you before, but has determined to outdo this fair land of ours. If we wish to hold our own, we must prosecute this work with vigor. Every Canadian should lend a hand. I hope when the history of this Exposition comes to be written, it will be said of Canada that she has borne herself well. I have great faith in my country. I believe we all have. One of the ablest American writers, in describing this province, said, "She is blessed by Providence with the finest climate and most magnificent scenery, and the richest soil to be found on the American continent. In fact, she is a country that has not only the finest stock, but produces the finest men and most beautiful women." Such a country, described by such a writer, is one that we should not fear for its future, and I want to say a word here. The farmers are

SAID TO BE THE GRUMBLERS.

I know that it is a subject of remark "that the farmer always grumbles; that he grumbles with the sunshine, and when it does not; and when the land is very fruitful, and when it is not." We are called the grumblers of the earth; but the future of our country depends upon us, because, after all, we are the foundation upon which must be built the success of all other callings—the manufacturer, the lawyer, in fact, every man living is dependent upon us for his success. The keeping of our country is entirely in our hands; do not let it be said, if the historian ever has to write of dissatisfaction in this land, that farmers were the ones who became dissatisfied with the country. Be true to your land and its form of government. Punish the men who rule it, if they do wrong—if they wreck the country's interests. Blame them, but do not blame your country or your country's constitution, because we have the finest constitution; we have the noblest form of government; we are partakers in the greatest blessings on the face of the earth, and our country is an heritage that we ought to love and protect.

A Change in the Chief of our N. W. Staff.

Ill health has caused Mr. Wm. Thompson to resign his position as managing editor of the Manitoba and Western edition of the FARMER'S ADVOCATE. During his regime he did good and lasting work in the province. Mr. George H. Greig, late of Otterburne, has succeeded him. This gentleman was born in Oxford County, Ont.; his father, Major Greig, was a well-known breeder of Shorthorns and Ayrshires. At an early age the young man decided to follow agriculture. To prepare him for his future work he was sent to the Ontario Agriculture College, where he remained until he graduated. Soon after this he and his brother, Mr. R. W. Greig, came to Manitoba and took up a large tract of land near Otterburne. This they at once set about improving, and soon had a considerable area under cultivation. As soon as practicable commodious stables were erected, and a herd of Shorthorns established, which is to-day one of the largest herds of Bates-bred cattle in Canada. They have also a large and well selected herd of grade cattle. Their farming operations have been well and successfully conducted. Mr. George H. Greig was an active promoter of the Manitoba and Northwest Cattle Breeders' Association, and is a member of the Dominion Shorthorn Breeders' Association, and is also an active member of the executive committee of the Central Farmers' Institute; as such he has been successful in organizing vigorous local institutes. The practical and scientific education which he received in Ontario, together with twelve years' experience in Manitoba, has admirably fitted him for the position he now fills. Well read, honest and industrious, we fully expect him to do good work for the farmers of the west, and as one of themselves we expect the western farmers to rally around him, and give him all the assistance in their power.

How Best to Overcome the Present Agricultural Depression.

Paper read by Mr. Bedford before the Brandon City Farmers' Institute.

Farmers as a rule are credited with being persistent grumblers, but I am sure with No. 1 hard at 50c. per bushel, and cattle 2c. alb., there is reason for complaints, for the profit to the farmer at these prices is very small indeed, and the fact that farmers thorough the world are generally suffering from the same cause is very poor consolation.

Many reasons are given for the present extremely low prices of all kinds of farm produce, some of them reasonable, others quite ridiculous. Probably the principal cause is the readiness, in this age of steam and electricity, that all kinds can be transported to the large centres of trade so quickly, for as soon as any shortage takes place the news is at once telegraphed all over the world and supplies are quickly sent from nearly every part of the globe—cold storage assisting to this end. So you see that we are sufferers largely through the increased civilization of our time, and we will have to bravely face the difficulty.

We will now discuss some of the means by which we can overcome, or at least lessen the evils consequent on the present depression. In attempting this I shall not try to exhaust the subject, but simply throw out a few suggestions, some of which may prove useful.

I hold that the remedy must naturally be of either three directions, viz:— "In increasing the selling price," "Lowering the cost of production;" or in so diversifying our farming that every year we may have some product that can be sold at a profit.

Now in regard to the first. I consider that the selling price is beyond our control, and will have to be left largely to the regulations of supply and demand.

The cost of production, however, is to a large extent in our own hands, and can be lessened. First, by getting larger yields per acre. Secondly, by utilizing the waste of our productions of the farm.

Is it not a fact that we are not raising anything like the amount per acre that we ought to do if our land was in the shape it should be. On some of the clean, well-farmed land on the experimental farm the returns this year were 35 bushels of Red Fyfe per acre, while on poorly farmed land in the same field, the yield was under 17 bushels per acre, a difference of 18 bushels per acre.

Now in regard to quality! In certain years the best of management will not prevent frost, but we all know that many a two-horse farmer undertakes a four-horse crop, and he is then surprised that a portion of it is frozen. There is one source of loss which is completely under the farmer's control, that is loss from smut. Any person who in this enlightened age refuses to blue-stone his seed wheat deserves to lose from ten to twenty cents per bushel, for he not only risks loss to himself but also risks injuring the reputation of the wheat of the province. So far eight tests with blue-stone have been made on the Experimental Farm. In every instance the blue-stone has effectually killed the smut. So that there is no excuse for smutty wheat.

We now come to the question of the utilization of the waste or by-products of the farm. If you were to ask J. A. Christie, our local lumberman, to draw the slabs, or even the saw-dust, from his mill to a pile and set fire to it, he would laugh at you, and say "that the returns from slabs and saw-dust pay a large portion of his running expenses," and if he took your advice in burning his refuse he would have to close up his business. The same with our flouring mills. They never think of burning bran just because it is a waste product. Farmers in the country are not so particular, and thousands of dollars are wasted every year by the burning of straw or chaff, and it does appear to me a shame and a disgrace to burn such bright clean wheat straw as we generally have done here. We found last winter on the farm that, providing we had good clean straw or chaff, we could entirely dispense with hay in feeding cattle. At the present time we have a cow giving 57 lbs. (nearly three pails) of milk per day, and she never gets a pound of hay.

Again, farmers allow elevator men to dock them for screenings, much of it small wheat, and then present it to them to send east, or burn as they see fit.

This leads me to the last, but not least, important subject of my paper viz: diversified, or mixed, farming. Judging by the aversion shown by many farmers to keeping stock, one would think that it was a very disagreeable business, or that cattle, sheep and swine did not thrive here, instead of which, stock, properly attended to, adds interest to farming and I think I am safe in saying that in no part of the Dominion do all kinds of cattle thrive better than in this province. Our winter is no longer than in Ontario, pasture is plentiful and practically free, both hay and coarse grain are cheap, and straw and chaff of the best quality are abundant.

I do not say that all should go into any one branch of stock raising, but let each follow the line most suited to his taste. Some farmers will never succeed with dairy stock, but would make money feeding steers. Others would fail with sheep, and succeed with pigs. Expensive females are not necessary, but pure-bred males should be used. While I am on the subject of feeding steers allow me to point out the folly for selling poor thin stockers to the butcher.

After the farmer has spent over two years in building up a frame and everything is ready for the feeding, which is the most profitable part of the work, many farmers sell their animals. Mixed farm-

ing is not only the most profitable but money comes in during every month of the year. With stall-fed cattle in spring, wool, mutton, butter and eggs in summer, and pork and poultry in early fall, the farmer is always ready to pay cash for his supplies and need not either run an account at the store or borrow from the banks at a high rate of interest.

To sum up. Don't sow more land than you can work well and can properly attend to. Aim at producing the largest amount per acre of the best quality. Always blue-stone your seed wheat. Supply yourself with stock of some kind as quickly as you can house them. Stack your straw, it won't take much time or room. Don't drag it and the weed seed all over your farm; weeds will get there quick enough. Clean your wheat before delivering it.

Brandon Farmers' Institute.

A special meeting of this institute was held Saturday, December 17th. Mr. Rutherford was to have given an address on horse breeding, but being ill Mr. McNaught, of Rapid City, took his place and read an excellent paper on "Feeding and Watering the Horse," illustrating what he said by diagram of digestive organs of the animal.

He gave a list of the available horse foods of the province, and said that though wheat was generally considered injurious, he had not found it so in this country, having fed frozen wheat in large feeds with very good results; barley was also very suitable when oats were scarce. For an average farm horse of say 1,200 lbs., when at work, a gallon of oats three times a day, with a gallon of bran at night, was as much as he ought to get in the shape of grain. He did not think it was a good plan to feed oats and bran together, as the bran had a tendency to make the horse bolt his oats. Crushed oats were good; bran, as a mash, was inclined to scour, but if fed dry had not this effect, as it could not be eaten so fast. Horses not working could be economically fed on cut straw with chopped grain. If running at wheat straw they should get plenty of salt. Broncos are all troubled with worms, which disappear when they are fed salt.

Water for horses should not be too hard, and if drawn out of deep wells in summer should stand in the sun to warm before being given to them. The time of watering horses was of the greatest importance. They should always be watered first thing in the morning, and always before and not after feeding. If coming in hot from work give half a pail, let them eat hay for awhile, and then water before feeding them their oats. If watered after feeding, it prevented the digestive organs from assimilating much of the nutriment that was in the grain. When grain was the last thing fed, a horse would never be ravenously hungry after five hours' work. He had had twelve years' experience in Manitoba, and had never lost a horse from any cause connected with his feeding. Boiled barley was a laxative, and might take the place of bran, say twice a week. The best roots were carrots, they would not hurt a race horse in training; but to keep a horse in good health nothing was better than salt and bran. In the Old Country they considered the best time for a hard run was two hours after feeding, but with the farm horse it was different; it did not hurt him to go to work as soon as done feeding. He had, however, the greatest objection to giving a horse all he would drink just before going to work.

Mr. Nicol found whole oats best for horses at work; crushed oats were inclined to scour working horses, but were most suitable for idle ones. He found that a gallon of oats when chopped measured nearly a peck.

Mr. Cox agreed with Mr. McNaught throughout, with the exception of feeding bran and oats together. He thought that the bran made a horse masticate his oats better.

Mr. J. D. McGregor said that in his case at present the object was to get their stallions in good condition, but as they were standing in the stable they had to be very careful how they fed, for if they gave them a little too much rich food it would soon affect their colts in the legs.

The meeting closed with a vote of thanks to Mr. McNaught.

Meeting of the Cypress Electoral Division Agricultural Society, No. 1.

A meeting was held at the Queen's Hotel, Glentworth, of the above Society, on Saturday, December 10th, 1892. The meeting was not large, but those present took a lively interest in the Society, and the business was promptly carried out, Mr. D. Steel, president, in the chair. Mr. J. Axford, secretary, read an estimated account of the receipts and expenditures for the present year, and taking into consideration that they have built a fine hall, at a cost of \$10, when the subscriptions are collected there will, no doubt, be a favorable balance to carry over.

The annual meeting of the Morden Electoral Division Agricultural Society was held in the Queen's Hotel, Morden, on December 12th, Dr. McConnell in the chair. Moved by J. A. Wright, seconded by J. T. Hutchinson, that the annual auditors' report as read be adopted. Carried. The following officers were elected for 1893: J. T. Hutchinson, president; Wm. Topley, 1st vice-president; John Sweet, 2nd vice-president. Directors—Dr. McConnell, V. Winkler, Thos. Shortreed, J. A. Wright, I. A. Cowie, John Bothwick, Wm. Morrison. James Bonny and Wm. Comer, auditors; C. V. Helliwell, secretary-treasurer. Moved and seconded that the next annual show be held in the town of Morden, October 4th and 5th, 1893.

A Cow for More Than One Purpose?

BY JOHN TAYLOR, JR.

Yes! you may have a cow for more purposes than one, but will it pay? I think not. The profit made in one department will be eaten up by the loss of the other. A cow may be paying as a beef raiser and be running the owner into debt every day as a milk producer.

In your December issue, page 471, your correspondent, "A Stock Breeder," ridicules the idea of a special purpose cow. In the first part of his letter he appears to be very impartial, and speaks as though he were not especially interested in any of the several breeds, and winds up by giving a lot of figures to prove that the Shorthorns are "the cows." So much for his figures as far as they go; they would prove that if it is bulk of milk you want, regardless of cost, the Shorthorn has the advantage. Because a big Shorthorn cow gives more milk or butter than the little Jersey or Ayrshire is no proof that she is the most profitable. If you can keep three Jerseys on the food consumed by two Shorthorns, and each Jersey gives as much milk or butter as a Shorthorn, which breed will pay best? Men differ in strength, and the strongest man may be the smallest consumer of food. The same holds good in milk production. The New Jersey station has been conducting tests to find out the actual profit derived from each of the several breeds as butter producers. They found that the Gurnsey group earned in one month \$67; the Jerseys, \$66.75; the Holsteins, \$60, and the Ayrshires, \$47, and that the actual profit from the Gurnsey and Jersey groups was \$22 each, and that the Holsteins and Ayrshires had less than \$5 to their credit when the food was paid for. This test was for butter. It will be seen that the Ayrshire earnings were the lowest as a butter producer; the Holsteins and Ayrshires might have made a better showing as milk or cheese producers.

This goes to show that we must not be led away with the idea that because a cow milks well she is profitable. No; I believe in special farming. Let every man consider his individual situation as to which line of farming he is prepared to follow, and go into it and make a specialty of it. If he is so situated that he can make butter or cheese profitably, he should have ambition enough to excel in this line. If his situation is better for beef production, let his aim be to own a herd of good beef cattle. I hold that if it is butter or cheese he is after, to make the most out of it he must keep a special dairy breed, and aim to have the very best as milk or butter producers—not a cow whose tendency is always on the side of beef. Take the Shorthorns, Herefords and Galloways generally, they will not continue the flow of milk long enough to be profitable; you may feed them heavy, and they will lay on the beef—it is their nature.

"Stock Breeder" says that "the dairy cow must be fed before her carcass will be moderately presentable when hung up in the shambles." Well, I never saw the cow yet that had not to be fed before she would be good beef.

"Beef will be wanted as long as the world lasts." Are the people going to stop eating butter and cheese? Not by any means. The beef-producing territory is enlarging as the prairies open up. This large extent of territory is to-day very extensively engaged in ranching, and is producing vast quantities of beef, and overstocking the market, and keeping down the prices. Not so with butter and cheese. There is a good demand to-day for a good article, and there is no danger of Texas and some other prairies over-stocking the market with butter and cheese.

"The special beef cow must give a little milk at certain periods, and in such quantities as will not pay to throw it away." No, it will not pay to throw it away; the less she gives, the more expensive milk it is.

I have found from experience, that the cow for more purposes than one, or the cow that would raise good beef, would soon eat her head off, compared with the special dairy cow as a milk producer. I do not think that beef and butter or cheese can be profitably produced together; the profits (if any) you will make out of the one will be more than eaten up by the loss on the other. I think that the farmers of the older sections ought, as far as possible to raise butter or cheese in place of beef. Beef can be produced cheaper in the West than we can raise it. We have a good climate for dairying, and there is no danger of the ranches overstocking the markets with cheese and butter. The good article will always be in demand. We should make nothing but the best; it costs no more to manufacture good than a poor article.

Roll the Snow.

After a heavy snow storm the roads can be made passable by rolling them with a hand roller. If there are "pitch holes," or if the surface is uneven, harrowing will be found of service. In Quebec the above has been the practice for many years.

Elaboration of Milk.

BY H. H. DEAN, ONTARIO AGRICULTURAL COLLEGE, GUELPH.

All organized bodies are an aggregation of cells. A cell is the smallest particle into which a plant or animal may be divided. "Cells possess the properties of nutrition, reproduction, growth, development, and, in many cases, their contents are capable of motion and manifesting irritability." The udder of the cow is a gland made up of numerous vesicles (cavities) which consist of a membrane lined with epithelial cells. These cells are the secreting organs or the seat of the changes by which milk is produced. A number of these vesicles gathered together form what is known as a lobule, and lobules united form a lobe which is surrounded by connective tissue, having a common outlet into the milk cistern situated at the upper portion of the teat.

