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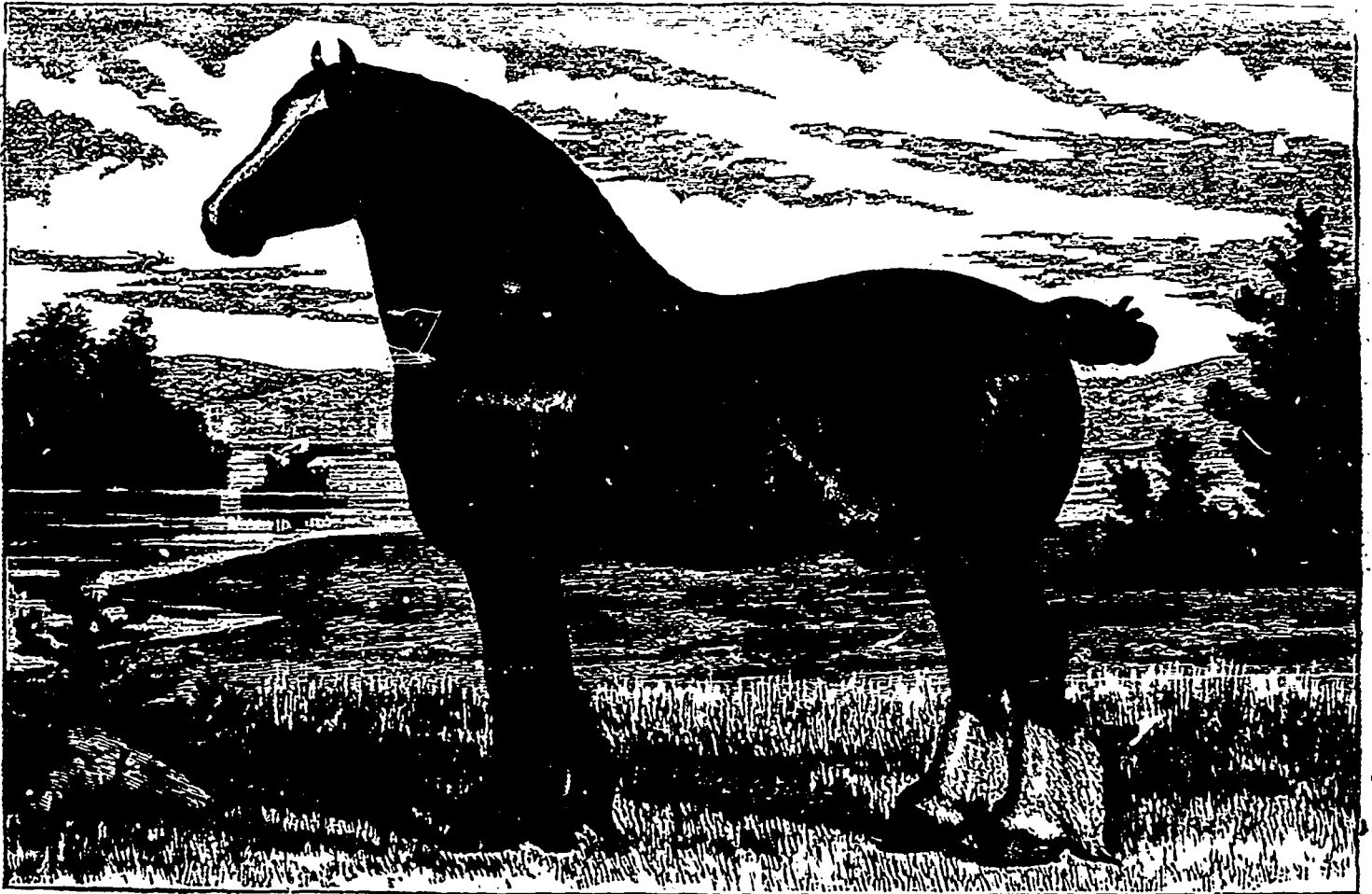
# THE CANADIAN LIVE-STOCK AND FARM JOURNAL

DEVOTED TO THE INTERESTS OF THE STOCK-RAISERS AND FARMERS OF CANADA.

VOL. V.

HAMILTON, CANADA, DECEMBER, 1888.

No. 62



THE CLYDESDALE STALLION ST. GATIEN, 3988.

Imported by and the property of R. Beith & Co., Brantville, Ont.

## St. Gatién, 3988.

A handsome bay of great smoothness is St. Gatién, 3988, the chosen representative of Mr. Beith's stables, appearing in our lifelike illustration. He has two white stockings, with a strip of the same on his face. Well muscled and footed with good pasterns, he moves easily and freely, not encumbered by his weight of body. Bone he does not want, nor does he lack in quality. As will be seen from our illustration, he is a fine upstanding horse of goodly proportions, strongly coupled with well sprung ribs, and deep round barrel. He was bred by Mr. David Reid, of Benthead, Kilmarnock, and was sired by Old Times (579), dam Mary (4012), by Perfection (1499), g. dam Maggie by Lochend Champion (448). Old Times has won many prizes, but he is perhaps better known as the sire of Prince Charlie (634), the sire of the famous mare Moss Rose, winner of, among many others, the Champion Cup given at Glasgow for the best animal of the horse kind exhibited, beating all stallions, including Flashwood; and besides this, she was sold for £1,000. On his dam's side he becomes related to such horses

as Perfection (1499), and Honest Davie (386). St. Gatién adds many gems to the honorary crown of his ancestors, having won first prize at Linlithgow and Bathgate when a two-year-old, in 1885. He was drawn in the short leet at Glasgow Stallion Shows in 1886 and 1888, and in the latter year he gained the Buchanan District Premium, and was commended at the Highland and Agr'l Society's Show at Glasgow. In this country he has scored series after series of victories, having secured first at the Provincial, in his class, diploma for best Clydesdale horse of any age, and first at the Industrial; he also won the silver medal and the Clydesdale Society's prize for the best Clydesdale horse of any age.

## "The Journal" Booming.

Our subscription list of 1887, at this date, was much in advance of 1886. This year it is a long way in advance of 1887; in fact, November this year has fully doubled November, 1887. To know that our efforts to publish the leading farm journal in Canada is thus appreciated stimulates us to greater exertions

for the future and, we assure our readers of 1889, it will be our earnest endeavor to keep the JOURNAL where it has always been, in the vanguard of agricultural journalism. Others may imitate and follow, while we will, if necessary, put on more steam and continue to lead.

## Our Premium Picture.

Friends, renew your subscription and send a new name along if you can, and our handsome premium picture will be sent by return mail. Below we present a few testimonials regarding it:

"Your premium plate of the O. A. College to hand and I am very much pleased with same. It is fully worth the dollar, let alone the paper for a year." JAS. PLAYFAIR, Sturgeon Bay, Nov. 14, 1888.

"I have just received the picture from you of the Agricultural College, for which I return thanks. I think it an excellent drawing of the College buildings and grounds, and indeed the whole surroundings, having been there myself on several occasions." EDMUND F. FENDE, Waterdown, Nov. 20, 1888.

"I received the engraving of the Ontario Agricultural College and grounds. I am well pleased with it, think it is very good indeed and will have it framed and placed in the house. Many thanks to you for it." JOHN A. McDONELL, South Lancaster Ont. Nov. 20, 1888.

## Canadian Live-Stock & Farm Journal

PUBLISHED MONTHLY BY

THE STOCK JOURNAL COMPANY,

48 John Street South, Hamilton, Ont.

Terms, \$1.00 per Annum in Advance.

**To Subscribers.**—Subscription price, \$1.00 per annum in advance. Single copies, 10 cents each; sample copies free. No names will be removed from our subscription list when in arrears and without we receive instructions to that effect. Those in arrears will be charged \$1.25.

**Clubs.**—Any person is at liberty to form clubs. Clubs of five copies to any address, for one year, \$4.00. Clubs of ten copies to any address, \$7.50.

**To Advertisers.**—Advertisements of an appropriate nature will be inserted in the JOURNAL at the following rates: For a single insertion, 18c. per line, nonpareil (12 lines makes one inch); for three months, 15 cents per line each insertion; for six months, 13c. per line each insertion; for one year, 10c. per line each insertion. Cards in Breeders' Directory, not exceeding five lines \$1.50 per line per annum. Copy of advertisements should reach us not later than the 25th of each month (earlier, if possible). If later, it may be in time for insertion, but often too late for proper classification. Transient advertisements payable in advance. No advertisement inserted for less than 75c. Contracts broken by insolvency or otherwise will revert to the usual rate of 18 cents per line per insertion.

**To Correspondents.**—All communications intended for publication in the JOURNAL should reach us by the 20th of each month—sooner if possible. We do not hold ourselves responsible for the opinions of correspondents.

**Remittances** may be made in registered letter at our risk. The receipt of the JOURNAL will be sufficient evidence to subscribers that their remittances have been received.

All communications to be addressed STOCK JOURNAL Co., 48 John street south, Hamilton, Ont.

HAMILTON, CANADA, DEC., 1888.

Subscribers to the JOURNAL paid to December, 1889, get free our beautiful picture of the Ontario Agricultural College and Experimental Farm at Guelph, Ont.

GIVE the old as well as the new office if you desire your post office changed. Give the same name as appears on your label or two JOURNALS may be sent to the same house. We this month received a communication requesting a change, signed only T. S. Of course we cannot do as desired, because the person gives neither name nor post office.

NOT the least danger in putting young steers into winter quarters is to endeavor to force them along too rapidly. Until the time arrives for fattening, it is best to keep them in a healthy growing condition. If this is once checked it means diminished returns. The effect of forcing the first winter shows itself markedly the next season when they again return to the pasture. It is safe to give them all they will eat up clean, provided condiments are not used, and what they leave in their mangers should be at once removed. The skill of the feeder finds greater scope in knowing his charges and their foods thoroughly, than in the knowledge of nutritive ratios, desirable though the latter may be.

PROBABLY no animal of the farm is more easily affected by surrounding conditions than sheep, and hence the desirability of all flock masters being thoroughly posted as to the conditions under which the various breeds thrive best; and not only that, but their own conditions must not be slighted. Transplant the Highland from his airy home to the lowland, and he becomes so subject to foot rot that he has to feed from his knees, while by his side the Leicester may graze untroubled. Bring the Cheviot out from the snow drifts of his native hills to bear the least confinement, and he sheds his valuable fleec in small portions. Active, deep, though narrow chested, with the

finest of wool, he is essentially a child of his conditions. It takes but a year or two to test the shepherd's knowledge, of these important considerations, as told by the flock that once were prize winners, but now degenerated.

WHAT would be thought of the merchant that would daily pass goods over his counter and not know the cost of the articles that he was selling? Such a want of business tact on the part of a merchant would soon run him aground. Yet it may be asked how many of our farmers know what it costs them to raise a certain crop? To know the exact cost of every crop requires a minutiae of details beyond ordinary comprehension, and hence it is pardonable. A knowledge of book-keeping allows of sufficient accuracy in this respect to answer all practical purposes. By carefully debiting each department with that which it receives and crediting it with that which it gives in return, the profit or loss of each may be roughly determined.

THE main source of demand for our heavy horses comes from the city, where they are attached to lorries and drays, and made to do service on roads of hard pavement, which results in more or less concussion. If the frog of the foot is left unpared, and the pastern is of the right angle, this is greatly lessened, and for this reason we think that fineness of hoof and slant of pasterns are qualifications too often overlooked in the judging of draught horses. A healthy hoof is firm but not dry, elastic in texture but not spongy, with good breadth and running well back. Have with this a pastern not too long, but at a good angle, and this is all nature can do for the prevention of concussion. A short, upright pastern is a fertile cause of ring bones and other bone diseases, and hence worthy of attention. If too long, it loses the element of strength, and there is then a tendency to what is known in race horses as breaking down.

A FEW days in the Province of Quebec gave Mr. A. Macdonald, of the *Mark Lane Express*, time to ferret out the weakest threads in their agricultural fabric. Hear him: "At the same time I cannot help expressing surprise at the evident disinclination that prevails to clean and enrich the land and to improve the character of the live-stock. On what appears to be tolerably good land—land, which most old country farmers would bring readily to a high state of fertility, miserable crops are raised, while native cattle and horses of inferior and unimproved types, predominate." This is a pill unsugar-coated that may require many efforts to swallow, but as it cannot be controverted, it must necessarily be taken. We hope it may serve as an incentive for our co-workers in that province to furbish their weapons afresh, and do battle until they have brought about a reformation of present conditions. But it must not be forgotten that Quebec has some very enterprising breeders. Coming to Toronto, the same writer gives equally frank expression to his views, but they are highly complimentary to Ontario herds. "I hardly expected to see so many high-class stock at any point of my journey as came before the judges here. They were, indeed, worthy of any country in the world." This does not call for comment further than to say that it should be highly valued by Ontario stock-breeders, and especially by those who had representatives of their herds among the animals that gave rise to such a remark from one so well fitted as Mr. Macdonald to pass judgment on anything relating to stock or farm.

### Objectionable Advertisements.

I like your JOURNAL very much for many reasons, but especially because you think enough of yourself and JOURNAL to avoid many trashy and injurious advertisements which many editors publish for the sake of the few ill-gotten pence received from vampires of different kinds.

JOHN D. FRASER.

Warwick West, Ont.

We are continually receiving very flattering testimonials from our many correspondents as regards our advertisements, but we have retrained from presenting them to our readers, deeming such action unnecessary. It has always been our endeavor in the past and shall ever be so in the future, to refuse space in our journal for advertisements other than those known to be reliable and of a pure and healthy character. We have, however, seen several advertisements that were refused space in our columns appear in other Ontario farm papers. We feel that in keeping our standard ever on high we shall not only make our columns better advertising mediums, but shall also aid our readers in distinguishing between that which is reliable and worthy of their patronage and that of a questionable character and worthy of their censure.

### Pure-Breds vs. Scrubs.

We understand it is the intention of Prof. Shaw, of the Ontario Agricultural College, Guelph, to carry on a series of tests with pure Shorthorns and scrubs to ascertain the relative cost of keep and returns in the production of beef. He proposes to select two pure Shorthorn calves and two scrubs, males, and the former of faulty colors, that the first cost may be reduced, and to keep an accurate record of the amount of food fed and the cost of the same until they are three years old.

One pair of each will be fed on skim-milk and one on new milk. He is desirous of securing the calves at an age as near the birth period as possible, and is on the look out for them now.

