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# THE FARMER'S ADVOCATE

AND HOME MAGAZINE



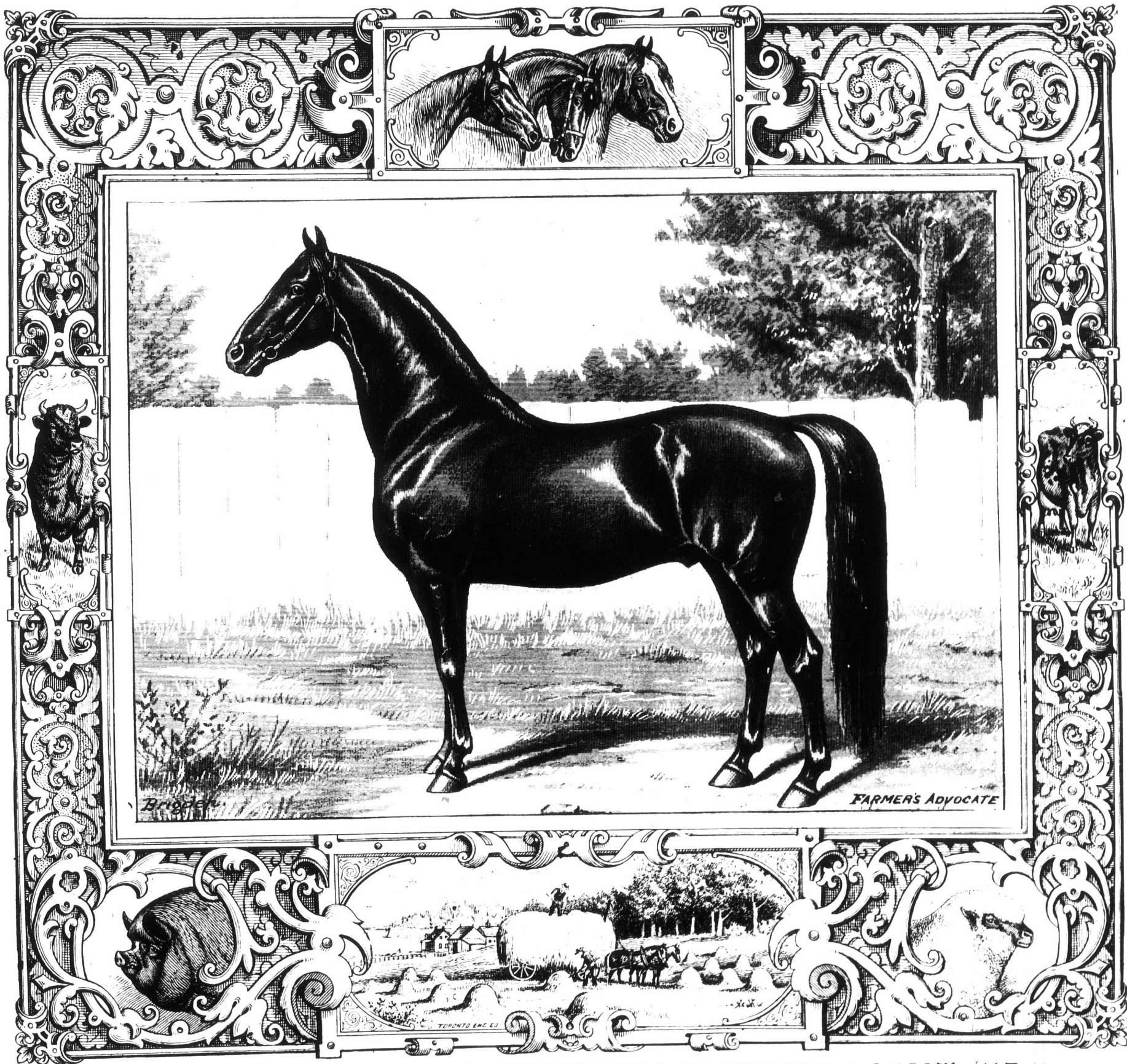
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No. 326.



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



## EDITORIAL.

**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 (914); 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 manure; 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.



### The Agricultural and Experimental Union.

The fourteenth annual meeting of the above society was held at the Ontario Agricultural College, on the 22nd and 23rd of December.

There was a larger attendance of ex-students and visitors than in former years. This was doubtless owing to the attractiveness of the programme, which, in addition to ex-students, included the names of men who are acknowledged to be leaders in their several departments.

The meeting was opened by the President, Nelson Montieth, B. S. A., giving an appropriate address, and after other routine business had been concluded, G. F. Marsh, B. S. A., presented a report of his work in compiling a register of all students who have attended the Ontario College. The greater number of these are farming in Ontario, though they have been reported from all parts of the world. A number are holding responsible positions in agricultural colleges. Over two-thirds of those who have attended are still farming.

It is gratifying to state that the reports received show that a much larger proportion of the students who have attended of late years remain on their farms than those of earlier years.

Reports were given of the horticultural and agricultural experiments carried on through the year. These co-operative tests are carried on by members of the Union and farmers who are interested in this work, and have now assumed enormous proportions, there being over three hundred experiments in different parts of the province.

John Burns, of Kirkton, gave a practical and interesting paper on country roads, which we will publish at an early date.

John Hannah, Secretary Ontario Creameries Association, gave an address upon the factors necessary to the advancement of the dairy industry in Ontario.

Prof. F. Shutt, Chemist, Experimental Farm, Ottawa, gave a very scientific address on chemistry of barnyard manure. His remarks were chiefly based upon analysis prepared at the Experimental Station, Ottawa.

In the evening the annual supper was held, when speeches were delivered by the Hon. John Dryden; Wm. Muloch, Vice-Chancellor of Toronto University; C. C. James, Deputy Minister of Agriculture; Professors, Visitors, Ex-students and Students.

J. J. McKenzie, Bureau of Health, Toronto, gave a paper on the vitality and development of the fowl brood germ (*Bacillus Alvei*). The data were obtained from original work in growing the germs in different cultures. His studies have been of great value to bee-keepers.

F. A. Gammell, President Ontario Bee-keepers' Association; Wm. McEvoy, Government fowl brood inspector, and others, joined in a very animated discussion on this subject.

D. Buchanan, B. S. A., read a paper on the improvement of the social condition of the farmers.

One of the most interesting papers delivered, as was shown by the length of time the speaker was kept on the floor and number of questions he was plied with, was that given by Prof. L. H. Bailey, of Cornell University, on recent progress in Horticulture. He reviewed the great progress which has been made of late years in all the branches of this industry, concluding with an account of some of their experiments, especially that on the effect of electric light upon the growth of different plants.

An entertainment given by the College Literary Society closed one of the most successful meetings which the Experimental Union has ever held. A number of the papers and much of the discussion will be published at an early date in the *ADVOCATE*.

We call the attention of Canadian breeders of Shorthorns to the letters of Messrs. Gibson and Wade, of the Dominion Shorthorn Breeders' Association, and of Mr. J. H. Pickersell, of the American Shorthorn Breeders' Association, which appear among the stock gossip in this number. The appeal made to the breeders of the red, white and roans should meet with a hearty response. We have been informed that the Association representing the Jerseys are taking active steps to secure a large exhibit of this breed, and that the cows selected and sent by them shall be comfortably housed in Chicago months before the tests are to be conducted. In fact many or all of them will calve there. Associations representing other breeds would do well to follow this example. Breeders in Manitoba and the Territories are appealed to as well as those in Ontario and the east. What we desire to see, and what the Canadian Shorthorn Breeders' Association desire, is united action on the part of all Canadians.

### 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, Wawanesa; 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. Boydd, 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 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 assistance, 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.

### 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 fatted 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.

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.



**THE FARMER'S ADVOCATE & HOME MAGAZINE**

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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.

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We have reason to believe our subscribers will be much pleased with the change made in the form of the "Advocate," and by the fact that it will hereafter be published twice each month. We hope each old subscriber will endeavor to increase our circulation by sending us at least one new name. We also request our subscribers to send us agricultural items of interest to our readers. Examine the label on your paper, if you are not paid to January, 1894, kindly remit us forthwith. After making payment notice your label, and if credit is not at once given, notify us immediately, that we may be able to trace the money. All P. O. orders and registered letters are at our risk. Carefully read the above announcement.

**STOCK.**

**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 overruled 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 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 man 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.

#### Encourage Local Men.

Your admirable account of the Fat Stock Show, of Guelph, published in your issue of 1st inst., prompts me—in the interest of ordinary farmers—to offer a suggestion regarding the regular fall shows held throughout the province, instancing, as an example, the one held at Ottawa, in September last (which is by no means an exception to the general rule). The custom followed last year was the same as in previous years, i. e., fat stock from different parts of the province, made a regular circuit and carried off all the prizes, and which in every instance was more on account of the amount of fat, the fine lines of breeding being overlooked when the animal was only in prime condition for service. There are few ordinary farmers who can afford to breed and feed purposely for exhibitions, and if those fall shows are intended to stimulate and encourage farmers to improve their stock, I would suggest that the classification be altered, so as to have one class for FAT cattle, and another for fine breeding independent of the fat, which would be an encouragement to the farmers, and would, I feel sure, materially increase the entries.

JAN. 9th, 1893.

CARLETON.

The columns of the "ADVOCATE" are open to those who wish to discuss agricultural or live stock subjects. We invite correspondence and discussion. This is the farmer's organ; if they do not use its columns, it is their own fault. We wish farmers to realize that their's is the calling *par excellence*, that their interests are the chief and of greatest national importance. If they will, and we wish to encourage them to do so, they can control the country and shape her destinies. It seems a hard task to get farmers to realize and act upon these great truths.

#### Advanced Agriculture and the Connection of Sheep Therewith.

[Prepared for last meeting of Dominion Sheep Breeders' Association by Richard Gibson.]

On this continent we know but little of the difficulties experienced by the farmers of the Old World. Here we have a virgin soil, and in many localities we have not yet been compelled to study how to renovate worn-out, or bring into successful cultivation naturally barren soils; and as long as we have that "Mecca" for the restless and dissatisfied, the Northwest, to resort to, so long shall we put off the time, as it is cheaper to "pull up stakes" and move West than to endeavor to do the best we can with what we have, if naturally poor. But I don't think it would be time unprofitably spent to look abroad at what has been done, and see if there are no lessons that may be utilized in some portions of our province from the examples set forth.

In England many thousands of acres of wild and barren wastes, like Lincoln Heath, which formerly was a huge rabbit warren and a home for vermin—so desolate and solitary was it that a column was erected and lighted up at night to guide any belated traveller—this heath land was let for 2s. 6d. per acre, or a couple of rabbits a year.

Where the column stood at Dunstan Pillar is now one of the best cultivated and most noted farms in Britain; from under its shadow Royal winners innumerable have been bred and fed, and the name of Cartwright is known in every British colony.

Again, on the Wolds, those high table-lands running east and west across the County of Lincoln, are farms which formerly rented for five shillings (English) an acre, and now for \$7.00 to \$10.00.

Then take the County of Norfolk, the eastern portion of which is probably the poorest, naturally, of any part of England, having been nothing but a pure white, blow-away sand, piled up in little mounds. Those who have traveled between Detroit and Chicago by the Michigan Central Railway will remember Michigan city, which nearly resembles that portion of Norfolk of which I am speaking, and where now we find large farms well tilled, and as prosperous a class of farmers as any in Britain.

I need not go to the counties in the South of England to illustrate my point, but would merely remark that I know of farms of from 1,000 to 2,000 acres that have not over from five to ten acres of permanent pasture immediately surrounding the dwelling, and on which only sufficient cows are kept to supply the family with milk and butter.

The question naturally will be asked, How to farm 1,000 acres successfully without cattle? The practical answer, as exhibited on the sheep farms of Britain, would be, Grow green crops and feed them off with sheep.

Let us look at the means adopted, not to keep up a naturally fertile soil, but to reclaim and bring into cultivation the waste places of the earth; and a word here of encouragement may not be thrown away, if we enquire, in passing, Who accomplished this work, and to whom are we indebted for this object lesson? Was it some rich landed proprietor? Or perhaps a syndicate of wealthy capitalists? Or a well-endowed agricultural college? No; it was wrought out by the tenant farmer, who, having obtained leases and a liberal tenant right, was content to risk his capital in the venture; and when I say on these same farms are to be found the wealthiest farmers in England, that it is on these farms the English malting barley is grown in its greatest perfection, and that it can only be grown on sheep farms successfully has been so often demonstrated that any conversant with the question would not try to make one believe it can be grown elsewhere as successfully.

The means at first adopted were large applications of artificial manures, generally bone dust, then by encouraging the growth of clover and other green crops, followed by turnips, all eaten on the land by sheep, so that by the constant treading the soil became consolidated sufficiently, and by the return of all green crops it became rich enough to grow grain. Though these soils are now rich in plant food, they could not be kept up without sheep, and to-day without them they must go out of cultivation.

The rotation was the ordinary four-course—quarter roots, quarter barley, quarter clover, quarter wheat—the roots and clover consumed by sheep. Can we not apply this lesson to advantage in some portions of our Dominion? What the tenant farmers in parts of England have done, might not in a modified way the landowners of Canada do? While I would say that it is not absolutely necessary to keep sheep on every farm, I do say there are but very few on which they cannot be kept to advantage. There are vast tracts in the eastern part of this province where I am satisfied they could be kept very successfully, and with profit to the farmer and to the benefit of the farm. While the soil is thin, it is not like the white sand hills of Norfolk; while it may be covered with scrub brush, it is naturally richer than the Lincoln Heath, which only produced furze or gorse and heather. No lighthouses are required to direct travellers. I have not entered into the subject minutely, but sufficient has been said to draw attention to the matter, and if the hints presented should induce one to try the experiment, I trust it will be intelligently carried out; and so sanguine am I of the result, that I feel sure the experimenter will not regret the venture, and that he will agree with the philosopher of old, who declared that "Sheep have a Golden Hoof."

#### The Cattle Trade.

AN ABRIDGED REPORT.