Besides cells, the mammary glands consist of fat, blood, nerves and muscles. There are two glands which lie alongside each other, separated by a fibrous partition. It will be noticed that the cow's udder is divided lengthwise, not across the udder. Each gland has two outlets (on the side), and sometimes three. The whole is covered by the outer skin of the animal.

Exactly how milk is secreted or elaborated we do not know. There are two theories put forth in explanation of the process. The first one, known as the "Transudation Theory", assumes a simple filtering of the constituents of the milk from the blood through the gland, and a turning of them into milk by this process. The objections to this theory are put thus by Aunsby:—"The milk is not simply secreted from the blood, like the urine in the kidneys, or the digestive juices in the stomach and intestines, but is formed in the milk glands from the cells of the gland itself—it is the liquefied organ. This is shown even by the composition of its ash, which, like that of all tissues, contains much potash and phosphate of lime, while the fluids of the animal body are poor in these substances and rich in chloride of sodium (common salt); the ash of milk contains three to five times as much potash as soda, while the ash of blood, on the other hand, contains three to five times as much soda as potash. Was the milk simply a transudate from the blood, it would have a similar composition, and could not serve as the exclusive food of the young animal, since it would not contain all the elements necessary for growth; but since it is a liquefied organ, it is exactly adapted to build up other organs."

The second theory, known as the "Metamorphic" (change of form shape), assumes that the milk is formed in the gland by the decomposition of the cells of that organ. Professor Sheldon says that a combination of the two will probably give the most satisfactory explanation, and this is more apparent when we consider the sources of the various constituents of milk. Neither casein or milk-sugar are found in the blood, consequently they could not be filtered from it, but are probably the result of a special cell activity. Fat, though found in the blood, is not there in sufficient quantity to supply the fat of the milk. "The milk-sugar, casein, and fats are all formed by the direct activity of the epithelial cells as a result of the decomposition of their protoplasmic (first formed) contents or their action on the food constituents in the blood. The other constituents of the milk, the water and salts, evidently result from a direct process of transudation from the blood, with the exception that without doubt, a certain percentage of the potassium salts, and phosphates, like the specific milk constituents, originate in the metamorphosis (change) of the protoplasm (first matter) of the secretory cells."

From the preceding we would judge that the character of the gland has considerable influence on the quantity and quality of milk produced by a cow. Other things, such as food, surroundings, method of handling, period of lactation, frequency and regularity of milking, are all supposed to contribute somewhat towards the quantity and quality of milk. As to the effects of food upon milk, see Bulletin 80, Dept. Agr., Ont. Two experiments are here reported, showing the effect of frequent milking (three times a day) and milking each gland by itself. That is, instead of milking the two front teats together, and then the two hind teats, which is milking a teat of each gland, the cows were milked two side teats at a time, or a front and a hind teat at once.

MILKING THREE TIMES A DAY.

To see what effect milking three times a day would have, we selected two of our largest milkers and milked them at 5 a. m., 11 a. m., and 5 p. m. of each day for two weeks, beginning June 23rd. Previously each cow had been getting one pound of bran and two pounds of barley meal a day, in addition to good pasture; but when we began milking three times a day their daily meal ration was increased to 2 lbs. cottonseed meal, 2 lbs. pea meal, 2 lbs. bran, fed one-third morning, noon and evening. The yield of the two cows for the two weeks previous was: Artis, 819 lbs. milk; 2.93 per cent. fat; 24 lbs. fat. No. 13, 531 lbs. milk; 3.50 per cent. fat; 18.59 lbs. fat. When milked three times a day their record for two weeks was:

fat. No. 13, 531 lbs. milk; 3.50 per cent. fat; 18.59 lbs. fat. When milked three times a day their record for two weeks was:

Time.	No. 13.		Artis.	
	Lbs. milk.	Av. p.c. fat.	Lbs. milk.	Av. p.c. fat.
Morning.....	263.5	3.27	357.5	2.70
Noon.....	141.5	4.18	180.0	3.42
Evening.....	144.0	4.16	172.5	2.96
	549.0	3.87	710	3.03

The total fat given by No. 13 in the two weeks was 20.27 lbs., and by Artis 20.80 lbs.

For the two weeks following July 6th, when the milking three times daily ceased, these two cows were fed the same quantity of meal twice a day as they had been previously getting three times a day, and were milked twice a day—at 5 o'clock morning and evening. Their record was:

Time.	No. 13.		Artis.	
	Lbs. milk.	Av. p.c. fat.	Lbs. milk.	Av. p.c. fat.
Morning.....	250	3.47	308	2.72
Evening.....	239	3.62	299	2.80
	489	3.55	607	2.76

The total fat given by No. 13 was 17.06 lbs., and by Artis 17.87 lbs.

It may be interesting in this connection to note what difference there is between the total amount of fat credited to our cows by testing them two days in the week, and the actual amount of fat produced, as shown by testing them every day. In our regular dairy work the per cent. of fat in each cow's milk is determined on Monday evening and Tuesday morning, and Friday evening and Saturday morning, which tests represent the quality of milk produced during the week. Taking the tests of these two cows on the days mentioned, from July 7th to 20th, No. 13 would have been credited with 18.39 lbs. fat—actual yield 17.06 lbs.—and Artis 17.85 lbs. fat—actual yield 17.87. In the case of the one cow it gives almost exactly her yield, and the other would have been credited with .79 lbs. more than her yield.

SUMMARY.

By taking the average total pounds of milk and fat given during the two weeks previous to and after the milking three times a day, we should have a fair basis on which to compare the results of milking twice and three times. No. 13 gave 510 lbs. milk and 17.83 lbs. fat as the average of the periods preceding and succeeding the experiment. During the experiment she gave, in the same length of time, 549 lbs. milk and 20.47 lbs. fat—an increase of 39 lbs. milk and 2.44 lbs. fat. Artis gave 713 lbs. milk and 20.44 lbs. fat, as the average of the two periods, when milked twice a day, and when milked three times a day she gave 710 lbs. milk and 20.80 lbs. fat—a decrease of 3 lbs. milk, and an increase of .36 lbs. fat; in other words, her yield was about the same when milked three times a day as when milked twice.

This experiment would seem to indicate:
1. Frequent milking increases the percentage of fat, as both cows gave a higher percentage in their milk at noon and evening than in their morning milk. The average of these two, and also of the three milkings per day, was higher than their general average when milked twice a day. The effect on the total fat or butter was to increase it in the case of one cow, while it remained about the same in the other.

2. One cow gave more milk when milked three times a day, and the other gave less, presuming that the extra meal balanced the failing pasture.

3. It would not pay to continue milking these cows three times a day for any length of time, as the cow soon regulates herself to normal production. It may pay for a short time by keeping the cow at high pressure.

MILKING EACH GLAND BY ITSELF, OR THE TWO SIDE TEATS AT ONCE, INSTEAD OF A FRONT AND A HIND TEAT.

The two cows used in this experiment, which commenced Nov. 14th and continued two weeks, had been milking for some time. One calved April 15th, and, consequently, had been milking about seven months, and the other calved March 27th, and had been milking about eight months. We should naturally expect these cows to decrease in their milk, owing to the advanced period of lactation. During the two weeks previous to the experiment Cherry gave 257 lbs. milk, containing 4.07 per cent. fat, or 12.47 lbs. fat (about 13½ lbs. butter). For the same length of time, during which gland milking was practised, she gave 266 lbs. milk and 4.56 per cent. fat. This would be 12.13 lbs. fat, or about 13½ lbs. of butter—practically the same as for the two weeks previous. Dairy Queen gave, previous to the experiment, 250 lbs. milk, with 4.62 per cent. fat—11.55 lbs. fat; about 13 lbs. butter in two weeks. When gland milking was done for two weeks she gave 228 lbs. milk, 4.07 per cent. fat, 9.27 lbs. fat; about 10½ lbs. butter. The effect of milking eight months showed itself markedly on this cow. Some might say, "You should teach your cows to milk ten or eleven months." In reply I would say that we do not care if a cow milks but four months if she will give us from 6,000 to 9,000 lbs. of milk in that time, and make from 250 to 400 lbs. of butter. A cow that will give 8,000 lbs. of milk in six months is more valuable, other things being equal, than a cow that gives 8,000 lbs. of milk in ten months, because she would save four months' stripping, and time is money. As a matter of fact, we generally find that the cow which milks for the longest periods, say nine to eleven months, give the most milk in a year.

Weeds.

BY J. HOYES PANTON, M. A., F. R. G. S.
SCROPHULARIACEÆ (Figwort Family).

Many of the flowers of plants in this order present a somewhat irregular appearance, showing a sort of two-lipped structure, as seen in the snapdragon.

Verbascum Thapsus (Mullein).

This common plant by the wayside is too well-known to require minute description. Its coarse, hairy-like leaves, the long spike covered with yellow flowers, serve to identify it readily. It is a biennial, and can easily be got rid of by pulling when young. Its presence is always taken as an evidence of slovenliness and negligence on the part of those near whom it grows.

Veronica arvensis (Field Speedwell).

This is common in the fields as a low-growing plant of spreading nature; the stem hairy; three to eight inches high, with small blue flowers. Cultivation soon destroys this annual.

Veronica peregrina (Neckweed).

This is a great garden pest. It is becoming very common and spreads rapidly. It bears white flowers; is low growing and spreading in character. It has some resemblance to chickweed, but the flowers are much smaller.

Linaria vulgaris (Toad flax) Fig. 27

This is a creeping perennial; spreads rapidly, and in some places is becoming a troublesome weed. The thin, smooth, pale green, crowded leaves, on stems one foot high, covered with pale yellow flowers, having an orange centre, give the plant a striking appearance. Owing to this combination of color, the name butter-and-eggs has been applied to this plant. It bears many small black seeds, and generally grows in patches, which should be thoroughly hoed and the plants never allowed to get sunlight.

VERBENACEÆ (Vervain Family).

Verbena hastata (Blue Vervain).

This is the only species we shall notice in this family, and is not a bad weed, but is comparatively common on low ground near streams. The plant is three to four feet high; leaves two to three inches long, much longer than broad, and toothed along the edge. The small blue flowers are very irregular in appearance; grow upon spikes that are quite numerous on each plant. The stems have a purplish appearance, and are quite shrubby.

LABIATÆ (Mint Family).

A very large family, chiefly herbs, with square stems, and generally very aromatic. The flowers are irregular, mostly two-lipped in appearance. The family is valuable for its medicinal properties; in it we find such plants as mint, sage, thyme, etc.

Leonurus Cardiaea (Motherwort).

This is a common weed in waste places, and is seldom if ever seen in cultivated fields. The leaves of the flower stem are quite unlike those which appear in the early part of the season. It is a difficult plant to describe so that the ordinary reader can identify it. The most striking character is in the leaves, the lower being large and palmately lobed, somewhat like the maple, and the upper three-cleft; the upper lip of the flower is bearded and purple. It is a perennial, and grows from one to three feet high.

Nepeta Cataria (Catnip).

Though classed among weeds, it is not a very obnoxious one, and seldom finds its way to the fields, but seems to linger about stone heaps or fence-corners by the wayside. Cats are very fond of it, and will travel quite a distance in search of it. The whitish, small, irregular flowers appear in late summer in clusters of spikes at the end of the branches. The leaves are oblong, heart-shaped, and the plant is of a soft, downy-like appearance.

Brassica vulgaris (Self-heal).

Very common in low fields, low spreading, with oblong leaves and three flowers under each of the broad and round purplish bracts of the head; flowers, bluish purple. Though perennial, it is not troublesome to any great extent.

BORRAGINACEÆ (Borage Family).

Here we find some of the plant "tramps" of nature. The weeds here have a rough, uncouth, unpleasant appearance, their form, structure and smell in most cases being very unattractive; yet, in this family, there are some respectable members that serve to give it tone. Here we find the burs, stickseed and beggar's lice, the heliotrope and forget-me-not. The plants of this order are mostly rough and hairy, producing hard seeds, usually four to a flower; flowers are arranged on one side of the stem; the juice is bitter, and sometimes mucilaginous.

Cynoglossum Morissoyi (Beggar's Lice).

A kind of small bur, which is troublesome by getting into the wool of sheep, and sometimes sticking to the clothes of man. The seed is about one-



Fig. 28

third the size of a wheat grain, and is covered with prickles. The plant grows about two feet high; is common in woods, and seldom invades the fields; flowers a pale blue, something like those of the forget-me-not. Cutting down wherever found will soon kill out this biennial.

C. officinale (Common Hound's-tongue) Fig. 28.

This weed is our common coarse burr by the wayside; reddish purple flowers; large, rough, flat, prickly seeds. It grows about two feet high. You seldom find it growing in cultivated fields, but frequently in the fence corners, where it becomes a nuisance, on account of the seeds sticking to sheep. Being a biennial, spudding it below the surface will destroy it.

How Best to Overcome the Present Agricultural Depression.

An Address delivered by James Elder, of Virden, before the Brandon Farmers' Institute.

(CONTINUED FROM PAGE 9.)

Next, we must curtail our purchases. There are two words in the English language, each composed of four letters, which in a general way mean the same thing, but at the same time have a vastly different meaning. If a man adopts one as a basis of his purchasing he will go down, whilst if he adopts the other he will be apt to succeed. These two words are "Want" and "Need." If a man buys all that he wants, look out for the bailiff. If he buys nothing but what he really "needs," he will be surprised at the reduction he can make in his annual expenditure. And with this end in view, let us use as little as possible the credit system so prevalent in Canada—a system which, although in some cases a necessity, has at the same time much to do with the present pinched condition of our people.

Many an article which is bought during the summer, in view of a good crop, could and would be dispensed with if the hard cash had to be paid for it. With the same end in view, let us give the machine agents and the organ peddlers a wide berth. By that I do not mean to say that we should not have a supply of the best machinery in the market. But surely we are capable of judging for ourselves what we need and when to buy. And I think that a good rule for a farmer is never to buy from an agent when he calls at the farm. Many who to-day are receiving the attentions of the bailiff will tell you that they could have done without the article for a year or two, and had no intention of buying, but were persuaded by the agent who offered "such liberal terms," and before he was out of sight they regretted that they had given the order.

For my own part, I never give an order to a calling agent, but when I have, after calm deliberation, without the aid of this self-constituted, philanthropic advisor, concluded that I need a certain article, I go to town and buy it, and have never found any difficulty in finding a dealer.

Agents may think this plain talk, but I have a brother an agent, and they say he is a good one—a rather doubtful compliment.

The next point to which I would refer is one for the remedying of which I have less hope, simply because our party prejudices prevent us from taking an impartial view of it. I refer to our trade relations. I know that I will be met by some with the cry, "No politics in the Institute." I think that is a foolish cry. If you say, "No partyism in the Institute," I say amen to that. But we are farmers, and farmers constitute by far the majority of our population, and no class of men in the Dominion have a better right to discuss the political questions of the day than we have. But we cannot do so because our party prejudices interfere, and those who, by means of rings and combines, are sucking the very blood from our veins, take advantage of that in order to have the political machinery run in their own interests. What would you think of a man who, on account of being troubled with a cough, would call a doctor, and allow him to sound him all over, except just over one lung, because he was a little ticklish just there; and yet that is just the position taken by those who cry, "No politics in the Institute."

It is all very well to say we should discuss plowing, sowing, pickling, stacking, etc.; but when the manufacturers meet, do they confine themselves to asking the best material for bushing, the best kind of knotted, or the most durable journal? No, sir. The all-absorbing question is, How shall we fix the tariff so that the farmers may be made hewers of wood and drawers of water while we become millionaires? And when the farmers can meet in the same way, and, casting aside the party prejudices inherited from our fathers, prejudices which, in their day, were principles founded upon questions which no longer exist—consider without bias what will be for our mutual benefit, then, and not till then, will we have fair play in the race of life.

Now, sir, I hold that if the farmers of Brandon are sincere in asking this question, it is our duty, as

honest men, to lay aside our party names, and calmly look at the political, as well as every other phase of the question, and if we find that the policy of our party conflicts with our interests, let us sever our connection and vote for our interests.

And since you invited me to come here and discuss this question, I claim the right to speak my mind without hesitation.