We can readily conceive the immense value of such a test to the province. Some argue that the great difference in the results in breeding animals is in the feed alone. If so, those men who lay out large sums of money in the improvement of their stock should be shown their folly. If, on the other hand, scrub stock will not lay on beef as pure-breds, and if they will not give so large returns for the feed, it should be proven beyond the possibility of contradiction.

Another valuable element in the proposed test is this, that it will determine the exact cost of production of beef with an accuracy that has never been given to the world before, and also the quantities of food consumed.

The experiment is to be repeated until there is no room to doubt the accuracy of the conclusions arrived at.

### Fair Criticism or Adulation—which Is It to Be?

In preparing the description of a herd or of the live-stock shown at an exhibition, two courses are open to the writer, and he may adopt either without doing violence to truth. The first is, to say not a word in reference to anything that is defective about the herd or exhibit, or any animal in either; the second is to speak of both just as they are. Now if the question were put to our readers, which of these methods is preferable, we believe there is not a man of them, from Newfoundland to Vancouver, but would answer, the latter. The world expects truth, however widely its inhabitants swerve from it in their individual dealings, and the generations of the living will never be

satisfied with anything less. Nor is it truth that consists simply of negatives that will satisfy the craving; it is truth that represents things really as they are. All men in their inner-selves have a strong respect for reality, although the outer man may be a daily worshipper at the shrine of sham and shoddy.

Saying only nice things about a herd or exhibit is simply adulation, and cannot but beget a suspicion in the mind of the reader that the whole truth has not been told. The whole number of perfect animals in any one herd or exhibit, however excellent these may be, may usually be counted on our finger tips, hence, if their strong points and favorable features of development only are referred to, there remains in the minds of the reader the impression that something has been kept back, and his estimate of the worth of the narrative will be weakened in proportion to the strength of the suspicion that he has only been told a part.

But while mankind will concede the correctness of our position in the general, apply it to them individually, and in instances not a few there will be sullen dissatisfaction, mutterings of discontent which take a whole year to reach the writer in their tortuous round-about journey, or the serious insinuation, conveyed through some sharply-worded epistle, that he is a respecter of persons, and that he is of that pitiable, contemptible material that has an eye to the yellow gold of the rich in preparing his descriptions.

Now, there surely is some better way for the aggrieved to adopt when any criticism in the columns of a periodical touches upon his work in a manner that may appear to him in the character of a misrepresentation. If his live-stock has been misrepresented in any way let him correct the misrepresentation in the same columns where it has been made. No editor worthy of the name will deny a man the chance of putting himself right before the public when a wrong has been done to him in any way through its columns. This is a manly, open course, and one that can not but meet with the commendation of a right-thinking public.

But few profitable descriptions of an exhibition have ever been written in this country, and they never will be written if the over-sensitiveness of the owners is not going to admit of the whole truth being told. If the writer simply calls this animal "good," the next "excellent," the third "perfect," and has only strong commendative superlatives to apply to the various objects that come beneath his notice, his narrative has more of sugar in it than strong meat, and will justly pass for what it is worth, a preparation that may be suitable for infants, but not at all adapted to strong men.

We have attempted a reform in this respect, but have been most hindered by the breeders who should be most anxious to further our effort. It has been our experience in the past that touching a weakness in any prize animal is about equivalent to taking a dog by the ears, or punishing a mother's only child. We have, therefore, to face the question, shall we in future bring out those infantile productions, or shall we instruct our reporters to give us a description of exhibitions that will mirror things just as they are. We do not hesitate to announce that we have decided upon the latter, and will adhere to it with an unshaken constancy of purpose.

We admit that the judgment of a writer may err, and he may make a mistake, for even good judges of stock differ in their opinions. We grant that such a mistake will be somewhat trying to the party most affected, but we affirm at the same time that in a manly, open way, the wrong should be righted

through the columns of the paper the medium in which it has been made.

It is important that public sentiment should be right on this matter, for it is an unfortunate fact that the press gives the public usually what they most crave for. It is this more than anything else that has made the press cater so largely to a popular love for narratives of crime. It is this more than anything else that has led to the degradation of that instrument, which can so highly elevate the people if rightly used. We call upon the breeders of Canada to sustain the effort that is being made to give to every one interested a fair, open, manly description of a live stock exhibition, rather than one made up of crumbled soda biscuit, water and sugar.

### Shall the Farmer Breed Light or Heavy Horses?

With the advent of the steel girt-carrier the pessimist predicted the total extinction of its weaker rival, but he who had tasted of the pleasures of equine ownership smilingly listened, knowing as he did that as long as the well-oiled wheel would revolve or the smooth runner glide, so long would the horse contribute to the enjoyment of the purest of pleasures. Further, because of the bond of sympathy existing between the owner and the owned, the horse still continues to be employed under conditions perhaps more favorable to his compeer. A demand for horses still existing, the question at issue is, which shall the farmer raise?

We desire, firstly, to dispel the idea held by many that, when we speak of a light horse we mean no other than a trotter. We understand the latter to be a horse that can travel a mile inside of three minutes, no matter as to his size or appearance. He may be spavined and blind, but as long as he can go in good time with the aid of toe-weights, trotting-boots, etc., he is considered a trotter. This is far from our idea of a horse. We would be understood, however, as meaning by this term, a horse of 1,100 or 1,200 lbs., sound, symmetrical, and serviceable. He must be a free and easy mover, of straightforward action, but not losing time in recovery. In height he must be about 16 hands, with plenty of stylishness and well broken to saddle and harness. Add to this quality of bone and muscle, and our ideal stands before you, a high standard, we admit, but not unattainable. If a trotter fulfils these requirements, so much the better.

On the other hand it remains for us to define what we mean by a draught horse. In a word, a heavy, firm-boned, strongly-muscled and coupled, clean-acted horse of over 1,400 lbs. weight; square-set and with but little daylight to be seen under him. Couple with these a shoulder built for a collar, and a disposition suitable for a pull, and our description is finished. We think we are right in saying that the above described horses are the only two types that it will pay the farmer to breed, excepting he has special conditions or markets to satisfy. We recognise, as all fair thinkers must, that they have their places, and our endeavor is to find out the same.

Personal inclination is no doubt the first and most important consideration in deciding which shall be raised. This is uppermost in the minds of most men in such a matter, as the profits do not differ so much as to offer strong inducements to over-ride individual likings. It would be folly for a man whose ideal of horseflesh is the slow, but strong and sure draught horse, to raise a more vitalized type. Profit is not necessarily overlooked, but if any one takes a deep delight in any department, he, as a rule, con-

vinces himself that it will pay, regardless of outside expenses, and even stern facts. Some men, owing to their peculiarities, are specially fitted for the handling of heavy horses, while others would fret and worry incessantly if tied to such a team.

Other considerations bear more or less weight, as soil, market, surrounding conditions, etc. As to the soil, the statement is often made unguardedly that a light horse is better on a light soil than a heavy horse. We would modify this slightly by saying that a heavy horse is at home on a similar soil, and a light horse at his best on a light soil. It is obvious that for drawing loads and other heavy work of the farm, no matter if the soil is light or heavy, a team of good weight or substance is required. On the other hand, for the light work, and there is usually plenty of it on a farm of light soil, the more active horse works to better advantage. There is this thought in considering the amount of work that can be got out of each before selling, viz., that the draught horse is generally of a better disposition for farm work than the lighter classes. We think, however, that this, though largely hereditary in some families, is due in the majority of cases, to improper care and training at the right time. A horse of poor brain development, be he light or heavy, will not be of a kindly disposition. The moral code of all the lower animals, is framed as a rule, according to the treatment they receive.

In regard to the market, though the balance of trade may be in favor of the draught horse, yet we do not think breeders of the others have any reason for discouragement.

The surrounding conditions other than soil and market, have but a slight influence. We refer more particularly to the nature of the land, whether rolling or level, and in a lesser degree the climatic conditions. A humid, moist atmosphere, and its attendant coarse herbage is certainly more suitable for the development of bulk, while on the other hand the higher rolling lands and drier climate is more conducive to production of quality of bone and muscle.

We hear it very often stated that the breeding of draught horses and their care requires less attention than those of a lighter stamp. As it is followed in some districts such is truly the case, but all true stockmen will agree with us in saying it is a lame argument, and one begotten of carelessness and shiftlessness. Importation and fattening qualities go a long way in the eyes of some, but not for much in the estimation of the discriminating breeder. Deficiencies of body and unsoundness of limb can be more easily hidden in the case of the draught horse, and this no doubt leads some to the conclusion that they are easier to breed. Perhaps we do not err much in saying that there is more scope for the hand, eye, and judgment of the breeder, to exercise their power of discrimination in the breeding of the draught horse than in any other.

### The Shallows Past.

Agriculture has always had alternations of prosperity and adversity, and possibly this may continue down to the end of time. From 1795 to 1815 British agriculture flourished as never before. Then came a time of depression, deep, prolonged and severe, when everything pertaining to agriculture languished. Another period of revival followed, and now stagnation broods over the wonderful little island, darker than the mists which so often shroud its bosom from the sunlight of heaven.

So has it been in America. In 1812 wool sold for \$2.50 per pound, and in 1815 following, pure-bred sheep were sold in some instances for \$1 per head. The year 1837 marked another period of great de-

pression, and the year 1852, the central point of our great prosperity. Our own country has always shared the alternations of prosperity and adversity in the United States, so intimate are the trade relations of the two countries.

It is thus manifest that periods of ebb and flow, of prosperity and adversity, have characterized the agriculture of the past, and we have no reason for expecting that it shall be different in the future. Men can explain the reasons for the various changes in the appearance of the moon. They can tell us to a nicety the causes of ebb and flow in the tides, but they cannot altogether account for the vicissitudes of trade. It may be true that war has a bearing upon these; that they are affected by periods of abundant growth; that mechanical invention influences them; but who will tell us why improvement refuses to come, often, when there is a general expectation for it; and why it comes sometimes when it is unlooked for? These periods are not unlike the wind which "bloweth where it listeth." We hear "the sound thereof," and yet we cannot "tell whence it cometh or whither it goeth."

Three years have not gone by since sages with the pen prophesied that wheat would never probably reach the figure of one dollar again. One dollar and a quarter has already been paid for it. But a few years since hay in country places could be bought readily for five and six dollars a ton, now it brings twice that amount in the same localities. There is a general tendency to improvement in all the lines of agriculture, in some of them very marked, in others of them less so. It is worthy of note that when one of those periods of depression sets in, it is apt to continue for some years. Improvement in some lines is sure to bring improvement in others.

Bearing this in mind we cannot refrain from venturing a few hints as to the opportunities of the present for investing in improved stock, particularly those of the beefing breeds. The prices of these have of late been at low water mark, but now it cannot be otherwise than that they will improve.

Good prices for grain, and hay and fodder, are sure to be followed by good prices for beef, as the latter is produced from these. Good prices for beef makes a brisk market for the breeds which produce the beef. There will never, in all probability, in many years to come, at least, be a more opportune time for investing in pure-breds than the present, and those who are wise will not fail to improve it.

Happy is the mariner who spreads all sail when the winds arise to waft him on to the distant port. Happy is the school-boy who makes the most of school and college days, which enable him when rightly utilized to look over the heads of ordinary men. Happy is the weather-beaten old farmer who is busier than the bee in getting in his seeds in spring time when the weather is favorable, and happy is the investor in pure-bred stock who can so discern the signs of the times as to decide upon investment when the tide is at its lowest.

Precisely the opposite of this is usually done. It is when potato seed is enormously dear that men are fidgeting to plant more potatoes; and it is when prices are ruling high that men are most prone to invest in pure-bred stock, the very thing that beginners at least should refrain from doing.

We fail to see where the risk can be in investing in pure-breds of the proper sorts at the present time. They have undoubtedly reached low water mark, and cannot but advance in price. Our numerous list of responsible advertisers, comprising the best in the Dominion, will show where good stock can be got,

and those who may not have the means to pay ready cash, by giving heed to our premium offers published in the September and October numbers of the JOURNAL, can have the object of their desires gratified. In any neighborhood a goodly list of subscribers may be easily obtained by means of a little earnest, personal effort, and in this way good specimens of any of the breeds of improved stock may be secured without cash outlay.

The best purchases of live-stock have always been made when they sold cheaply, and the most foolish ones when some boom was at its height.

### The Clydesdales at Home

In scanning such a group of horses as those of Mr. R. Beith & Co., of Bowmanville, one cannot but reflect on the many continuous years of selection and discriminate breeding necessary to produce animals so uniform in type and good qualities. With such animals, the chosen representatives in our clime of the many that have given the "land o' cakes" a reputation throughout the world, need we wonder at the vast proportions that the importing trade has assumed in the past season? As long as others keep their standard of excellence as high as that of Mr. Beith, little need they fear the decadence of a trade so profitable to Canada and so lucrative to Scotland.

At present the stable harbors 2 five-year-olds, 3 four-year-olds, 6 three-year-olds, 12 two-year-olds, and 1 yearling; so it may be inferred that numbers were not lacking to draw conclusions as regards the proprietor's selective ability and acumen.

Of the five-year-olds the post of honor, perhaps, is due St. Gatien 3988, he being chosen to represent his compeers on our first page, and of whom an extended description is there given. Man o' War (4572) is a strongly-coupled, solid brown horse, wanting not in quality and finish. His sire, Warrior, was a noted prize-winner, having secured 1st prize at the High Land and Agricultural Society show at Glasgow as a three-year-old. His dam, Sally McKie (1650), was got by Cairn Tom (1171), by Rob Roy (714). The latter was one of the most successful horses in Scotland, and g. sire of the well-known Farmer (286) and Lord Lyon (489).

A fine trio are the four-year-olds, including Bounding Willow (5580), Guy Mannering (5849), and Knight of Craighburn (5118). The first mentioned is a heavily-quartered horse, fore and aft, strongly-muscled, firm-footed, with fine, silky feathering. He handles his short legs handsomely, not dishing or swaying his body, so customary with heavy horses. His breeding is of the richest, having fused in his veins the bluest of Clydesdale blood, being sired by the illustrious Good Hope (1679), a son of the yet more famous Darnley (222). On his dam's side he has for a g. sire Clyde (1621), a three-year-old prize-winner at Glasgow. Not to be outdone by his redoubtable ancestors, Bounding Willow has secured many prizes in Scotland, and has here earned 2nd at the Provincial and 3d at the Industrial. "Never buy a horse with four white feet, for he carries his 'shroud with him," is an Arab tenet that we would willingly overlook in considering the worth of Guy Mannering (5849), a worthy son of the renowned McGregor (1487). His dam, Dolly, was by Prince (609) by the famous Lochfergus Champion (449). The Knight of Craighburn (5118) is a light bay with two white stockings; a clean mover with good muscle and firm bone. The Prince of Wales (673) is his g. sire, Sir Wyndham (4728) being his sire, the winner of the £100 premium of Falkirk district. His dam,

Rosie of Canmuir (5393), was got by the well-known Prince Alfred (618).