Ald. Frankland, of Toronto, made a racy speech, which was interspersed with much laughter. His idea, he said, in the inception of the export trade, was to benefit the farmers of Canada and supply cheap animal food to the workmen of Lancashire and Yorkshire, in England, where he was born, and where he had no meat but liver to eat in his boyhood days. Now there were cheaper animal foods there than in any part of the world. He paid a high tribute to Secretary Wade in connection with the A. and A. Association. He believed that this show was doing far more good for agriculture than the Toronto Show, with all its circuses and dancing—the two things did not mix. He spoke entertainingly of the early days of the cattle export trade, when he had purchased ten head of cattle from Mr. J. S. Armstrong, father of the sweepstakes winner of this year, paying nearly \$2,000 for them, and, with other cattle and a lot of sheep, had taken them across the Atlantic at his own risk, because the insurance was prohibitory. After arriving in Britain, with a banner and a band these Canadian cattle were marched to their destination in Liverpool, and though the returns were not high, still the English people saw what Canada could do. He advised the closer drawing of commercial relations with the Mother Land; in Britain and Europe was the place to get up their reputation, not over the line, before whom they would not stultify themselves, and where they could not get reciprocity on honest and fair conditions. He characterized the cattle scheduling as a dirty, cowardly trick, the act of a man, Gardner, who knew as little about agriculture as the new incumbent at Ottawa. The Canadian cattle get fifty per cent. more care than the American cattle. On the ranches they do not care; if they had forty per cent. die, they could make enough on the sixty per cent. to pay them. The wanton destruction of animal life there was awful, there is nothing like it in Ontario, and little in the Northwest. He asked from Mr. Dryden the assistance of the Ontario Government, to press upon the Dominion Government, if the order for scheduling is not cancelled, the necessity of preparing slaughter houses, etc., for the Canadian cattle, distinct from those used by the Americans, which were fully occupied. He thought that Canadians were entitled to more favored conditions than the others. From February to August 60,000 cattle were purchased for export in Ontario, and \$4,500,000 paid to the farmers. It can be seen what it means if the trade with England ceases. A cattle beast of 1,400, of high quality, early matured, to dress 800 pounds, would sell in competition with any cattle on earth. He drew a comparison between the past and present, to show the progress of Canada; she lived well. The export trade would go on. The Americans could ship their cattle, but the pluck and determination of Canada would cause her to more than hold her own.

#### 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 crossing.

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.

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."



**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 overstocking 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 land 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.

**DAIRY.**

**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 (cisterns) 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) theory, 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; 18.50 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	337.5	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 267 lbs. milk, containing 4.67 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 296 lbs. milk and 4.50 per cent. fat. This would be 12.33 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.



### Western Dairymen's Association of Ontario.

The annual meeting of the Western Dairymen's Association of Ontario met in London, Ont., on Tuesday, 10th inst. Notwithstanding the severe storm that was raging, and the intense cold, there was a large gathering of dairymen assembled at the hour appointed.

Mr. J. Geary, the respected and energetic President of the Association, was ready on time and called the meeting to order. In his opening address, he gave a resume of their work for the year, and said: "Your Board has, since I last met you at Brantford, departed somewhat from old ways. In order to meet the growing wants of the dairy industry, we appointed a young man as secretary, Mr. J. W. Wheaton, who is to devote his whole time to the work of this association. He will devote part of his time to attending annual meetings of cheese factories, and give addresses at these meetings on breeds and feed of dairy cows, care and handling of milk, and the best methods of manufacturing the milk and the best methods of utilizing the by-products of the dairy. This departure seems to have met with your hearty approval, shown by the reception he has received at those meetings which he has already attended, and also by the numerous applications which have been received for his services, which, I fear, are more than he can overtake.

"I also feel exceedingly thankful to both the Dominion and Provincial governments for the assistance they have given us in aiding us to develop and increase our dairy work, and also in assisting us in improving the quality of our produce.

In order to induce farmers to become members of this association, we have reduced the membership fee to 50 cents, and we confidently hope this will lead to a very great increase of members. We also hope the members will attend and encourage local meetings throughout the province, where they will discuss the various subjects relating to their dairies, and endeavor to acquire all the available information they can."

The President then introduced the Hon. John Dryden, Minister of Agriculture for Ontario, to the Association, who on rising was greeted with a most hearty reception.

We need not here state that the Hon. Minister of Agriculture is always a welcome visitor, not only to our conventional gatherings, but at all agricultural gatherings.

The hon. gentleman said: I am here to represent the Ontario government, and I suppose the motive power of this, as well as other associations, is money, and I am sure the government will continue their support as long as it is needed. My department is related to the dairy department, and I can say that the annual reports of this department, which includes the annual reports of the Eastern and Western Dairy Associations and the Ontario Creamery Association, are most interesting to outside parties, especially in Great Britain, where they say our reports are the best, the most instructive and the most practical of any they receive from anywhere. There is no doubt but this and the sister associations have been the direct means of the growth and increase of our dairy work to its present condition. One good these reports do is to scatter information amongst those who do not attend these meetings, and it seems about the only way of reaching a great many. The educational advantages which the Travelling Dairies have extended to the farmers have been of great benefit, and this is only a step—only a beginning—leading on and up to a larger system of co-operation in dairying where it is not now in operation. The income has in the past been more uniform from dairying than from any other branch of farming. The cultivation of the home market should be more attended to than it has been. We don't want you to cull out your poor cheese and ship them to Toronto to supply the local trade. That is not the way to cultivate the home market. Some say we are booming this dairy work. Yes, and we intend to keep up the boom—to increase and improve our dairy industry all we can. It is right for the government to provide for the education of the people. We are establishing a dairy school at Guelph, and we purpose to make this school the best on the continent of America or anywhere else. We mean to equip our school so as to give both technical and practical education. We have provided fifty chairs for our dairy school, which we thought would be ample accommodation for all, but to my surprise there have been eighty applications for admission already received. We have been obliged to refuse thirty applications. These must be provided for in the future. We cannot afford to allow these young men to go without education, or allow them to go out of our own province to seek that which they need and should receive at home.

These points which we have given were illustrated and spoken to by the Minister with great earnestness, and were listened to with the greatest interest by the audience.

Prof. Dean, of the Agricultural College, Guelph, gave a fine address on "The needs of the dairy." More knowledge was needed regarding the value of milk and its products, butter and cheese, as a perfect food. More knowledge was needed how to maintain the fertility of the soil. More knowledge was needed how to produce more milk cheaply, and of good quality. The standard should be raised from 3,000 pounds per cow to 5,000 or 6,000 pounds. More knowledge is needed how to increase winter dairying. More knowledge is needed in co-operative dairying, to pay according to the quality of the milk. This is coming to be the question of the time. Butter fat is the most

valuable and the most variable part of the milk, and milk should be paid for accordingly.

The other speakers, Messrs. Vanslyke, Hoard, James, Fletcher, Ruddick, and others, were all in good trim, and gave valuable information upon each of the subjects discussed.

The convention was the most successful ever held by the association. The membership has about doubled, and the interest manifested throughout the three days' meetings was continued to the very close.

On the last afternoon the convention was honored by the presence of His Excellency the Governor-General, who addressed the meeting shortly, giving kind words of encouragement to the association, and wished it the greatest success.

As our time and space are both limited at present we cannot give the papers read at the convention, but will at some future time give our readers the cream of these, which we believe will be productive of great good. We congratulate the Association and its officers on the complete success of this convention, and hope the results will meet their highest expectations.

## FARM.

### 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.

#### LABIATE (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 Carduaca* (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 or spikes at the end of the branches. The leaves are oblong, heart-shaped, and the plant is of a soft, downy-like appearance.

#### *Brunella 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, stick-seed 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 Morissoni* (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-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.



Fig. 28

### 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.



Fig. 27



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."

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 per-

suaded 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 knotter, 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 benefitted 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.

Fifty Years Ago.

BY T. B. WHITE, CLARKSBURG, ONT.

"Fifty years since, the sun rose on a different America. Our own Ontario, then a forest, may, in its most cultivable portions, be considered as cleared. In consequence the winds from many points, which formerly blew over the forest, which gave off continual quantities of moisture to the atmosphere, now passes over a soil much drier, even heated, which, instead of giving moisture to the passing breeze, absorbs that which it contains. The result is that those breezes which formerly gave us continual summer showers do so no longer. The rainfall is, perhaps, still in equal volume in Ontario, but not equally well distributed, and our forests to the north obtain a moisture which at an early day fell closer to the lakes. The result is well known. Our harvests are demolished, and our prosperity diminished."

The above is from Introduction to Forest Report, 1886, and the following is from a Globe editorial on "Thanksgiving Day" for 1892: "Old men, looking back on their youth, sigh that things are not as they used to be. We can agree with them, but not in the same sense. They are better than they used to be. No age can compare with this in the wide diffusion of material comforts, or in the prevalence and accessibility of intellectual delights. Take whatever "Golden" or "Augustan" age you please, and this will not suffer by comparison."

Whatever faults and delusions the old and illiterate may have respecting the past, present or the future, it is seldom we meet with two opinions more contradictory and positive than the above, and my advice to such friends is that they would do better to be more sure about their own spectacles and not be so ready to attribute all the misconceptions they meet with to those whom we are told can see no farther than the next harvest time.

Those who have read the Report from which this first opinion is taken will know that it labors hard to show that this change for the worse has been brought about by the over-clearing of our forests and consequent change of climate. But is the statement true, either as regards diminished crops or change of climate? I think not, for however extreme a season may be, whether in floods, droughts, frosts or thunderstorms, similar extremes have been before. I have read that Prof. Cleveland Abbe, the founder of our weather bureau system, is of the opinion that there is no noticeable change in the climate since history began. Clearing and draining the land changes the effects of the climate some, and on the whole beneficially to health and agriculture. But, because land dries quicker and some runs of water dry up where they used to run all summer, it does not follow that we have not rain as often and as much as there was fifty years ago. It is to get the water away that we turnpike our roads, ridge up our fields and dig ditches and drains, and not have it standing on and percolating through the land all summer, keeping it cold and sour, and consequently in wet seasons starving out our crops.

But near one hundred fold  
Grow each potato will;  
If planted where it's not too cold,  
And hoed up in a hill.

In 1888, rain fell on more days (133) than was ever recorded at the observatory, Toronto, before. And in the years 1889 and 1890, it seemed to be raining with us most of the time, and we had a greater deficiency these years in crops than we ever had for want of rain. In 1891 we had no rain from seeding to about the first of July, and crops were looking bad, but rain came, and, though sparingly, we had one of our best harvests. In 1892 we had rain from spring to winter, and though crops are not to complain of, it has been with difficulty we could get them or work on the land, so that if the forests to the north of us do obtain a moisture which fell fifty years ago closer to the lakes, we have something to be thankful for.

With respect to droughts: In 1861, grain in this township and Nottawasaga was sown, grown and got in without a shower, when our farms were only about half cleared. On Peace River, at a mission farm, 4 or 5 years ago, they had no rain, and consequently no crops, and that for them means almost starvation, but from a letter I have before me I see the harvest of 1891 was a good one, so that this philosophy about over-clearing the forests changing the climate seems at fault out there.

On the drought of 1813, Thomas Jefferson, in a private letter lately published, says: "From the fork of James river and the falls of other rivers upwards and westerly, we have had the most calamitous year ever seen since 1755, when it never rained from April to November. There was not bread enough to eat, and many died of famine. This year (1813) in these upper regions we have not had a single rain from April 14 to September 20, 5 months, except a slight shower in May. From 500 acres of wheat sowed I have not got 1500 bushels. Our corn has suffered equally. I am told the drought has been equally fatal as far as Kentucky."

The year 1755 was the year General Braddock left Virginia with an army to take a French fort on the upper Ohio, when he was killed and his men routed, and the year 1813 James river was blockaded, and Jefferson had to sell his wheat, raised the year before, for 17 cents per bushel. In those times the sun rose on a different America.

I will have to keep frosts and thunderstorms for next paper.



### 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. ab., 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.

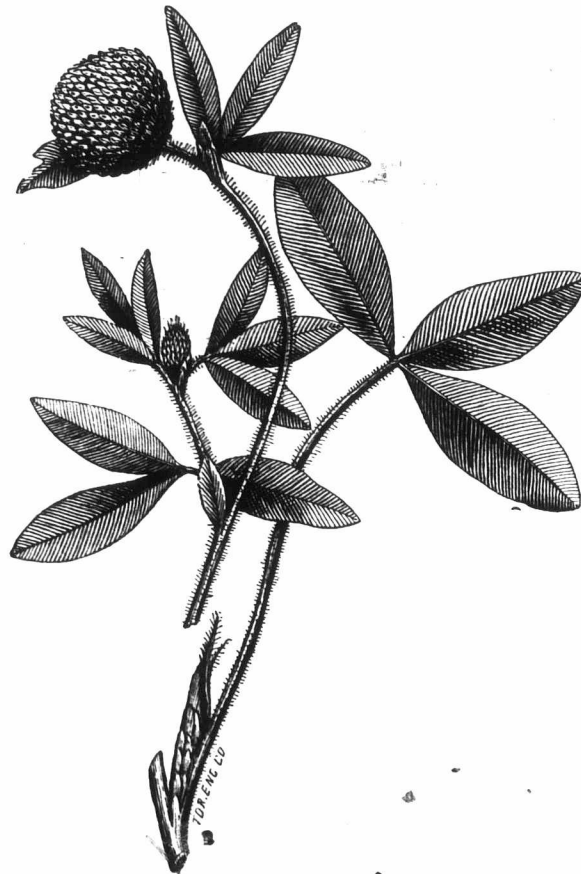
To sum up. Don't sow more land than you can work well and can properly attend to. Aim at producing the largest amount per acre of the best quality. Always blue-stone your seed wheat. Supply yourself with stock of some kind as quickly as you can house them. Stack your straw, it won't take much time or 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.

### Trefolium Medium (Zig-Zag Clover).

To the Editor of the FARMER'S ADVOCATE:

SIR,—About four years ago I found growing along the edge of one of my fields a patch of clover unlike any that I had ever seen before. It grew in a solid mat about fifteen inches high. The blossom is pretty much like other red clover, but the leaves are narrow and pointed. I have examined it every year since I found it, but I cannot find that it produces any seed. On examining the root I found that instead of a top root, like other red clover, it had roots like couch grass. The roots have joints or buds on them. I sent a specimen to the Natural History Society in Charlottetown, and they pronounced it Trefolium Medium or Zig-Zag clover. I have since learned from Prof. Lawson, of Dalhousie College, to whom I sent a specimen, that one peculiarity of it is that it does not ripen seed, but propagates from the root. I write this in hopes that you, Mr. Editor, or some of your readers, may give us information about the plant, which I understand is a stranger in the Dominion. The place where I found it was along the edge of a bush, where the land had never been cultivated. It is spreading rapidly, though no care has been taken of it. The mystery to me is how it came here when it does not produce seed. Seed could be carried by birds, but we hardly think birds could transport the roots a great distance. I would like to know if it would make a good pasture plant. I believe it would stand the winter well, as from the formation of the roots it would not be liable to heave with frost. It would make a very pretty lawn grass. By running shallow furrows with the plow and spreading the roots along in them, a field might soon be stocked with it. I will send you a specimen, complete roots and all.

WALTER SIMPSON,  
Bay View, P. E. Island.



ANSWERED BY J. HOYES PANTON.  
TRIFOLIUM MEDIUM (ZIG-ZAG CLOVER; COW GRASS  
MAMMOTH CLOVER.)