Personally, I believe that one of the most potent causes of the present depression is the existing protective tariff, which debars us the privilege of choosing our own market either for sale or purchase. Why do we find so many first-class, intelligent western farmers buying American binders, and paying forty dollars (\$40) each extra for them? It is either because the binders are superior, or because those farmers are absolute fools; and whichever way you put it, if I desire an American machine, why should I not be at liberty to buy it without paying a fine under the name of duty? Of course, the reason given for the adoption of the system was to build up the manufactories, and thereby increase our population and secure home consumption for our products. That system has been in operation for nearly fourteen years, and now we ask, Where are our manufactories? Where is our increased population? "Echo answers, where?"

We were to foster our "infant industries." But whilst we were rocking the cradles, and benefitting politicians were singing a sweet lullaby, some of our "infants have died," and those who have lived have changed into monsters called rings and combines, which now stand with their heels upon our necks, whilst they drain the blood out of us. Why, I ask, should we farmers stand divided, whilst we are made a prey of by miller and grain dealer rings on one side, manufacturer rings on the other, and railway rings on top of all?

Let us unite, and not only talk together, but vote together, and then, and not till then, will we be in a position to make "tyrants tremble." And now, perhaps, I have said enough upon this tender but important point. There is another point upon which I wish to touch, and I sometimes think that it is the most important, because most potent of all; I refer to the moral phase.

I said at the beginning, that many of us in coming to this province very much resembled Lot viewing all the plain of Jordan, and pitching his tent towards Sodom. In reading the histories of Abraham and Lot, the chief difference seems to have been that, whilst Lot was most concerned about pitching his tent, Abraham never forgot to build an altar to God. And is there not good reason to believe that this fact had something to do with the vastly different fortunes which befel them? Is it not true that many of us have more resembled Lot than Abraham; and may not our difficulties and disappointments be attributable to a merciful rather than unkind Providence?

Let us pause and think, and, where necessary, amend our practice, and if we do, I have no doubt that ours will yet be a prosperous country, and we a happy and contented people.

January Work.

BY ALLEN PRINGLE, SELBY, ONT.

While there is not much to be done to the bees in January, what little there is is important. Those in proper winter repositories properly fixed require but very little attention, while those not so conditioned might require a good deal or loss would result. In the former case the entrances should be examined, and the dead obstructing it removed to give a free exit and ample ventilation. Then, if the floor of the repository is strewn with dead bees, as it always will be more or less, these should be removed before they become a nuisance. The floor should be covered liberally with dry saw-dust, and fresh lime placed around here and there. Bees wintered outside should be looked after now and then, especially after heavy snow storms, to see that the entrances are kept clear. It sometimes happens that during a cold spell the entrances will become completely filled with ice from within—the heat of the bees melting the frost which collects on the inside of the hive, when it runs down and out, and is frozen in the entrance. This must be attended to. Many farmers still use the "old box hive" for their bees. These, if being wintered in the cellar, where the temperature ranges from 40° to 50° Fahr., would be all the better inverted—that is, turned "upside down" and "down side up." Don't be frightened. It will not hurt them to "stand on their heads." I remember that about forty years ago, when my father kept some fifty to sixty colonies in the "old box hive," he used to winter them in a little house built for the purpose, filled in with saw-dust four to six inches thick all round, still standing on the whole homestead where I live, and he used to stand them all "on their heads," as the neighbors used to say. They wintered very well, and his losses were comparatively small. The farmer bee-keeper with a few colonies in box hives need not, therefore, fear to turn his hives bottom up when in the cellar, as they will be much more likely to come through all right that way than the other way. They should, however, be placed well up from the cellar floor the nearer the ceiling the better. If turned up put a thickness or two of woolen cloth or cotton and wool quilt over the open top.

Wheat Grading System Discussed.

BY A FARMER, EUNOLA, MAN.

I notice in your October number an article by J. S. Thomson, headed "Grading Wheat Unsatisfactory to Farmer and Buyer," in which he claims the grading system is a fraud and a nuisance.

It has opened up a subject that calls for careful consideration. Then, if it is found that selling by sample will be of more benefit to the country at large, the sooner the present system is done away with the better.

The following seem to me to be the main reasons why he would do away with it:—

1st. The buyers are opposed to it.
2nd. A farmer having a sample of wheat that will barely go No. 2 hard, by mixing inferior soft white wheat with it can obtain No. 1 northern or No. 2 hard price for it.

3rd. That the inspectors very often don't agree upon the same grade for the same sample of wheat.

I quite agree with Mr. Thompson that a drop of from ten to fifteen cents between the grades of hard wheat is too much. Now, is it the system that is at fault, or the way it is administered, and would the farmer really be the gainer by selling by sample? I doubt it. Would not the sample system still allow the same frauds to be practised on the farmer? Would not the buyer still say it must be better than the sample or it won't pass? That the buyers are opposed to it needs no comment.

As to the second reason, there is very little room for comment either, except how few farmers are able to mix inferior wheat with it so as to raise the price?

The third reason is the most important, and, to my mind, is where the real difficulty lies, and refers to the local buyers as well as to the inspectors. He quotes from his own experience, where he got No. 2 hard at Fort William, when the Winnipeg inspector only gave him No. 3 hard for the same wheat. Also that of another farmer who got No. 2 hard at Toronto, when he only got No. 3 hard at Fort William and Winnipeg.

Does that prove the system itself is at fault, or should we not rather endeavor to improve the administration? The same thing on a smaller scale has happened at the local market, where a farmer has been offered a low figure for his wheat, refused to sell, and given the same load to another farmer who obtained the highest price from the same buyer. This is where I think the farmer suffers the most, and would he not have the same thing to contend against under the sample system?

In support of the grading system, the article from the Winnipeg Commercial, in the same number, "Grading Wheat Defended," covers the ground so well it is needless to add more, except drawing attention to a former article—taken, I think, from the same journal and re-published in the ADVOCATE about February or March, if I am not mistaken—giving the experience of a buyer shipping on sample. It was stated that he received a telegram saying: "The car was not up to sample; what was to be done with it?" The shipper telegraphed back saying: "Take a sample from the car in presence of C. P. R. station agent and abide by his decision." The answer came back saying the agent would not open the car. This shows one of the evils that would creep in with the sample system.

I would like to hear the views of other farmers on the subject, as it requires careful consideration before action is taken.

Further Discussion on Wheat Grading System.

To the Editor of the FARMER'S ADVOCATE:

DEAR SIR,—One of the questions that is agitating the minds of the farmers of our country, is the present system of grading wheat, and on this subject I would like to express a few ideas through your valuable paper. Many condemn the grading system and pronounce it a fraud; they claim all grains should be sold on sample. Now, in the face of this, and after some experience, I claim that the present system, if rightly done, is the greatest protection the farmer or dealer has. In selling grain on sample suppose a farmer sells to an Eastern miller, say three cars of wheat; he sends a fair sample, the miller or dealer makes him an offer, the farmer accepts and ships; when the grain arrives at destination, perhaps on a "falling" market, suppose the miller or dealer should say, "This grain is not up to sample; I won't pay the price I bid for it," what redress has the shipper or farmer? Whereas if he sold on grade he could collect. As you see, by selling on sample you are at the mercy of the dealer.

A few suggestions on grading:—We are told by Mr. Braithwaite, of Portage la Prairie, that the Board that formulated the standards for this year was composed of five millers, three dealers, and one farmer. I think you will agree with me, that the people most interested had but a very small representation. I would suggest that the Board be composed of equal numbers of farmers and millers, the parties most interested, and let the standard grades be arranged so as to do justice to all concerned.

When the Board meets to arrange standards, they should decide to fix grades so that there will not be more than three cents difference in value between the grades, or, in other words, bring the grades a little closer together. As it is at present, a farmer having a lot of wheat not quite a two hard has to take a three hard, a drop of from eight to ten cents, when there is actually not more than two cents difference in value. In all honesty, this is not as it

should be. I also think that our No. 1 hard is a little too high a standard; in fact, so high that if you are not located on high ground you cannot reach it. I know the argument in favor of it is to keep up our reputation; but are we doing it? Take, for instance, the reports of the grades: look at the very small percentage of one hard that appears in said reports. Remember, the world is looking on, and can read between the lines.

One of the causes why the standards are so high, the Grain Exchange, through their representative, sends throughout the country to the local dealers for a couple of bushels of the classes of grain that their section of country can supply; at that time threshing is in full blast; the dealers drive around and pick up the best they can get, and from this the standards for the season are struck. Consequently, they find they are a little high for their section.

Farmers should try and arrange their payments so as not to be forced to rush the markets early in the season. It can be done in this way:—Half of their payments fall due in January, and half on first of March; this plan would afford a breathing spell between times, and give them a chance to pay their store bills and blacksmith, binding cord, and other little things incidental to farming early in the season; and I believe by this plan we would realize more for our produce, and the machine men at the close of the season would get more money than they do now under the present system, which is simply this—each dealer (particularly machine men) is trying to get his money in first, which is the chief cause of the markets being glutted.

For many other good suggestions, read carefully Chas. Braithwaite's article in December ADVOCATE, page 474, and let us all try honestly to bring about a better state of things. Yours truly,
J. J. RING, Crystal City, Man.

Hardy Cherries.—2.

BY JOHN CRAIG, DOMINION HORTICULTURIST, OTTAWA, ONT.

(Advance Sheets of Bulletin No. 17.)

VARIETIES RECOMMENDED.

With present experience the following varieties are recommended for trial, and will probably prove valuable in those sections where climatic conditions permit the cultivation of the pear: Amarelle Hâtive, Strauss, Griotte Impériale, Olivet, Gros Gobet.

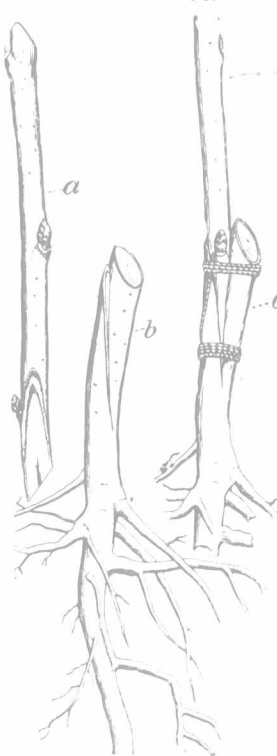
The following list comprises varieties which appear to grade in hardness with the Wealthy apple: Spate Amarelle, Fouchès, Morello, Minnesota Osthelm, Brusseler Braun, Orel 25.

Among those of exceptional hardness, and which should be tested along the northern border of the apple belt are: Riga No. 18, Vladimir, Bessarabian and Shatten Amarelle.

PROPAGATION.

Budding.—Cherries are propagated for commercial purposes almost entirely by budding. This consists in transferring a single bud of the desired variety to the stock or branches upon which it is to grow. The operation is usually performed during the month of August, when (using a nurseryman's phrase) "the bark slips." It is effected by slicing a well ripened bud from a twig of the growth of the same season, and inserting it under the bark of the stock, where it is securely tied. If the operation is successful all the top above inserted bud is cut off the following spring. By rubbing off and preventing the formation of other wood the whole growth of the stock is directed into this channel. In this way trees of suitable size for orchard planting are produced in two seasons. In the Western States, where the snow fall is limited, some objections have been urged against this method of propagation, on the ground of the prevalence of root injury to the more or less tender stocks. In regions of abundant snow fall, as in the Province of Quebec and Eastern Ontario, this objection does not carry the same weight.

CROWN GRAFTING.



early in spring, upon stocks in the ground, which had been planted the year previous. A strong

Root grafting, as ordinarily practised, when applied to the propagation of the cherry is attended with little success.

Crown Grafting, which is inserting the scion in the crown or collar of the stock, at or a little below the surface of the ground, is in the experience of the writer a much more successful method. This may be done in winter, using stocks which have been stored for the purpose; or early in spring upon stocks already established, and undisturbed in the ground for a year. Prof. Budd claims satisfactory results when the stocks are taken up in the autumn and grafted in the graft room during winter. Careful comparisons have been made here for the past three years, with a view to determine which plan was attended with the best results. The average returns show a gain of over fifty per cent. in favor of crown grafting.

growth is obtained the first year, at the end of which the graft may be taken up, and part of the old root cut away. The yearling graft may then be replanted, setting it deeper than formerly, so that the scion is brought under ground and offered conditions favorable to the emission of roots. The principal objection to the method is that at the time—early in spring—when this work should be performed, many other duties engage the attention of the fruit grower, making it difficult to accomplish in a limited time a large amount of this kind of grafting. The method is one, however, that can always be practised to some extent. It will prove of special service to amateurs, for whose benefit the following instructions are given:

The stocks should be planted in nursery rows the year previous to the date of grafting. Cut well matured scions in autumn of the growth of the same season, keep these in a dormant condition over winter by packing in forest leaves, or damp sawdust. In this locality the best time for out-door grafting is usually during the first two weeks of April. Figure IX. illustrates the method of crown grafting the cherry, as usually conducted in the graft room. (a) shows the scion cut wedge shape, (b) the stock with a slanting cleft for the reception of the scion, (c) the scion in position, firmly bound with waxed thread, and (d) illustrates the joint completed by a covering of grafting-wax, to exclude the air.



In the case of out-door work the process is essentially the same, except in the manner of tying. Instead of binding first and waxing afterwards, a firmer joint is made by applying the wax first, and covering this with a cotton bandage, which adheres to the wax and holds the scion in position. It must be remembered in the case of stocks which are in the ground, that the top is cut off at the point indicated in the figure as soon as the scion is inserted, after a little practice this is easily removed by an upward cut, which can be made without disturbing the scion.

PROPAGATION BY ROOT CUTTINGS.

When cherries are on their own roots, as when grown from sprouts, they may be multiplied by means of root cuttings. The surface system of roots, those nearest the top of the ground,—are used for this purpose. These are taken up in the autumn and cut into three-inch lengths, packed in boxes with earth and stored in a cool cellar till spring. When the ground is in proper condition the cuttings are planted in rows, sticking them in a slanting position and covering completely, so that the top end is about an inch below the surface of the soil. Several shoots will usually start; the strongest should be trained up to form the future stem, and all others broken off. Where greenhouse facilities are available, the cuttings may be started during winter with gentle bottom heat in the propagating bench, and set in nursery rows the following spring.

STOCKS.

The Mazzard cherry (*Prunus avium*) is probably used by nurserymen more than any other as a propagating stock. It is a native of Europe, and is supposed to have given rise to many of our cultivated varieties. All varieties of cherries unite with it readily.

The Mahaleb cherry (*Prunus mahaleb*) is used to considerable extent, partly on account of its dwarfing tendency, and also because of its adaptability to clay soils, as pointed out by Professor Bailey. (See bulletin on native plums and cherries.) The Morello stock (*Prunus cerasus*) has not been largely used by nurserymen, chiefly owing to its sprouting habits. It is hardy, however, and can be frequently procured by amateurs when Mahaleb or Mazzard are not easily obtained.

Wild Red or Bird cherry (*Prunus Pennsylvanica*) has been successfully used as a budding stock for some years by several experimenters, but its ultimate value for this purpose has not been definitely determined. Most varieties seem to unite with it as readily as with Mazzard. Budded trees of many varieties on this stock in the trial grounds of the Central Farm are making a vigorous growth, apparently having made a perfect union. The ease with which seed of this species can be procured in nearly all parts of the Dominion, as well as its great hardiness, should render it a popular stock for cold climates.

The Statute Labor Question.

BY JAMES ELDER, VIRDEN.

The above question is being earnestly discussed in Ontario and in some parts of this province, and the prevailing opportunity seems to point to the abolition of the old system, and it may not be out of place to discuss the question here.

The only argument which we hear in favor of the old system is, "That a farmer does not feel the five days' work as much as he would the cash payment of \$5.00. Now, we believe that this is a delusion. If a man has to perform five days statute labor, that means a day and two-thirds of a man and team spent on the road, but it really means two days off the farm, because there is but little done at home on the second day after the statute labor is done. Besides, it is a matter of value, and at the rate of wages paid in this province, every day of a man and team is well worth \$3.00, and, as a rule, is badly needed on the farm.