The three-year-olds are a grand lot, among which we mention Granite City (5397), whose cut appears in our November number of last year; Gay Prince (5796), Royal Scotsman (5317) and Jubilee Model. The first was sired by the distinguished Lord Erskine (1744), who also sired Cairnbrogie Stamp, and the two-year-old filly Loyalty, that sold for £400. On his dam's side Bee (919) he traces to the Prince of Wales (673). It will be seen that Granite City is a horse of rare breeding, which is grandly upborne by individual merit. He is a handsome bay color, with two white hind points and one fore. He stands well on his well-set legs, which nobly support his deep, rotund body. His joints are broad and his shoulder well set, giving him an easy movement with plenty of leverage. The Granite City was first at Glasgow, second at the Royal Agricultural Society's Show at Newcastle, and 1st at the H. and A. S. show at Perth in 1887, and his record in this country has a similar ring. Royal Scotsman (5317) is an inbred Prince of Wales (673) horse of a light bay color, rangy and an easy mover, with plenty of fine quality. His chest is deep, and his shoulder fitted for a collar. He secured second prize at the Provincial this year.

Gay Prince (5796) was sired by Prince Edward (1254), dam Lady Wildflower (4974), by Blue Ribbon (1961). He is a solid brown color of good body and quality, with good limbs and splendid muscle. He has a good show-ring record, having secured among others the Upper Nithdale premium. His sire, Prince Edward, was got by the far-famed Prince of Wales (673), whose son, Prince of Albion, sold for £3,000 in August last. Gay Prince is also a full brother to What Care I (912), a winner of many prizes. The sire of Blue Ribbon was Darnley (222). Gay Prince secured 2nd at the Industrial and 1st at the Ontario and Durham show.

Jubilee Model (5902), is a horse of well filled and deep quarters, with extra bone, and is withal a more rangy horse than his brothers in arms. He was sired by McCammon (3818), his dam being Lossit Tibby (5617), by Abbey Prince (2). McCammon is a son of Blue Ribbon (1961), who in turn is the get of Darnley (222), and he is proving himself to be an exceptionally good breeding horse, and has gained 1st at the H. & A. S. Centenary show, and also sold for £900 when only 2 years old. On his dam's side he traces through one remove to the noted Lochfergus Champion (737).

It would be impossible to describe all the eleven two-year-olds, so we must content ourselves with a short description of a few of them. Believing that "the place is dignified by the doer's deed," we give first position to Invader (Vol. XI.). He is a well put together and excellently finished horse of a blocky type, with extra fore arm and neck. He stands firmly on his short legs, and moves easily and freely. Prince Henry, his sire, (1257), is only one remove from the Prince of Wales (673). Prince David (643), the sire of Prince Henry (1257), stood second only to Darnley (222), at the Royal at Carlisle in 1880. Invader's dam was Damson (2512). He gained first and the silver medal presented by the Clydesdale Horse Society at Annan, in 1887. McRaw (6057), was sired by Garnet Cross (1662), dam Darling (5624), by Breadalbane (3461). He is a horse of good substance, heavily muscled and finely topped. His sire, Garnet Cross (1662), besides winning many premiums and prizes, sold by auction for £700. His gr. dam, Polly (884), was got by Prince of Gowrie (1794), by the famous Samson (741), the sire of Keir Peggy, 187,

world renowned as the sire of the great Darnley (222). McRau secured first at Windygates in 1887, and 5th at Edinburgh in 1888, first at the Provincial and second at the Industrial. A low set, deep bodied, free-moving horse is General Burnett (Vol. XI.), who was sired by El Ameer (359), a get of Darnley's (222), and he is a full brother to the famous mare Zeynal, noted for her many conquests in the show ring.

Lord Coleridge is a son of Chief Justice, by Blue Ribbon (1961), by Darnley (222). Equally well bred is he on his dam's side, she being sired by the notable Hercules (378). Darnley's Chief (Vol. XI.), was sired by King Darnley, who besides being a son of Darnley (222), is a full brother to Top Gallant (1850), who sold for £1,200.

The yearling Pride of Eastfield (Vol. XI.), possesses a grand fore-quarter, with a fore arm well clothed with muscle, and good pasterns, combined with hoofs of a firm texture. Bone is not wanting, neither is quality. An extra good loin and shoulder are among the many qualities of this highly finished animal. His sire was the celebrated Lord Erskine (1744), dam Missie of Udstone (6137), and his gr. dam Nell was got by Lorne (499), the sire of the well known prize winner Ivanhoe (396). Pride of Eastfield came to this country as a first prize winner at the H. and A. S. Show, at Glasgow this year, and he has added to his laurels by winning first at the Industrial, first at the Ontario and Durham Exhibition, and also first at the West Durham Show.

Two Hackneys have also been imported, and fine ones they are. The Gem is 7 years old, by Gem of the Peak, by Mr. Sykes, the winner of the Ceasar-witch, while his gr. sire, Sir T. Sykes, won the 2000 guinea prize and the St. Leger. Gem's dam was by Laughing Stock, that won the £100 prize at Wolverhampton, and many other winnings. He is a horse of extra action, splendid bone, and finely chiselled, rangy, showy, and of a useful type. He bids fair to prove a valuable stock getter. Firefly (1779), stands about 15.3, and is more of the true Hackney type. He is a neat, snug looking horse, strongly coupled, and good knee action. His sire was the well-known Hackney stallion, Triffit's Fireaway (249), dam, Nance (129), by Pottinger. His sire has won no less than 32 prizes in all.

#### FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL. Herefords.

(Continued from September.)

In females I like a clean-cut, delicate head, with the same features that I mentioned above for bulls, but with nice feminine character instead of the bull's masculine appearance. A "gay" head need not be objected to, provided the horns are not cocked up and turned back—upturned horns are very different from cock horns. A bull-like, coarse head, is the worst kind to my mind, as it gives no style or smartness to the animal. I am not fond of the very dark reds, as I believe those of a lighter color—not too pale—feed quicker, and are usually of better quality. Beauty of form and symmetry should always be considered by the judges as two strong points in favor of the animals possessing them. As a grazer the Hereford is *facile princeps*, and in the stall he is no mean rival of the Shorthorn; but as a milker the Hereford is, as a rule, indifferent; the milk is rich, but there is too little of it. The calves, though, begin to eat at a very early age, and seem to get away from calves that enjoy a much larger supply of the lactal fluid. Youatt and other authorities describe the cow as being a very inferior animal, and say that he was comparatively small and delicate, the breeder

having been taught by experience that if the cow is too large and masculine the ox will be brawny and coarse, and probably slow to fatten; the cow is, however, since then much improved, but even now Hereford breeders prefer the medium-sized cow. The bull, when used on grade cows, is very prepotent in giving uniformity of color and shape to his offspring, the white face being the invariable result; he likewise transmits his unrivalled grazing propensities. In disposition Herefords are much wilder than Shorthorns, but with kindness they become very docile and tractable.

One of the earliest records of the exhibition of Herefords is that of the Charlton ox, which was fed by Mr. Campbell, who purchased him in July, 1787, in a lean condition, and put him through the winter, but failing to get his price in the spring, he put him again to grass, "expecting to get a good increase in weight, as he was then only six years old." In 1789 he sold the ox to Mr. Cowdry, of Greenwich, who took him to show at Smithfield. This ox weighed 3,360 lbs. live weight, and yielded 1,914 lbs. dead weight. Among the earlier accounts of Smithfield show, the Herefords constantly appear in the prize-list. In 1802 Mr. Westear, at that time the chief of English graziers, exhibited at Smithfield show a pure Hereford steer, with which he took first prize for the best steer weighing 160 stone and upwards. The steer is described in the *Commercial and Agricultural Magazine* for that year, as being as "remarkable for his extraordinary make as for his extreme fatness. His color, which had then become a distinctive quality, not overlooked by graziers, was the favorite one, a very dark chocolate, bordering on blackness. He was seven years old and lively and active in an uncommon degree for an animal so fat, and his countenance indicated a disposition to fatten, perhaps more strongly than any ox that had been exhibited at Smithfield. He was sold for a large price to Mr. Chapman, of Fleet market, and weighed when dead more than 2,128 lbs., the quantity of offal being very small. The beef was very firm, and a more even covering of fat was never seen." Ever since the commencement of fat stock shows, both at Smithfield and elsewhere, the Hereford has proved himself a worthy antagonist, and seldom fails to secure a fair share of the prize money. It is surprising that the breed has not taken a greater hold in this country, for it is possessed of many excellent qualities. This may perhaps be accounted for in part, by the fact that the importations of that breed to this country prior to the year 1860 appear to have been an indifferent lot, and a prejudice against a breed once excited, is often difficult to allay; or it may have been owing to their deficiency in milking qualities, which would doubtless be an obstacle to their becoming popular in dairying sections. The first introduction of Herefords in the United States was likewise not successful in gaining much popularity till within a few years ago, when a strong boom arose, and several large importations were made, including many animals of undeniable merit, and the Hereford interest grows so rapidly in that country that it is now perhaps second to none, except the Shorthorns. AGRICOLA.

(Concluded.)

"I am very well pleased with the STOCK JOURNAL. I think it is the best farm paper I have ever had."—Ed. Hoelscher, Prestoo, Ont.

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FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

#### Fall Fairs in the North-west.

(By our special North-west Correspondent.)

The exhibits of agricultural and garden products from the Canadian North-west, which have recently been on view at all our eastern fairs, have made your readers fairly familiar with its resources as a field for the production of high grade cereals and good roots, but the distance is too great to admit of their seeing the quality and quantity of their live-stock. They have been gradually introducing a number of very good stock from the lower provinces, which have been pretty evenly scattered all over the country, and the most conspicuous feature in the live-stock record of the last few years is the great increase in the number, and improvement in the general quality of their draught and general purpose colts.

No Provincial fair has been held in Manitoba since the fall of 1886, when a very excellent all round display was made at St. Boniface, a suburb of Winnipeg, but partly as a result of high railroad fares, stress of work in the field, and one or two bad days in the fair week, the financial results were very disappointing, and the local government had to foot a deficit to the tune of some thousands of dollars. The expense and loss of valuable time involved in collecting from a wide area, has been the main reason for the failure to hold any other general show since 1886, and part of the saving in expense thus effected has this year been applied to supplement the funds of the local shows, held in almost every county. In some few instances this has been followed by a marked improvement on last year's form, but at the majority of the local fairs all the way to the Rocky Mountains, there have been well founded complaints of a falling off in attendance, in interest, and occasionally even in the quality of some parts of the exhibition. The pressure of fall work in the very limited space of time that intervenes between the close of harvest and the "freeze-up" is mainly to blame for the shortage in the cattle classes. A few dollars of prize money does not nearly recoup the outlay involved in travelling cattle to and from the fairs, and the spirit of emulation is not keen enough in most places to induce a full turnout of the beef stock, even within the county areas. Brandon Society has resolved to hold its next year's show in the middle of August, when everybody has more leisure time, and in their case the change is likely to do good and bring out a much better representation of the capital pure bred cattle in that fine district.

The earliest show of the season was held at Springfield, on the east side of the Red River, on the 29th September. This is an old, well settled, and fairly prosperous district, but the general quality of the stock exhibited, though fairly good, deserves no special mention.

Portage la Prairie is one of the oldest, most evenly successful, and most closely settled districts in Manitoba. Its fertile "Plains" are unbeaten for a continuous record of high-class wheat production. For cereals of all sorts it has not its equal perhaps in the Dominion, and Kenneth McKenzie, M.P.P., showed this year a splendid sample of White Fyfe. His Red Fyfe was in 1886, in the opinion of good judges, the best sample at the Provincial, and he deserves honorable mention as a reliable standby who has always brought in good cattle and cereals. Mr. Wallace, who has the best farmer's service bull in the Province, bought a calf from Donald Frazer, of Emerson, another good all round exhibitor of live stock and other produce. Mr. Puxley, from Westbourne, championed this year's Portage Fair with Shorthorn and other cattle, and Walter Lynch, his neighbor, the

oldest breeder of pure bred Durhams in the Province, was also well to the front. It must be now about 15 years since he brought in the lot of cattle and sheep which have made their mark in the Province ever since. There are no finer grade cattle anywhere than in the Lynch neighborhood, all traceable to this very successful pioneer's enterprise in those far back days. Senator Sanford now runs the boss cattle ranche of the Westbourne district, with several hundreds of grade cattle and four Hereford bulls as his leading card for the production of grass fed beef steers. He has the best Aberdeen-Angus bull of the Province here, and some Shorthorns, but did not exhibit against his neighbors in any class of cattle. He showed a general purpose stallion, largely Cleveland blood on Clydesdale, a magnificent walker, for which he had a merited first and diploma. In vegetables, Portage was this year an easy first, and won also two months ago the Government prize of \$100 for the best collection of samples for eastern exhibitions. It has good show grounds, well fitted up, a spring show of bulls and stallions, and its show will always be a leading one.

Birtle, out on the North-western, had as its best feature the Binscarth herd of Shorthorns (of which Mr. T. L. Smellie is manager), the champion lot of the whole North-west. Prince Arthur, his aged bull, is unbeaten here, and he, besides other good bulls here, was raised by the Hunters of Alma. Good Clydesdale mares made also a figure here, the property of Gen. Wilkinson, a recent English settler.

Austin, some thirty miles west of Portage, may be mentioned as an example of a "one-horse" show in a thinly settled district. It had the best Red Fyfe wheat of this year's growth yet exhibited, a collection of ladies' work, dairy produce, preserves and home-made bread, in a little log building with a flag overhead. Grain and vegetables were set out around this building, some very good. Then there were good mares and colts, and the teams were exercised on the trail leading through the scrub to the only store. But they have had great luck in wheat this year, and will make a good stride before another show comes round.

Carberry, 20 miles further west on the main line, marketed 1,000,000 bushels of grain last year, has a magnificent wheat country, the "Beautiful Plains" to the north of it, but is on that account less of a stock district. A very fine Shire horse, imported by Donald McCaig, and about the best roadster horse in the Province, with good turnout of other horseflesh, were on hand here. Mr. Barron, and Adam McKenzie, son of Old Kenneth, of the Portage, were extensive exhibitors here, mainly of Durham and grade cattle, but the show was below the average of former seasons all but the horses.