The specimen of clover sent you is the above species. It differs from ordinary clover in being perennial, with a creeping rootstock; leaflets narrower and longer, some partially pointed; head larger and less compact, and upon a short stalk; flowers later, has larger stems and more inclined to spread. It is adapted for permanent pastures, but not so well suited for alternate cropping as the common clover. On account of the straggling nature of the stem, the term zig-zag clover has been applied. By some it is not considered as hardy as the red, and more liable to "heave" in spring. Its tendency to coarseness lessens its value in producing hay. A peculiarity is noticeable in this plant, that if it is not pastured or mowed in spring it will not develop seed to any extent. This probably accounts for your correspondent not being able to find seed. There is no doubt but it will produce seed, and that it does not depend entirely upon propagation by root.

### GARDEN AND ORCHARD.

#### Fertilizers for the Orchard and Garden.

[Prepared by T. G. Raynor for the last meeting of the Ontario Fruit Growers' Association.]

This is a very important subject to the orchardist and gardener, for it has to do with the home end of his business. The wise application of fertilizers may often lower the cost of production to an extent that will greatly increase the profits, or at least leave a margin on some products which have not paid the producer very well in the past.

In discussing fertilizers, everyone should form an acquaintance with three simple elements, called in agricultural science nitrogen, phosphoric acid and potash, which are found in all fertile soils.

Of these three elements, nitrogen is most expensive and most likely to escape from our grasp, both in its management and application. It occurs in all vegetable and animal composition, and many of the salts occurring in nature, as nitrate of soda, etc. Phosphoric acid is found to a considerable extent in the bones of animals, and as a mineral in the form of apatite. Potash, the least expensive of the three, is found largely in the composition of wood ashes.

The productiveness of our soils depends upon the quantity of these three elements present in them. If any one of the three be absent, or not present in sufficient quantities for the development of any particular crop, by so much is that soil said to be unproductive.

There are two things to guide us in the use of fertilizers. First, the nature and condition of the soil; second, the kind of crop grown. Soils vary much in composition, from light, leachy ones to very heavy. Thus it is evident that we should understand their powers for retaining these three elements, at least to some extent, in applying fertilizers. A knowledge also of the composition of the crop grown is indispensable, with regard to its behavior towards them, in order that there may be no great waste in the application of the fertilizer. For example, the potato takes from the soil a considerable quantity of potash; then by applying a potash fertilizer we may greatly increase the yield of potatoes. Now, if we had applied large quantities of phosphoric acid, we might not realize any increase in the quantity of potatoes produced, and would naturally conclude that we had made a mistake, as well as sustained a loss.

There are three classes of fertilizers at our disposal. I refer to: First, green manures; second, general manures; and third, special fertilizers.

#### GREEN MANURES.

For light and heavy soils, green manures are very valuable, as they increase the power of a light soil to hold manurial ingredients, which might otherwise leak away, while they greatly improve the texture of a heavy soil, making it open and friable. Green manures are useful in orchards to keep down weeds; to keep the soil, if heavy, open, and at the same time add to its fertility. They may be pastured, and thus become a double source of profit. Any large-leaved plant which will grow quickly and draws most of its nutriment from the atmosphere or subsoil, as red clover, buckwheat, etc., is suitable for green manuring.

#### GENERAL MANURES.

By general manures I mean those which contain the three elements referred to above. They contain other element food as well. Farmyard manure and compost come under this head. If we could produce or even buy enough of this class of manure, we would have no difficulty in making and keeping our soils very productive. Most of us realize the value of a compost heap, but how few, comparatively speaking, make them, by throwing in a heap all the vegetable and animal waste products occurring round our homes, together with some farmyard manure, which, when well mixed, makes for us a rich and cheap manure, especially for the garden. In gathering up the refuse vegetable matter, etc., we remove a suitable hiding place for many injurious insects, as well as destroy many that have taken refuge therein.

#### SPECIAL OR ARTIFICIAL FERTILIZERS.

The third class of manures of which we speak are called special or artificial fertilizers; that is, they contain some one or two of the three elements to which I referred. There are very many of this class of fertilizers manufactured and used at the present time.

Where we require more fertilizing material than we have at hand, the special fertilizers come readily into play. They are invaluable to the market gardener. In some cases, however, they should be used with precaution, if we are to realize a profit from their use. By experimenting with our soil, we may learn which of the three elements it has the most need of, and this will guide us in the kind of fertilizer to apply. A knowledge of what the crop to be grown requires will also be a help. Just here a word of caution may be necessary to some. Certain classes of fertilizers should be purchased subject to a chemical analysis by a competent and disinterested person. So many have been defrauded in the past that this step is almost necessary. On the other hand, it may prevent a fertilizer from being unjustly condemned.

In a paper of this kind it would be folly to give the composition and value of the many special fertilizers now offered for sale. I can only suggest the general principles.

Generally speaking, I would apply nitrogenous manures, or fertilizers containing nitrogen, such as



sulphate of ammonia, nitrate of soda or guano, to crops or trees where vigorous growth is the object; phosphoric acid, in the form of superphosphates, bone ash, bone meal and apatite, etc., where fruit or fully developed seed is required; and potash fertilizers, as wood ashes or kaint, are very useful in growing crops which store up considerable starch in their growth. It is needless to remind the fruit grower these days of the value of wood ashes as a fertilizer and insecticide for the orchard and garden. It pays to use all the wood ashes made at our own homes, and frequently to buy from our neighbors who offer them for sale. If we expect to grow paying crops of fruit and vegetables, we must supply the elements of growth and development to those soils which are being repeatedly cropped.

**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 hardiness with the Wealthy apple:

Spate Amarelle, Fouchès, Morello, Minnesota Ostheim, Brusseler Braun, Orel 25.

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

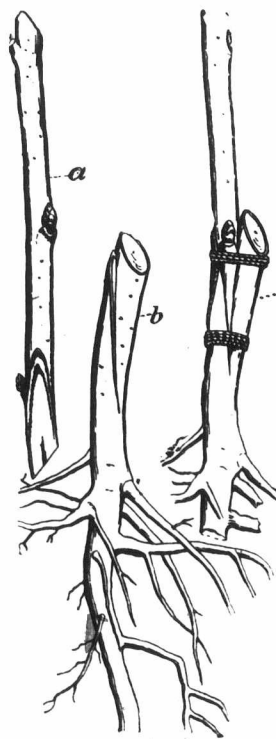
**PROPAGATION.**

**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.

**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.

**CROWN GRAFTING.**

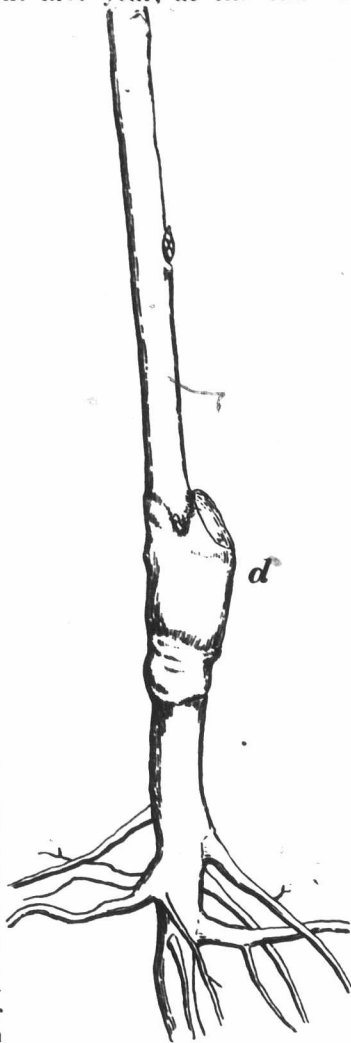


Root grafting, as ordinarily practised, when applied to the propagation of the cherry is attended with little success.

**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.

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

**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.

**GRAFTING WAX.**

Many receipts are offered for the manufacture of grafting wax. A satisfactory wax for out-door use is made by melting together five parts resin, and two parts beeswax; to this is added one and a-half to two parts linseed oil. For winter in the grafting room the same amount of resin, with less oil and beeswax, makes a wax more suitable for indoor application.

A liquid grafting wax is made by melting together one pound white resin, and one ounce beef tallow; to this, when partly cooled, eight ounces of alcohol is added, stirring in slowly. This should be kept in closed cans to prevent the alcohol evaporating.

**Apple Growing.**

BY THOMAS BROOKS, BRANTFORD, ONT.

Plant in the spring, thirty feet apart each way, and don't forget you are planting a living thing with a life to be fed, protected and cared for, if you would have it a thing of beauty and profit. If you do not mean to feed, protect and care for it, don't plant it. Of all the kinds of fruit grown in this country the apple is capable of adapting itself to the greatest variety of soil, climate and surroundings, but under no circumstances must we neglect the feed, care and protection. Remember the apple tree, though a living thing, is tied to one spot; it cannot roam in search of food. Take your cow into the field and give her only twenty feet of rope, she will soon eat up all the feed within her reach, and have nothing but the ground to stand on, and if you do not supply her wants will prove unprofitable. Now I believe this to be the condition of too many of our apple trees; they have little more than the ground to hold them up, and if there was any such thing as their getting out, they would follow one another over the fence, like so many breachy sheep. General practice has been something like this for the first ten years. The orchard has been made to grow all the grain and roots that could be got from it, thus doing double duty—all right if double fertility has been applied to the trees, but this is too often neglected. Unless the orchard has had very liberal treatment in the way of manure and cultivation, the ground will be poorer than before the trees were planted. To me there appears a great similarity between animal and tree or vegetable life. For our domestic animals to become strong, healthy and vigorous, they must be fed and cared for in a proper manner. The cow, to give good results at the pail, must have the proper feed in right proportion and quantity, with good care; so the orchard, to give good results in the barrel or cellar, must have its wants supplied to that end from year to year.

The animal and its needs, and how and with what to supply them for any desired end, is now pretty well understood. In the care of the orchard these points are rather more obscure, and perhaps not so well understood by the average farmer. The suitable treatment of the tree itself, in the way of cleaning and pruning, may in the main be agreed upon. The only remedy I know of to cure any unfavorable subsoil conditions, either in the field or orchard, is tile draining. This will greatly benefit a hard clay subsoil or a cold damp bottom, and in the orchard I believe a good depth, even to four or five feet, to be necessary. If a tile drain is too near to surface in the orchard, there is danger of the tiles filling with small roots from the trees.

I do not wish to be tedious, and of what I have written this is about the sum. First, if the orchard is on hard clay or cold subsoil, deep and thorough tile draining with perfect outlet. If in grass, which I always think is the nicest condition, after the trees are well in bearing, not, however, to be sodbound, but kept mellow with top dressing, ashes and coarse manure. Next is clean bark and proper pruning, and let me say right here, better prune too little than too much. I have seen most ruinous results from over much pruning. Get the tree into nice shape and form as to the desired height of the lower limbs from the ground, and the direction of leading branches, during the first five years. After that, under no circumstances ever prune closer than to cut a branch off a limb; never cut a leading branch off the trunk. I think that success in apple growing, as in many other things, lies in the faithfully carrying out of some of the old, well-established facts which I have tried to point out. First and last, feed the apple tree.

**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.



## VETERINARY.

## 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 infrequently 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 mucus 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 Bilious 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 minute; 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 lanced 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 106° 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 mucus from nostrils, stiffness of gait, arching of back, dryness of nose, are unerring symptoms in the ox of the animal being amsis. 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 bluish 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 of 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 lower 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—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.

**POULTRY.**

**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 unsurfitted 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.

**APIARY.**

**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.



## FAMILY CIRCLE.

## Life.

Two things there are we have no voice in choosing—  
Our ancestors nor our existence here,  
Fate's mandates here admit of no refusing  
From prince or beggar, sinner, saint or seer!

Time leads us onward through the world's deep mazes:  
No horoscope forecasts our end or way;  
The keenest thought within the world that blazes  
Cannot elucidate beyond to-day!

We see the footprints of those gone before us;  
The heights attained; the ledge where some fell;  
Anon we catch heaven's chimes, sweetly sonorous,  
Or hear a plaint from sin's own citadel.

Our work goes on. We fancy we can fashion  
A structure fair, and beautiful, and grand!  
We often fall! God can but have compassion  
Upon the heart that owns a feeble hand.

I can but think the rudest life work given  
Has hidden in it one fair, polished stone;  
Smooth, perfect, beautiful—as seen from heaven—  
Though sunk in chaos, with rank weeds o'ergrown.

Enough, 'twould seem, if, with each gift extended,  
We add our fraction to earth's highest good,  
That we may whisper, when our life's expended,  
Though poor my work, I did the best I could!

—Housekeeper.

## PRIZE STORY.

## Dr. Marston—A New Year's Story.

BY FLOSSIE GRAHAM HAWTHORNE P. O., ONT.  
(Original.)