We have practical proof of this in the fact that when contracts are let, very few farmers care for them, even when more than \$3.00 per day can be earned. So that the whole question of statute labor is a matter of paying in value instead of cash, whilst the whole is really (though perhaps not apparently) worth more to the farmers than the cash.

This is one side of the account, but there is another, viz.: The value is not worth nearly as much on the road as the cash would be, for the following reasons:—

1st. Whilst there are some who take an interest in the work and try to do as much as possible, and to make as good a job as possible, with a great many the object seems to be to get the day put in as easily as possible, and the work done is of a most unsatisfactory character, and this, too, even when the work is being done upon the road over which the individual travels.

2nd. If men were doing contract work they would not only work harder, but they would work ten instead of eight hours per day.

3rd. A contractor can accomplish more in a given time, because he will supply himself with all the appliances necessary, and have his plows and other machinery in proper condition, whereas the farmer's plow almost always requires about an hour's tinkering before it will work, and then seldom works satisfactorily, and a great deal of time is lost in hunting up scrapers and shifting them from place to place.

4th. Contract work means finished work—work brought up to a specified standard; whereas, statute labor often means a job left half done, and the road left in a worse condition than before it was touched.

5th. The pathmaster or road commissioner's work will be more systematically done.

Under the present system, each man wants to do his work opposite his own farm, and, as a consequence, the statute labor is often frittered away upon a great many little jobs, but few of which are finished.

Now, if a tax were collected and a road commissioner appointed for a term of say four or five years, he could then arrange his work systematically, and by making a main road through his district, so located as to accommodate the greatest possible number of settlers in the shortest possible time, and afterwards attending to the branch or less travelled roads, I have not the least doubt that at the end of his term every person would admit that the change was a great improvement.

Pertinent as these remarks might be under the old system of doing statute labor, *i. e.*, with plows and scrapers, they are much more pertinent now that we have the road plow, which is operated by eight horses, and does a vastly greater amount of work in a given time than can be done by the old system.

When using the road plow last summer, we found our greatest hindrance to consist in the continual change of teamsters and teams.

Before either the man or team became acquainted with the work, their time was put in and a new man and new team had to come on. Then, again, it often happened that the statute labor of a district was performed without that particular piece of road being finished. Then, again, there was the great loss of time consequent upon three men and three teams waiting for the tardy fourth man and team.

All things considered, we are confident in the opinion that the time has come for a complete change in our whole road system, and the question is which district will lead in adopting the reform.

And now that the road plow has been mentioned, we would advise those in districts where it is not known, to be careful about making ditches along their roads, because there is not the least doubt that the road plow will come into use in every district of Manitoba, and in order to prepare for it we would say, Set your stakes 9 feet from the centre of your road and draw a light furrow first, throwing it toward the intended road bed, then go around on the gee, making each furrow deeper than the one before, until you have five or six furrows plowed on each side. This will leave you 18 feet of road bed, with 5 or 6 feet plowed on each side to be thrown in upon the road bed with the eight-horse plow. It also leaves about 9 feet of prairie on the outside of the ditches to drive on in wet weather when the centre is slippery. This work should be done the year before the road plow is used.

Timely Notes for January—No. 2.

A happy, a progressive, and a prosperous season! WISHES AND RESOLVES.

With each succeeding January we are all prone to make numerous resolves for a new and better life—with some in a financial and others in a spiritual sense. Let us not forget that "the road to — is paved with good resolutions." It is in the carrying of them out that there lies the hope of regeneration. Among a few of the good intentions I would call your attention to the following:—To get out of the hands of traders, either of horses, cows, or trees; rear your own calves; get a good horse that you can and will keep for half a life time; and get your trees from the Experimental Farm, and the nearest spruce bush; to join the Institute, the Dairymen's Association, the Stock Breeders' Association, and, lastly, the Patrons of Industry; to pay up the arrears on your agricultural paper, obtain the bulletins from the Experimental Farms, and try to improve your returns from each acre and from each animal.

GENTLENESS IN STOCK RAISING.

The "still, small voice" is what tends most to make the stock gentle and kind. Both cows and horses are unnerved when shouted at, and, being frightened, very often kick in self-defence. Many folks tie a heifer's legs together, draw her head up high to a beam, then give her a few caresses with the milking-stool, yell at her a few times, and then are very indignant if the poor beast tries to kick and holds up her milk. Now, let us reverse the treatment, and tie the man's feet together, put a gag in his mouth, so that he can't swear, and tie both his hands behind him, so that he can't pinch the heifer's teats. I think that particular cow would not kick then. "Put yourself in his place" is a good maxim on the farm, and should be placed over the cows' stalls. Kindness pays.

ECONOMY IN TAKING STOCK.

We have now our slackest time. Let us sit down and take stock of our belongings, as a merchant does. Beginning with the farm itself. What was it worth last January? \$2,000, or \$3,000? What is it worth now? Any more or less? Say \$2,000 last year. Now with the extra plowing done, the fresh stable and sheep pen, it is worth say \$2,500—no mortgage—then we are \$500 better off on this item. Then the horses. Our teams are worth say \$20 less each than last year, on account of their being a year older. Our young horses are worth more. Let us then put down what we honestly think they are worth at present market values. Say two teams at \$300 each, and four young horses at \$75 each, in all \$600+300=\$900. Let us now turn to the cattle. Is our bull a pure-bred? If not, why not? Is he worth more than last year, or less? And so on with the cows, the pigs, the sheep and the poultry. The implements and "dead stock" are all to be reckoned out in the same way; and lastly, our cash, with our bills payable and receivable.

Another very important point, and a very forcible educator, will be the different value we put on our stock individually. Take those two colts. The first by a pure-bred Clyde is "easy sale" at \$75, the second by that cheap Clyde-trotter-French-combination stallion would be a very slow sale at \$40. How much have you lost on that colt as compared with the first this year, and how much will you lose on him by the time they are both four years old? Will you, after that demonstration, still go on using the mongrel stallion?

Take your cows now. You know that "Bess," the old reliable twelve-year-old, still gives you 6 lbs. of butter per week, but you know also equally well that her daughter "Buttercup," though only four years old, gives you 10 lbs. per week, eats less and looks better. You value "Bess" at \$30. What value do you put on "Buttercup"? Can you afford to keep "Bess" any longer? What about those others that don't give as much as she does? Do you intend to go on keeping "Buttercup," so that she will help pay for the board of the other unprofitable brutes? Wouldn't you be better off to give away some of those cows at the beginning of the winter, or, at any rate, sell them for what they will fetch, or make beef of them? Carry out this comparison with all your other stock, and I don't think you will want much urging next year to buy a pure-bred bull, boar or roosters.

Again, you had some fifty acres of wheat this past season; 30 of it gave you 25 bushels per acre, the remaining 20 only 15 bushels. Why was this? Did that 20 acres pay expenses? If not, wouldn't you have been better off without them? You had a piece of Hungarian grass of four acres that returned you sixteen large loads of good hay, with only four days' work in all for plowing, cutting and hauling, because it was so near your buildings and on your own farm. You also cut forty loads of wild hay ten miles from home, which took you two weeks to cut and stack out in the swamp, and is going to take you three weeks more to haul home during the cold of winter. Now, in the first case, you got four loads a day of first-class hay; in the second only a little over one load a day of second quality stuff. Think it over seriously, and without prejudice for the good old times, and determine that this season you will endeavor to have all your hay at home, grow it on your own land, and thus not only get more of a better quality, but without any hardship of winter teaming. Let those far-away swamps severely alone. Believe me you can make more money giving your stock your full attention during

the winter than you can save by hauling home swamp hay in the cold of January and February and neglecting your cattle at home. Let us think more and work more with our heads and not so much by "main strength and ignorance."

GENERAL.

Keep all those refuse pieces of meat from your animals, such as lungs, etc., and chop them up for your hens; burn your bones in the stove, and the fowls will be glad of them.

Look round you for fresh roosters. Make note of those hens that lay right along in the cold winter months, and keep all the pullets from them; they will most likely follow their mothers in their good deeds.

If you intend buying a bull or a boar, buy one that was born early in the year; they will be better grown than those coming later. Again, in showing them they will have a considerable advantage, as the ages are frequently reckoned from the beginning of the year. "INVICTA."

Enquiries re Shropshire Sheep.

A subscriber from Cartwright, Man., sends in the following enquiry, which we submitted to Mr. Wm. Wallace, Niverville, Man., to answer:

"Would you be good enough to give a general description of the Shropshire Sheep? If it is a suitable breed for this country? If a prolific sheep, and if the wool is of more value than the Leicester? Also please inform me what you would consider a fair bargain in taking sheep on shares for say a three years' term?"

The Shropshire is a medium woolled sheep, with dark brown face and legs; a thick, compact, well-shaped body, set on short legs; head and legs well covered with wool. It comes early to maturity, and at any age its weight compares favorably with other breeds. The mutton is more highly esteemed than that of the Leicester or Cotswold, the fat and lean being well mixed. The wool is shorter, finer, and with a closer habit of growth than that of the other two breeds, and it is worth two or three cents more per pound. The Shropshire is very prolific, and the ewes are good mothers. This breed is well adapted for Manitoba, either pure or for cropping.

We have not heard of sheep being rented in Manitoba on shares, but know of cases over the boundary in North Dakota where this has been done; the farmer getting one-half of the wool, and on -half of the increase.

Legal Department.

To the Editor FARMER'S ADVOCATE.

SIR,—What is the law in Manitoba governing line fences? My neighbor insists that I shall build and maintain all dividing lines. Am I compelled to fence against stock? C. W. K.

ANS.—You are not compelled to fence against your neighbor's stock, for whenever two persons have adjoining fields and no fence between them, each must take care that his own beasts do not trespass on his neighbor's. But under Chap. 12 of the Revised Statutes of Manitoba, it is provided that whenever any owner of land erects a line fence the owner of the adjoining land shall, as soon as he encloses lands adjacent to or along the line fence, pay to the person who erected the line fence, or his assigns, a fair compensation for one-half the line fence. Such compensation may be determined by arbitration, if not otherwise agreed upon. And further, that each of the parties occupying adjoining tracts of land shall make, keep up and repair a just proportion of the division or line fence on the land dividing such tracts and equally on either side thereof. And further, the disputes between the owners or occupants of adjoining lands, in regard to their respective rights and liabilities under this Act, shall be decided by the majority of the three fence viewers appointed in the same manner as stated in Subsection (C) of the sixth section of this Act. The whole Act bears upon the subject, and its provisions should be strictly followed.

We take the following clippings from the Breeders' Gazette, which shows that choice beef is still in demand at paying figures:—

"One of the largest droves of choice beeves ever received here was brought in on Wednesday last, by J. Evans, from his Emerson, Ia., farm. There were seventeen car loads, and every animal was about as near perfection as they make them. They were Polled-Angus, averaged 1,400 lbs., and brought \$6. Mr. Evans has about 1,000 head of young cattle on his Emerson farm, 400 of which are pure-breds." "Among the very prime Shorthorn cattle here recently were seventy-two head belonging to J. D. Waters, of Mechanicsburg, Ill. They were two-year-olds, averaged 1,508 lbs., and sold at \$6.10." "Another bunch of thirty-eight head of Angus cattle, from Missouri, that averaged in Chicago 1,816 lbs., were good enough to fetch \$7 per 100 lbs., and were pronounced the choicest cattle for the number ever marketed in Chicago."

Domestic Veterinary Treatment of the Animals of the Farm.—6.

BY DR. MOLE, V. S., TORONTO.

DISEASES OF THE RESPIRATORY ORGANS.

We shall consider in this paper a number of diseases affecting the organs of respiration in horses, cattle, sheep and swine; give cause, symptoms, and treatment in each of the simple cases, but not in any way to supplant the regular veterinary attendant, for it is not to be expected that the farmer will be able to recognize all the symptoms in their many phases, as presented in disease.

CATARRH, COMMON COLD, BRONCHITIS, PLEURISY, PNEUMONIA AND BROKEN WIND.

These diseases bear such a close resemblance to each other that not unfrequently one terminates imperceptibly into another more severe in character; two or even more may be present at the same time. Thus we may have bronchi-pneumonia, or pleurisy or influenza with an attack of laryngitis, so that to an inexperienced observer the whole may present an assemblage of diseases of the most inextricable confusion.

Many of the above-named diseases are essentially similar in character, the difference in name arising merely from the difference in the locality in which they are manifested, as laryngitis and bronchitis, which are, as their terminations indicate, inflammation of the larynx and bronchæ, more particularly the lining mucous membrane.

CATARRH OR COMMON COLD.

Catarrh is inflammation of the mucous membrane of the air passages, more particularly of that portion which lines the nostrils, producing an increased discharge of mucous from the nose; it is one of the most frequent complaints met with in the horse, sometimes prevails over a large extent of country, and affects nearly every animal when it is denominated Influenza, Pink Eye, or Epizootic Catarrh.

The term Influenza is somewhat misleading, as it is generally understood to embrace one specific disease, instead of a number of manifestations. So much has been written, and so many observations taken in this disease that whole chapters might be written in describing this complaint. For the sake of description the various names by which it is known are here mentioned: Pink Eye, Typhoid Fever, Epizootic, Epehippus Fever, La Grippe, Typus Fever, Hepatic Fever and Biliotic Fever are all one. We recognize several diseases under the denomination of Influenza, and are of opinion that it is more like Malarial Fever of the human subject, for it has been recorded that a single animal with a slight catarrh will communicate and become the centre of disease, and it is entirely a matter of chance as to whether a sporadic or common cold may not produce a very wide outbreak of Influenza; and that it disappears as suddenly as it commenced is incomprehensible, unless on the theory that it is a germ disease and has died out because the material on which it can live has died out also. Therefore sanitary measures are all important. Insist on the abundant admission of fresh air, a free use of disinfectants, with constant washing day by day of floors, walls, mangers and surroundings.

Symptoms.—Generally localizes its effects in the head and chest, the animal is feverish, the pulse altered in character—about fifty to sixty per minute—small in calibre, and a jarring or wiry touch; temperature elevated one or two degrees, about 102 to 103 Fahrenheit; corresponding to an elevation of temperature the respiration will vary from fifteen to thirty times a minutes; the breath will be hot, and the breathing superficial from the closing of the bronchial tubes, as described in my last article. The eyes will be dull and watery. The membranes of the nasal duct being swollen, the tears cannot flow freely into the nostrils, therefore they escape from the eyes and flow over the cheeks. The visible mucous membranes of eyes and nostrils will be of a pinkish color, and from this appearance is sometimes described as Pink Eye. The animal yawns frequently, indicating derangement of the stomach and digestive organs, or gives forth a cough or sneeze at the same time. When the throat is sore, the appetite will be bad. Then a watery fluid is discharged from nostrils, which either disappears, in a favorable case, or becomes thick and tenacious; the urine is high colored, voided frequently, and dung ejected in small quantities, with a glazed, glistening surface.

Cause.—A very common cause is that of over-driving the animal, and then allowing him to stand in a draught of cold air; placing him in a cold, damp stable; turning him out to grass while in a state of perspiration; driving him into water, or wetting the legs when the system is exhausted after a long journey; placing him at once in a close, warm, or ill-ventilated stable with other horses suffering from the disease.

Treatment.—Owners of horses who are at all observant ought to be able to instantly detect the symptoms of Catarrh, and by prompt measures arrest its progress; and if any attention has been paid to my explanation of the theory of inflammation, there ought to be no difficulty in at once adopting domestic remedies for this complaint.

The first and great healing power of nature is rest for the wearied tissues. Make the animal warm and comfortable by rugs, and bandages to the legs; and give a bucket of gruel, instead of the usual method of filling the manger with oats, etc. Should

the animal not recover his natural heat, do not waste any time waiting, but remove the rugs, obtain a blanket, wring out in hot water and apply to sides and chest. Apply and well rub in some of the stimulating liniment, and cover with rugs until the reaction sets in. Give two drachms of the tincture of aconite morning and evening; place about half an ounce of nitre or saltpetre in his drinking water, which should have the cold chill taken from it. As soon as the animal will take any feed, offer a bran and flax seed mash, with boiled oats and a few carrots, and in most cases a recovery will soon be manifest. Without warmth and comfort medicine will prove of little or no avail. It may be necessary to continue these remedies four or five days in succession.