Brandon has some very live breeders to the south of it, but had on 18th October the worst day of the season, and poor attendance of visitors. J. E. Smith, of Beresford, is a frequent buyer of eastern blooded stock. His Durhams championed this and Plum Creek fairs, and his imported Clydesdale mares were at Oak Lake, Plum Creek and Brandon. Jas. Bremner from Penketh had the best aged Durham and best Polled Angus bulls, while Sharman and Sharman, who run a neck and neck race with Smith as breeders and importers, made some very good seconds, and one or two firsts at Plum Creek, but were deterred by weather from shewing here. Jas. Walker's Clydesdale Splendour, is one of the best in the Province, and of the other 150 entries in the horse class there were many promising animals.

Dennis County, still further west on the main line, made the best figure of the year. There were two

shows in this county, one at Oak Lake, and the other next day at Verden, 15 miles further west. Sharmans placed their fine Durham herd at both fairs, picking up most of the premiums. Both are good districts with settlers around who, in spite of a pile of field work pressing, are determined to maintain the reputation of their annual show, and they managed to fill the bill. Verden, the strongest of the two, may be taken as a representative of a pretty lively turnout for a town which just six years ago was a huddle of tents. The entries numbered 1,500, with \$1,200 of prize money. The horse class numbered 200, and cattle, 90 entries. First prize and the president's gold medal went to Mr. Sprot's imported three-year-old Clydesdale horse, a very promising animal. There were ten teams heavy draught, nearly as many general purpose, and keen competition in many of the breeding and young horse classes, which here, as elsewhere, are the feature of the season. The show took place in a large enclosure close behind the town, the village band played on the ground, and everybody was there or wanted to be. A good concert finished the proceedings. The ladies' productions, some of them of high merit, were shown in the Orange Hall, and grain, dairy, and domestic products, with roots and vegetables, filled the Public Hall. Several of the leading farmers here are from the Huron district, and contributed much to the success of the show. Mr. Win. Stephen shewed very good oats 87 days in the ground till ripe for cutting, and a new variety of hard red wheat by Mr. Beattie, Elkhorn, had a merited first prize. Verden is fast getting to be a *stone* town, with cheese factory, grist mill, three elevators and a big country trade.

Moosomin, Indian Head, Regina, Moose Jaw and Calgary are points in the Territories where very good shows were this year held. Stock is rapidly growing in numbers and quality, and this and last season they have done well in grain. Wheat over 64 lbs., and oats at 49 lbs. are fit to show anywhere, and the local papers are rivaling those of Manitoba last year with details of big yields. Here are two clipped at random from the *Regina Journal*, not by any means the largest that are claimed there:

**AN OAT YIELD.**—Mr. Alva Morton reports a yield of 820 bushels of oats from ten acres—82 bushels to the acre.

**AN AVERAGE YIELD.**—A portion of Mr. James Bole's wheat averaged 35 bushels to the acre, and taking his entire crop, the average was 30 bushels.

A feature of the exhibitions farther west is the exhibits by the Indians, sometimes against their white neighbors, and taking first prizes even in wheat. Among the successful competitors were Messrs. Carry the Kettle, Big Sky, Yellow Legs, Big Darkness, Hump armish eda-tea, and Chief Jack. Mesdames Carry the Kettle, Non chung-lass, Rabbit Skin, Muddy Bull, and Standing Buffalo, carried off honors in domestic manufactures, and on every reserve they raised good paying crops. Calgary sent away many very fine specimens of grain on the straw and in bag, and in thoroughbred horses of roadster and cavalry stamp showed some capital entries from the surrounding ranches.

Turning back upon Southern Manitoba, we find Menota on the Souris the centre of a perfect wheat garden, with 700 exhibits at its show. But this has been a hard year on the Hartneys, Laughlands and other wheat growers in that fine region, the frost having dipped with more destructive force there than on any corresponding area in the Province. Deloraine, Killarney, Manitow, Morden, all tell the same tale of more urgent work in the field, and shortage in all ex-

hibits that require extra work to bring them to the stand. At St. Jean Baptiste on the Red River Mr. Martin had a capital herd of Galloways, imported this spring from McCrae's, of Guelph. This is a mixed English and French show, but the French, like all the other old standards on the Red River, are more noted for the number and variety of their scrubs, than for any other special feature in breeding. Next to the Mennonites on the fine track from Emerson to Morden, the old stagers and half-breeds on the Red and Assinaboine Rivers have a standing reputation for scrub ponies and cattle, hairy sheep and razor-back hogs. Excepting a few on the Portage Plains, it is hard to find any man more than ten years in the country who owns a thoroughbred beast or reads a farming paper.

The feature of the year, as already noted, is the rapid increase in draught and general purpose horses and the fine teams, oftenest of mares, imported from the east for that purpose. The cattle on view have everywhere been short in number, it costs too much time to handle them, but with the exceptions noted the general grade is rising, and dairying becoming much more general. The bulk of the stock is grade Durham, with a few fair Ayrshires and their grades. D. McNaught, at Rapid City, and S. Corbett, at Springfield, are Holstein fanciers, and there are a few Jerseys, half and thoroughbred, near Winnipeg.

Sheep are not spreading as they might, considering the high price offered at all times for mutton, the want of fences and depredations of wolves being the principal checks on their general introduction. Pigs are also scarce and dear, a drop in prices two years ago having checked breeding. The year's exhibits conclusively show that good grade cattle, and horses inclining to the heavy side, with Red Fyfe wheat, are to be the mainstay of all the North-west, outside of the area west and south of Calgary. Sheep, cattle, and shagginappy ponies are being cleared off as fast as possible to make way for upstanding mares, to be bred to blooded horses for England and the East.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

### The Ayrshires from an Economical Point of View.

BY D. NICHOL, CATARIQUI.

(Continued from November.)

The Ayrshire breed is one of the oldest in existence. As with every other breed of valuable cattle we possess, it owes its origin to a mixture of races. A hundred and twenty-five years ago cattle were brought into Ayrshire from the English county of Durham, where the Shorthorns (formerly called Durhams) were originally bred. The progeny of these were soon scattered throughout Ayrshire. Care in breeding and management helped to produce what soon became a very valuable breed for the dairy. In those days the Shorthorns were noted for their dairy qualities; but the cross from them became more valuable for the locality in which they had grown up, and for the purpose of the owners, which was solely the butter and cheese industry. The growing demand for the dairy products of that county stimulated the growth and improvement of this breed, and they in time became noted as producing more milk, butter and cheese from the same quantity of feed than any other breed in existence. This quality they still possess; and the Ayrshire dairy district still retains its high reputation for its dairy products.

The method of breeding usual amongst Ayrshire dairymen resulted in the production of model dairy cows—excepting that they have horns. Late casualties

have convinced me that dairy cows should not have horns, therefore I hope to see an effort made to breed out of this, and I am certain it will be an improvement. When cattle in their natural state were exposed to the attacks of strong enemies, horns were doubtless needful, but in a domesticated state horns are only hurtful appendages. Some will of course say, dishorn. But that involves suffering, and renders the operator amenable to the law against cruelty to animals, and should be punished accordingly; and besides, a dishorned animal never looks well.

The hornless Ayrshire cow will be the model dairy cow. In respect to form, they are compactly and economically built. The style of bull always chosen by the Ayrshire breeders has been selected with regard to this form—a bull of somewhat feminine characteristics, with a fine head and neck, broad hips and full flanks has always been preferred.

The Ayrshire cow, having been bred for one specific object, which has been almost completely attained, may be taken as a model of what an excellent milch cow ought to be.

In choosing a milch cow the points to be observed should be as follows: A head small, long and narrow at the muzzle; horns, if they must have them, small and fine, placed widely apart, and bent gracefully forward and upwards; eyes, full and brisk; neck, long, slender and tapering toward the head, with very little loose skin below; the shoulders and forequarters light and thin; the hind quarters large and broad; back straight and wide across the loins and hips; body, deep in the rib, and on the whole, wedge shaped; tail small and long; legs, fine in the bone and short, with firm, neat joints; udder square and capacious, reaching well forward and backward, but not hanging low; not fleshy but loose when empty; teats, moderately long and small, pointing outward, and set widely apart; milk veins large and prominent; skin loose, thin and of yellow color; disposition docile and not easily disturbed. An animal with such a structure must be a good feeder, and possess an excellent digestive capacity, with no waste places upon which food will be uselessly expended; all the animal functions will be exercised in the direction of profitable production of milk. All these good points the Ayrshire possesses in a remarkable degree.

Besides this, with the exception of the common cattle of the country and the West Highlanders, the Ayrshires are hardiest of all breeds. They stand changes of weather better, and live longer in usefulness. They are energetic and industrious. They make the best of high or low keeping. They can forage a living and keep in good condition when Holsteins and Shorthorns would starve. In fact, in point of economy the Ayrshire is "par excellence" the dairy cow.

It is asserted by some who are well qualified to judge in such a matter, that after all, the most useful dairy cows can be selected from amongst the best common cows of Quebec province; but what are they? In the eastern part of Ontario and the western part of Quebec the best of the common cows are chiefly Ayrshire grades. For the last fifty years there have been continual importations of Ayrshires to those parts of the Dominion, and their offspring has been very widely disseminated by the Joneses, Houghs, Pickering, Mortons, and Thompsons of the Brockville and Morrisburg districts, and by the Doddses, Irvings, Drummonds, Davises, Browns, Hays, and a host of others in the Montreal District, while comparatively few of any other breed have been imported to these districts except for speculative purposes.

It is quite probable that very excellent dairy cows can be selected from amongst the common cattle of the east; but I find on particular enquiry, that the nearer they come to the pure Ayrshires, the more uniform is their productiveness. I also find that amongst the commonest of the common scrubs there are not more than one in twenty-five that any good dairyman would select as a profitable business cow. When American dairymen come over to purchase good dairy cows they invariably do business where they find most Ayrshire blood.

Montreal is by far the largest city in the Dominion, consequently a very large dairy business is done in the neighborhood, and that chiefly by the most experienced dairymen in the country. It is very remarkable that nearly all the cows used for their purpose are either Ayrshires or fine Ayrshire grades.

It is also very remarkable that in Great Britain nearly all the cows used for practical dairy purposes are of the same class, although all the other boomed breeds are much nearer at hand than to this country; and be it observed these old country dairymen are generally shrewd business men, who having to pay high rent for the land they occupy, must exercise the strictest economy.

So, whoever in this country would engage in the dairy business with a view to profits, would do well by weighing the matter thoroughly before being induced to invest in some of the boomed breeds at fabulous prices.

I know of some enterprising young farmers now ruined by the temptation, while if they had taken warning by the experience of others who were wrecked on the same shoal, might now have been enjoying all the comforts of this life.

An old adage is that "experience teaches fools," but human life is so short that many experiments in such a matter as this cannot be wrought out by individual farmers. So when we come to consider this matter from an economical point of view, it becomes expedient for every individual farmer to first endeavor to ascertain from the experience of others, whether wise men, fools or knaves, which of all the different breeds of cattle is the best adapted to his circumstances. Many other things I would like to write on this subject, but I fear I have already exceeded my limit.

### The Education of Farmers.

BY J. H. SMITH, ANCASTER, PRESIDENT OF THE ONTARIO TEACHERS' ASSOCIATION, 1887-8.

(Concluded.)

To the second question, "Can any means be devised that will lessen this tendency and direct the intellectual energies from young people into more practical and useful channels?" we simply reply that in our opinion the time is at hand when a new departure is necessary. What that departure shall be seems quite evident when we consider the nature of the education necessary to meet the present requirements of the people. If we examine somewhat carefully the statistics furnished by the Minister of Education in his last report, it will be found that 368,763 pupils are enrolled in our rural public schools, and 118,733 in those in our towns and cities. Of these 63,548 are in the 4th class and 5,977 are in the 5th class, in the rural schools, while in the cities and towns there are 17,026 in the 4th class and 2,054 in the 5th class. The number of candidates that were successful in passing the examination for admission into our high schools was 7973, or nearly 10 per cent. of the total number enrolled in the 4th class, while in all our public schools, rural and urban, only 1,558 pupils are reported as studying agriculture. From these figures we learn that 76 per cent. of the pupils enrolled attend our rural schools, and are therefore practically connected with farm life; 18 per cent. take up the course of study prescribed for 4th and 5th classes, while only  $\frac{1}{8}$  of 1 per cent. devote their attention,

even for a limited time, to the study of agriculture. This seems somewhat remarkable, when in the light of the above figures it is seen that we are peculiarly an agricultural people, and that the great bulk of our children spend their youthful days on the farm.

The only conclusion at which we can arrive from the consideration of these facts is that new avenues are necessary to provide room for the rapidly growing mental life that is permeating all classes of our people. Restrictive measures of whatever kind or class, that tend in any way to retard this intellectual growth, are to be avoided. The machinery and appliances for mechanical and agricultural pursuits of a quarter of a century ago, fail to meet the wants of to-day; so it is in educational affairs. The methods of instruction, the kinds of schools as well as the subjects taught, that were prevalent during the earlier development of this country, do not meet the demands of society as at present constituted. Upward and onward is the motto in educational affairs as in everything else. It is necessary to lengthen our cords and strengthen our stakes. To accomplish the purpose we have in view it will be necessary to establish, or at least have permissive legislation, that the people may establish, in rural municipalities, a class of secondary schools, in which agriculture and kindred subjects pertaining to farm life shall be recognized as the principal subjects of study.