The January night was bitter cold, with a clear sky above, and moon and stars shining brightly. Doctor Marston sat before the fire. He was a young man of about eight and twenty years of age, with a pleasant and good looking face of florid complexion, and, as yet, unmarried. He sat, this freezing winter's night, with his feet resting upon the brass fender, a medical book in his hand, and a pipe dangling from his mouth. The contents of the book did not seem to entirely enchain his attention, for every few minutes he would raise his eyes and glance up at the clock on the mantle. The clock struck twelve. "Midnight," muttered the doctor aloud. "The men are fully an hour behind their appointed time. What can delay them?" The words had scarcely left his lips, when the bell pealed loudly. Dr. Marston laid down his book upon the table. He unlocked and opened the front door, and beheld two men standing before him in the clear moonlight, carrying between them something long and heavy, which was concealed in a canvas bag. The two men immediately entered with their strange burden, and Dr. Marston followed them into his private room. They laid the heavy canvas bag upon the long table, which stood behind a green baize curtain that was hung by rings on a brass bar running from one end of the room to the other. Without saying a word, the men slowly drew off the great bag covering, and a human form, rigid and half nude, was disclosed to view upon the table. "The fellow said to the last that he was the wrong man, sir," exclaimed one, winking his eye. "Said and swore that he was innocent. He died like a man, sir." A moment later the two body bearers bade good-night to the physician, and were out in the cold street. Marston, having bolted and locked the door, returned to the room, and, having pushed the green baize curtain aside to the walls, stood looking at the form upon the table, with his hands clasped behind him. The body before him was that of a man of perhaps thirty years of age, well formed, and with a fine featured face, which even death could not rob of its manly beauty; but a dull blue circle stained the skin of the neck, where the noose of the hangman had pressed, and lightened, and yet the eyes, closed and unswollen, gave to that dead face the appearance of calm repose. A dark murder had been committed eight months before. For the crime a man had met a murderer's fate upon the scaffold that same morning, and there he lay, this night, in the room of Dr. Marston, for the unfortunate man had been poor and utterly friendless in life, and so in death the body had found its way to where it lay. For a few minutes the doctor stood silently looking at the corpse, and then he turned upon his heel, walked over to an open chest of drawers, and drew out his box of instruments. He took up the candle, set it beside the box upon the dissecting table, and, rolling up his sleeves, opened the box and drew forth a long, slim and short-bladed knife. With the first gentle touch of the knife upon the cold body, the young physician started suddenly back a step or two, and, dropping the knife upon the floor, stared at the body before him. A slight shiver had passed through the form upon the table, and the eyelids were trembling even now. Marston comprehended the truth. The man was not dead. The doctor immediately set to work to revive the man, whom the world believed had died upon the scaffold that same morning. His efforts were soon rewarded, for within twenty minutes a living, breathing being sat upright on the long table and swallowed the brandy that Marston held to his lips. "A live man!" said he, in a husky voice, as he gazed about him, and then fixed his eyes upon the doctor. "Thank God I was not buried alive!" Marston shuddered. "You will not give me up to the cruel law again! You will not leave me taken back to prison! My God! will you not be merciful!" "You were found guilty of murder, Robert Jones. You were brought to the scaffold to-day, and, by a most clumsy mistake, were cut down before life had entirely left your body. By giving you up to the justice from which you have for a time escaped, I only do an imperative duty," said Marston. "As I am now a living man, as there is a heaven above, I am an innocent man!" cried Robert Jones, fervently. "I never committed the deed of which I am accused, never, never! I was condemned upon evidence which was purely circumstantial, and no murder rests upon my soul." Something in the look of the man, something in his voice and manner, caused Marston to think that, after all, this being might be the victim of circumstantial evidence. "Don't give me up," pleaded Jones. "Don't let them kill me in earnest. Give me my freedom. Allow me to leave this place a free man, and the mercy which you will show an unfortunate man this night shall ever remain as close a secret with me as it may with you. You may live to bless the hour when such mercy was shown me; for, if the old saying that 'murder will out' was ever a prophetic one, it shall be in my case, Doctor. I say again, I am innocent man; and the time will come when you and all the world shall be firmly convinced of the fact." "I will be merciful. I do not know why it is, but I am strangely forced to believe your declaration that you are an innocent man. I have an old suit of clothes here. Arise and dress yourself, and let the coming of another night see you upon the ocean. Remember faithfully the belief I had in you, and never abuse the mercy thus shown you." The man, descending from the table, knelt upon his bare knees before the young doctor. The clock struck the hour of two in the morning as a man, wrapped up almost to the very eyes, passed out from the warmth and shelter into the fierce coldness of the silent street, and Dr. Marston, sitting before the fire, asked himself, again and again, whether he had done right or wrong in allowing that man to go forth free.

Seven years passed. It was New Year's day. In the high room of a miserable, poverty-stricken, shabby inn, in a narrow, dirty street, not far from the waterside, a man sat by the bedside of his wife and child. The woman and child were asleep, and on their thin, pinched faces the stamp of poverty was plainly discernible. This haggard looking man, who sat there gazing at the two beings upon the bed, was Dr. Marston.

Six years before he had married, and, thinking that a splendid opportunity lay before him to make money and reputation in a distant city, the young doctor, with his wife, had set forth full of the brightest hopes. But, before the passage of four years, misfortunes came thick upon them. The money acquired by the practice of his profession was one day swallowed up in a speculation which had held out a bright promise of success. He was penniless. Sickness came upon his wife and child, and the doctor found himself a ruined man. Back came all three, husband, wife and child,—the two latter still ill and suffering. Without money, and, consequently, without friends, Dr. Marston and his family took lodgings in the wretched old house. Mrs. Marston awoke and looked at her husband. "You have returned," she murmured in a whisper, lest she should awake the sleeping child. "Oh, have you succeeded, dear?" "No, Emma darling," answered her husband, his eyes dim with tears. "I have not succeeded; the friend whom I helped with money in my prosperous days refused to lend me a single dollar." The wife dropped her head upon the pillow, and a flood of tears came to her eyes. "Heaven help us, William this New Year's day, when all the world but us is happy," she sighed. "God aid us and our child. Oh, how want and poverty are thrusting us down." Marston bowed his face in his hands, and sat silent and almost despairing, while his wife sunk once more into merciful sleep. Half an hour passed, and, at the end of that time, a low knock came at the door, and the doctor opened it, a man entered the room, and he was muffled up so closely that hardly more than his eyes could be seen. "You are Doctor Marston?" he said, slowly. "Yes, I am," replied the physician. The man suddenly caught the hand of Marston and shook it warmly. The strange man's next movement was to draw out from under his cloak a small tin box and folded newspaper, both of which he handed to the wondering doctor. "Before you open the box, sir, which is not locked," said the stranger, "you must read the marked piece of news on the first page of that paper. And now, Dr. Marston, good-night, and good-bye." Saying the box upon the table, Marston hurriedly opened the paper, at the first glance beheld the article, and, with a beating heart, read the following piece of news:—

"A Dying Man's Confession.—Hiram Wood, an aged man, passed away last evening, and two hours before that event he made a terrible confession. In this confession he declared himself a murderer; said that he alone was the man who committed the dark deed some seven or eight years ago, and for which crime a young man named Robert Jones died upon the scaffold; sent there by what then appeared to be the strongest circumstantial evidence."

The newspaper fell from Dr. Marston's quivering hands, he pulled open the tin box and saw a folded sheet of paper lying on the top of something firm and heavy, and this is what he read:—

"DEAR DOCTOR MARSTON.—You are now convinced that the man who swore to you that he was innocent, seven years ago, spoke the truth; I glory in the thought that in this, your dark hour, I can be of service to you. In the tin box you will find the sum of ten thousand dollars—a present from him who owes you his life. Blush not to take it, for it was all procured honestly. As much more money is at your disposal. When the morrow comes, I shall pay you and your family a pleasant visit, when we can chat together and be joyful."

From your life-long debtor,

"ROBERT JONES."  
The contents of the box were emptied out upon the table. Dr. Marston instantly awoke both wife and child to hear the happy tidings.

The sick wife and child of the doctor rapidly recovered, and Marston became a rich and prosperous physician.

## Our Library Table.

"The Domestic Monthly," New York; \$1.00. Bright and readable as usual; one of the best household magazines, beautifully illustrated, and indispensable in every home.

"Good Housekeeping," Springfield, Mass.; \$2.50. A neat, well printed home periodical, containing everything needed for home reading, and always reliable authority on those subjects.

"The Home-maker," \$1.00; Minneapolis, Min. Ever welcome is this little monthly, containing good reading for all, from grandma down to the children.

"Jenness Miller's Monthly," N. Y.; \$1.00. This journal, devoted to woman's dress reform, is certainly wielding a great influence in that direction. The last number contains a cleverly written article upon the subject, accompanied with many illustrations of reform dress.

"Our Dumb Animals," \$1.00; New York. Such publications cannot fail to have a good influence over the young and thoughtless, as well as the matured.

"Ladies' Home Journal," \$1.00; Philadelphia. Truly this journal is all that is claimed of it. The articles are all readable. The instructions for fancy work most explicit, the receipts reliable, and the remainder all good.

"Grip's Almanac," 10 cents. Abounds in fun and good-natured jokes, with numerous comical illustrations.

We have received a copy of the Quarterly Illustrator. It is full of interesting illustrations selected from all the great illustrated periodicals, with a list given of the names and addresses of the artists; 25 cents single copy; 92 Fifth Ave., N. Y.

The Christmas number of the "Home-maker" is a charming one, printed on good paper, and well illustrated; Union Square, N. Y.

## Concentrated Lye Soap.

All fat and grease from the kitchen should be carefully saved, and should be made into soap by the following method before accumulating and becoming offensive: Boil for six hours ten gallons of lye made of greenwood ashes, then add eight or ten pounds of grease, and continue to boil it. If thick orropy, add more lye, till the grease is absorbed. You can know when it is absorbed by dropping a spoonful of the melted soap into a glass of water; if grease remain it will show on the water.

If hard soap is desired, put one quart of salt in half a gallon of hot water, stir till dissolved, and pour into the boiling soap. Boil twenty minutes, stirring continually, remove from the fire, and when cold cut in cakes and dry. A box of concentrated lye may be used instead of salt, as it will obviate the necessity of using more dripped lye to consume the grease. *Home Magazine.*

## MINNIE MAY'S DEPARTMENT.

## MY DEAR NIECES:—

If the woman who is at all dissatisfied with her limited sphere after reading of the broader and higher sounding occupations of other women, would only take into consideration these facts: That it does not need other women's chances to do heroic deeds. Why, she is doing them every day, though it never occurs to her that those commonplace deeds—duties she may call them—are often fraught with much that is noble and heroic. Does the moral training and physical care of children count for nothing; duties that cannot be shirked or left for anyone else to do; the daily plans for the comfort and amusement of children; the never ceasing demands upon time and attention of household matters, and all these accomplished at a sacrifice of health and often physical suffering, for the constant wear and tear on the dear old mother must eventually tell upon her physical forces. Why should not every woman keep a record of her labors—a diary would hardly do—but keep a book and enter therein every garment she makes, every one she mends, every stocking and sock and mittens she knits, every broken heart and bruised nose she patches up for the children during the day; every siege of measles, scarlet fever, whooping cough, sore throat and cut finger she nurses; not to mention all the little prayers and hymns and stories she teaches; the bread, cakes, pies and buns; to say nothing of the ten hundred and ninety-five meals she plans, prepares and cooks, and often extras. Surely these do not count for nought, as the busy brains and weary limbs of the tired woman will certify. If any nieces would only begin the year by keeping an accurate record in any entry book of work actually accomplished, it would surprise them to know what an amount they have turned out, and to others it might prove they might have done more.

To make home dearer,  
And dark skies clearer,  
And bring Heaven nearer,  
Is woman's work.

The dark, stormy days of winter are especially trying upon children, often being kept in the house from sickness, severity of weather, or other causes, and with nothing to amuse them. To mothers, this is especially trying. She has her usual duties to do, besides the extra work of the children, always noisy and often fretful with the restraint imposed upon them. Some hints may be of use to those who do not live within easy access of stores, or whose means are limited to such an extent that toys cannot be afforded. The piece-bag, a strong spool of thread, needles and thimble, will furnish enough to keep the most restless child quiet for many an hour. Dolls are the delight of every little girl's heart, and such "lovable" ones can be fashioned from cotton and stuffed with wool, eyes painted with a little blue button, the nose pinched and stitched into place, and a little mouth made with a bit of red thread, hair can be furnished from raveling threads of any brown or black woollen stuff, then dress the dollie, adding stockings cut from an old pair, and a little pair of boots of bright flannel or crocheted with bright yarn. All these may be done at odd minutes—if a mother ever has any—and kept for a surprise when most needed. For boys, it is more difficult to furnish amusement, if they are not old enough to read, but I have found a supply of acorns a boon to children. Shew them how to make soldiers, by sticking a little flag in one and placing them in long lines, but pray, my dear niece, do not allow the little ones to do this on the floor; give them a small table or a tray on a stool, never on the floor. Elephants, horses, dogs, cats, mice, rats, indeed nearly all the animal kingdom can be fashioned out of cloth and stuffed with wool. Gay looking birds can be made the same way, and a flat feather sewed on or glued on for wings and tail. Pretty little boats, too, can be made from shingles, and sails and mast added, to pull about with a string. For the baby a soft ball of bright crocheted yarn will keep him quiet in his high chair; or a rattle can be made of an empty pill box, with a few pills in it, covered with cotton or cloth, and a hard roll of cloth added for a handle. Each mother should study the tastes of her children, and try to furnish amusement for them in times of necessity. Do not expect the poor wee things to sit about and amuse themselves all day or days, as often happens during these winter days; show them how to play, and they will easily take to it. Scrap books are an endless source of amusement to both boys and girls. Collect the pictures at your leisure, and any old book will do to paste them in. A cupful of flour paste and the stiff quill of a goose wing will do for a brush. Need I go on, my dear nieces? These few hints enlarged upon will secure you many a leisure hour, and give your children a taste for occupation which will, perhaps, tell for their benefit in the years to come. MINNIE MAY.



**Fashion Notes.**

The fashions for women and girls were never more comfortable nor sensible than they are now. So many styles of hats and bonnets, so many shades of color; in fact, something to suit any face, complexion or purse.

Fur is much worn, from the luxuriant seal to the humbler cooney; and so many furs are dyed brown or black, and are to be had at such reasonable prices, that all may have enough of fur about them to give a warmth and dressiness to their winter costume.

There is no particular fashion for wearing the hair; bangs are worn just as much ever, and every woman has the good taste to wear her hair in the most becoming way. There are not so many fancy pins worn as before, and usually the hair is coiled or braided close to the head. Let us hope it may be years again before that untidy style of locks down the back, or flying curls or ringlets, will be worn. All is tant, smooth and neat. The half length cloaks worn this season do not look so comfortable on a stormy day as an old-time ulster, buttoned to the hem of the dress, but all predict that the half-length coat will have a very short reign. It is unbecoming and cuts the figure, be it made ever so well. Muffs are to be seen with every lady, a little larger than formerly, but looking so snug and so admirably adapted to the severe winters of Canada. Black flannel is made into full suits of underclothing—drawers and shirts, and with black stockings look very neat and suitable. Veils are little worn now; they have been pronounced injurious to eyesight.

**Some Thoughts on Cooking.**

BY A. M. CARSON.

Poverty and ill health are often the result of mismanagement. As an illustration, allow me to point to one of my neighbors. She has a dyspeptic husband, and what does she do for him? Simply coax him to try this doctrine and that, while she feeds him on white bread, fat pork, greasy, water-soaked vegetables, and rich pastry, year in and year out. All the doctors in Canada could not cure a man who lived on such a diet as that. I said something similar to a woman, the mother of a large family of small, sickly children, when she was complaining about doctor's bills. "Why don't you use Graham flour, fruit, porridge and other plain, wholesome food?" "Couldn't afford to lay out cash for them things," she replied. "We've got to live on what we can raise at home."

"No; but you can afford to pay the doctor. Oatmeal is cheaper than pork and far more wholesome. It contains as much nourishment as the best fresh meat, the doctors say. It makes a delicious dish for breakfast, or for any meal when made with milk instead of water—sweet skim milk, I mean."

"The doctor told us to get Graham flour, but it's dear. Jim says he isn't goin' to pay a big price for a mixture of bran and shorts."

"Mix it yourself, then," said I. "A friend takes his wheat to a mill where stones are used, and he gets 52 lbs. Graham flour for every bushel of wheat."

"My! If we could only do that!" said she. We use such a lot of flour and other stuff that we've had scratchin' to make a bare livin'.

Two other neighbors have been forced to mortgage, then sell their property and move away into a new country, snowed under by an avalanche of doctor's and grocer's bills. One of the men inherited a fine farm from his father, but he didn't care for work, and, like his wife, was very fond of fine clothes and a luxurious table. Had he earned his farm himself, probably he would have taken better care of it and had a comfortable home to-day, instead of being a hired man. The other man was the unfortunate possessor of a wife, whose delicate health was chiefly the result of unwholesome food and ignorance of nature's laws. Good health depends largely on wholesome food and proper ventilation.