The causes of Epidemic Catarrh or Influenza have a close relation to the state and peculiarities of the atmosphere, the season of the year, etc. In the fall the prevalence of the northeast winds, or a rapid change of the atmosphere—a hot, close condition quickly succeeded by a cold, damp, moist state, is pretty certain to be followed by the prevalence of Epizootic Catarrh. It has been recorded that whenever an epidemic of this complaint appears in animals, the human subject is sure to be affected later, and it is then familiarly known as La Grippe. In our young animals it usually terminates in an abscess in the submaxillary space or underneath the jaw. This condition is known as "Strangles". Hot fomentation, the application of bran and linseed meal poultices are indicated. Should the abscess seem tardy in forming, a slight blister of the biniodide of mercury will hasten the process by increasing the flow of blood to the part already inflamed and thus cause suppuration, which should be balanced as soon as the matter points for an opening.

Should, unfortunately, Pneumonia supervene, its appearance is greatly to be dreaded, especially where a number of animals are kept. As disease has always a tendency to communicate a more violent attack from a simple commencement, it frequently undermines the whole organism before an ordinary observer would suspect that anything particular was the matter; it is here that a skilled veterinarian should be called in, as it is only his experienced ear that can detect the various changes which have been and are taking place. There is also something in the very cough which tells of the great and destructive damage done to the internal structures. It is soft and feeble in its character—is constrained, as it were. The animal is afraid to cough, from the acute pain which it experiences during the act; the countenance is dejected, the eyes present a dull, inanimate look of pain; if the hand is placed on the limbs, a moderate degree of warmth is at first felt, but if retained for a short time a coldness becomes perceptible, which seems to come from the deep-seated structure of the limbs. The visible mucous membranes of the eyes and nostrils present a dull, leaden hue, the front of face and nose become cold, and death soon closes the scene. The post mortem changes were described in our last article, and need not be again referred to; but in advising for domestic treatment, the lines laid down for common catarrh must be strictly followed, and in addition give alternately a half pint of good whiskey and port wine. The action of all stimulants is to rouse the system and give natural heat; it has also the twofold object of preventing a too great oxidation of the blood, and thus lower the temperature, which will sometimes mount up to 104° to 105° Fahrenheit in fatal cases of this disease.

Certain remedies, like simple aromatic tea; vegetable acids, as vinegar, lemon juice; alkalines in the form of salts, sweet spirits of nitre, which are household remedies, are always useful because they act on the excretory organs and ameliorate the effects of fever. Some little judgment is required in administering the proper quantity. Half a gill of whiskey would be too large a dose for a small buggy horse, and too small for a Clydesdale cart horse. Port or native wine, on some occasions, not only acts better than whiskey, but it is also more palatable to the patient. Use in half-pint doses, mixed with an equal quantity of water, at least three times a day, in severe cases.

In convalescence, the diet should be nutritious; eggs and milk, bread and milk, or milk and water with bran and linseed meal mash are all indicated. In preparing the eggs, follow out, as near as possible, the domestic method. Break a dozen eggs into a basin; add a teaspoonful of salt (about a quarter of an ounce); mix the whole thoroughly with a whisk to a froth; add about two quarts of milk, and give the same to the patient.

Hygienic conditions now come in as a most important factor, with good nursing. Boiled oats, hay tea, or fresh cut vegetables of any kind that the stomach will retain or can be coaxed to take—the great and important fact is to give nourishment to support the flagging spirits. A very important "don't":—Don't force the recovering patient to walk or take any exercise. Give a good, roomy, warm box or barn; allow the animal to wander around on his own account; he will be the best judge of how much exercise he is willing or desirous of taking.

So far as we can observe, there is no reason to believe that any contagious disease can arise spontaneously. Influenza behaves, as do all other contagious diseases, in a uniform manner. It has its period of latency, development, height and decline. How it spreads it is sometimes difficult to trace; but surely the fact that in one case out of ten thousand the difficulty of tracing it seems entirely out of sight is no argument in supporting the assertion that it arises spontaneously. Fortunately, pleuro-

pneumonia contagiosa is unknown in the Dominion of Canada, and the government of this Dominion, with Professor McEachern, of the Montreal Veterinary College, as their veterinary adviser, deserve great credit; and we accord to Professor McEachern the sole credit of organizing the measures of sanitary police prevention against this scourge of the bovine tribe. We of Canada enjoy the valuable privilege of exporting our cattle alive on the hoof to Great Britain, whereas our neighbors across the border are obliged to convey them in carcass or slaughter at the port of landing. There is no doubt that during the coming winter and next spring a very great effort will be made by the American government to gain a foothold of this market, and it is for that reason we advocate the greatest precautions in guarding a great privilege that we of the Dominion of Canada enjoy. The English and Scotch farmers have been so sadly served with unfavorable condition of season as to render farming unprofitable, and we are quite of opinion that if they only knew of the favorable conditions that farming can be carried on in this country we should see more and more of them trying their fortune in Canada; and they will exclude the whole of our animals, should, unfortunately, such a dire calamity overtake our herds. Therefore it will be quite unnecessary for us to describe the symptoms of pleuro-pneumonia contagiosa, but we may state how pneumonia affects cattle, always remembering our original description of inflammation of the lungs. The ox is fortunately very rarely affected with pneumonia, except the working oxen. All diseases of the respiratory organs in cattle ought to be treated with very great suspicion, but they do occasionally suffer from catarrh and bronchitis, and the train of symptoms may be classed as follows:—

Usually a rigor or shivering fit, lasting about an hour, running of a glairy or white-of-egg colored mucous from nostrils, stiffness of gait, arching of back, dryness of nose, are unerring symptoms in the ox of the animal being amiss. Constipation, too, will be occasionally present, known by the stiffened and glazed appearance of the dung.

Cough, or wasting, as it is more often called, if very severe and more acute. As in bronchitis, the respiration becomes quickened with a wheezing sound, increasing to a grunt; this disease cannot be distinguished, unless by an expert, from pneumonia, and it is not important to separate the two diseases. In either case the affection must be treated promptly and decisively; apply hot fomentation to the sides and chest by means of the blanket; apply some strong liniment of ammonia; should this not be at hand, a pound of mustard applied hot, with some oil of turpentine, will be found beneficial. Some amount of discretion must be used, for if applied too strong it will blemish the skin. The bowels in oxen always want relieving, therefore give one pound of Epsom salts in two quarts of gruel, and a teaspoonful of the aconite mixture every four hours until relieved.

At times the disease takes a chronic form, from the acute symptoms not receiving any attention. The farmer will describe the animal as to have a "waste" on her, or that she is a pinner. The beast has been coughing, and she has fed tolerably well, given her usual quantity of milk, so that little notice is taken of the complaint; after a short time she begins to waste, the cough increases, and is more persistent; the appetite becomes capricious, the milk gradually diminishes, until an attack of diarrhoea usually closes the scene. "Old Brin. dies." The verdict is, "Inattention and neglect of a common cold."

As long as any of these disorders attack the upper part of the throat, and the animal coughs hearty, the farmer may be content with nursing and attending to the general comfort of the animal. Domestic veterinary treatment should be carried no further when skilled assistance can be had; for if the animal is valuable, or he refuses to lie down, take food, water, etc., then, under these conditions, the farmer may depend he has more than a common cold to deal with.

Tuberculosis is a contagious disease, and deserves a whole chapter to itself, and the consideration of this most important matter will be taken up in our next communication.

CATARRH IN SHEEP.

With regard to the diseases of sheep, although prevention is, generally speaking, easier than cure, still, at the same time, a knowledge of the general lines of treatment of the more common diseases to which sheep are liable is invaluable to the shepherd and farmer. The cases which we generally hear of and most frequently see are congestion of the lungs, in highly-bred, good-conditioned animals which are forced to exert themselves. In these cases, fatal effects are so rapid as to give great surprise to the owner. The art of detecting the ailments of sheep comes only to those who are observant of their natural ways and habits. Watch the eyes and ears, and learn to detect the first symptoms of ill health. In mild cases of catarrh, a slight discharge at the nostrils, weeping eyes and short cough are all that present themselves; the restlessness and absence of the cuddling will indicate that it has progressed beyond this stage to pneumonia. Of all diseases that affect the lungs of sheep, none cause so much loss to the Canadian breeders. It is due in most cases to direct exposure to cold and damp, and is principally met with in the fall and spring months. Almost the same symptoms that were described in the first part of inflammation of the lungs—elevation of the temperature to 102 to 104 Fahrenheit, oppressed breathing, hurried respiration, slight cough,

flapping of the nostrils and depressed ears. The appetite is always interfered with to such an extent as to require great attention. Give light gruel, hay tea, and all the domestic remedies as before detailed. In the early stages, one to five drop doses of the aconite mixture, given every four hours, will very often cut short the complaint. It is questionable whether any description of live stock have so little care bestowed on them as sheep, as owing to the weakness of their nervous system the animals, if neglected in the earliest stages of the attack, frequently fall victims to a disease which a little care and proper treatment on the first appearance of the trouble would enable them to have thrown off. The old-fashioned method of slaughtering a sheep showing signs of illness, if in good condition, or of simply letting it take its chance, as is too often done, when a poor one, cannot be considered satisfactory. There is one thing necessary to say in the administration of medicine to sheep. Let an assistant throw the animal on its haunches and hold it between his legs, back towards him, with the loerw jaw seized in his left hand from the left side; he can seize the upper jaw, or, what is preferable, pull out the cheek, to make a pocket or pouch with his right; then pour out steadily from a small bottle, or tin can, the exact quantity for each animal.

When we come to consider this disease in swine, some very formidable obstacles present themselves. Who is there that has attempted to drench an old sow will venture on the experiment again? Yet by a little judicious management they can be cheated into taking medicine when they don't want to. It will save a lot of trouble if it can always be done, but there are many exceptions. The method that has always proved successful in our hands is the following:—

First catch your animal; if of a large size, back into a corner; have your fluid medicine in a bottle; take an old boot and cut a portion of the front toe off; offer to Mr. Pig, and, in nine cases out of ten, he will seize it in his teeth and hold fast; then pour your medicine into the boot, and let it flow into the mouth. If anyone knows a better way, we shall be glad to hear of it.

Swine, like all gross feeders fattened in confinement, make bad patients, but we have to record a most docile case, the property of Mr. Fearman, of Hamilton, and as a guide for all cases will relate his symptoms and give the treatment. A red Tamworth hog, about six months old, was noticed to have refused his food for two or three meals. Being a valuable animal, our attention was called. Found little Mr. Pig separated from the others in corner of sty; nasal disc hot and dry, and breathing hurried, shallow and oppressed; temperature, 104° Fahrenheit, taken at the anus; bowels constipated, urine diminished—his removal to a box that we could better observe him pointed out all these symptoms; also an absence of the characteristic piggy smell. For medicine we give jalap, one ounce; quinine, one ounce; ginger and black pepper, equal quantities, about half an ounce. This we mixed with some treacle, and made just thick enough to stick together. An assistant held the jaws open by two pieces of strap, and with a stick covered with tow, we rubbed a quantity of the electuary, as this may be called, on the teeth, taking advantage of the fact that no animal other than the human subject can expectorate. This treatment combined with a little stimulating liniment to the sides, brought about recovery in a few days, and he had the distinguished honor of winning a prize at the last local agricultural show.

The Bots

IN HORSES NOT NEARLY SO DANGEROUS AS GENERALLY SUPPOSED.

The common gad-fly (*Gastrophilus equi*) attacks the animal while grazing late in the summer, its object being, not to derive sustenance, but to deposit its eggs. This is accomplished by means of a glutinous excretion, causing the ova (eggs) to adhere to the hairs. The parts selected are chiefly those of the shoulder, base of the neck, and inner parts of the fore legs, especially about the knees, for in these situations the horse will have no difficulty in reaching the ova with its tongue. When the animal licks those parts of the coat where the eggs have been placed, the moisture of the tongue, aided by warmth, hatches the ova, and in something less than three weeks from the time of the deposition of the eggs the larvæ have made their escape. As maggots, they are next transferred to the mouth and ultimately to the stomach along with food and drink. A great many larvæ perish during this passive mode of immigration, some being dropped from the mouth and others being crushed in the fodder during mastication. It has been calculated that out of the many hundreds of eggs deposited on a single horse scarcely one out of fifty of the larvæ arrive within the stomach. Notwithstanding this waste the interior of the stomach may become completely covered (cuticular portion) with bots. Whether there be few or many they are anchored in this situation chiefly by means of two large cephalic hooks. After the bots have attained perfect growth they voluntarily loosen their hold and allow themselves to be carried along the alimentary canal until they escape with the feces. In all cases they sooner or later fall to the ground, and when transferred to the soil they bury themselves beneath the surfaces in order to undergo transformation into the pupa condition. Having remained in the earth for a period of six or seven weeks, they finally emerge from their pupal cocoons as perfect

dipterous (winged) insects—the gad-fly. It thus appears that bots ordinarily pass about eight months of their lifetime in the digestive organs of the horse.

According to Prof. Michener, bots seldom—not more than once in ten thousand times—cause colic. They may, when present in large numbers, slightly interfere with digestion, but beyond this they are, with these few exceptions, entirely harmless. It is entirely useless to attempt to dislodge them from the stomach, and they will go at their appointed time, which is mostly during the months of May and June.

Veterinary Questions.

ANSWERED BY W. A. DUNBAR, V. S.

I have a cow that got her teats frozen last winter. She is about to calve again. What treatment will I give her to get the milk through her teats.

THOS. COUGHLIN, Virden, Man.

If the obstruction is at the lower extremity of the teat, and the canal is completely closed, it will be necessary to make a small crucial incision in the end of the teat with a sharp knife or lancet, and then pass a steel knitting needle, which had just been dipped in boiling water, and afterwards in a solution of boiling carbolic acid (one pint of the acid to twenty-five of water) through the obstruction until the milk begins to flow. To prevent closure of the opening just made, insert for a few days a teat syphon or milking tube, which should be kept corked except at milking time; or, instead of the syphon, a rubber or wooden bougie may be used. If wood is used, it should be of good quality, and not larger in diameter than a coarse knitting needle. The surface should be made as smooth as possible, and the end to be inserted should be well rounded and a little enlarged. Whether syphon or bougie is used, it should be disinfected, and again replaced until the part is healed. In extracting the milk while the teat is sore, the milking tube should be used.

Can you, through the *ADVOCATE*, inform me whether there is any danger in feeding horned cattle on straw with the binding twine in it? The other day I butchered a three-year-old steer for beef, he having been fed for about a month previous principally on straw and chaff, and, on opening the large paunch, it contained a large amount of the binding twine. The steer was apparently well and all right otherwise. We have to feed straw this winter. Is there any danger of bad effects from the twine, and what remedy, if any?

H. G. S.

The digestive organs of cattle are not very readily injured by the introduction of imnutritious and indigestible substances, as is evidenced by the strange articles, such as nails, pieces of chain, leather, woolen cloth, etc., which are not infrequently found in the stomach after death. These articles, which may very properly be termed "hard tack," having produced no bad symptoms, nor any evidence of their presence while the animal was alive, afford sufficient proof that the stomachs of such animals are not of a very delicate or sensitive order. I therefore think that the swallowing of a moderate quantity of binding twine will not lead to serious results. It will be as well, however, to feed just as little of the article in question as circumstances will permit. Should indigestion arise from it, the remedy would be to remove the cause and give a good dose of purgative medicine, such as Epsom salts, one to one and a-half pounds; gamboge, half an ounce; ground ginger, one ounce; treacle, one pint. Dissolve in a quart of hot water, and give in one dose.

Poultry on the Farm.

BY IDA E. TILSON, WEST SALEM, WIS.