To make our meaning clear and prevent any possible misunderstanding as to the nature of these schools and the class of work to be done, it may be as well to explain more fully the following points, (1) Under whose management shall they be placed? (2) What shall be the length of each session? (3) What shall be the course of study? and (4) How shall they be supported? It may be as well to state that we shall consider the two classes of schools, rural and urban, separately, and shall proceed to answer these questions as they bear upon rural schools. Now in regard to the management, the writer would place these under the charge of township boards in municipalities where such boards exist, and in all other municipalities, under the jurisdiction of the township councils. These boards or councils, as the case might be, should have power to use any schoolhouse in the municipality, or the township hall, for holding such school or schools. They should have power to determine the number of such schools, the location of them, the employment of properly qualified teachers, and furnishing the necessary equipment for the proper conduct of such schools. They should have authority to provide means to meet the necessary expenses, either by levying a rate on the assessable property, or by applying to the municipal council for the amount required. In regard to the length of the sessions, it must be borne in mind that these schools are intended for boys over 14 years of age and for young men, so that they will necessarily be winter schools, to be opened say about the 1st of November and closed about the 1st of May. This will enable these young people to attend an advanced school during the winter season, and leave them free to assist on the farm during the busy summer months. To anyone acquainted with farm life, especially in the older settlements, it is well known that the great majority of young people have more leisure time during winter than they use with advantage to themselves or their friends. Now it is very desirable, and, the writer believes, quite practicable, to utilize this time for mental improvement, and so far as his observation has gone, no more feasible plan has been proposed. It may be remarked further that these schools are to be opened each day at 10 a.m., and closed at 3 p.m., having four hour sessions, and thus leaving these young people free to do the chores around the farm, both before going to and after returning from school. The course of study should embrace the following subjects, viz:—(1) The different kinds of soil; their formation and cultivation, together with the best means of improving each kind; the production of these soils; (2) The mathematics of the farm, which should include land measurement, laying out the farm into fields, measurement of solids, surfaces, hay in mows so as to estimate the weight, grain in piles and in bins so as to estimate the quantity, of cattle so as to estimate their weight; a full set of accounts, or more properly speaking, a complete system of farm book-keeping; mechanical drawing with use of instruments, so as to be able to prepare a working plan for any ordinary building; (3) The breeding, rearing, feeding and care of all classes of live stock found on the farm, together with the symptoms and remedies of the more common diseases from which live-stock suffer; and (4) Literary work, which should include



the critical reading of some standard English author, composition, correspondence, and practical English. It remains now to determine how these schools are to be supported. This can be done by the Legislature giving a fixed grant to each school that has been kept open during the time fixed by the law, as it does to County Model Schools, and High Schools. This grant should be supplemented by a similar grant from the County Council. In addition to these, fees should be charged, and the balance paid from township funds.

In all our schools, both Public and High, the course of study should be practical, and so prepared that the knowledge received and the instruction given should be along the line of life which the student purposes following. An ideal education can only be given to those who have the time to devote to it, and possess the means to carry it fully out. But for those who are compelled to leave school before they are sixteen years of age, and battle with the realities of life, to provide themselves with food and raiment, a more practical education is required. What is wanted is

In addition to these schools great encouragement should be given to literary societies, reading circles, and whatever tends to encourage intellectual activity among our young people. It will hardly be necessary for me to say a word or two on behalf of farmers' institutes, for I feel assured that every thinking man will rejoice that they have been introduced. Nor do I suppose it necessary to allude to one of the greatest of modern educators, the printing press, for I assume that no family is without its newspaper, and certainly no progressive farmer will be without one or more of our excellent journals devoted to the interests of agriculture. Our public and high schools, our professional schools and universities, together combined, form one of the grandest features of our modern civilization, and lead us to look hopefully upon the future prospects of this grand Dominion.

#### Summerhill Stock Farm.

This well-tilled four hundred acre farm is owned by Mr. Peter Arkell, Teeswater, and has for many

Baron Tadema, bred at Bow Park; the fourth, Major Trim = 1668 =, bred by Mr. Wilson, Ashgrove, and the fifth, Knightly of Waterloo, by imported Waterloo Warder (47222), bred by J. C. Snell, Edmonton, Ont.

The present stock bull, Red Prince, so admirably brought out in the sketch, was bred by Mr. Daniel Arkell, Butler's Court, Lechlade, Gloucestershire, England, and was imported by Mr. Arkell in the summer of 1886. Calved January, 1886, and sired by Habis (47997), he traces to the 15th dam Queen, bought of a Mr. Thompson. He is red in color and of a fine, sturdy build, and is a most excellent stock-getter, particularly of heifers, of which there is a fine lot in the herd, as well as a number of bulls, nearly all taking after Red Prince in color and shape. Eclipse (237), Clifton (147), and Ben (70), amongst the foundation standard-bearers, figure in his pedigree.



SHORTHORN BULL RED PRINCE AND TWO OF HIS GET, PRINCESS AND LADY SUMMERHILL.

Imported by and the property of Mr. Peter Arkell, Teeswater, Ont.

such training and such knowledge as will assist them in their daily struggle for a living. To such an ideal education is positively injurious, since it practically unfits them for becoming breadwinners, because they have neither the time nor the means to pursue it sufficiently far, to make it valuable, and they find themselves with only a partial education that has not fitted them to face life's difficulties. The writer is strongly of the opinion that something in the line of practical and industrial education will have to be grafted upon our present system, before it will be complete, and serve the purpose for which it was designed. We have not made progress in this direction. Our system is a most excellent one, and one that we should all feel proud of, and doubtless do, but there is room for improvement, and we cannot refrain from expressing the opinion that the line we have marked out is the line in which these improvements must come.

years past been stocked to its full capacity with a fine herd of Shorthorn cattle, and the best flock of Oxford Down sheep in the Dominion of Canada. The Shorthorns were built on a foundation bred by Mr. Thos. Arkell as early as 1850, who in turn bought from the herd of Mr. Adam Ferguson, East Flamboro, one of the oldest and for years one of the most noted breeders of Shorthorns in all Canada. The bulls used for a time were from the early importations of Mr. F. W. Stone.

The present herd of Mr. Arkell was commenced in 1862, the first two cows being Favorite and Cherry, and the first bull Flamboro' Chief [1409], bred by Mr. Thomas Stock, East Flamboro'. Then followed Sentinel, bred by Mr. F. W. Stone, Guelph; the third,

One of his half brothers took 2d at the Birmingham show recently in a lot of 200 bulls, and another 2d in a company of 150, and also 2d in a reserve lot of five.

The whole herd numbers some 60 head, of which 22 are breeding cows, 9 are two-year heifers, 5 one-year heifers, 6 one-year bulls, and 17 calves. The young stock are all sired by Red Prince.

Among the breeding cows we mention in particular Cherry 7th, by Baron Sidonia = 376 =, out of Cherry 2d; Cherry 10th, by Major Trim = 1668 =, out of Cherry 4th, and Cherry 11th, by Major Trim = 1668 =, out of Cherry 3d. They are all reds with the exception of a little white, and all possessed those valuable features so necessary in a breeding cow, being deep, roomy, with broad hips and lengthy

quarters: Two calves of March last, Princess and Lady of Summerhill, which appear on the opposite page, are the get of Red Prince, and well do they attest to the stock-getting qualities of their sire. They are both solid reds and are of goodly proportions, giving strong indications of future worth. The former had for a dam Flower of the Forest 6th, by Baron Sidonia =396=, the latter out of Cherry 11th, by Major Trim =1668=.

The Oxford Downs were imported by Mr. Arkell, who selected them in person. They have been more successful in carrying first honors than any other flock in the Dominion for a number of years, and have been widely sold to all parts of Canada and the United States. Mr. Arkell gives his work in every department that close supervision which is essential to highest success, and this no doubt very largely accounts for the fine herd of Shorthorns and flock of Oxford Downs of which he is the fortunate owner.

The stock is kept in good breeding condition, and therefore the young stock is likely to go on improving wherever it may be taken. Any one wanting good, serviceable bulls of a fine, beef-producing type, will find that the time spent in visiting the Summerhill herd has not been spent in vain. The farm is but 2½ miles from Teeswater, on the C. P. R., which is also the telegraph station and post-office.

### Chicago Fat Stock Show.

(From our own Correspondent.)

Leaving Canada by the ferry at Point Edward, the Chicago and Grand Trunk Railway connects with the main line at Port Huron. The land in Michigan through which this line passes is not equal to that on the Canadian side. A good deal of it is wet, marshy and flat. Corn is a chief crop; much of it was injured by a severe frost on 22nd August last, and farmers on the train were deploring the amount of soft frosted corn this year. Cattle are seen out in the corn fields picking up a living amongst the withered stalks, or in the barnyard on the sunny side of a straw stack. The buildings, and especially the barns, are far behind those on the Canadian side. In Illinois, before reaching Chicago, a long stretch of marshy prairie land is crossed, with numerous stacks of coarse marsh hay, not to be removed till there be sufficient frost to allow the marsh to be crossed with teams.

The exhibition building is well situated in Chicago, at the foot of Adams street, on the lake shore, quite near the main business part of the city, the post office and the chief hotels. It is a large building with a circular arched roof, contains dining and lunch rooms, besides a number of refreshment stalls, mostly of the fresh cider and peanut order. It is lighted with electric light, made in the building. A large gallery runs quite around the building, and it being well seated is much used by visitors. The poultry and fancy pet show is here, and is a large exhibit. Light Brahmas and Plymouth Rocks were the most numerous. The hog and sheep pens are at the extreme end of the building, and being behind the engines, and some other permanent fixtures, are out of the way, and were not made attractive. All the chief mutton breeds were there, the 'Downs taking a prominent place. In Southdowns the chief exhibitors were T. W. Harvey, Turlington, Nebraska; J. H. Potts & Son, Jacksonville, Ill., and J. R. Stone, Stonington, Ill. In Shrops there were some very nice sheep. S. H. Todd & Sons, Wakeman, Ohio; Geo. Allen & Son, Allerton, Ill., and J. F. Rundel, Birmingham, Mich. Messrs. Stone & Rundel also exhibited Oxford Downs, and Mr. Rundel was the chief exhibitor of Cotswolds. There did not seem to be anything superior to what

in former years was sent from Canada, when Mr. Rutherford had some fine animals, or in even earlier days, when George Hood, of Guelph, raked in the most of the ribbons, with some splendid specimens. Next came the cattle stalls, on either side of the show ring, and filling several of the recesses. The stalls are open, the alleys are kept very clean, and the animals are well seen in comfort by the visitors. Looking at the exhibit as a whole, and comparing it with past exhibitions, there is a marked decrease in the heavy over-fed animals of four and five years old. The mountains of flesh are gone. Instead, we have a marked increase in the number of very young animals. Calf beef seems to be the rage now. Animals under a year, yearlings, and two-year-olds are the features of the show. Early maturity is the cry now, and it is certainly in the right direction, though it, too, may be overdone. The number of animals forward is not so large as has been seen. The long rows of red Shorthorns, corn fed, with the yellow tinted flesh, are not here as they were years ago. In Shorthorns, Bow Park herd, Brantford, Ont., have a nice exhibit, and John Hope carries off the blue ribbon in his class. The Herefords are in large numbers, and have some very nice young things shown by Gridgell & Simpson, Independence, Mo., and Adams Earl, Lafayette, Ind., and others. The Aberdeen-Angus have some good ones; a couple of nice sweet steers, small but very neat and good quality, bred by Wallace Estill, Estill, Mo., are as good as anything shown in this class. They are both from the same dam, and have white markings, which throw them out of the fashionable breeding class, and into the feeding stall. They look very like winners. Mr. Jas. J. Hill, of St. Paul, Minn., has some very nice black doddies. Mr. S. P. Clark, of Malden, Ill., shows some Gallo-way crosses, which will make the best of beef. They have good rough coats, and flesh laid on where it is needed most; for good juicy meat they will be hard to beat. Devons are shown by William Younger, Fairbury, Ill., and J. W. Morse & Son., Verona, Wis.; Sussex by Overton Lea, Nashville, Tenn.

The show ring is a large oval, surrounded by a neat iron picket fence. On one side are arranged reserved seats, from which a good view can be had, and for which an extra quarter is charged. The gallery, however, seemed to be the favorite place for visitors, as it gave an excellent free view. The ring has been planked and covered with from four to six inches of good clay, this again daily sprinkled with fresh sawdust. There was a slight spring to the floor when heavy horses trotted over it, but otherwise it was a good place to show off an animal. It was large, and the whole of the spectators could get a good view. The attendance was not large during the day, but increased during the evening when the slaughtering contests took place, and each evening there was some special attraction. At no time was there such a crowd as we see at the Toronto Exhibition on a big day. The horse stalls are fitted up much as an ordinary stable in rows, with good wide passages. The stalls are boarded over above, which prevents draughts, and adds to the comfort of the animals.

The show of horses, and especially Clydes and heavy draughts, was the best that has been seen for some time. The contrast between the number and quality of the animals this year and those shown over two years ago was very marked. There was a large class of ponies, in fancy variegated colors, of various shapes and sizes; a number of roadsters and trotters; a large ring of Cleveland Bays, which seem to be much in favor as sires of a class of coaching animals. The Normans and Percherons were probably fewer than two years

ago, and the quality much the same. There were a number of good Shire animals, but the Clydes were the feature of the horse show. They were the first to be judged, and the ribbons were tied by Jno. Hope, Bow Park, Brantford; Geo. Bayler, Washington, Ill., and S. P. Clarke, Malden, Ill. In aged stallions there were twelve animals before the judges. Among these were Milroy, Cedric, Lord Lynedoch, Bar None, Chester, Prince of Wales Yet, The Gallant Graham, Caa Canny, Dollar King, Pride of the Glen, etc. The three placed first were Lord Lynedoch, the property of Galbraith Bros., Janesville, Wis.; a fine bay with white face and a pair of white hind socks, being fat and fleshy, with good middle, fine shoulder—a big horse that fills the eye well. The same firm showed the Milroy, placed third, a good thick horse, goes well with his hind legs well under him at the trot, with fine front, broad chest, good legs, but a little light behind. They are a fine pair, and some spectators could hardly see how Cedric was placed between them. Many thought he should have been either first or third. Cedric is an old horse, —14—, owned by the veteran importer, Col. Holloway. He is a dark bay, four white feet, hoofs black and white mixed. Has good pasterns, and goes well. Has a grand hind leg from the hock down, fine sharp bone, clean cut, smooth and nice. Above he is not so good. Shows his age, but he is a wonderful horse considering the work he has done.

In three-year-olds there was a class of eleven, and good ones they were. The judges were long in deciding the winners. The McQueen, a horse well known in Canada, owned by R. B. Ogilvy, of Madison, Wis., was first. He was bred by Peter Kerr, Bellymack, Balmaghie, Scotland, is a good, well coupled horse, and a splendid mover. Gr. Ahead, a black son of St. Lawrence, with the usual white markings, was second. He is out of the same dam as the celebrated mare Louisa. There were several other good ones in this class.

The two-year-old colts were very uniform in color and markings. A class of nineteen came before the judges, nearly all bay with white on face and hind legs being the color, with slight variations of the whole lot. The judges drew out a short leet of seven, viz., Marmion, Prince of Flanders, McAdam, McNaught, Laird Graham, Livingstone and Lord Irwin.

Many thought that Marmion, a big colt, and good mover, would have come in, but the blue was given to McNaught, by McGregor, dam by True Blue, and g. d. by Lochfergus Champion, owned by J. C. Houston, Baldinsville, Ill., a good useful colt, good hoofs, but not so sweet on the pasterns as one could wish. Lord Graham got the red ribbon, the second place.