Porridge, fruit, well cooked vegetables and Graham flour should be on every table. For the benefit of those who have never tried the latter commodity, I append a few recipes:—  
Graham Pancakes.—One egg, two cups sour milk, teaspoonful soda, a pinch of salt, and flour enough to make a batter slightly thicker than for white griddle cake. Sweet milk and cream of tartar will do.

Graham Puffs.—One and a-half cups sour milk (1 use ½ cup of cream with 1 cup milk), large spoonful of sugar, 1 teaspoonful soda, salt, flour to thicken. Bake quickly.

Graham Biscuit.—The recipe calls for an equal quantity of white and Graham flour, but I use the latter only. Put some Graham flour into your mixing bowl, pour in 1 cup cream, 1 cup sour milk, or 2 cups milk with a little lard or butter, teaspoonful of soda and sugar, and a pinch of salt. Roll out and bake quickly.

Graham Batter Cake.—One egg, 1 spoonful sugar, a little salt, 1 teaspoonful soda, ½ cup cream, 1½ cups of buttermilk, flour enough to make a moderately stiff batter. Pour into a baking pan, bake quickly, and cut in squares.

Graham Bread.—Two quarts warm water or milk, 4 large mashed potatoes, 1 cup yeast, handful salt, with enough white flour to make a thin batter. In the morning mix with Graham flour, and add 3 spoonfuls molasses, or sugar. Don't mix it stiff, let rise, knead well, put in pans, let rise again, then bake. It requires a little longer to bake than white bread. Here is another recipe for Graham Bread.—For one loaf, take 1 cup of white and 2 of Graham flour, 1 cup warm water, ½ cup yeast, molasses ½ cup, 1 teaspoonful salt. Stir with a spoon, let rise once, and bake very slowly.

Graham Pudding.—One egg, ½ cup sugar, 1 cup cream—sweet, if you have cream of tartar, or sour if you use soda. ½ cup currants, ½ cup raisins, 1 teaspoon cinnamon, or other spice. Graham flour to make a batter not stiff. Drop in buttered cups and steam thirty minutes. This makes a light, wholesome pudding.

**Great Men and Their Wives.**

BY J. TORREY CONNER.

It has been said that there is confirmation of the divine wisdom that appointed the marriage relation in the well-ordered lives of those happily mated.

Woman, given to man as a helpmate, possesses a boundless influence for good or ill; and no greater truth was ever written than that embodied in the sentiment: "The wife makes the home, the home makes the nation." Take for example, the records of men who have achieved greatness in the world's history, and how often one can trace the gentle influence and hearty co-operation of the loving mentor at the fireside.

Who that has followed the brilliant career of England's prime minister questions that to the care and devotion of his wife, who plays an important though unobtrusive part in his life work, Mr. Gladstone's unimpaired mental and bodily vigor are largely due? It has ever been her self-imposed task to relieve him of all business and household worries, that his time and talents might be devoted to the nation's affairs; and while she, no doubt, occupies an enviable position as the wife of a noted man, it is at the cost of much self-sacrifice.

The wife of Thomas Carlyle also lived a life of abnegation. Wedded to a man who, by reason of an exceeding nervous temperament and shattered health, was, perhaps, irresponsible for his erratic moods, she bore with very whim, patiently and uncomplainingly; nor was he insensible of her worth, and at her death no woman was ever more sincerely mourned. In one of his letters to Emerson, after his wife's death, he says:

"By the calamity of last April I lost my little all in this world, and have no soul left who can make any corner of this world into home for me more. Bright, heroic, tender, true and noble was that lost treasure of my heart, who faithfully accompanied me in all my rocky ways and climbings; I am forever poor without her."

A familiar visitor at the home of William Cullen Bryant describes the home life as rarely beautiful. After forty-five years of sunshine together, the wife, a gentle minister, living wholly for her husband, the husband at seventy a lover still, the darkness fell, and he was left alone. Of this he wrote: "Bitter as the separation is, I give thanks that she has been spared to me so long, and that for nearly a half century I have had the benefit of her counsel and her example."

Tennyson experienced naught but happiness in his married life, and in lines addressed to his wife, he says:

"Dear, near and true—no truer Time himself  
Can prove you, though he makes you ever more  
Dearer and nearer."

Is there anything this side of heaven that can be compared to such companionship?

Benjamin Franklin, after forty years in matrimonial bonds, was able to testify: "We are grown old together, and if my wife has any faults, I am so used to them that I do not perceive them." In the midst of toil and poverty his home was a refuge, where all the petty cares and perplexities of the day were laid aside.

An amusing story is related of Edison, the inventor. A friend passing by his laboratory late at night was surprised to see it brilliantly illuminated, and, entering, found the inventor so deeply absorbed in experiments as to be unconscious of intrusion.

"Well, Tom," he remarked, "it is after twelve o'clock; are you going home to-night?"

"Twelve o'clock? By George! I must go home, sure enough; I was married this morning."

Notwithstanding this little episode, Mr. Edison is said to have been a model husband, and they are a most devoted couple.

In reviewing the lives of our illustrious statesmen, we find the faithful wife ever at her husband's side, his comforter in times of adversity, the promoter of his successes, a guardian angel always.

A helpmate indeed, the woman who stands side by side with her husband, ever ready with words of cheer, though often her own courage well nigh fail her. And yet, alas! there are many blanks in the lottery of matrimony, and who shall say wherein lies the fault?

It is said that matrimony is the metempsychosis of people—turning them into different creatures from what they were; but may it not be the proverbial blindness of love that is responsible for ill-assorted unions? Attracted by a lively manner, a beautiful face, as soulless as it is charming, or dazzled by the eclat of high position, marriage is rushed into headlong, only to be repented at leisure when it is found that vivacity is not always good temper, nor a beautiful exterior indicative of moral worth; while honors, title or wealth, without union of soul, can no more suffice the heart's needs than hunger can feast on dry husks.

Among the men known to fame who "married discord in a noble wife," was Addison, tutor to the young Earl of Warwick. The Countess Dowager, with whom he became associated, was attracted by his gifts of mind and person, and noting this, he was led by ambition to aspire to her hand. She accepted his addresses, and became his wife, afterwards treating him as a lackey, never allowing him one moment to forget the difference in their social position, and ignoring those heaven-bestowed talents which placed him, in reality, far above the accidental advantages of birth.

Dryden also married above his sphere, and his wife wedded him solely for the honor the position would confer upon her; their fate was not a happy one. His thoughts were in the clouds, while hers were of the earth earthy, making it impossible for them to meet on the same plane. On one occasion she told him that she wished to be a book, that she might be favored with more of his company. His reply was: "Be an almanac then, my dear, that I may change you once a year."

Lord Byron wantonly bartered his own and his wife's happiness for his own advancement, and she, not content to be superseded by those interests which set her life apart from his, returned to her parents, while he, a self-exile, left England forever.

Concerning the domestic happiness or unhappiness of Shakespeare, but little is known. His wife, eight years his senior, was of lowly birth, and as he was married when but a mere lad, it is to be presumed that he tired of the bonds of wedlock, for he deserted her, leaving her to care for the little family as best she might; nor was her name again associated with his, although she survived him seven years. Many other instances may be cited where men of note have proved marriage to be, in their case at least, a failure, but we would fain turn from the task. Would that all men's creed was that of the Talmud: "Woman was not made from man's head, that she should rule over him, nor from his feet, that she should be his slave; but from his side, that she might be near his heart." Would that all women were worthy of the creed!—*Housekeeper.*

**Why the Boys and Girls Leave the Farm.**

BY A. M. CARSON.

As the old question of "Why the boys and girls leave the farm" is being revived by a Canadian journal, I venture a few thoughts on the subject. This query introduces the more practical inquiry, "How shall we keep them at home?" In my mind, the solution is easy. Give them, in as great a measure as possible, the coveted pleasures that lure them to town. What are they? Wealth is not one, in three cases out of five. The young folks like money, of course, and it is necessary that they have some of their own. But they regard it as a means, not as an end. They prefer to scatter it along life's pathway and reap a harvest of enjoyment by the road rather than leave it in one golden pile to be divided and quarreled over by the heirs.

I said it was necessary that they should have some spending money of their own, because I have known boys and girls leaving the farm for lack of this very thing. Mary doesn't want to go to her father every time she wants some postage stamps, a new book, or sheet of music, or some needed clothing, and hear him growling about hard times. And Tom would rather stay home from the lecture, the picnic or tea meeting than ask the old man for fifty cents or a dollar to take his girl there. Put the young folks in the way of earning some money—earning it, I say, for then it will be more wisely spent. Let the boys have some stock; the girls a garden, some poultry, or whatever they can manage. It will yield them something better than money—a harvest of knowledge.

The other day a young girl, the only unmarried daughter of a well-to-do farmer, left home to work as a servant in Uncle Sam's domains. Why? "Because," as her sister said, "father was always a little close fisted, and he growled every time Jennie tackled him for money. So she made up her mind to earn her own living." Her two brothers left home years ago from causes somewhat similar, I think.

Of course, many boys and girls leave the farm, not because they are uncomfortable at home, but because they have the inclination or the talent to fill some one of the many professions, or perhaps some particular trade. And it is right that they should go. We would not keep them, knowing that it is both wrong and unprofitable to force them into distasteful employment. But the tastes of those who are willing to stay under certain conditions should be studied and, if possible, gratified. Are they fond of music? Then let them have a musical instrument. The refining, uplifting and cheering influence of music is not half understood. Have they a taste for reading? Then provide them with the very best literature you can afford. Books are as necessary to the mind as food to the body. Starvation in either case is fatal. "A small library of well-selected books in his home has saved many a youth from wandering into the baleful ways of the prodigal son," says Greeley. The same writer remarks, "The best investment a farmer can make for his children is that which surrounds their youth with the rational delights of a beautiful, attractive home." Many farmers—I see them all around me—have large farms, good barns and ugly, inconvenient houses. One may safely wager that the wife and daughters have not much "say" in that place, for women are all fond of pretty homes. They hate to be compelled to spend all their time and to entertain their friends among pots, pails and kettles, because the back kitchen cannot be used in winter time. Every family needs a kitchen, dining and sitting-room, however scantily furnished. A pretty, convenient house does much toward keeping the young folks at home. "Hardly any labor," says Greeley, "is so well spent as that which makes the wife and children fond and proud of their home." Yet, no matter how beautiful the house is, if unreasonable fault-finding, severity and selfishness lodge there, the children will soon flee from that earthly pandemonium. Home happiness is the most precious thing on earth. There is only one way to get it, in palace or cottage. "Do unto others as ye would have them do to you."

**A HANDY APRON—A WINTER CONVENIENCE.**

Use one yard of strong material. Cut a strip off the side for the band. Then fold in two, having the fold at the bottom. Open the material, curve out the two top corners, the pieces taken out measure eight inches on the straight side. Fold again. This makes two pockets for your clothes pins when you are lining clothes. Face the edge of the pockets, put on the band, and it's done.

Another convenience is a collar-and-cuff band. Use a piece of cotton about a foot square. Fold through the centre; stitch the edges. Then put another row of stitches about an inch from the edge and sew on a row of small buttons between the edge and the stitching. Button the collars and cuffs on this, and there will be no danger of dropping and soiling them when you're in a hurry, as one is very apt to do when the fingers are numb with cold.



## UNCLE TOM'S DEPARTMENT.

MY DEAR NEPHEWS AND NIECES:—

It has been suggested by some of the puzzlers that we get up a souvenir photograph of all those who have interested themselves in that department during the past few years. Therefore I make this proposition:—That all those who desire to be numbered in this group forward their photos to me, and with them we shall have one large group made, from which copies will be taken, so that every puzzler may have one at the mere cost of production. I hope you will all join heartily in this. I shall be glad to see the pictures of my dear nephews and nieces, and you will see Uncle Tom (not that he is much to look at), and it will form a pleasant memorial of the happy times we have had together. Let me have your photos as soon as possible, please.

The prize selections of poetry will appear again in our next, as well as the names of those who send correct answers to January puzzles.

UNCLE TOM.

## John Greenleaf Whittier.

E. H. CHASE, IN THE HOUSEKEEPER.

"Love to the world," were the last words of the aged poet as, at the dawn of a beautiful September morning, he passed to a higher life. "Love to the world" was the thought that lay warm at his heart, and stirred and nerved the gentle soul to action in behalf of humanity, through a long and beautiful life. Who shall doubt that when the recording angel "writes the names of those whom love of God has blest," the name of our beloved national poet and friend will be very near the head of the list?

Gentle, unassuming, and naturally inclined to shrink from contact with strangers, yet Mr. Whittier early became the champion of an oppressed race, lecturing and writing in their behalf, and throwing his influence with a very small minority, against a popular and wealthy majority. His letters, at this time, to prominent men, were many and urgent that they would use their influence to better the condition of the slaves of our southern states, and yet, unlike so many earnest workers in that cause, he was able, in his broad charity, to separate the sinner from the sin, and to work in a spirit of tolerance and love.

We know the life of John Greenleaf Whittier almost as we know our own lives. It has been lived among us, and has overflowed to us. We can follow him from the time he was a bashful boy, on a New England farm, attending the district school summer and winter, working at shoemaking, and, later, teaching, to pay his way for a term or two at Haverhill Academy. He was modest to such a degree that he shrank from facing William Lloyd Garrison to submit his first poem, and contented himself with pushing it under the editorial door.

We know many of the little incidents of his first attempts at editorial work, to which he was called when he was barely twenty; and of his later return to the farm, at his father's death, to care for the loved ones that remained; and many of us can remember the part he took for ten years prior to the first clash of arms that heralded the civil war, and can date our first real knowledge of him from that time.

Among his most earnest and soul-stirring poems are those on slavery. Strong, courageous, Christian, they shall live when the blot that caused them to be written shall have faded except from the page of history.

The poem "South Carolina to Massachusetts" has in it a power, searching, strong, and bold, yet just, that shows Mr. Whittier to have been a man of clear perceptions, sound judgment, and manly courage.

The later years of retirement, prosperity, and peace, have given the American people no cause to think of Mr. Whittier as other than a strong man, and a faithful friend; and to him is accorded the merit of having been one of the leading spirits in seeking to crush not only the evil of slavery, but the other evils of our age.

In saying that he was a leading spirit in seeking to crush slavery, it must also be said that, with many another sincere worker, he was a devotee of peace, and had his own convictions of the manner in which this should be accomplished.

Mr. Whittier was truly of the people, and in touch with them, and the press all over the land, not a one in our own country, but in Europe as well, is filled with tributes of love to him who proved himself so worthy of all love and praise.