If poultry quarters are overcrowded, little exercise ground remains, and a mob of idle, discontented creatures results. Nature indicates small flocks are best, because wild fowls live in families or groups. More than 50 hens can hardly be kept profitably in one enclosure, and three square feet of floor space is a standard allowance none too generous. It is not best to mix different kinds of poultry. I have tried turkeys, guineas and peafowls in combination with hens, and though these noisy birds may scare away hawks, they frighten and domineer my hens quite as much. In a house where there are no guineas, peace and happiness prevail. Every biddy descends from her perch early and scratches all day in the leaves and straw below. My other house has a few guineas, which monopolize every privilege, and unless they go out and off, the hens can hardly be induced to stir, and certainly will have less opportunity and fitness for laying. I would not so much mind guineas and peafowls taking the best, but they chase my hens from place to place, and, like the dog in the manger, prevent them from eating that not needed by these prosecutors themselves. It is only justice to say guineas are great insect-catchers, but no scratchers. They are better eating than turkeys, and their eggs, though few, are rich. Incubation lasts four weeks, a hen being better than one of themselves. The little things are as easily raised as chicks, and become very fond of their foster mother.

While warm shelter and entire safety engross our thoughts at night, the main daytime requirements of poultry are sufficient freedom, contentment and proper food. An article lately read objected to the general prominence given food. Well, hatching and moulting come on by at certain times, while feeding knows no seasons or fashions, but is a living question 365 days of a year. I always regretted that my flock utterly refused rye, which is nearly as valuable as wheat; but to my delight, this last fall, they accepted rye fresh from the threshing machine and relished it awhile, till somewhat old and dry, which illustrates, what many may have noticed, how fond hens are of new grain. As this is somewhat laxative, enough old grain should be saved to mix in for some time. Dry, clean wheat possesses the distinction of never causing bowel complaint. Corn ranks next in safety. Musty grain is dangerous, and dear at any price. Should one have such a product on hand, which must be utilized, a thorough heating in an oven will destroy all germs. This can be done day by day, with small quantities as fed, because winter rations should be warm anyhow. Screenings contain so many wild seeds and so much waste, and are no cheaper in proportion to weight than is clean, solid wheat. I have anticipated the general introduction here of peas and beans, long cultivated in Canada for stock, by successfully feeding these nourishing legumes, green, cooked whole or ground, to my fowls. Rye and oats have also obtained a wider use by being ground and then combined in my puddings. Another writer has complained that vegetables are refused by his fowls and left lying around mused. What is new to a hen she fears, and must learn to eat. Have a little patience. Feed such things in moderation at first, and when biddy is particularly hungry; use stratagem if necessary. It is said "all things are fair in love and war." Surely this is a case of love for biddy's welfare. I had special difficulty in teaching my flock to eat carrots, which are so valuable. Finally a few onions were boiled with them to give flavor, and my problem was solved. Biddy thinks she is eating her favorite onions, but I know she is eating carrots. I do not cook hay, so often recommended, because it is easier to boil vegetables instead. Dry clover is well enough relished, and unless fed lavishly, does not pack in crop and bowels. A sensible hen will soon learn to eat apples. I saved and used the product of two crab-apple trees last fall. My meat supply consists, as usual, of scraps from a packing house, bought in cakes for a cent and a-half per pound. After beginning its use, the number of eggs soon increased. Grains or seeds, plants or vegetables, meat or some animal product, and grit, are the natural divisions into which poultry allowances fall. There is most danger of overdoing the grain ration. I have been away the second time, and left on this occasion a written programme which provided for more food than needed with my own good care. However, my substitutes, having in the former instance failed to feed at all, now determined to retrieve themselves. I returned from enlightening others about poultry, to find mine sick. Mused, uneaten grain lay all about, a sight never before seen here, and it seems a regular stuffing had been tried. An over-fat hen will not lay, neither can a hungry, half starved one; that is the business hen which has nearly, though not quite all she wishes to eat, just as he is the healthy person who rises unsatisfied from the table. Grit had been entirely forgotten. A hen has no other teeth than the little pebbles in her crop and gizzard. How shall she digest except they be provided? There are usually waste hills or places from which sharp gravel can be drawn by the load. Make some mortar purposely; that or crumbling, weather-beaten sandstone will be pecked in pieces. I dislike to recommend pounding crockery; it is such dangerous work for the eyes. From pounded glass must surely be taken those long sharp splinters, which are said to kill rats, and could easily pierce any membrane. A coal stove and biddy might, at first glance, appear unconnected, but coal ashes, with their clinkers, form a model pulverizer and digester. Don't forget that biddy needs grit as well as human beings do, only her's is of a different kind. As you supply her, just say,

"When this you see
Remember me,"

and she will remember you with abundance of hard-shelled, solid, perfectly developed eggs.

A writer in the *Wisconsin Farmer* is the author of the following sensible article:—A young couple in early life buy a farm that will keep sixteen to eighteen cows. They go in debt for a large share of the purchase price, but by industry and economy succeed finally in paying it. An only son has grown to young manhood, and begins to talk of securing a home of his own. His parents begin at once to say: "Our farm is too small for two families." So, as an adjoining farm is for sale, the boy buys. Suppose, on the contrary, the father had taken his interest money, and indeed his surplus income for a few years, and expended the amount in buying extra fertilizer, procuring better stock—in short, making the old farm produce more than both farms will. How much better every way! Many advantages come from intensive rather than extensive farming. Ontario as well as Manitoba is to-day suffering because many Canadian farmers have overreached themselves in their desire to own large farms. A small farm thoroughly and wisely worked is much preferable than a large one when the owner has only enough capital to buy or work a small one.

NORTHERN PACIFIC R.R. TIME CARD

Taking effect on Sunday, April 3, 1892. (Central or 90th Meridian Time).

Table with columns: NORTH BOUND., SOUTH BOUND., STATIONS, Miles from Winnipeg. Lists train times and distances to various stations like Winnipeg, Portage Junction, St. Norbert, etc.

MORRIS-BRANDON BRANCH.

Table with columns: EAST BOUND., WEST BOUND., STATIONS, Miles from Morris. Lists train times and distances to stations like Winnipeg, Morris, Lowe Farm, Myrtle, etc.

PORTAGE LA PRAIRIE BRANCH.

Table with columns: EAST BOUND., WEST BOUND., STATIONS, Miles from Winnipeg. Lists train times and distances to stations like Winnipeg, Portage Junction, St. Charles, etc.

Passengers will be carried on all regular freight trains. Pullman Palace Sleepers and Dining Cars on St. Paul and Minneapolis Express daily.

CHAS. S. FEE, H. SWINFORD, G.P. & T.A., St. Paul, Gen. Agt., Winnipeg. H. J. BELCH, Ticket Agent, 486 Main Street, Winnipeg.

ELECTRICITY IS LIFE. HEALTH, WEALTH. Electric Appliances for all parts of the body. Cures Rheumatism, Dyspepsia, Sore Eyes, Sciatica, Lumbago, Kidney trouble, Weak Lungs, Neuralgia, Catarrh, Headache, Asthma, Bronchitis, Chronic Colds, etc. R. B. THOMPSON, Winnipeg.

MANITOBA DYE WORKS, 250 Main Street, Winnipeg. Gentlemen's suits cleaned and dyed equal to new. Also ladies' silks, velvets, laces, gloves, etc. Dresses and mantles dyed and cleaned without unmaking. Skins tanned, carpets, skin mats and rugs cleaned or dyed. All work guaranteed. W. C. KING, Prop., 242-y-m

GRIEVE & PHIPPEN TAXIDERMISTS, 251 Main Street, Winnipeg. Highest Cash Price paid for WHITE OWLS, ELK AND MOOSE HEADS, ETC. 31-2-y-m

GRETNA & MORDEN IMPORTERS FALL AND WINTER BEST QUALITIES OF THE SCHULTZ & HANSEN GENERAL MERCHANDISE GOODS JUST RECEIVED. GIVE US A CALL SCHULTZ & HANSEN, Head Office: GRETNA, MAN. 352-c-m General Merchants.

IMPORTANT TO STOCK DEALERS! HORSE AND CATTLE FAIR TO BE HELD AT Gretna, Man., Wednesday and Thursday, Feb. 22nd and 23rd, '93.

700 HORSES, A NUMBER OF WORKING CATTLE AND FRESH MILCH COWS WILL BE OFFERED FOR SALE. Before going East to buy, see the Home Market and the Stock offered for Sale. Provincial-bred Horses and Cattle far Superior to the Inacclimated Stock Imported from the East. All Stock Dealers will find it to their interest to attend.

E. WINKLER. JACOB HEPNER. P. R. FRIESEN. 38-b-m

M. CONWAY, AUCTIONEER OF Pure-Bred & other Stock (Twenty years' experience), announces to the breeders in Manitoba and the Northwest that he proposes holding REGULAR SALES. If you have pure-bred or other stock for sale, communicate with me at 262 Portage Avenue, - Winnipeg. P.S.—Write for dates of country sales. 33-2-y-m

BOYCE'S CARRIAGE WORKS. JAMES STREET WEST, WINNIPEG, MANUFACTURER OF First-Class Vehicles OF ALL KINDS. We carry the largest assortment in Manitoba. Call and examine before buying. Send for catalogue. 33-2-y-m

CANADIAN PACIFIC RY. OPENING OF LAKE ROUTE. Manitoba, Alberta, Athabasca. The largest and best equipped Boats on the Lakes, leave FORT WILLIAM EVERY TUESDAY, THURSDAY & SATURDAY for Owen Sound, Toronto, Montreal, Boston, New York and all points East. Connecting train leaves Winnipeg every Monday, Wednesday and Friday at 17.45 o'clock. LOWEST RATES. QUICKEST TIME. Passengers ticketed through to all points in the East and the Old Country. Direct Route to St. Paul, Chicago and all Southern Points. Rates to Pacific Coast \$10 and \$5 lower than by any other route. For full particulars as to rates, time, etc., apply to W. M. McLEOD, City Ticket Agent, 171 Main Street, Winnipeg, J. S. CARTER, Depot Agent, or to ROBERT KERR, General Passenger Agent, 262-y-m C. P. R., Winnipeg.

STEAMSHIP TICKETS. If you are going to the Old Country, or sending for your friends, apply to your nearest railway or ticket agent, who can supply outward and prepaid tickets at lowest rates. Steamers leave Halifax every Saturday. ROBT. KERR, Gen. Passenger Agent C. P. R., WINNIPEG. 27-y-m

Clements. MAKES CLOTHING TO ORDER. OUR OVERCOATS FOR WINTER WEAR FOR \$20 AND \$25 ARE NOT TO BE SEEN EVERYDAY! Suits for \$20!!! Suits for \$25!!!! Our work is as only Custom Tailoring can make it. GEO. CLEMENTS, Merchant Tailor, 486 MAIN ST., WINNIPEG. 28-2-y-m

GRAIN DEALERS AND COMMISSION MERCHANTS. All kinds of Grain Bought and Sold. SPECIAL FACILITIES FOR HANDLING SMUTTY WHEAT. Highest Market Prices Obtained. STEWART & HOARE, 435 Main-St., Winnipeg. 26-2-y-m

J. B. RUTTER, AUCTIONEER. LIVE STOCK, Appraiser, &c. REAL ESTATE, MORTGAGE, HOUSEHOLD, FURNITURE SALES. Conducted in city or country. Write for dates. Telephone 173. Office: 246 Portage Avenue, Winnipeg. 29-2-y-m

ROSE & CO., CHEMISTS & DRUGGISTS, Rosser Avenue, - BRANDON. Orders by mail promptly attended to. 28-2-y-m

SIFTON & PHILP, BARRISTERS, ETC., BRANDON, - MAN., Will furnish prices and terms for Manitoba Farm Lands in any part of the Province on application by letter or in person. 28-2-y-m

CRADLE CHURN JUST OUT. Will revolutionize the CHURN - TRADE PERFECT IN CONSTRUCTION AND EASE OF OPERATION. Churns with half the labor required by any Barrel Churn. B. R. HAMILTON & Co., Patentees and Sole Proprietors, 31-2-y-m Neepawa, Man. DR. ANDERSON & BATES, Surgeons of the Eye, Ear, Throat & Nose, 34 North James St., Hamilton, and 5 College St., Toronto. Sole agents for Prof. North's Earphone for the incurable deaf. A large assortment of artificial eyes on hand. 28-2-y-m

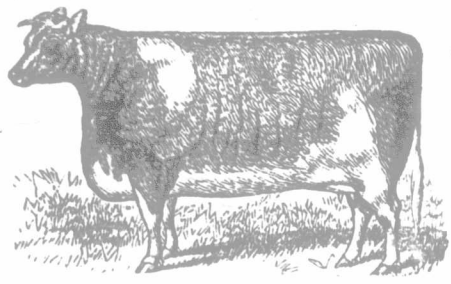
ONTARIO VETERINARY COLLEGE Temperance Street, Toronto. The most successful Veterinary Institution in America. All experienced Teachers. Session begins October 21st. Apply to the principal, PROF. SMITH, V.S., Edin., Toronto, Can. 27-2-y-m

"EASTLAKE" STEEL SHINGLES. METALLIC ROOFING Co., Toronto. Send for Catalogue. 33-2-y-m

THE GREAT 'DOWSWELL' WASHER Eleventh Year. SAVES LABOR, HEALTH, TIME, MONEY. Washes without injury THE FINEST AND HEAVIEST FABRICS. Buy one from your hardware dealer or direct from PEERLESS MANUFACTURING CO'Y, HAMILTON, CANADA. 24-2-y-m

Morton, Alexander & Morton Tanners and Boot Manufacturers, 171 & 173 King-St. Boots Wholesale and Retail. 38-2-y-m

New Importation! ARTHUR JOHNSTON, Greenwood, Ont.



Announces that on the first of December next (1892), he will have home from quarantine SEVEN - YOUNG - BULLS - AND - SIX - FEMALES All of which will be sold at moderate prices.

SCOTCH-BRED SHORTHORNS FOR SALE 6 Choice Young Bulls

And the Imported Cruickshank Bull ABERDEEN HERO, Their sire. Also some nice Young Heifers, From one year old up. Prices to suit times.

SHORTHORNS AND BERKSHIRES A choice lot of Fall Pigs on hand, also a few fine Spring Sows. Write for prices. No trouble to correspond.

John Racey, LENNOXVILLE, P.Q.

Shorthorn Cows, Heifers and Young Bulls for Sale A few animals of first-class quality & breeding. Address, W. J. Biggins, Elmhurst Farm, Clinton, Ont. One mile south of G. T. R. Station. 319-2-y-om

THE GREAT MILK AND BUTTER HERD OF HOLSTEIN-FRIESIANS. SMITH BROS., Credit Valley Stock Farm, CHURCHVILLE, PEEL COUNTY, ONT., (24 miles west of Toronto).



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

ONLY--HOLSTEINS--ONLY We are making a specialty of breeding Holsteins of the following strains: Aagies, Barringtons and Mercedes. Our last importation comprised nineteen head from one of the leading herds in the United States.

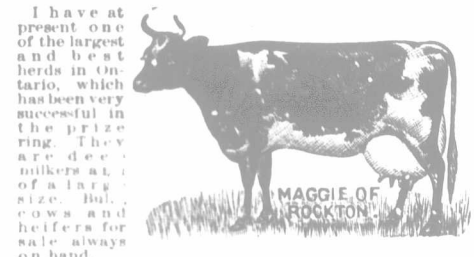
Our herd now numbers close to 30 head. Young bulls and heifers for sale. Prices right and terms reasonable. E. M. S. & C. S. MOTT, The Gore Farm, Box 95, Norwich, Ont. 318-2-y-om

Holstein-Friesians. I have several choice young Bulls of the Auggie and Barrington strains, which I will sell cheap to quick purchasers.

Also several choice Cows and Heifers, of Bonnie Queen and Auggie breeding, will be sold at greatly reduced prices, if taken soon. Write for prices and breeding. H. BOLLERT, Cassel, Ont. 218-2-y-om

Maple Cliff Stock Farm Three Ayrshire Bulls for sale, including the grand stock bull, Robbie Dick 1257, bred by the late Thomas Brown, and two young Bulls fit for service; also Bronze Turkeys. Stock winning at both Montreal and Ottawa. R. REID & CO., Hintonburg, near Ottawa. 324-2-b-om

Prize-Winning AYRSHIRES FOR SALE. I have at present one of the largest and best herds in Ontario, which has been very successful in the prize ring. They are deer milkers and of a large size. Bull, cows and heifers for sale, always on hand.