The class of aged mares brought out a dozen good animals. Here, as in most of the prize rings of the United States, blue is given for first and red for second, with white for third. In this competition, which was for the premiums offered by the Illinois State Board, who have charge of the show, there was but a first and second, blue and red. The judges made first award to Cherry Red, owned by the President of the American Association, N. P. Clarke, and gave second place to Cherry Ripe, the well known animal, the property of Col. Holloway. The attendant, in handing out the ribbons, reversed them, handing the blue to the groom in charge of Cherry Ripe, who immediately in the gladness of his heart, cut a series of delighted capers as he led her out to her stall. The judges noticed the error and had the class re-called, and the ribbons changed. These mares are fine quality, sisters, Cherry Red the younger. Cherry Ripe

has been breeding well, has had three foals, and this year has a fine filly after Cedric.

In three-year-olds, Mr. N. P. Clarke was also first, with a McGregor mare. Lily McGregor, a nice, bright bay, with dark forelegs, white socks behind, good feet and feather, moves well, a nice smooth mare with good Clydesdale quality. Col. Holloway second with Maid of Tarbrooch, sired by Tarbrooch, a son of Druid, and out of a mare by Abbey Prince. She was bred by exhibitor. Another big good mare in this class was Queen of Lyon.

In the two-year-old class, Mr. N. P. Clarke showed a pair of Macgregor fillies, Dora Macgregor and Mary Macgregor. The former a very dark brown with white hind markings, strong bone, good feet, nice clean legs, but rather smaller than her competitor, Lady Livingstone, shown by Banks & Hilt. This mare is plainer, but has more substance and promises well to make a big roomy mare. The final was between these two, and the judges were divided. A referee was called, and the blue went to Dora Macgregor.

During the latter part of the judging an exhibition was given by a lady rider, and the Kentucky horse Woodlawn. It consisted of fancy drill movements, the horse keeping time with the music of the band, the slow march being especially difficult and very well done.

### Registration of Berkshires.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—Would you do me and others the favor of answering in the next number of your valuable JOURNAL the following questions:

1. Is there a register for Berkshires, and where?
2. What is the cost of registration.
3. A bought a Berkshire sow from B. B. sent A. pedigree of sow. Now what steps must A. take in order to get his sow registered?

By answering the above questions you will oblige a young farmer and reader of the JOURNAL.

Kent. Co.

J. R.

The only registry for Berkshire pigs in Canada is kept by H. Wade, secretary of the Agricultural and Arts Association, Toronto. Pedigrees are simply recorded and certificates issued. The cost of registering is fifty cents, and an extra twenty-five cents for the certificate. In order to get his sow registered, A. should forward copy of the pedigree to H. Wade, Toronto, giving him B.'s name at the same time, that the pedigree might be so recorded.

### Veterinary.

#### The Veterinary Art.

The relative importance of this profession to any country increases with that of the live-stock industry, just as the relative importance of the healing art increases with the population of the country. Disease amongst the human family and the domesticated races of live-stock increase in a ratio, more rapid than the increase in numbers in either case, hence the demand also for skilled practitioners, both of the medical and veterinary schools, because relatively greater.

Where the live-stock industry has become the most important agricultural interest in the land, and such is the case in Ontario now, it is of prime importance that we should have an able staff of veterinary practitioners in all parts of the country, men capable of curing disease in at least a fair proportion of instances, and whose aid could be called in with a feeling of confidence in their ability to cope with ailments in a masterly way.

Now, while we have a number of veterinary practitioners of the class indicated, it is within the mark

to say that a good many are not of this class, nor can it be otherwise. If it is considered necessary for a young man to spend four years of hard study and to embrace every opportunity of gaining information in the dissecting-room before he is allowed to dink with the deranged framework of a human body, why should two years be deemed sufficient to obtain a full knowledge of the but little less intricate physical structure of domestic animals, and to learn the methods of removing derangement where it may have obtained a footing? We cannot but conclude that a longer term of preparation would tend to turn out a more fully equipped class of men who would honor the profession and whose services would be eagerly sought after by those requiring them.

Veterinary science has done much of late to remove the mists that have greatly obscured the origin of certain diseases, and has made great progress in the healing art, but vast heights lie beyond that are yet unscathed. There are yet a large number of ailments which cannot be disposed of by the skill of the present, when they once get a footing. We refer to tuberculosis, pleuro-pneumonia and diseases of a kindred nature. When our sheep and swine sicken it is a too frequent experience that it is to lie down and die with or without the aid of a veterinary practitioner.

There is a great opening in the study of this art, for progress and discovery. Most diseases of the horse seem to be pretty well understood by graduates in this science, but the same cannot always be said in regard to the diseases of cattle, sheep and swine. It may be that the liability of the horse to become disabled through travel has concentrated research, and stimulated effort to remove his ailments, but it should not be forgotten that the cattle industry of Canada is as important as that of horses, and therefore deserving of as much consideration at the hands of our veterinary practitioners.

It is certainly folly for farmers who know nothing about animal physiology or diseases to harry the treatment of ailments in a way that is wholly arbitrary. They should undoubtedly send for those whose business it is to do such work, when they are available.

But let us speak plainly. Why do not farmers call in the aid of the veterinary practitioner more frequently than they do? We answer, why do not people when ill call in the aid of a physician of but little reputation for skill? The man who is successful in working cures gets abundant patronage, and the one who is not successful does not. There is a feeling abroad amongst farmers generally that the average veterinary practitioner does not do him as much good as he should, and therefore he is shy about employing him. This feeling was voiced in a letter which appeared in the JOURNAL for October, under the signature of "A Young Farmer," p. 252, where he complains that out of some five or six cases in his own experience, where veterinary skill was called in, no relief was obtained. When our sheep and swine sicken there is no more reason that they should die than that this result should follow when a horse becomes ill.

While we have many men in this profession who are masters of their position, and bright ornaments to it, the field for discovery and achievement should spur them on to still higher effort. We hope they will arise and take full possession.

Kinross Park Stock Farm,  
NEW LOWELL, ONT., Nov. 14, 1883.

GENTLEMEN—I must thank you very much indeed for the colored lithograph of the College and grounds at Guelph. No thing so much makes one envy the lot of the student under Prof. Shaw's kind and watchful care.

Yours, etc., J. G. DAVIDSON.

### Horse Breeding.

BY F. C. GRENSIDE, V. S., GUELPH, ONT.

(Continued from November.)

In the previous contributions on this subject, an effort has been made to point out what appeared to be the existing defects in the courses pursued in this country in the production of draught horses.

An attempt was made to show that there is no truth in the assertion that we hear so frequently made of late, and which seems to indicate a reaction in the anti-thinking public mind, viz., that it is a mistake to breed draught horses, as they are unsuitable for general farm work, loggy on the road, and that they have declined in price some fifteen or twenty per cent.

Although there is some truth in these assertions, still they fail to prove that there is not a paying demand for heavy horses, of a good type. The careful breeder who can bring experience, common sense and knowledge to his aid need not be afraid to continue the production of dray animals; for any little inconvenience that may be experienced from their unsuitability for general farm work, is more than compensated for by the early age at which they can frequently be sold, by their comparative freedom from unsoundness, and from the fact that infirmities of temper are seldom found amongst them.

We have also endeavored to give a brief outline of the points that should be attended to in order that reasonably perfect animals may be produced, with sufficient certainty to make the enterprise of horse-breeding moderately reliable.

Another point presents itself for consideration, and it is perhaps one of the most important in the present stage of horse breeding in this country, for it is very little understood by the majority of breeders, and that is, the classes of animals to mate in order to produce light horses of the kinds wanted in the market, and for which good prices can be procured.

When one begins to talk of light horses, many farmers prick their ears, and fear that they are going to be recommended to breed a class of horses unsuitable for their work. Such is not the intention of the writer; on the other hand, he would urge farmers, except under peculiar circumstances, to have nothing to do with breeding a class of horses that cannot be utilized on the farm before they reach a marketable age; or if they happen to be unsound cannot be made use of for general work. It does not appear to be correct to call any horse suitable for farming purposes unless he can plough fairly stiff land.

In some clayey districts, an animal in order to draw the plough with ease should approach pretty well the weight of a draught horse. In such localities it would seem rational for the horse raiser to give a large measure of his attention to the production of dray horses, and only breed light ones in such numbers that paying use can be made of them for the light jobs and road work. But the major portion of the land in this country can be conveniently and profitably worked with horses ranging in weight from ten to thirteen hundred. Fortunately there is the largest demand and better prices can be procured for horses of this weight than lighter ones.

Doubtless some good livery horses weigh less than ten hundred, but there will always be enough small horses bred to supply the demands of liverymen, whom by chance the progeny have turned out smaller than the method of mating would justify one in expecting. Liverymen object to paying more than one hundred and twenty-five dollars at the outside for their horses, and few farmers would care to acknowledge that they have little enough enterprise to embark in the project

of raising one hundred and twenty-five dollar horses in a country like this.

It has been previously pointed that there is a large demand on this continent for carriage horses, and so scarce are they that wonderfully large figures are realized for well matched pairs, and good single horses sell readily at paying prices.

Most inquiries are for horses standing from fifteen-three to sixteen-two, with a preference towards the lower limit. They must have plenty of substance, and weigh from eleven to thirteen hundred. Range is particularly required, particularly a good long neck, which should be clean cut, with a moderate development of crest. If the head is well put on to the neck, and there is a good carriage of head and neck, it is a point that wonderfully enhances the stylishness and value of a carriage horse.

If this point were more generally appreciated, we should not so frequently see animals that might make carriage horses disfigured by having their noses stuck out in a straight line with their necks, by the use of over-checks.

In addition to substance and range, the more quality a horse possesses the more valuable he is, and if, in addition, he has good straight forward action, the higher the better—the most important desiderata are satisfied, in meeting the demands of the market as at present constituted.

The question next presents itself, as to how, with our available material, we are to produce such a class of horses. Practically we may be said to be almost altogether without sires possessing in themselves the qualities demanded in carriage horses. It is true that when a premium is offered at even our best shows, a number of animals present themselves for competition and one can see at a glance that they are bred from the most incongruous sources, and that they are really chance horses, so that we have not many representatives, if any, of pure bred carriage horses. There must consequently be very little reliability in breeding from such animals, with our mongrel mares. We often hear it remarked that what we want most in this country in horse-breeding is the introduction of a good English coach horse in order to produce carriage horses.

The best authorities concur in the belief that there is grave room for doubt if there is a pure breed of English coach horse at the present time. There is doubtless some of the remnant of the once pretty pure Cleveland Bay still in existence, but extremely little of it in its original purity.

An effort has been made to resuscitate the breed by the establishment of a stud book, and it will doubtless succeed, in time.

Advantage is taken of the similarity of size, color, and other characteristics, to palm off half breeds or nondescripts on would-be purchasers of coach horses in England, and they find their way to different parts of the world as Cleveland Bays, or English coach horses. There has been such a run on horses of this class in the old country, that good specimens cannot be procured at prices that one would be justified in giving with the expectation of getting one's own out of them, much less any profit.

The French coach horse can undoubtedly be obtained in considerable numbers, but, although they have a somewhat similar origin to the English coach horse, English horsemen don't as a rule consider that they possess all the characteristics desirable for a carriage horse.

There is no doubt that this breed was originated by the intermingling of the blood of the English thoroughbred with draught mares of France, and the half-

breeds so produced being mated, which, with fresh infusions of thoroughbred blood from time to time, has resulted in the establishment of this breed.

Many judges consider that the French coacher would be improved by a little more life and range, and evidence of more quality. They seem to have retained, in the majority of instances, too much of the lymphatic temperament and short neck of their maternal ancestors.

Undoubtedly one occasionally sees in this country entire horses, that present pretty nearly the characteristics desirable in a carriage horse, but we seldom get the amount of quality in them that is desirable, and in addition, they do not possess that purity of blood which confers sufficient prepotency, when mated with our ordinary mares, to bring out the carriage horse features in their progeny. The carriage horse in Canada is simply a chance production, so far: no systematic effort seems to have been made to produce him.

(To be continued.)

### Inquiries and Answers.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—I would like an opinion (through the veterinary department of your valuable paper) on the following: I have a couple of horses, one a gelding, stabled pretty much all the time, the other a brood mare that raised a colt this summer, and was pastured, that seem to have some disease of the skin. They spend a good deal of time while in the stable, rubbing their necks and shoulders against the sides of the stall, and biting at their sides where they can reach with their teeth, and when let out loose make for the nearest fence or post and commence rubbing, and will continue at it a considerable time; in fact one of them has the mane completely worn off. The hair is dry and harsh and full of white dust. The skin seems thicker in some places than others, with numerous small lumps, and the hair off in some small spots. Appetite good, and though well fed are not in good condition. I would like to know the cause, but would more especially like to know what would effect a cure.

A SUBSCRIBER.

Coleraine, Ont.

ANSWER BY F. C. GRENSIDE, V. S., GUELPH, ONT.

These horses are either suffering from the presence of hen lice on their skins, or are the subjects of some disturbance of their systems, causing irritability of the surface of their bodies. If there is a hen-house in close proximity to the stable, or if hens are allowed access to the stable, and mingle with the horses, the skin should be carefully examined for the presence of lice. Hen lice are pretty large, and can be seen, as a rule, by examining with a good light at night.

If it is suspected that lice are present, take two ounces of staves-acre seed and bruise them up well; then take a quart of boiling water, and pour over them, allowing the infusion to stand until it cools. Make such a preparation for each horse, and rub it on the parts that are rubbed, and for a considerable space all around. If the lice are not all killed, repeat in a few days. Tie the horses so they cannot lick themselves, until they dry thoroughly. The washing should be performed in a warm building.

If it is evident there are no parasites on the skin, a dose of physic should be given to commence with; and after it has operated, give a large tablespoonful of Fowler's solution of arsenic in the feed or water three times a day for a week or ten days.

Wash the irritable parts with soap and water once, then apply the following lotion, twice daily to the itchy parts: Prussic acid two drachms; liquor potassa two drachms; one quart of water—mix. Feed wholesome and nutritious food, and exercise daily.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

I have a mare aged five years. She got very dry and rough in the coat. I think she was slightly overheated last spring. Has not looked oily in the coat since. Please let me know what I should do to bring about a healthy appearance again.

W. J. SPROUL.

Shelburne, Sept. 2, 1888.

ANSWER BY F. C. GRENSIDE, V. S., GUELPH, ONT.

Most horses that have at all coarse coats are inclined to become rough and dry this time of the year. If the mare in question is used for driving purposes I would recommend clipping her, and keeping her warmly blanketed. You will find she will improve in health and spirits, and gain flesh.