His poems for liberty, and for the truth, were struck off at a white heat, and every line rings with patriotism and strong conviction of right. His songs of places show his passionate love of Nature, and his intimate acquaintance with her in her most secret haunts. His Snow-Bound is an idyl, complete, true, and picturesque, showing his love for the beautiful in common things. To the real New Englander, it is a fadless picture of the dear, old home.

His ballads are most felicitous and smooth-flowing, with a perfect simplicity of form and language that is their own peculiar charm; and his poems of friendship, most of which are loving tributes to friends on some noteworthy occasion, pour out the warmth of a loving and true heart.

It seems but yesterday that there came to us the beautiful lines of his greeting to Oliver Wendell Holmes on his birthday, and yet, to-day, the hand that penned them is still, and the Christian soul whose faith was so strong has gone to a higher life.

Whittier's poems were not all of his writings. There are many prose works, as well, and through them all there speaks the deep life and the upspringing faith of a truly Christian man.

These later years have been years of devotion, and strong growth in spiritual life, and we have reached to him for comfort and encouragement, which was sure to come.

As a man he was strong and true; as a poet he was prophetic and inspiring, yet, after all, it was his simple, loving spirit, the spirit of the Master whom he served, for which we loved him.

Mr. Whittier died at the dawn, whose breaking, for

years, he had loved to watch, and which, while his brief illness lasted, he had loved each day to see creep over the hills, and as the light came into his window, proclaiming the birth of a new day, his niece stooped to catch the last words which the tender lips just parted to give. "Love to the world," came to her ears almost as the spirit took its flight to the morning land.

Lucy Larcom, Sarah Orne Jewett, and other friends were remembered in his will, and all his manuscripts and letters were left to Samuel T. Pickard, a very dear friend, than whom none could have been selected who would accept the trust more lovingly, nor carry out the wishes of Mr. Whittier more faithfully.

## Gaining and Losing a Day.

A QUEER FACT EXPLAINED IN A VERY SIMPLE MANNER.

You often hear some one who thinks himself "cute" telling how sailors in circumnavigating the globe "gain" a day. Such persons, says the St. Louis Republic, almost invariably mention the "gain," but it is seldom you hear of the "lost" day, which can also be dropped out of the existence in making a trip around the world. The facts are these: If he goes to the east he gains a day; to the west he loses one. It comes about in this way: There are 360 degrees of longitude in the entire circle of the earth. As the world rotates on its axis once in each twenty-four hours, one twenty-fourth of 360 degrees, which equals 15 degrees, corresponds to a difference of one hour in time. Now, imagine a ship sailing from New York to the eastward. When it has reached a point 15 degrees east of the starting point the sun will come to its meridian, or noon line, one hour sooner than it does at the point from which the ship sailed. When the ship has reached a place 30 degrees east of the sailing point it will be noon two hours sooner on shipboard than it will 30 degrees to the westward, and so on until when the ship has reached a point 180 degrees from the place of sailing it will be 1 o'clock, say Tuesday morning, with the people in the ship when it is only 1 o'clock in the afternoon of Monday with the people at home; in other words, the ship has sailed just one-half the distance around the world (180 degrees), and has gained exactly twelve hours. Double this and you can readily understand how the day is gained in sailing around the world to the eastward, and you will soon find the root of the mystery of the "lost" day which is dropped out of the calendar by a person who crosses the total 360 degrees with his face constantly turned to the west.

## From the Scissors.

Did you ever take the trouble to look up the history of the curious little bell-shaped indented piece of metal you wear on your finger when sewing, and which you are content to call your "thimble"? It is a Dutch invention, and was taken to England in 1695 by one John Lofting. Its name was derived from the words thumb and bell, being for a long time worn on that member, and called the thimble; only within the last 150 years has the word "evolved" into thimble. All records say that the thimble was first worn on the thumb, but we can scarcely conceive how it would be of much use there. Formerly it was made of brass and iron only, but of late years steel, silver, gold, horn, ivory, celluloid, and even pearl and glass have been used in its manufacture. A thimble owned by the queen consort of Siam is shaped like a lotus, of solid gold, thickly studded with diamonds, which are so arranged as to form the lady's name and the date of her birth and marriage. Queen Victoria has a very valuable gold and diamond-set thimble, upon which are engraved many historical scenes from English history.

## To Test the Purity of Water.

Test for Lime.—Into a glass of water put two drops of oxalic acid and blow upon it. If it gets milky, lime is present.

Test for Hard or Soft Water.—Dissolve a small quantity of good soap in alcohol. Let a few drops fall into a glass of water. If it turns milky, it is hard; if not, it is soft.

Tests for Iron.—Boil a little nut-gall and add to the water. If it turns grey or lake, black iron is present. 2. Dissolve a little prussiate of potash, and if iron is present it will turn blue.

Test for Acid.—Take a piece of litmus paper. If it turns red, there must be acid. If it precipitates on adding lime-water it is carbonic acid. If a blue sugar paper is turned red it is a mineral acid.

Test for Carbonic Acid.—Take equal parts of water and clear lime water. If combined or free carbonic acid is present, a precipitate is seen, to which, if a few drops of muriatic acid be added, an effervescence commences.

Test for Magnesia.—Boil the water to a twentieth part of its weight, and then drop a few grains of neutral carbonate of ammonia into a glass of it, and a few drops of phosphate of soda. If magnesia be present it will fall to the bottom.

Test for Earthly Matters or Alkali.—Take litmus paper dipped in vinegar, and if on immersion the paper returns to its true shade the water does not contain earthly matter or alkali. If a few drops of syrup be added to a water containing an earthly matter it will turn green.

## Wise Words and True.

Better three hours too soon than one minute too late.

Let friendship creep gently to a height; if it rush to it, it may soon run itself out of breath.

Good taste rejects excessive nicety; it treats little things as little things, and is not hurt by them.

One gains courage by showing himself poor; in that manner one robs poverty of its sharpest sting.

A false friend is like a shadow on a dial; it appears in clear weather, but vanishes as soon as a cloud approaches.

The mind of the scholar, if you would have it large and liberal, should come in contact with other minds. It is better that his armor should be somewhat bruised by rude encounters, even, than hang forever rusting on the wall.

## Love Lightens Labor.

Selected.

KINDNESS OF MISS ELLEN HARRIS, DUNGASKON, ONT.  
A good wife rose from her bed one morn,  
And thought with a nervous dread  
Of the piles of clothes to be washed, and more  
Than a dozen mouths to be fed.  
There were meals to be got for the men in the field,  
And the children to fix away  
To school, and the milk to be skimmed and churned;  
And all to be done that day.

It had rained in the night, and all the wood  
Was wet as it could be,  
And there were puddings and pies to bake  
And a loaf of cake for tea.  
The day was hot, and her aching head  
Throbbled wearily as she said,  
"If maidens but knew what good wives know,  
They would be in no hurry to wed."

"Jennie, what do you think I told Ben. Brown?"  
Called the farmer from the well;  
And a flush crept up on his bronzed brow,  
And his eye half bashfully fell:  
"It was this," he said, and coming near,  
He smiled, and stooping down,  
Kissed her cheek,—" 'twas this, that you were the best  
And dearest wife in town."

The farmer went back to the field, and the wife,  
In a smiling and absent way,  
Sang snatches of tender little songs  
She'd not sung for many a day.  
And the pain in her head was gone, and the clothes  
Were white as foam of the sea.  
Her bread was light, and her butter was sweet  
And golden as it could be.

"Just think," the children all called in a breath,  
"Tom Wood has run off to sea!"  
He wouldn't, I know, if he only had  
As happy a home as we."  
The night came down, and the good wife smiled  
To herself, as she softly said,  
" 'Tis sweet to labor for those we love—  
'Tis not strange that maids will wed."

## Too Thin.

The phrase "too thin," is generally regarded as an instance of American slang, and is supposed to find its proper place only in works devoted to that important branch of philology. In support of this theory one occasionally sees newspaper stories obviously manufactured for the purpose of explaining this expression. And it has even been called in the English press, "a notable Americanism." The truth is, it has a most reputable English paternity, having been used by Lord Chancellor Eldon, in an opinion delivered in the case of Peacock against Peacock. The point under discussion was whether "partnership, without any provision as to its duration, may be determined without previous notice." The eminent jurist decided that the question was one for the court and jury to act upon, summing up his opinion in these words: "I cannot agree that reasonable notice is a subject too thin for a jury to act upon; as in many cases juries and courts do determine what is reasonable notice." Here the expression was applied in what we term its slang sense. But Dr. Wm. Cave more than half a century earlier uses the expression in the following connection, in his "Life of St. Athanasius." "For procuring a synod to be called at Antioch, Eustathius is charged as heterodox in the faith because they knew that too thin to hold water."

## For Roughness of the Skin.

Cold cream of almonds is one of the best preparations for roughness of the skin produced by wind or sunburn. To make this, mix together four ounces of oil of almonds, half an ounce of white wax, and half an ounce of spermaceti. These ingredients should be put in an earthen jar. Set the jar in a saucenpan of water and mix the ingredients thoroughly together. When the mixture is a smooth liquid; stir in two ounces of orange-flower water; mix well and pour the mixture into any ornamental earthen jars which you may possess. Simple olive-oil is also an excellent unguent to use on the skin. There is no danger from the use of vegetable oils. A great many persons with a naturally dry skin use a little simple oil after bathing, and for this purpose a vegetable oil, like oil of almonds or olive-oil, is to be preferred to anything else. Camphor ice which is made with olive-oil is an old and tried family remedy for chafed hands, and so easily made that it should always be at hand. Take three drachms of camphor, three of white bee's-wax, and three of spermaceti; add two ounces of sweet olive-oil. Put the mixture into an earthen pot, set in a saucenpan of boiling water, and let it melt into a smooth consistent mass. It will be white and almost translucent when cold. While it is in a liquid form, pour into little ornamental jars.

## Color and Quality.

Those who associate color with quality have almost invariably regarded red as the symbol for strength and for warmth, for all its shades are more or less full of vitality, while nothing is more emblematic of the strength and warmth of youth, with all its hopes and purposes, than that modification of red known as rose color. Blue, again, is universally felt to be the symbol of coldness, the ancients considering the disembodied spirit to be of a blue tint; and while red is a physical color, blue—the color of the air, of distance, of space, of the heavens—is an ethereal and intellectual hue. Yellow, on the other hand, has had two entirely different symbolical meanings. In its deep golden tinge—the color of the sun—it was the emblem of virtue, as in the halo of the saints, while in its more crude and glaring tint it has always been used to signify baseness; Judas is often represented in old works of art in that form of the color, and it is to-day the color of the dress of a certain class of convicts. Green, again, has always been connected in the public mind with jealousy; purple, with royalty; white, with purity and joy; gray, with sobriety, and black, with grief. The system of heraldry has made great use of the symbolical meaning of colors—gules, azures, sable, vert, and purpure being their designations. With all this, the varying civilizations, or semi-civilizations, have never agreed on the color to be worn in mourning—these mourning in black, those in white, others in yellow, and kings in scaplet.—Harper's Bazar.



Puzzles.

1.—ANAGRAM.

Murder! Murder! Did you hear that cry? Hark! Listen! What is that! That man is ALMOST INSANE, you say; He's killing the old grey cat.

FAIR BROTHER.

2.—CHARADE.

Volume twenty-eight, of the dear old Advocate, Has its TOTAL life begun; And twice every month we'll greet its welcome face, So cheery and LAST of fun. And many new friends, we hope, will join our band, To gladden our old uncle's heart. Oh! once they have joined they'll like it so much, That from it they'll be loath to part. For much may be learned in our columns each day, That will be found of great PRIME. Then our family join and some puzzles send, Either in prose or rhyme.

ADA ARMAND.

3.—RIDDLE (Phonetic).

My first is a title you often may hear; My second we hope for at the close of each year; Though we hope for my second, if with it we should meet, It even then seems to be a COMPLETE.

ADA ARMAND.

4.—BEHEADING.

Oh! say! Miss Lily Day, You that live down by Chaleurs Bay, Do you think I'll leave the "Dom," After getting such a hearty welcome from you.

And then, Mister Fair Brother Hopes I mean to stay; Of course I do, dear sir, Back forever, that is what I say. Now we get the Advocate, Shall we not have a time, Twice a month; oh! say! Making puzzles that do not rhyme.

In and out of season, If a prize you do not LAST; If we thus go struggling on, Though they have no rhyme OF FINAL HENRY REEVE.

Happy New Year, hail to thee, Now the old year pass away, As thy smiling face we see; Shall we work or shall we play. Cousins all, for the sake of days of yore, Join our charmed circle once more; Lonely will be Uncle Tom, you know, If we all forsake him so.

From puzzledom do not TOTAL, If a prize you do not LAST; Stay FIRST Uncle Tom another year; Nail your color to the mast. HENRY REEVE.

My first a girl's name; my second a part of your body; my third a conjunction; my whole a clever personage. HENRY REEVE.

They say I'm the gem of the ocean, A pearl both precious and rare; I shine like an emerald in darkness, But for daylight I have no care.

They say I'm the root of all evil, My delight is to be left alone; I ramble about in the evening; The forest I choose as my throne. They say that I sparkle with beauty, I'm worn on the head of our Queen; Though adorning the necks of fair ladies, I never a lady have seen.

They say that I bring with me sunshine, You'll find me in every home; You may pick me up on the seashore, For there in abundance I roam.

FAIR BROTHER.

8.—BURIED PROVERB.

A. c. c. e. g. g. h. h. i. i. n. n. n. n. o. o. r. t. t. u. v. v. FRED. HALL.

A Useful Article.

A very convenient receptacle for soiled clothes is made by covering a light barrel with chintz or furniture cotton. For this purpose an empty salt or sugar barrel will do. Line the inside with any kind of paper; paste it on. Then measure four pieces of pruit or chintz the length of the barrel, allowing four inches extra for the hem at the top. Run a narrow hem along the bottom, gather the top, slip the cover on and tack it securely. Cover the lid, inside and out, and make a knob by fastening a spool on. These are very convenient for cast-off clothing, quilt patches, etc.

NOTICES.

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We were much pleased when in the city of Brantford, not long since, to find that the enterprising firm of Bain Bros. Mfg. Co. (Ltd.), manufacturers of the well-known Brantford Bain wagons and sleighs, occupy much larger premises. When the firm located in Brantford a little over two years ago, they leased a part of the A. Harris, Son & Co.'s factory on Colborne St., but during the past year the demand for their goods has increased to such an extent that they found it an absolute necessity to enlarge their premises. Consequently they have purchased the whole of the spacious factory formerly occupied by Messrs. A. Harris, Son & Co., which enables them to double their former capacity. The additional machinery has been placed in position, and certain improvements necessary on the premises have been made. Thus it is now one of the best equipped factories of its kind in the country. The owners are in a position to guarantee their many friends and customers prompt shipments of all orders entrusted to them. We would solicit for them a liberal patronage.