JAS. McCORMICK & SON, ROCKTON, ONT. 323-2-y-om

EUROPEAN ADVERTISEMENTS.

SHROPSHIRE SHEEP DAVID BUTTAR, CORSTON, COUPER-ANGUS, N. B., SCOTLAND Has taken all the principal prizes in Scotland for several years. His sheep are of the purest blood, and carefully bred; every sheep eligible for registration. Pedigrees and prices on application. 318-2-y-om

Astwood Hill SHROPSHIRE the most famous flock in England. We led in the showing at the Royal and the Bath and West of England in 1891. T. & S. BRADBURNE, Astwood Hill, Red-ditch, England. 316-2-y-om

Shropshires, Shorthorns, Shire Horses, Yorksh es The Ruyton-11-Towns flock always winning at R. A. S. E. and other shows. Last win: The Champion Cup at the Royal Liverpool, Manchester and North Lancashire Show for the best ram, all ages and all breeds. Shorthorns: -Winning at R. A. S. E., etc., etc. Herd established over 30 years. Yorkshire Pigs of good pedigrees. Easy distance from Liverpool. Meet trains at Baschurch, G. W. R., by appointment. Address Telegrams: RICHARD BROWN, Ruyton-11-Towns, Shropshire, Eng. 322-2-y-om

2,250 SHROPSHIRE including most of the greatest winners, also Horses, Ponies, Cattle, Pigs and Sheep of other breeds, exported during 1891 by E. GOODWIN PREECE, Live Stock Exporter, - Shrewsbury, Eng.

Who has personal knowledge of the best flocks, herds and studs, experience in shipping, and the privilege of selecting the choicest specimens of any breed, either for exhibition or breeding. American buyers supplied at lowest rates, and those visiting England conducted round the best and prices. For particulars, apply to JOHN TAZEWELL, Uxbridge, Ont., G.T.R. 315-2-y-om

DORSET HORN SHEEP! CULYERWELL BROS., Durlough Farm, Bridgewater, Somerset, Eng. Breeders and Exporters of Improved Dorset Horn Sheep. Sheep and wool from this flock have won many first prizes at all the leading shows in England and Canada. Flock registered in English record. For price, etc., apply to JOHN TAZEWELL, Uxbridge, Ont., G.T.R. 315-2-y-om

LINCOLN SHEEP I always have for inspection and sale a large flock of pure Lincoln Long wool Sheep, including many prize-winners, having taken 80 prizes the last two years at the Royal and other shows, for both rams and ewes; also the first for the best collection of Lincoln fleeces of wool at the Royal Windsor show last year, which proves the character of this flock, which is most famous for their great size and 120 years' good breeding. Also breeder of White Yorkshire Pigs. Address: HENRY DUDDING, Riby Grove, Gt. Grimsby, Lincolnshire, Eng. 319-2-y-om

BLAIRTUMMOCK CLYDESDALES. Prof. McCull invites inspection of his Stud of Clydesdales by American and Canadian buyers. Among the many good ones bred at Blairtummock may be mentioned Col. Holloway's renowned Cedric, acknowledged the greatest breeding horse in America. Address: PROF. McCALL, The Veterinary College, Glasgow, Scotland. 317-2-y-om

CLYDESDALES & AYRSHIRES WALTER PARK, Halton, Bishopton, Scotland, the breeder of the world-renowned "Lord Erskine," has always for sale a choice lot of Clydesdale Colts and Fillies; also pure-bred Ayrshires of the best milking strains. Visitors welcome. 317-2-y-om

THE HOME OF SPRINGHILL DARNLEY. Clydesdale dealers when in Scotland should not fail to visit Messrs. R. & J. Findlay's Stud. Breeders and owners, amongst others, of the famous H.A.S. winner, Crystal 5387. Address: Springhill, Baillieston, Glasgow. 317-2-y-om

THE HOME OF SIR EVERARD Wm. Taylor, Park Mains, Paisley, Scotland, calls the attention of American and Canadian buyers to the fact that his stud of Clydesdales and Hackneys is one of the best in Scotland. Inspection solicited. No trouble to show horses. 317-2-y-om

CLYDESDALES AND AYRSHIRES. Parties visiting Scotland to purchase the above should call on the undersigned, who always has a choice selection bred from the best strains of blood. ROBT. WILSON, Manswraes, Bridge of Weir, Renfrewshire, Scotland. 317-2-y-om

W. G. BUTCHER, The Chestnuts, Needingworth, Hunts, England, offers for sale a grand selection of HACKNEY and SHIRE-BRED COLTS and FILLIES of the choicest breeding, and good individually. All registered. Visitors welcome. Station: St. Ives, Hunts. 317-2-y-om

HACKNEYS! DUNCAN JENKINS, The Cross, Govan, Scotland, offers for sale Stallions and Fillies, the get of such sires as Danegelt, Anconus, Sir Gibbie, etc.; all registered, and of the very choicest quality. All American and Canadian buyers should visit this stud. 317-2-y-om

To Stockmen & Breeders. LITTLE'S PATENT: FLUID NON-POISONOUS SHEEP DIP AND CATTLE WASH. For the destruction of Ticks, Lice, Mange, and all insects upon Sheep, Horses, Cattle, Pigs, Dogs, etc. Superior to Carbolic Acid for Ulcers, Wounds, Sores, etc. Removes Scurf, Roughness and Irritation of the Skin, making the coat soft, glossy and healthy. The following letter from the Hon. John Dryden, Minister of Agriculture, should be read and carefully noted by all persons interested in Live Stock: "MAPLE SHADE" HERDS AND FLOCKS. BROOKLIN, ONT., Sept. 4th, 1890. DEAR SIR, - I cannot afford to be without your "Little's Sheep Dip and Cattle Wash." It is not merely useful for Sheep, but it is invaluable as a wash for Cattle, etc. It has proved the surest destroyer of lice, with which so many of our stables are infested, I have ever tried; it is also an effectual remedy for foul in the feet of Cattle. I can heartily recommend it to all farmers and breeders. JOHN DRYDEN. £27 Seventeen Gold, Silver and other Prize Medals have been awarded to "Little's Patent Fluid Dip" in all parts of the world. Sold in large tins at \$1.00. Special terms to Breeders, Ranchmen and others requiring large quantities. Ask your nearest druggist to obtain it for you; or write for it, with pamphlets, etc., to ROBERT WIGHTMAN, DRUGGIST, OWEN SOUND, ONT. Sole Agent for the Dominion. 315-2-y-om

Imported Shropshires. My stock was selected by myself, and consists of Shearling Ewes and Ewe Lambs from the leading flocks of England, and of the highest quality and breeding. Stock of all ages for sale. W. E. GURNEY, Paris, Ont. 336-2-a-om

Imported SHROPSHIRE Having sold all my ram and ewe lambs, I now offer to intending purchasers their choice of seventy one and two-shear ewes in lamb to my imported stock rams. The ewes, for quality and size combined, cannot be excelled. W. S. HAWKSHAW, GLANWORTH P. O. 7 miles south of London. 315-2-1f-om

Gotswold Sheep. The gold medal flock established in 1854. All bred straight from imported stock. Three imported Rams in use. Young stock for sale. Berkshires. Herd established in 1865. Imported and bred from imported stock. Sows in farrow and young stock for sale at all times. Spring pigs now ready to ship. We ship to order, guarantee satisfaction. Com and see, or write. Jersey Cows, Heifers and Calves: registered; pure bred unregistered and high grades, bred from rich butter stock. J. C. SNELL, Edmonton, Ont. 315-2-y-om

S. COXWORTH, CLAREMONT, ONT., Breeder and Importer of Berkshire Hogs. Young stock of different ages constantly on hand. Pairs supplied not akin. Stock won at leading shows in 1892: 1st, 11 second, 7 third, including Toronto, Montreal and Ottawa. Prices moderate. Satisfaction guaranteed. Station and Telegraph Office - CLAREMONT, C. P. R. 316-y-OM

FIRST SWEEPSTAKES HERD - OF - IMPROVED: YORKSHIRES IN CANADA, selected from the well-known herds of the Earl of Ellesmere, Prescott Union, and C. E. Duckering, England, by James Main, who is considered one of the best judges of pigs in America; also one imported sow and several other Canadian-bred sows and boars of the well-known herds of Sanders Spencer and F. Walker-Jones, England. REGISTERED SOWS AND BOARS MATED NOT AKIN. JOSEPH FEATHERSTONE, P.O. and Telegraph. PINE GROVE FARM 321-2-i-om STREETSVILLE.

IMPROVED LARGE YORKSHIRE PIGS. Thirty-five choice Breeding Sows from the best English breeders. Young stock of all ages. Stock supplied for exhibition purposes, registered and guaranteed to be as described. Personal inspection solicited. J. E. BRETHOUR, Burford, Brant Co., Ont. 314-y-om

THE MARKHAM HERD, LOCUST HILL, ONT. (Farm one mile from Locust Hill St., C.P.R.) Registered Improved Large Yorkshire, Berkshire and Suffolk Pigs. Stock selected from the best herds in Canada. Am booking orders for Spring Pigs. - LEVI PIKE, Locust Hill, Ont. 320-2-y-om

Improved PEDIGREED LARGE YORKSHIRES A few very choice young boars, between 3 and 4 months old, at \$10 each. J. H. S. BARBOUR, King P. O., Ont. 318-2-y-om

J. M. HURLEY & SON Kingstons Road Stock Farm, Belleville, - Ont. Offer for sale pedigreed Improved Large Yorkshire Pigs of both sexes. Herd founded in 1887. OUR AIM is to make our pigs advertise us. 321-2-y-om

ISRAEL CRESSMAN, New Dundee, - Ont., BREEDER OF Large English Berkshires. Young Hogs always on hand; got by imported stock. 326-2-a-om

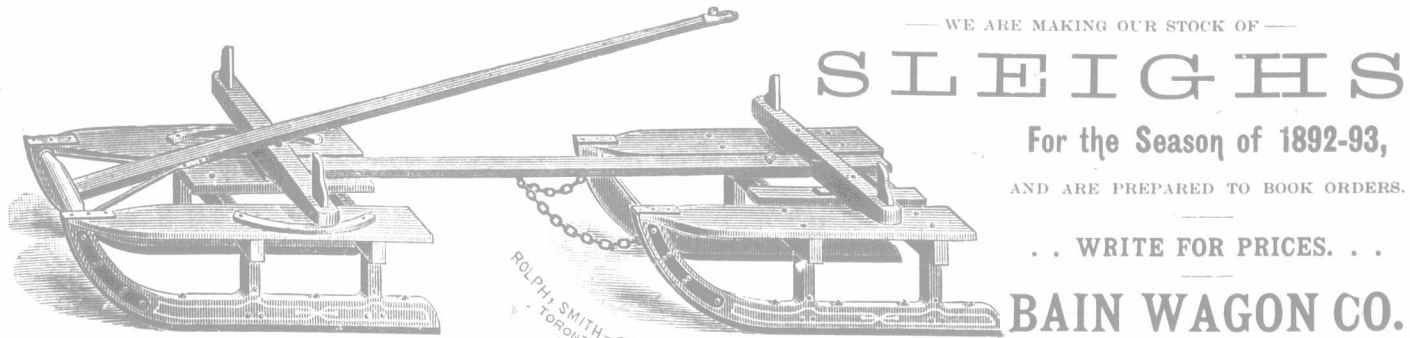
R. H. HARDING, Maplevue Farm, - THORNDALE, ONTARIO, Importer and breeder of Ohio Imp. Chester White Swine and Dorset Horned Sheep. Breeding stock recorded. Young stock for sale at moderate prices. Write for particulars. 322-2-y-om

E. D. GEORGE PUTNAM, ONT., Importer and Breeder of Ohio Improved Chester White Swine The largest and oldest established registered herd in Canada. I make this breed a specialty, and furnish a good pig at a fair price. Write for prices. 317-2-y-om

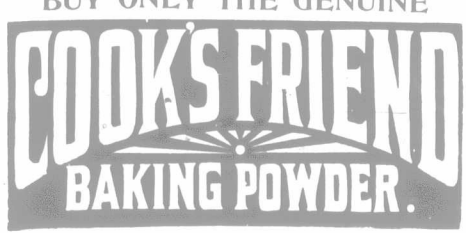
Registered Poland-Chinas Canadian Black Bess Herd - Stock strictly of the Corwin, King, Butler and Black Bess Blood. Choice stock of all ages for sale at reasonable prices. Imported Nominee at head of herd, assisted by Imported Boars Condit, Luck and Moorish King. Farm two miles south of G. T. R., C. P. R. and E. & H. R. stations. Correspondence and inspection of herd solicited. Reduced rates on shipment by express. - J. J. PAYNE, Chatham, Ont. 314-2-y-om

FARMERS, READ THIS We will pay extra for fat pigs bred from Tamworth and Improved Yorkshire boars, as they are worth more money to us. We have imported a large stock of these pigs, and have on hand a choice selection of imported and home-bred boars and sows. Write us for prices, which are as low as they can be made, this being a business entirely of a secondary consideration with us, our first object being to supply the trade with an A 1 article in bacon, and we are satisfied that these are the breeds that pay both the feeder and the packer. Send in your orders quick and get a good in-pig sow, or a boar to use on grade sows. JAS. L. GRANT & CO., Ingersoll, Ont. 320-2-y-om

BAIN WAGON COMPANY, WOODSTOCK, ONTARIO.



FARMERS!
If you want the best value for your money. If you want an article that will never disappoint you. If you want thoroughly good and healthy Baking Powder, into which no injurious ingredient is ever permitted to enter.



BUY ONLY THE GENUINE
COOK'S FRIEND
BAKING POWDER.
REMEMBER THAT
McLAREN'S COOK'S FRIEND
IS THE ONLY GENUINE.
The Best Grocers Sell It.
315-2-y-om

R. PARKER & CO.,
DYERS AND CLEANERS
Toronto.
Ladies' and Gents' Wearing Apparel, Ostrich Plumes, Damask, Lace and Repp Curtains, Etc., Cleaned and Dyed.
HEAD OFFICE AND WORKS:
787 TO 791 YONGE STREET, TORONTO.
Express and Post Orders promptly attended to. Send for Pamphlet: contains Price 315-2-y-om and Color List.



Best Sleigh in the Market!
Because it is the lightest running, shortest turning; never cuts off; is always in line; no wearing of box or rack; no splitting of bolster or reach; never buckles; can be backed like a wagon; built of the very best material; strong and durable.

— WE ALSO BUILD —
Bain Bros.' Improved One-Bench Man. Bobs
With longer runners, faced with two-inch spring steel shoes. These are especially adapted for logging and heavy teaming.
ALSO MANUFACTURE AND CARRY IN STOCK A FULL LINE OF THE
Celebrated Brantford Bain Wagons, which are so well and favorably known.
— ALWAYS ASK FOR —
BRANTFORD WAGONS and SLEIGHS
326-2-y-om

THE GODERICH ORGAN CO.
GODERICH, ONTARIO.
MANUFACTURE THE PIANO CASE THE NEW EMPRESS THE IDEAL HIGHCLASS FINE TONE
ORGANS
EVERY DEALER SHOULD WRITE FOR PHOTOS AND PRICES
WE LEAD THEM ALL IN STYLE TONE & FINISH
AGENTS WANTED IN EVERY TOWN
-2-y-om

"ISALEIGH GRANGE FARM."
J. N. GREENSHIELDS, Proprietor.
IMPROVED YORKSHIRES.
Our last importation, just landed, includes 1st prize winners at the Royal and other leading shows in England, and we are now prepared to show against any herd in the world, bar none.
Send in your orders for young pigs.
N.B.—Our prices will be found most reasonable, and we offer special inducements to buyers from a distance. Visitors most welcome and met by appointment. Address all communications to the Manager, J. Y. ORMSBY. Station, telegrams and letters, Danville, P. Q.

GUERNSEYS.
The Sweepstakes Herd of the Dominion, with the gold medal bull, "Ontario's Pride," at its head.
We have no heifers for sale, but can spare one or two bull calves by this famous sire.