### The Farm.

"MR. THOMAS SHAW, the founder and editor of the CANADIAN LIVE-STOCK AND FARM JOURNAL, has been appointed to the chair of Agriculture in the Ontario Agricultural College, and the superintendency of the College experimental farm, which positions were left vacant by the resignation of Professor Wm. Brown, noted in these columns some weeks' since. Mr. Shaw has labored faithfully and successfully for the past five years in building up a monthly live-stock and farm journal which is a credit to the province, and the *Gazette* wishes him even greater measure of success in the discharge of the important duties of his College work. Mr. Shaw announces that the publication of the *Journal* will be continued in good hands."—*Breeders' Gazette*.

The above announcement is in keeping with the large-hearted liberality at all times manifested in the columns of our contemporary. It is to us at least very satisfactory to have so high a compliment paid to the former editor of this paper, and to the legacy which he has left us, viz., the LIVE-STOCK JOURNAL. The value of the graceful tribute is much enhanced by the thought that it comes from a live-stock paper acknowledged the world over to stand amongst the very foremost of its class.

A WRITER in the *Cultivator and Country Gentleman* over the *nom de plume* of a "Teacher of Agriculture," endeavors to shed light on the much-debated and all-important question of agricultural education. His signature loses prestige when he writes of the best means of teaching farm work in the following words: "A familiarity with these operations of 'course is desirable, and any intelligent boy can learn it all in a few lessons, in observing the operations of the workmen on the farm." We willingly admit that the use of the observative powers is one of the largest of front windows through which the mind may be enlightened, but we have yet to meet the student, however intelligent he might be, that could learn to plough, etc., by observing the skilled hand at work. Students of this method of teaching we have met, but they were more noted for the possession of a glib tongue that hides a multitude of shortcomings than for efficiency in manual labor. There are two classes that attend our Agricultural Colleges, the one, farmers' sons, who are usually as well versed in the practical work of the farm as their would-be instructors, and those that are fitted for farming and desirous of following it but have not been fortunate enough to be born and raised on a farm. The former class of students justly desire to devote their attention mainly to the studies connected with agriculture, the others would like to be initiated into all departments, both out and in. The majority argue that it is instruction, and not the work of the laborer, that should occupy most of their time. The time at college is too short and precious for a student to work a good part of his time at hard, unproductive labor.

### Large or Small Farms.

There is a wide difference of opinion as to the most suitable size for an average farm. In determining this many things have to be considered.

We must consider the *man*. One man, with but little executive ability, but possessed of fine working qualities, may do well on a small farm who would

prove an utter failure in handling a large one. Another, who is a born director of labor, would bury himself on a small farm, as it would not give scope for the exercise of this peculiar talent.

We must also consider the *character of the land*. A rough, rugged tract, chiefly devoted to pasturage, must needs be large, to afford employment to him who has it in hand, while the more fertile the plot, the less of it is required to keep its occupant busy.

*Locality* should also be considered. The nearer the location to a large town the less the area that will suffice, owing to the variety and nature of the products that may be grown upon it for market purposes. When the location is remote from cities and towns two reasons may be advanced as to why farms should be large. First, they should be devoted to stock-keeping on account of the comparative ease of marketing the same; and, second, they must be largely self-feeding; hence a considerable portion must always be devoted to pasturage.

The natural conditions of the country must be considered. A farmer with a deep, rich prairie soil, best adapted to the uses of improved machinery, and where but little labor is required in processes of pulverization, can certainly handle a larger farm than one whose soil is of a stiffish clayey texture.

From what has been said there need be no great difficulty in deciding what size of a farm is best adapted to the interests of both state and citizen. As most men have no more than average ability, it follows that for the large number, average farms are the most suitable. Give me neither poverty nor riches, said the wise seer, therefore give us the happy mean in the apportionment of our farms, and we are best off.

The social and educational interest of the state are best furthered, in Canada at least, by average farms. In sections where large farms abound, the church, the school, the public highways, and all the local industries languish. What is of far more vital importance to the farmer and his country than the size of his farm, is the manner in which he cultivates it.

**Cost of Producing Wheat in England in 1651.**

In an old work written by one Samuel Hartlibb, on the cost of producing an acre of wheat in England at the date already mentioned, the following figures are given:

Rest	£0 13 4
Manure, 24 loads at 2s. 3d	1 10 10
Seed, 9 pecks at 1s. 6d	13 6
Two ploughings, sowing and harrowing	16 0
Weeding, 3s. feeding, 1s. 4d	6 4
Reaping	6 8
	£3 19 10
Deduct for next crop on account of manure	1 0 0
	£2 19 10
Return, 2. 23 or 3 quarters per acre, but the less is the most usual, say 16 bushels at 3s.	4 0 0
Net profit	1 0 2

This record gives us a very satisfactory glimpse of the state of agriculture at that time. The large item of expense even in those times was the manure. The amount of this applied compared with the small return of the grain reaped arrests our attention; but we must take into account the extent of the depredations to which British farmers of that time were subjected, and from which there was no means of escaping, owing to the unsatisfactory state of the land laws of that iron time. Large numbers of pigeons were kept at the old manor house, each pair of which had a dove-cote, and through the immense increase of their numbers from year to year, destroyed a large portion of the corn. Then the number of rabbits was very great, and there were depredations from other kinds of game. The

lands at the time were to a very large extent unfenced, so that the loss from the trespass of animals was also a considerable item. Even the highways were a common in many parts, so that much loss resulted often from the carelessness or the perversity of the drovers. The large amount of seed sown evidently made allowance for depredations from winged enemies. The small allowance for cultivating is a striking illustration of the cheapness of labor in those days, and the large amount allowed for weeding does not speak well for the cleanliness of the cultivation of those days.

Notwithstanding the lowness of the yield there was still a margin, which is accounted for by the low price of wages and the absence of foreign competition in the market, which made the price rule high comparatively. Now all this is changed. The price of labor is high, and that of wheat very low, so that in Britain now it is difficult for the farmer, where rents are far above what they were then, to hold his own in growing this cereal. Even in Canada we cannot do more than make wheat-raising pay. Our hope, then, must be based, not upon an increase in price so much as upon a better knowledge of the best methods of raising it through the light of the most advanced practice that has yet been given to the world.

**Johnson Grass (Sorghum halapense).**

While wandering through the Dominion Experimental Farm grounds at Ottawa, under the general guidance of Prof. Fletcher, and observing the many fodder plants being tested, our attention was at once attracted to a strong-growing plant somewhat similar to fodder corn. This, we were told, was Johnson Grass, a grass that is very favorably spoken of by many of our American neighbors. It is claimed for it that it will stand a northern climate, and that drought cannot kill it, as it is a very strong-rooted plant. It produces more leaves and less stalk than our fodder corn, which makes it a valuable fodder plant. The yield is said to be enormous in Texas, where it is stated to reach 9 tons per acre at 9 cuttings per annum, while in Colorado the yield is 6 to 8 tons per acre at 3 or 4 cuttings of fine hay. It is a very rapid grower, and as cattle like it, we think it will likely prove of great value for the silo. As with corn, it is very rich in saccharine matter. For comparison we give an analysis of this grass and also corn fodder, field cured.

	Johnson grass.	Corn fodder, field cured.
Water	14.30	32.05
Albumenoids	10.11	4.79
Fat	2.43	1.24
Carbohydrates	44.77	35.96
Crude fibre	22.47	22.14

There is one drawback to it, however, which might have been inferred from its drought-resisting properties, namely, that there is sometimes a difficulty in getting rid of it, its roots being strong and somewhat of the nature of couch grass (*Festuca repens*). But those who have tried it say that they have no trouble in this respect, some of them using it in their regular rotation. Testing it is certainly a laudable work for our experimental station to carry on, for if its testimonials are to be relied upon, it bids fair to prove of value to us.

Subscribers to the JOURNAL paid to December, 1889, get free our beautiful picture of the Ontario Agricultural College and Experimental Farm at Guelph, Ont.

**Mixed Farming.**

THIS PAPER WAS READ BY THE SECRETARY OF THE CENTRAL FARMERS' INSTITUTE AT SEVERAL OF THE INSTITUTE MEETINGS HELD DURING THE PAST SUMMER.

By mixed husbandry we mean that system of farming which provides for the growth and sale of varied products that can be profitably grown in the country by one and the same person. It renders the agriculturist who adopts it less liable to severe reverses that may arise in the prosecution of his calling, from the adverse contingencies of weather and market. It also necessitates a more varied growth of crops on the same piece of land, and is therefore more restful to the land. The conditions of adaptation on the part of a country are the capacity to grow a large number of varied crops equally well, or nearly so, and on the part of the husbandman to understand the nature and requirements of those varied crops in order to produce them in the highest excellence. If this definition is correct, it follows that a country is adapted to this system of farming just in proportion to its capacity to produce varied crops, the degree of the excellence in which these can be grown, and that those who adopt the system will succeed in proportion to the knowledge which they possess of the requirements of the crops grown and the diligence shown in the applying of this knowledge. Tried by this standard, there is no country on this broad continent so well adapted to sustain a mixed system of husbandry as our own Ontario. Sometimes we have on the one farm every reasonable variation of soil, from hard clay to light sand, and our climate favors the growth of a wide range of cereals. Mixed farming can never be carried on so successfully on the western prairies or in our own Northwest as in Ontario, for the variation of the products grown is more restricted. The prairies of the Western States will grow corn in great luxuriance, but are ill adapted to the growth of wheat and peas and clover. And while those of our own Northwest grow wheat to perfection, they refuse to grow peas and clover, and the soil of both places produces fruit of a sickly sort very reluctantly. Almost every variety of grain suitable for man and beast living in a temperate climate, can be grown in Ontario. Wheat, to feed ourselves and provide litter for our stock. Oats, barley, peas, rye, corn and roots to feed our stock in winter, and various kinds of clover and grasses to pasture them in summer, including the several kinds of grain that are now being sown everywhere for soiling purposes; while every kind of vegetable and fruit that men can reasonably desire, are grown in our gardens and orchards. We need scarcely stay to argue the question that a system of mixed husbandry requires more varied intelligence to carry it on successfully, than to follow any special line. It requires more capacity, natural or acquired, to grow half a dozen kinds of crop successfully than simply to grow corn and pork in an everlasting succession; hence if our Canadians who adopt the system of mixed husbandry are to stand upon the apex of their calling, they must be men of large and varied intelligence. We believe an opinion quite the contrary of this is prevalent, that special lines require much skill, while mixed husbandry is more adapted to the dead level of mediocrity. The specialist has usually more at stake, and runs greater risks, hence the prevalence of the idea to which we refer, but it is very plain that the specialist who grows horses, and requires but one or two kinds of produce to feed them has less of a drain upon his all round capacity than the mixed husbandry man, who, it may be, grows horses, cattle and sheep, and all the varied grains and fodder which these require, and, it may be, grows other produce for sale at the same time.

The idea that mixed husbandry requires less skill to conduct it well than special farming, is twin to that other delusion that anybody may be a farmer. It is true, indeed, that any one may work at farming and engage in mixed husbandry, but to be successful in the true sense in any department of farming, requires intellect of no mean order brought to bear upon the work in hand with an unswerving devotion.

The pursuit of a mixed husbandry is safer than that of some special line. One has been devoting his attention to the growth of mutton and wool. The price of both falls, and he cannot make it pay; whereas had he been growing some mutton and wool and some dairy products, the price of the latter would probably be remunerative at a time when the other was de-

pressed. The specialist in grain growing is exposed to like contingencies. He who grew wheat mainly during recent years, has been passing through a growing tribulation, while those who grew oats, peas, barley and hay have fared not so badly.

But there is a true and a false system of mixed husbandry. The mixed husbandry of the past has consisted mainly of growing different kinds of grain and hay, and some stock of the different varieties. It has been content to grow the stock of a very inferior order, to feed it sparingly in winter and sometimes in summer, and to sell a large proportion of the grain in the market without bringing back any equivalent in the form of fertilizers. It has made some butter and sold it to the grocer at a very low price, but probably at its full value; and it has planted vegetable and fruit gardens, the former consecrated as the dwelling place of weeds, and the latter relegated to the caterpillar. That is a picture of mixed farming in Canada that has been all too common, and we are reaping the harvest in the flocking of our sons and daughters to the towns and cities, and in their wholesale emigration to the United States. Any system that tends to the depletion of the soil is not worthy of the name of farming: it is land-robbing, and the individual so engaged is trying to make money at the sacrifice of the future interests of his own family.

That was the chrysalis state of mixed husbandry in Ontario. It is now emerging to the winged condition. The pillar of its future is to rest on this grand foundation; that it is not to be so conducted as to impoverish the soil, which implies that in most cases it will give much attention to the growth of one or more varieties of live-stock, without which the land cannot be so easily sustained. This will be stock good of its kind, and constantly improving by careful breeding and selection. It will no more be content with keeping stock alive in winter, as was the wont when mixed farming was in the cocoon state, but will keep them pushing forward as in summer. It will give due attention to the judicious growth of an abundant supply of both summer and winter feed, and will in most cases handle coarse grains and fodder, so that ultimately it will be found that larger returns have been obtained from turning them into meat or dairy products, than from their direct sale. It will provide for an abundant growth of vegetables for home use the year round, and such fruits as the locality will readily grow. Notice, it always has a regard to adaptation. The owner of strong clay should not waste his time in trying to grow an equal area of roots with him who has a soil of a clay or sandy loam, nor should one where the climate is unfavorable attempt to grow the Baldwin apple where the snow apple grows at its best. Nor should the rule be too stringently enforced that no fodder or coarse grains shall be sold off the farm. When hay brings about \$15 per ton, and oats between 50 and 60 cents per bush el, as they did in some of our towns last winter, it will be difficult indeed to make that much out of them in meat or dairy products, however excellent the output. The practice with which we are waging a war in which we don't want to have any discharge, is the selling the stuff off the farm without putting an equivalent back in the form of manurial enrichment.

The practice of a mixed husbandry is not inconsistent with giving some particular branch of farming the chief attention, giving it as it were the right of way. Nay, it involves this where it is to succeed best. The person who aims to grow pure-bred stock for sale, of different breeds, is not likely to bring it to that high state of perfection which follows the efforts of him who breeds but one variety of stock. And the farmer who goes into dairying will succeed better as a rule than the one who follows dairying and grows grain for the market at the same time. Now, neither stock-growing as it may and should be practised in Ontario, nor dairying, is antagonistic to a system of mixed farming. In the successful prosecution of the latter the idea of mixed farming is involved, for the farmer requires almost or quite as much to grow grain and other marketable products to feed his stock as though he were dependent on marketing these direct from his income. He cannot allow his farm to go all to grass like the ranchman of the west, for he has to provide food for winter, nor can he turn it all into cropping land at the same time, like the inhabitant of the prairie, for he must have some pasture for the summer.