The Breeders' Gazette, Chicago, comes to hand with a profusely illustrated Christmas number. The most prominent theme is, of course, "The World's Columbian Exposition." The frontispiece illustration presents a fine portrait of Chief Buchanan, chief of the Agricultural and Live Stock Departments. They also present ground plans and elevations of the show pavilion and stabling, accompanied by descriptive sketches, besides numerous capital illustrations of horses and other live stock. The Gazette being one of the best live stock journals published, we cheerfully recommend it to all breeders of pure-bred stock. It is issued at the low price of \$2.00 per annum. Address communications to J. H. Sanders' Publishing Co., Dearborn St., Chicago, Ill.

STOCK GOSSIP.

At a recent sale of street car horses in Montreal, the lowest price fetched was \$1.50, and a few were sold as high as \$33.

The extensive and well equipped stock ranch of Mr. N. Boyd M. P., situated about ten miles south of Carberry, and comprising some 23,000 acres, was recently visited by one of our staff. As we cannot give in detail all that would be of interest to our readers, we will confine ourselves to a few things from which something practical may be gleaned by those interested in stock raising. In Mr. Boyd's stud are some very fine horses, comprising standard-bred Thoroughbred and Clydesdales, and a careful inspection of the individuals will evidence the care that has been given in their selection, while their size and form gives the impression that utility has been fully considered. The number of horses at present is about 130, among which some fine heavy draft, as well as Kentucky-bred mares are to be seen. The young stock were looking exceedingly well, which is largely due to the fine system of caring for the suckers, and proper attention during the first winter, thus giving them a start which is easily retained. The advantage of this was clearly demonstrated at the time of our visit by a band of yearlings, among which were standard-bred and Clydesdales, which came in for the first time this winter in excellent flesh and fine appearance. A special mention of the individuals would be interesting, and where such fine animals as Freeman D 6359, and the thoroughbred Davidson are concerned, would afford pleasure to the writer as well as our readers, but this must be left for a future time. The horse has first place, but there is also a nice flock of sheep and some fine Berkshires, as well as 125 head of cattle, which, by the way, cannot be called "horned," at least part of them, as Mr. Boyd has been disarming some of his herd, to his complete satisfaction. He informs us that unless of milk was perceptible, and that some of them that spent a good share of their time in using their horns to the annoyance and discomfort of the others, are now as quiet and peaceful as could be desired. The operation had been performed about three weeks prior to our visit, and in every instance they were doing well. Much might also be said in reference to the growing and preparing food for this large stock, in ways Mr. Boyd has found profitable, as well as preparations for adding a supply of roots. A visit to Mr. Boyd's ranch will be found profitable to those interested, and the genial proprietor will be found ready to communicate pointers from his experience, as well as make the time enjoyable.

BREEDERS' DIRECTORY.

Cards up to six line space inserted under this heading at \$2.50 per line. \$2.50 per line if paid in advance.

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PREMIUMS.

A list of valuable subscription premiums will be found in Nov. and Dec. nos. Now is the time to obtain new subscribers to the Farmer's Advocate. No farmer can spend a \$ that will give himself or family as much pleasure and profit as the Advocate.

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STOCK GOSSIP.

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

Our readers will please notice that Mr. J. Kennedy, Orillia, Ont., will sell by public auction a number of Cheviot sheep, on Wednesday, the 15th of February, not Thursday, as announced in last issue.

Mr. J. C. Snell, Edmonton, Ont., makes a change in his advertisement from which it will be seen that he has some fine young Berkshire sows for sale, in farrow to imported boars, also some fine young boars and sows, two and three months old, and some nice young Jersey heifers and calves. Mr. Snell also has a special advertisement of a high class young Jersey bull for sale.

Peter Fargey, of Manitow, informs us that his Shropshire sheep are doing well, especially the two lambs that captured first prize at the Winnipeg Industrial and Dyer 108, his late importation from the flock of the Hon. John Dryden.

According to Breeders' Gazette the dispersion sale of the "Shropshire Park Flock," at Allerton, Ill., on Dec. 15th and 16th, was a remarkably successful sale, the total realized for 420 head of pure-bred Shrops being \$16,000, an average of \$40 a head. One home-bred yearling ram brought \$25, 12 rams over one shear averaged \$80 apiece, 91 ram lambs averaged \$23.75, 280 ewes sold in pens of three averaged \$41.75 per head, the highest priced pen bringing an average of \$85 per head.

Mr. Leslie Smith, of Wawanasa, called at our office the other day, and he informs us that his three-year-old Clydesdale stallion, Clan Buchanan, is developing into a big, stylish horse, with lots of quality and magnificent action. He is doubtless one of the best bred Clydes ever imported into Manitoba, being a son of Sir Everard—three champion of Glasgow stallion show—and a grandson of that wonderful horse Prince of Wales, Clan Buchanan was imported in March, 1892, by Stewart Robinson, of Wawanasa, and was bred by William Taylor, Park Mains, Paisley, Scotland.

A wonderful Polled-Angus heifer was shown by Mr. Clement Stevenson at the great Smithfield show. This was Bridesmaid of Benton, got by Jovial Sontar, the 300 gs. Jilt bull, now at the head of the Laughton Polled herd. The North British Agriculturist describes her thus: "She was all but perfect in figure, her only fault, and it was a slight one, being a slight weakness in the thighs. She had a broad and beautifully level back and well-sprung ribs, and she carried a marvellous cover of beautifully even and mottled flesh. Though only a yearling of 31 months and one week, she girthed 7 feet 8 inches, and scaled no less than 13 cwt. 18 lbs., an extraordinary weight for an animal of her age. She was, by general consent, admitted to be the best heifer of her age ever exhibited at Smithfield."

Mr. J. C. Snell, Edmonton, Ont., writes us that his Berkshire pigs, Cotswold sheep and Jersey cattle have been good friends to him in the past year. The demand for all these breeds was better during the closing month of the old year and the first month of the new year than has been known in the last decade. The demand for pigs has reached fever heat, and everybody in the trade feels the influence of it. The mutton breeds of sheep are wanted in large numbers for the Western States and Territories as well as in our own provinces and the great Northwest. Our sales of Cotswolds were never so large or covering so large a territory as last year. Jerseys, which were somewhat dull of sale last year, are again looking up, and the demand is now very active and good prices prevail. An advertisement in the ADVOCATE for November led to correspondence which resulted in the sale of five heifers to different parties. The following is a list of sales made by Mr. Snell since last report: Berkshires to Wm. Douglas, Caledonia; J. J. Grover, Newfield, Pa.; H. T. Hudson, Rootstown, Ohio; Geo. L. Raymond, Newington, Ont.; Jos. Greathead, Saugeen, Ont.; Caleb Brown, Colpays Bay; L. P. Enal, Beebe, Arkansas; Metcalfe Bros., Elma, N. Y.; E. V. Miller & Co., Morley, Iowa; Edward Gough, Ponassan, Ont.; J. B. Phillips, Terminus, Ont.; M. B. Palmer, Mendota, Ill.; David Heaslip, Bullieton, Ont.; Cotswolds to W. E. Lee Tremont, Nebraska; D. E. Graham, Egg Harbor, Wis.; A. Frank, Grange, Ont.; H. H. Prince, Catharine, N. Y.; Heter Rawlin s, Ravenna, Ont.; Jas. Law, Ridgetown, Ont.; Geo. Harding & Son, Waukesha, Wis.; S. H. Anderson, Oxford, Ind.; H. W. Harlow, Marathan, Ohio. Jerseys to R. C. Scott, Highgate, Ont.; Rev. I. F. Snowden, Kincaidine; G. A. Deadman, Brussels, Ont.; H. Plumsted, Clinton, Ont.; J. W. Ney, Bracebridge, Ont.



STOCK GOSSIP.

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

Dominion Shorthorn Breeders' Association.

TORONTO, January, 1893. Sir.—We desire to direct your attention to the following prize list in Dairy Classes which is offered by the Columbian Exposition, supplemented by specials from the American Shorthorn Breeders' Association. And would we desire to express a hope that the breeders of Canada will not allow this opportunity to pass without making an effort to sustain that reputation gained at the pail in the early history of the Shorthorns, as well as the honors won at the London dairy shows of latter years. Canadian breeders heretofore have had no cause to regret meeting opposition. In the various dairy competitions they have well and nobly sustained the claims of Shorthorns against all breeds and all comers.

Never have we had such an opportunity to impress upon the world at large our boast that we have a beef combined with a dairy breed. Our claims as to the former were never so emphatically recognized as at the late fat stock shows in England—at Norwich, at Birmingham and at Smithfield. Every champion prize, male or female, has been won by either Shorthorns or Shorthorn crosses. It makes no difference what the commingling of plebian blood, whether Angus, Galloway or Norfolk, the potent patrician blood of the Shorthorn has so asserted itself that we have no more laurels to gain in that direction. It is undisputed.

We now desire to urge upon our breeders not to neglect the opportunity offered to prove that we can win the same high position in the dairy classes as we have in the beef. We would therefore earnestly ask your co-operation in assisting this work. If you have none of your own calves at proper time, search your neighborhood, and if there is a phenomenal cow due to dates given below, communicate with us. All expenses will be paid. Further particulars may be obtained and premium lists will be forwarded on application to the secretary.

The cows for Tests No. 1 and 2 must be upon the grounds at such time as the Commissioner may designate prior to May 1, 1893; those for Test No. 3 must be upon the grounds at such time as the Commissioner may designate prior to August 29, 1893; and those for Test No. 4 at such time as the Commissioner may designate prior to September 20, 1893.

The prizes for cows in the Dairy School are as follows:—

Table with columns for Breed Test No. 1, 2, 3, 4 and Grand Sweepstakes. Prizes listed in dollars and cents.

GRAND SWEEPSTAKES. In Breed Test No. 1, if won by a Shorthorn over all breeds, \$250. In Breed Test No. 2, if won by a Shorthorn over all breeds, 250. In Breed Test No. 3, if won by a Shorthorn over all breeds, 250. In Breed Test No. 4, if won by a Shorthorn over all breeds, 250.

In order that as large a number as possible may be available from which to make selections, we urgently request that breeders of Shorthorns test their best milkers of such cows as may produce previous to the time that the entry closes—April 20, 1893.

H. WADE, Secretary. RICHARD GIBSON, President. American Shorthorn Breeders' Association.

COLUMBIAN EXPOSITION. Breeding Classes—Competition open to the World. The following amounts will be added to the regular prizes offered by the Columbian Exposition:—

Table with columns for Cows, Bulls, and Heifers in various age classes. Prizes listed in dollars and cents.

SWEEPSTAKES BY AGES. Beef Breeds. Bull three years old or over, bull two years old, bull one year old, and bull calf, if won by Shorthorns teach, \$50.

Cow four years old or over, cow three years old, heifer two years old, heifer one year old and heifer calf under one year, if won by Shorthorns teach, 50.

General Purpose Breeds. Same classification and prizes, if won by Shorthorns teach, 50.

GRAND SWEEPSTAKES. Ist. 2d. 3d. 4th. Beef herd (graded by age), same number and ages as in Shorthorn herd above, if won by Shorthorns, \$500 \$300 \$200 \$100.

Young herd, same number and ages as in Shorthorn herds, if won by Shorthorns 300 200 100 50.

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FAT STOCK. Shorthorns. Ist. 2d. 3d. Steer or spayed heifer, two and under three years, each \$35 \$25 \$10. Steer or spayed heifer, one and under two years, each \$35 \$25 \$10. Steer or spayed heifer, under one year, each \$35 \$25 \$10. Sweepstakes limited to first premium animal in each ring. 50. SWEEPSTAKES. Breeds and Grades by Ages—If Won by Shorthorns.

Competition limited to first premium animals in classes. Steer or spayed heifer, two and under three years, each \$50. Steer or spayed heifer, one and under two years, each \$50. Steer or spayed heifer, under one year, each \$50. Grand Sweepstakes—If Won by Shorthorns. Competition limited to Sweepstake animals in classes. Best steer or spayed heifer \$100. Herds. Shorthorn herd, to consist of steer or spayed heifer two and under three years, steer or spayed heifer one and under two years, steer or spayed heifer under one year \$50. Sweepstakes Herd—If Won by Shorthorns. Competition limited to premium herds in classes. \$200.

It should be expressly understood that these prizes, as well as those referred to in the letter sent out by Messrs. R. Gibson and W. Wade, are paid by this Association independent of the cash prizes and medals offered for Shorthorns by the Columbian Exposition, but awards will follow the decisions made by the jury selected by the Columbian Exposition. We wish also to call attention to the fact that the Canadian Government will pay transportation and other expenses on all Shorthorns selected for exhibition that are owned in that country. The Commissioners of the State of Illinois will also pay transportation expenses and add a pro rata to the prizes for Shorthorns that are owned in this State. Quite a number of other States have already made provision for aiding exhibitors of live stock, and it is expected that a number more will make such provision at the meetings of their legislatures this coming winter. With these great inducements, will not breeders make this the grandest display of Shorthorns ever made on earth? For general information concerning the show of live stock at the Columbian Exposition, address the Hon. George R. Davis, Director General of the World's Columbian Exposition, Chicago, Ill.; or for any particulars concerning special prizes offered by this Association, address J. H. PICKRELL, 17 Montauk Block, Chicago, Ill., U.S.A.

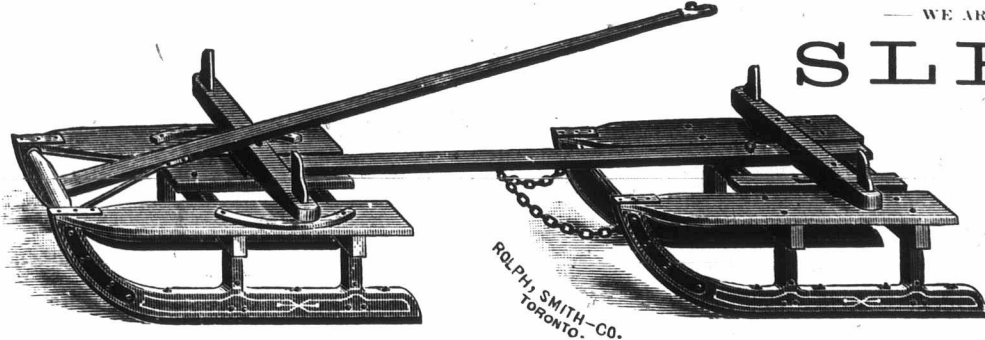
We are pleased to learn that sales have been good at the Fort Rouge poultry yards. The proprietor, Mr. S. Ling, informs us that his pullets are laying well, and that he will be able to supply eggs for hatching next month to parties wishing early settings.