SHROPSHIRE.
We have just landed nearly 100 head of Shearling Rams and Ewes from the flocks of R. Thomas, R. Brown, T. Meares, G. Thomson, Wm. Thomas and J. Thonger, including several noted winners. We offer for sale an extra choice lot of shearlings of both sexes and a few lambs.
322-2-y-om

The Dale **PIVOTED LAND ROLLER**
(PATENTED.)

A STEEL ROLLER, THE DRUMS OF WHICH OSCILLATE ON PIVOTS AND ADAPT THEMSELVES TO THE UNEVENNESS OF THE GROUND.

Its points of advantage are too many to enumerate.
Some of them are:
The bearings are the only wearing parts and are guaranteed to last from Ten to Fifteen Years, and can be replaced at a nominal cost.
It rolls all the ground, no matter how rough. There is no axle shaft, no strain, and consequently no wear. It is easily oiled between the drums.
THE DEMAND IS STEADILY INCREASING. IT IS UNANIMOUSLY RECOMMENDED BY THOSE FARMERS WHO HAVE USED IT.
Orders are now being booked for the spring trade.
Description and price furnished on application to
T. T. COLEMAN,
SOLE MANUFACTURER, 320-2-y-om SEAFORTH.

YOU HAVE STOCK TO FEED
THEN DO IT ECONOMICALLY.
CHOP YOUR GRAIN:
— WITH A —
WATEROUS CHOPPER
It Elevates the Grain; Shakes out Nails, Straws Bolts, Etc.; Grinds 20 to 40 Bushels per hour, and BAGS THE CHOP.
GRINDING SURFACES,
BEST FRENCH BUHR STONES.
Unequaled for Durability.
WATEROUS, - Winnipeg, Man.
33-y m

GET OUR NEW CIRCULAR.

FRUIT AND ORNAMENTAL TREES!
Grape Vines and Berry Plants.
Planters will find it to their interest to patronize a Canadian Nursery. Varieties are offered most suitable to our climate; useless sorts discarded. My stock is graded with scrupulous exactness, and is true to name.
Everything new and old in the nursery line deemed worthy of distribution. Having seventy-five acres in fruit here I can, and will give freely, good advice to customers. Send now for a free and useful catalogue and price list to Helderleigh Farms Nursery, E. D. SMITH, Prop., Winona, Ont.
325

SHIRE HORSES.—A grand young imp. stallion for sale at a low figure.
IMPROVED YORKSHIRES.—Young stock of all ages at farmers' prices.
WHITE HOLLAND and BRONZE TURKEYS.—Orders booked for young birds for fall delivery. Correspondence solicited. Prices on application.
318-2-y-om WM. MULLEN, Hillsburg, Ont.

The High Speed Family Knitter
Will knit a stocking heel and toe in ten minutes. Will knit everything required in the household from homespun or factory. Coarse or fine yarns. The most practical knitter on the market. A child can operate it. Strong, Durable, Simple, Rapid. Satisfaction guaranteed or no pay. Agents wanted. For particulars and sample work, address,
Cardon & Gearhart, Dundas, Ont., Canada.
Please mention name of paper. 321-2-y-om

STOCK GOSSIP.

In the advertiser's please mention the Farmer's Advocate.
We would draw the attention of parties needing a first-class Shorthorn bull to the advertisement of Mr. Struthers, manager of the Barnardo Farm, Russell, Manitoba.
J. A. Mullen, of Cyprus River, writes to this office that his poultry have done splendidly during the past season, and that he has something extra in B. B. R. Games. He is desirous of having the Manitoba Poultry Association take immediate steps in arranging for a poultry exhibit at the World's Fair.
Joseph Laurence, of "Retroquet Stock Farm," Clearwater, writes us that he has recently purchased a new bull to head his herd of Shorthorns, now numbering over thirty head, as his own bull Warrior 2nd - 15070 - was too closely related to his young heifers. He has secured Mina Chief, a rich roan calved Feb. 1892; bred by Arthur Johnston, Greenwood, Ont., got by that celebrated sire of prize-winners, Indian Chief, out of Mina Victor, etc. Mr. R. Nicholson, of Sylvan, Ont., says of Mina Chief, that he is one of the best young bulls to be had in Ontario to-day.
NOTES FROM MR. DRUMMOND, MANAGER FOR MAJOR-GEN. WILKINSON, "BIRTLIESE FARM," BIRTLIE, MAN.

The stock on the farm are all doing remarkable well. The imported Clyde stallion, Forrest Prince 11893 (5007), is looking well, and we anticipate for him a big season next year, as his colts are beginning to show up well. We have six very fine youngsters from him this year, and ten males in foal to him again. We have made several very good sales lately, namely:—A black four-year-old gelding to Mr. R. Burdette; to Mr. Collis, of Raven Lake, the imported Shropshire ram Pilgrim Father (4958), and to Mr. Molson, Selkirk, the bull calf out of Bancha, by Barrister 2nd - 12605 - all at very satisfactory prices. The pure-bred cow Kalista dropped a very fine bull calf the other day, by Barrister 2nd, and we have also some other very promising youngsters' all doing well. We have a small flock of very fine registered Shrops, and we are using the ram Puritan 27318, by Pilgrim Father (4958), on them this year, and expect a crop of extra fine lambs next spring.

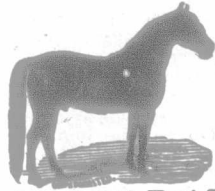
Fairview Stock Farm, Carberry, Man., the property of Mr. John Barron, was recently visited by one of our staff. His fine Shorthorns, about twenty-five (25) in number were found in comfortable winter quarters and thrifty condition. There was besides a fine lot of grade steers being fattened that show well the advantages of good breeding. A few thoroughbreds amongst this lot exhibited the superior breeding qualities of the breed to a still greater degree. His excellent stock bull, Barrington Waterloo, is one that possesses not only such qualities as mark his progeny with good fattening characteristics, but from a show standpoint his record at the Winnipeg Industrial in 1891 speaks for itself. There were many individuals worthy of special mention, but space will not permit. A fine bull calf by Barrington Waterloo, out of Lady Fairview 2nd - 17341 - attracted our attention, being very promising. Mr. Barron has also a fine lot of pedigreed Berkshires from Mr. J. C. Snell's importations that are good representatives of the breed, and the young stock are strong and growthy, some of them being of splendid form. From these good selections for breeding purposes can be made.

THE BANNER ASSOCIATION.
Report of the American Shropshire Association for the year ending November 1st, 1892:—

RECEIPTS.	
To balance on hand November 1st, 1891	\$ 2,244 53
" Total receipts during the year	13,123 75
	\$15,368 28
EXPENDITURE.	
By printing, record and blanks	\$ 2,194 17
" Salaries and expenses Executive Committee	5,252 95
" Special premiums paid	572 00
" Membership American Live Stock Association	50 00
" Postage used during the year	108 00
" Ear labels, Association numbers	169 95
" Money refunded, expenses, telegrams, etc.	138 04
" Balance on hand	6,583 17
	\$15,368 28
Total number of members Nov. 1st, 1891	737
" 1892	1,038
" " added during the year	301
" Pedigrees accepted during the year	13,424
" Transfers made during the year	3,428
Membership is divided as follows:—Michigan, 196; Canada, 183; Ohio, 132; New York, 110; Indiana, 94; Illinois, 79; Pennsylvania, 50; Iowa, 37; Wisconsin, 33; Missouri, 20; Minneapolis, 18; South Dakota, 17; Vermont, 13; West Virginia, 10; North Dakota, Virginia, 6; Kansas, Manitoba, Massachusetts, 5; Maine, Connecticut, Northwest Territories, New Hampshire, Colorado, 3; California, Nevada, 3; Kentucky, 2; Nebraska, Rhode Island, New Jersey, Maryland, 1 each.	
ASSETS.	
Total value of Volumes of Record on hand, including Volume 8	\$ 7,050 00
Stationery, stamps and furniture	450 00
Cash on hand	6,583 17
	\$14,083 17

THE VALUE OF ADVERTISING IN THE ADVOCATE.
We are in receipt of a letter from Mr. H. K. Zavitz, of Carberry, in which he says, "I have received so many enquiries for fowls, through my advertisement in the ADVOCATE, that I sold all I can spare just now."
Mr. Winkler, of Gretna, hands us the following letter from one of the customers he got through the ADVOCATE:—
Dear Sir, I received the young White Yorkshire boar you shipped me, and I am more than pleased with him. I intend to breed him to twenty-five high grade Berkshire sows. As a butcher, I find the white hogs the most profitable for cutting up, as the fat and lean are better mixed. Enclosed please find \$10, with much thanks for being so prompt. I would like to have him called "Uster Hero," so as to make an "Irishman" of him.
Yours truly,
JAMES CONVERY,
Morris, Man.

Horse Owners! Try



**GOMBAULT'S
Caustic
Balsam**

A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland O.

We're After You

— TO SELL YOU —
STRAW CUTTERS,
GRAIN - GRINDERS,
Root Cutters, - - -
- Horse-Powers, - - -
- Bevel Jacks, - - -
- Fanning Mills,
Harrows, Rakes, - - -
- Plows and Mowers,
At prices that will save you money.
Write us for cuts, circulars and prices.

WATSON MFG. CO., Ltd.
WINNIPEG, - MANITOBA. 38-a-m



**FORT ROUCE
GREENHOUSES
WINNIPEG.**

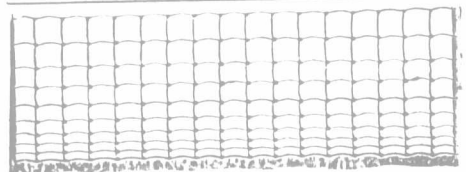
Brazton & Bowyer, Props.

All kinds of bedding out plants, choice table plants, and all kinds of cut flowers. Funeral designs at short notice. Country orders promptly attended to. Well-grown vegetable plants a specialty. Awarded several first prizes at Winnipeg exhibition. Send address for our FREE Catalogue. 37-f-m

SEEDS. — FRESH AND RELIABLE.

More Extensive than ever.
Send address for large, handsome & useful
1893 Catalogue - 1893.
J. M. PERKINS,
37-b-m 241 Main St., WINNIPEG

SEND YOUR POULTRY, ETC.,
-TO-
C. L. CHARREST,
AND GET PROMPT RETURNS.
37-f-m No. 304 Main Street, WINNIPEG.



SPRINGS IN A FENCE.

The large steel wires forming the horizontal bars are practically coiled-springs their entire length. IT WILL GIVE AND TAKE, BUT NEVER SAG.

PAGE WIRE FENCE CO. OF ONTARIO, LTD.,
WALKERVILLE, ONT. 335-y-om

**The CLINTON
... ORGAN CO'Y**

— SOLE MANUFACTURERS —
**BLATCHFORD'S PATENT COMBINED
RESONANT CHAMBER ORGANS.**
BEST TONED ORGANS MADE.
ELEGANT IN DESIGN. SUPERIOR IN FINISH.

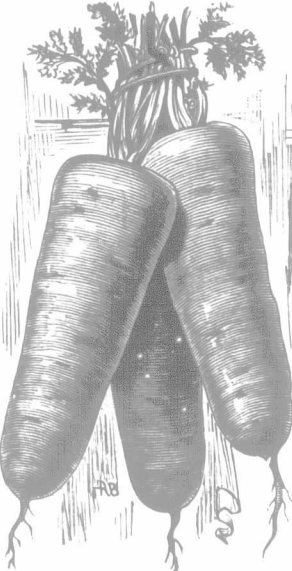
None but the best materials used, and the most expert and skilled workmen employed. These organs cost no more than any other. If we have no agent in your vicinity, write for our illustrated catalogue and price list.
N. B. - Reliable agents wanted in Manitoba and N. W. T. 312-y-m

ALL FOR 1 CENT!

The finest Illustrated Catalogue ever issued in Winnipeg of Flower, Field and Vegetable Seeds.



Window Bedding and Vegetable Plants.



Canary Birds, Bird Novelties & Bird Seeds.

I am head quarters in all the above lines, having practical experience in every branch, and for 10 years have been actually growing plants, flowers and vegetables from the seed I handle right here in Winnipeg, and thereby know what is best for this climate. The season here is short, and if you miss the one chance by having poor seeds or a variety of seeds that are not suitable for this climate, your chance is gone, and your crop is lost for the season. The catalogue will be brim full of useful information, and you can't find a better on earth to get what you want in anything I handle. Practical experience is far ahead of theory; don't run the risk of having no crop through getting bad seeds. I have the means of testing all seeds as to variety, germinating quality, etc., no other seedsman in the city having such facility. Therefore, it will pay before purchasing your supply of seeds, etc., to send for our handsome catalogue, which will be sent free to any address. One cent will buy a post card, place your name and address on it, and simply say that you want a catalogue for '93, AND YOU'LL BE ALL SOLID.



Florist to their Royal Highnesses The Duke and Duchess of Connaught.

Address, **RICHARD ALSTON,**
Royal Greenhouse,
27-b-m WINNIPEG, MAN.

W. G. FONSECA,
705 Main Street,
WINNIPEG, - MANITOBA,
Will furnish, in large or small quantities, to parties building, the celebrated

Mica Roofing.

Cheaper than shingles; more durable than tin; water and fire proof; not affected by heat or cold, and quickly put on, making it the most economical roofing known.
Enquiries regarding it promptly answered. 30-2-y-m

ESTABLISHED 1860.
KIRKPATRICK & COOKSON,
Commission Merchants, - Montreal.
GRAIN, FLOUR, BUTTER, ETC.

Advances made on Consignments to British or Continental Markets. 30-2-y-m

H.S. WESBROOK
DEALER IN
AGRICULTURAL IMPLEMENTS



COMMISSIONS EXECUTED - CORRESPONDENCE SOLICITED
H.S. WESBROOK, WINNIPEG, MAN.

38-y-m
— ESTABLISHED 1879. —
WM. BELL | MAIN STREET 288 WINNIPEG, MANITOBA.
(CORNER GRAHAM.)

DRY GOODS

Ladies' and Gents' Furnishings always on hand. A full and varied stock of Staple and Fancy Goods. Orders by letter and in person from our country friends given special attention. We have everything in stock to suit the farming community. Our stock will be found complete, and in prices cannot be undersold.
26-2-y-m **WILLIAM BELL, 288 MAIN ST.**

STEVENS & BURNS

MANUFACTURERS OF
Portable, Stationary and Traction Engines and Boilers, Ertel Victor Hay Presses, J I C Agitator Separator, Saw Mill Machinery, Engineers' Brass Goods and Fittings.

SEND FOR CATALOGUE.
STEVENS & BURNS, 32-2-f-m Winnipeg, Man.

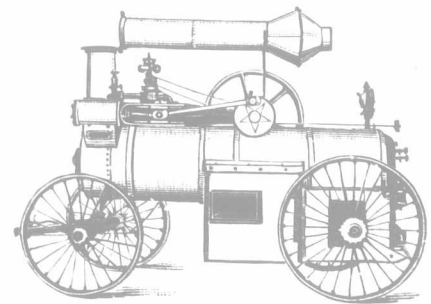
ONE DOLLAR WILL DO IT!

For the above amount you can get THE WINNIPEG WEEKLY TRIBUNE to the first of January, 1894. Fifteen months for \$1 - the balance of this year free. A splendid portrait is given free to every subscriber. THE WEEKLY TRIBUNE is the largest newspaper published in the Canadian Northwest; has all the news of the week; specially selected family reading and interesting serials. It is the champion of the people's interests; the popular paper with all classes. Address -

THE TRIBUNE PUBLISHING COMPANY, WINNIPEG, MAN.
14-2-f-m

ANDERSON & CALVERT,
AGRICULTURAL IMPLEMENTS

Cornell Engines, - - -
Advance Separators,
Monarch Separators.
FULL LINE OF
PLOWS, WACONS, ETC.



MOODY & BOYD'S
3 and 6 Horse Powers
and Separators.

OFFICE:
144 Princess St., Winnipeg
P.O. Box 1319.

GEO. McCULLOCH & CO.,
FLOUR AND WOOLLEN MILLS

Rapid City, - Manitoba,
Manufacturers of the Celebrated Rapid City Yarn, Blankets, Flannel, Kersey, Tweed, etc. The highest cash price for Wool. Extra inducement to farmers for Wool in exchange for goods. Samples on request. 28-2-y-m