Henry Arkell, "Farnham Farm," Arkell, Ont., has sold since last report, in Sept., the following Oxford-down sheep:—To W. E. Carlin, Wyoming, sixty ewes and three rams; J. L. Southworth, Nebraska, 140 ram lambs; George McEerrow, Wisconsin, ten imported ewe lambs, and fifteen ram lambs and yearlings; James Shaw, Drummond, Ont., four ewe lambs; Peter Werry, Bowmanville, six ewe lambs and one ram lamb; Wm Defoe, Orangeville, eight ewe lambs and one ram; Arch. & D. McKenzie, Corwin, four yearling ewes; Chris. Scott, Arkell, two ewe lambs; to James Bray, Portage la Prairie, Man., one ram lamb, and one ram lamb to each of Mr. Cruekshank; H. Godson, Toronto; F. W. Woods, Bunyan; Henry Rath, Crampton; Joseph Lee, Cowansville; Wm Rennie, Eden Mills; John Ross, Cedarvale; David Willison, Nassagawa; John Lee, Dunham, Quebec; and to Frank Harding, Waukesha, Wis., U. S., one ewe lamb; Alex. McKenzie, Mountsberg, Ont., one ewe lamb. Also the following Berkshires: John Blackburn, Starratt, Ont., one boar; Capt. McFarlane, Parry Harbor, one boar; James Nelson, Owen Sound, one boar; J. Zinger, Eden Mills, one boar. My sheep are doing well, and all stock coming through the winter well.

The Hon. John Dryden writes:—"I want to congratulate you on your advanced step in the publication of the ADVOCATE. The new style is neat, striking and attractive. I accept the venture of placing a semi-monthly stock journal on the market in Canada as your judgment of the progressive spirit of the stock raisers of our country. Our sheep and cattle never were more thrifty and healthy than at present. The breeding ewes were driven to the pasture late in the season, thus obtaining daily exercise so necessary to their health. With our present system, the cattle are always on grass or its nearest equivalent. I cannot speak too highly of our ensilage; both cattle and sheep relish it, and show by their appearance that they thrive on it. The demand for young bulls has been very brisk. Among the principal sales has been one to Messrs. J. & W. B. Watt, Clipper King, out of Coquette, the dam of Mr. Smith's Conqueror, and sired by Imp. Sussex; as his name indicates, he belongs to Mr. Cruickshank's Clipper tribe, and promises to be no discredit to the family nor to his present owner. Bold Boy was taken by L. Burnett, of Greenbank. This bull is a beautiful red, full of flesh; of splendid symmetry and displaying every characteristic of the typical Scotch Shorthorn. Another very nice bull was taken by W. J. Miller, of Keene, Ont. He is sired by Red Emperor, sold by me to Mr. Boak, of N. Y. State. Mr. Boak has won with this bull first prize and sweepstakes over all ages for two consecutive years at the New York State Fair. Mr. Miller's bull belongs to Mr. Cruickshank's Brawith Bud family, and is in every respect of the right sort. The demand for Shropshire sheep continues as before. Our sheep sales have been very numerous, and we find the only way to retain good lambs, either rams or ewes, is to increase the price beyond the regular limits.



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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.

**W. & F. P. CURRIE & Co.**

100 Grey Nun Street, Montreal,  
MANUFACTURERS OF

Sofa, Chair and Bed Springs  
A LARGE STOCK ALWAYS ON HAND.

IMPORTERS OF  
Drain Pipes, Vent Linings, Flue Covers,  
Fire Bricks, Fire Clay, Portland  
Cement, Roman Cement, Water  
Lime, Plaster of Paris,  
Borax, Whiting,  
China Clay,  
etc.  
277-2-y

MY FRIEND,  
ARE YOU USING  
**BELL'S FODDER-CUTTING IMPLEMENTS?**  
IF NOT, WHY NOT?  
Write for Catalogue and Prices.  
**B. BELL & SON,** 320-2-y-o ST. GEORGE, ONT.

**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 con-  
sequently no wear. It is easily oiled between the drums.

THE DEMAND IS STEADILY INCREASING. IT IS UNANIMOUSLY RECOM-  
MENDED 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.

**STOCK GOSSIP.**

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

Mr. John Morgan, Kerwood, Ont., reports his  
stock to be looking well. He has recently sold  
four bulls at paying prices. One went to British  
Columbia; a roan to Dr. Mann, Alymer; one  
to James Pool, Strathburn; one to Edward  
Dejeu, Strathroy. He still has a good one  
for sale. He is highly pleased with his silo.  
The silage is giving every satisfaction.

That well-known and highly respected breed-  
er of Shorthorns, Mr. W. J. Higgins, Clinton,  
Ont., writes: "My Shorthorns are doing well.  
The young calves are strong, vigorous and  
promising. The young bulls advertised in this  
issue are, one an extra good red (Golden Drop),  
the other a roan (Village Girl). Each is sired  
by the imported Nonpariel bull, General Booth  
5433. I can recommend these animals to in-  
tending purchasers."

Messrs. H. & W. Smith, breeders of Short-  
horn cattle, Hay P. O., Ont., write: "Recent  
sales from the Springhurst herd have been very  
satisfactory to us, from the fact that they have  
all been to gentlemen who have bought from  
us before. We might mention the following:—  
One bull to C. Aldsworth, Hay; bull to Thos.  
Colquhoun, Gowrie; and a nice pair of year-  
ling heifers to Hon. Thos. Greenway, Crystal  
City, Man."

THE BANNER ASSOCIATION.  
Report of the American Shropshire Associa-  
tion 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	408 00
Ear labels, Association numbers	189 95
Money refunded, expenses, tele- grams, etc.	138 04
Balance on hand	6,583 17

ASSETS.

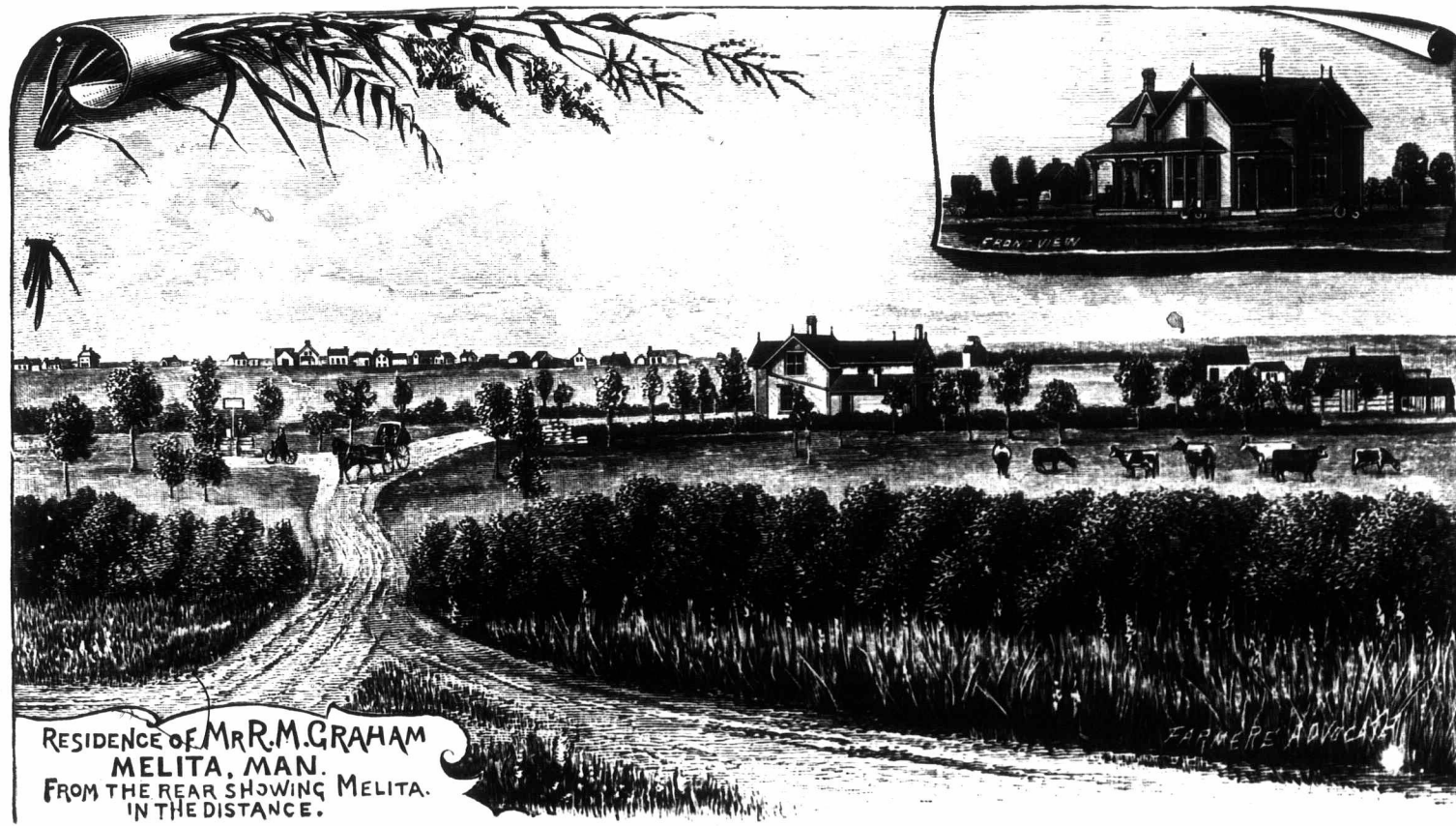
Total value of Volumes of Record on hand, including Volume 8	\$ 7,050 00
Stationery, stamps and furniture	450 00
Cash on hand	6,583 17
	\$14,083 17

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 Greta, hands us the follow-  
ing letter from one of the customers he go  
through the ADVOCATE:

Dear Sir,—I received the young White York-  
shire 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 profit-  
able 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.



RESIDENCE OF MR. M. GRAHAM  
MELITA, MAN.  
FROM THE REAR SHOWING MELITA  
IN THE DISTANCE.

**For Sale**

ONE OF THE  
**FINEST FARMS**

IN SOUTHERN MANITOBA,  
Adjoining the thriving town of  
MELITA, MANITOBA.

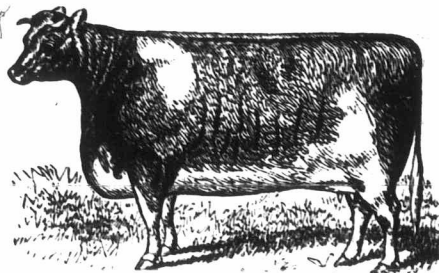
Price, \$20 per acre

OR WILL SELL THE BEST  
General--  
--Store  
IN MELITA.

I cannot attend to both and must  
sell one.  
See last November number Farmer's  
Advocate, page 431, for full  
description of farm.  
37-4-93



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...

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 Full 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. Higgins, Elmhurst Farm, Clinton, Ont.

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...

ONLY--HOLSTEINS--ONLY

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

Holstein-Friesians. I have several choice young Bulls of the Auggie and Barrington strains...

Maple Cliff Stock Farm Three Ayrshire Bulls for sale, including the grand stock bull, Robbie Dick 125, bred by the late Thomas Brown...

Prize-Winning AYRSHIRES FOR SALE. I have at present one of the largest and best herds in Ontario...



JAS. McCORMICK & SON, ROCKTON, ONT.

EUROPEAN ADVERTISEMENTS.

SHROPSHIRE SHEEP DAVID BUTTAR, CORSTON, COUPER-ANGUS, N. B., SCOTLAND. Has taken all the principal prizes in Scotland for several years...

Astwood Hill SHROPSHIRE the most famous flock in England. We led in the show ring at the Royal and the Bath and West of England in 1891.

Shropshires, Shorthorns, Shire Horses, Yorkshires. 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...

2250 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.

DORSET HORN SHEEP I CONVEYELL BROS., Durrleigh Farm, Bridgewater, Somerset, Eng. Breeders and Exporters of Improved Dorset Horn Sheep...

LINCOLN SHEEP I always have for inspection and sale a large flock of pure Lincoln Long wool Sheep, including many prize winners...

HENRY DIDDING, Riby Grove, Gl. Grimsby, Lincolnshire, Eng.

BLAIRTUMMOCK CLYDESDALES. Prof. McCall invites inspection of his Stud of Clydesdales by American and Canadian buyers...

CLYDESDALES & AYRSHIRES WALTER PARK, Halton, Bishopton, Scotland, the breeder of the world renowned "Lanark"...

THE HOME OF SPRINGHILL DARNLEY. Clydesdale dealers when in Scotland should not fail to visit Messrs. R. & J. Findlay's Stud...

THE HOME OF SIR EVERARD Wm Taylor, Park Mains, Paisley, Scotland, call the attention of American and Canadian buyers to the fact that his stud of Clydesdales and Hackneys is one of the best in Scotland...

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...

W. G. BUTCHER, The Chestnuts, Needingworth, Hunts, England offers for sale a grand selection of HACKNEY and SHIRE-BRED COLTS and FILLIES...

HACKNEYS! DUNCAN JENKINS, The Cross, Govan, Scotland, offers for sale Stallions and Fillies, also get of such sires as Danegelt, Anconcut, Sir Gibbie, etc...

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.

Imported Shropshires. My stock was selected by myself, and consists of Shrewsbury Ewes and Ewe Lambs from the leading flocks of England...

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...

W. S. HAWKSHAW, GLANWORTH P. O. 6 miles south of London. Gotswold Sheep. The gotswold established in 1841. All bred straight from imported stock...

Berkshires. Herd established in 1858. Imported and bred from imported stock. Sows in farrow and young stock for sale at all times.

J. C. SNELL, Edmonton, Ont. S. COXWORTH, CLAREMONT, ONT., Breeder and Importer of Berkshire Hogs.

FIRST SWEEPSTAKES HERD

IMPROVED: YORKSHIRES

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...

REGISTERED SOWS AND BOARS MATED NOT AKIN. JOSEPH FEATHERSTONE, P.O. and Telegraph. PINE GROVE FARM, 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...

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.

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.

J. M. HURLEY & SON offer for sale pedigreed Improved Large Yorkshire Pigs of both sexes. Herd founded in 1882. Our aim is to make our pigs advertise us.

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

FOR SALE. A choice lot of young Berkshire Pigs, from two to three months old, from imp. and prize-winning stock; also a few choice boars fit for service.

R. H. HARDING, Maplevue Farm, - THORNDALE, ONTARIO. Importer and breeder of Ohio Imp. Chester White Swine and Berkshire Hogs. Breeding stock recorded. Young stock for sale at moderate prices.

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...

Registered Poland-Chinas Canadian Black Bess Herd. Stock strictly of the Cornwall, King, Butler and Black Bess Blood. Choice stock of all ages for sale at reasonable prices.

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...

JAS. L. GRANT & CO., Ingersoll, Ont. Young stock of different ages constantly on hand. Cows supplied not akin. Stock won at leading shows in 1892, 1893, 11 second, third, including Toronto, Montreal and Ottawa. Prices moderate. Satisfaction guaranteed. 24 at 100 and Telegraph office - CLAREMONT, C. P. R.