(To be continued.)

**The Construction of Outbuildings on the Farm,**

WITH A VIEW TO THE COST OF ERECTION, ECONOMY OF SPACE, AND CONVENIENCE FOR FEEDING STOCK. AN ESSAY BY MR. THOS. SHAW, TO WHICH WAS AWARDED FIRST PRIZE BY THE AGRICULTURAL AND ARTS ASSOCIATION.

(Continued from November.)

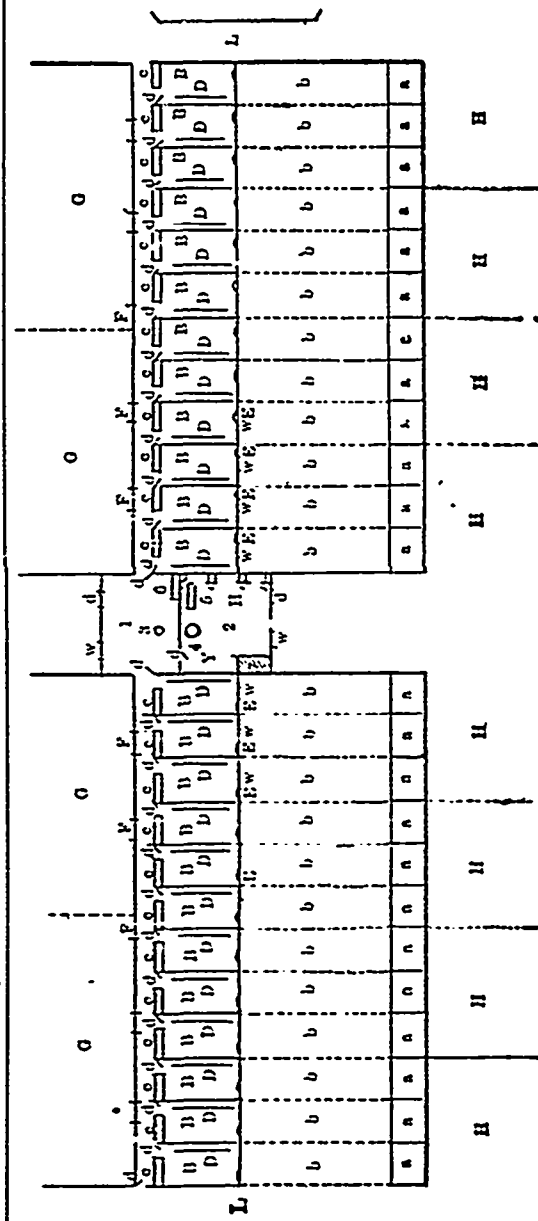
**POULTRY HOUSE WITH PLAN.**

The poultry branch of farming is of late assuming enormous proportions, and should, therefore, not get the go-by in an essay such as this. When we remember that in 1885 our fowls numbered 6,336,805, and that the export of eggs to the United States alone from the Dominion brought us a revenue of \$2,476,220 the same year, the magnitude of the interest will be apparent to us.

The best poultry house that we have met with for operating on a large scale is that owned by Mr. Geo. J. Nissly, Sabine, Michigan, U. S. A., and described in the *Washington Farmer* of Feb. 22nd, 1886. We subjoin a drawing of the ground plan with description, from which many excellent hints may be obtained by ordinary farmers.

It consists of two wings ZZ, each 100 feet long by 16 feet wide, and 8 feet high to the eaves, each of which is divided into twelve pens BB, 8 1/4 by 13 feet, in which from eight to twelve fowls are kept. The building Y, which connects the two breeding houses, is 16 by 20 feet, and one and a half storeys high, and is used as a granary, cook-room, etc. A hallway extends along the north side of each wing. The perches DD, are regular portable benches, 9 feet long, 20 inches wide and 20 inches high, with a perch 8 inches above the top of each bench, which forms a drop-board from which the droppings are removed every morning. The nest boxes, c, c, are 6 feet long 22 inches wide, and are placed 20 inches above the floor, and project into the hall six inches, where is a hinged lid for removing the eggs. The interior divisions of the nests are made portable, all in one piece, and by lifting the hinged top they can readily be removed, and the entire nest-box be cleaned out. Each pen has a large window to the south, w, w, extending nearly to the floor, for sunshine and light. The doors from hallway into the pens, two feet wide and seven feet high, are represented by dd, and are all hung with patent spring hinges, thus avoiding the trouble of stopping to adjust any fastenings. EE represents the outlets for fowls, and are opened and closed with slides which are operated by cord and pulley from the hallway. Ventilation is furnished by six large ventilators in roof, which are opened and closed by cords in the halls. There are also ten transom ventilators and windows in the north side of the building shown by FF. The outside runs or yards are represented by bb. They open in the rear into sheds aa. These yards are separated by standard wire netting, four feet wide, attached to a tight base of boards two feet high, thus making a fence six feet high. The object of the base is to prevent fighting amongst the males. The floor of the sheds, aa, is loose gravel. These sheds furnish shade in summer and a comfortable place in which to scratch in winter, and each shed has a window opening to the south. HH are small fields for pasture and range, into which the fowls are let alternately from the smaller yards. GG are large yards enclosed with wire netting, in which are reared the young chickens.

The centre supply building is divided into two rooms, 1 and 2, with a door leading from one into each hallway. 3 is a coal stove for the comfort of attendants, and to measurably warm the pens when desired, and also for service in the brood-chambers. In this room also there is a large egg cabinet represented by 6. Each egg is marked when taken from the nest and placed in the cabinet, in which is a separate tray for each breeding pen. Figure 4 represents a small steam boiler, which supplies steam for cooking food, which is done in a large cooking vat, 5, to which the steam is carried by a pipe from the boiler. The stair leading to the upper storey is shown by 7. In this upper room are six large grain bins, and also for other kinds of food, which is drawn through spouts xx, on the lower floor. Stairs also lead to the cellar, where are stored cabbages, potatoes, turnips, etc., for winter feed. There is also a brooding house and incubator in connection, which we may not stay to describe here. Its object is to raise broilers for the New York wholesale market, where, it is said that, early in the season they bring wholesale from 40 to 45

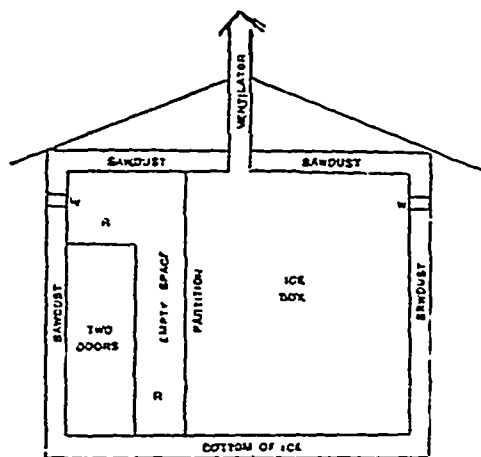


cents per pound. All the buildings are ciled on the outside with drop-siding, under which is a lining of tarred felt, and they are also ciled inside with matched ciling. There is nothing very costly about the construction of this building, or of the piggery, sheep-house or horse-barn previously described. We refrain from giving figures because of the vast difference of the cost of erection when in different hands and in different localities.

**ICE-HOUSE WITH PLAN.**

To the dairyman an ice-house is simply indispensable, and to every farmer it will prove a very great boon, and all the more so to those remote from cities where dairy products can only be marketed at intervals, and, where the butcher does not call, it may be only at long periods. Of the many plans that we have examined, that designed by Mr. D. M. McPherson, Lancaster, Ont., and now used somewhat extensively in the dairy sections where Mr. McPherson's numerous factories abound, is the best, not only as regards effectiveness, but cost of construction when compared with its utility.

It consists of two square compartments one inside of the other, with a space of 22 to 24 inches between the inside and the outside compartment, this space being filled with sawdust, which permanently remains there. It has two doors, one in each compartment, well fitted and double. There are two small box windows on the top of the inside compartment of the ice-house proper, say 12 inches square, having two glass lights in each box, one inside and one outside.



PLAN OF ICE HOUSE

The inside of ice-house has a partition of say four feet, with door on one side, and it is the better of being movable so that it can be laid back to the side of the room when filling with ice. This four-foot space is for the storing of any perishable article in hot weather. In filling, the ice is packed in the remainder of the inside compartment close up to the sides all around, and all spaces between the cakes of ice and the sides should be filled with clean snow, and a quantity of the same put on top. The bottom of the ice-house and chamber is air-tight, but well drained. Round cedar or other poles that are durable, two or three inches in diameter, are laid on the ground close to each other, and then some straw or hay is laid over them and four inches of sawdust strewn on the top. This forms the floor. The building on the outside should be well banked, with an under drain for the removal of all water. There should be a ventilator of 6 by 6 inch wooden pipe passing up from inside the ice compartment to the outside to carry away the moisture and the damp air. There should also be two feet of sawdust on top of the ice-box. In this ice-house the ice will keep fairly well in the hottest weather. It furnishes clean ice, affords the advantage of being enabled to cut pieces of ice for use, and the great convenience of having the sawdust permanently placed, the house being thus ready for filling at any time in winter.

The site of building suitable for farmers and families is, say, outside measure 16 feet square; inside, 8 by 12 by 8 feet; ice compartment 8 by 8 by 8 feet; store-room, 4 by 8 by 8 feet, and height of side, outside, 10 feet. The cost will vary from \$40 to \$60, according to the locality where it is constructed.

It should really be a first concern of the farmer to secure good buildings, especially out-buildings, after having secured a farm. The improvement of the farm will avail but little if there is not ample barn room for the increased crops grown. The attempt to improve stock of any kind will be greatly hindered if there is not suitable accommodation for it, more especially in winter. Even where there is ample accommodation, but so arranged that it involves the loss of much time needlessly, the owner is necessitated to drag his train of progress weanedly up an inclined plane, which becomes steeper as his physical powers wane. He is paying, it may be the wages of two men where the labors of one would suffice.

When we reflect that in 1886 we had invested in farm buildings no less than \$183,748,212, or about 28 per cent. of what was invested in farm lands, and that the value of the live stock dependent on these for shelter was \$107,208,935, to say nothing of the entire crop on which these were fed, and that the work of the Ontario farmer for at least five months of the year lies in a great measure in his out-buildings, it is certainly a matter of the first moment how these should be constructed. Surely he should take a deep interest in the placing of every stone, and as to the whereabouts in the structure of every piece of timber. Any process that will save the taking of one step daily means the saving of thousands of steps for some one, and any device that will shorten the process of feeding but five minutes each time means in the end a saving of years of labor.

We have heard the assertion made, and by sensible calculating men, that if a majority of our farmers were to consign their present out-buildings to the flames,

and to replace them with those built upon improved modern methods, that ten years hence they would be worth more money. Although we cannot countenance the taking of such a step, which would seem an unjustifiable destruction of the gifts of Providence, we will not venture the assertion that the statement made by those men was not correct, and we record it here in the hope that its sweeping, startling nature may lead numbers of our farmers to re-examine their bearings as to the state of their out-buildings, and to set about their improvement.

But before this is undertaken they should use every legitimate means to post themselves as to the latest and most improved methods of building. This may be done in two ways, first by means of travel and getting ideas from ocular demonstration, and second, through the medium of books and agricultural papers. It is greatly important that when one undertakes to put up a farm building, that is to last him the rest of his lifetime, and perhaps his successor as well, that it should be constructed with as many of the latest improvements as he can work into it.

Some men, indeed, most men, just build as their neighbors have built, or they rack their own brains in devising some plan or plans which to them are new, but which others have devised in better form years before. Far be it from us to discourage the exercise of the inventive faculty, but it does seem folly in the extreme for any individual or class of the commonwealth to dig for gold that has long been through the mint, and passes already in some neighborhoods for current coin. And this is just what those men are doing who, unaware of the great improvements that have already been made in the erection of farm out-buildings, are laboring to devise some plan that, when realized, is, it may be, far inferior to what already exists. No man living is likely to evolve in its entirety a system of out-buildings in advance in every respect of the systems that are already common property, or at least that might be, for none of them are patented. It is far better first to ascertain what has been done by the collective wisdom of mankind, and then if we can improve on that or add to it, we lay the whole farming community under obligation to us.

When we think of the vast outlay expended in the out-buildings of the farm, many of them so imperfect in their construction that the money invested in them lies in a bank that makes no returns—when we reflect that this imperfection in construction often involves an enormous waste of food and labor, and when we reflect still further that it is in the power of every man to improve those buildings during every year of his existence—we are surely justified in the assertion, that by doing as they have done, in the hope of improving this state of affairs, the Council of the Agricultural and Arts Association of Ontario have laid the farming community under obligation to them, when they offer a prize open to all comers for an essay on "the construction of out-buildings on the farm, with a view to the cost of erection, economy of space, and convenience of feeding stock, to be accompanied with diagrams."

(Concluded)

### Mixed Farming.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—I now proceed to redeem my promise to send you a short sketch of my system of farming. I will try to do so in as few words as possible. The farm comprises one hundred and forty-five acres, soil clay loam, and my system may be called a most thoroughly mixed one. My grain crop this season comprises thirty acres wheat (not threshed), sixteen acres barley yielded forty-two bushels; fifteen acres oats and peas mixed (not threshed), two acres of which were used up as a soiling crop. Fodder crops. Fourteen acres hay (meadow), twelve acres Hungarian, seven acres fodder corn, five acres turnips, one-and-a-half mangels. I keep from forty to fifty head of cattle, sixteen dairy cows, twelve two year olds, sixteen yearlings now on hand. I have about one half of my dairy cows coming in in the fall, and make butter during the winter and sell milk to cheese factory during summer. I have my best bred cows to calve in Autumn, and rear all the calves on the sweet skim milk, with the addition of a small allowance of oil cake and a liberal allowance of palped roots and cut hay and fodder corn as soon as they will eat. Such calves make excellent butcher's cattle at thirty months old, or two years from May following, which I have always found the best season of the year to turn off beef cattle. I de-

pend largely on soiling for summer feed for cattle. I sow rye in September for early spring pasture, which is ploughed up first of June and sown to fodder corn and turnips and sometimes a portion to rape for fall pasture. After rye is done turn on to pastures. I have one field of Prof. Brown's permanent pasture, but do not think it much if any superior to my own mixture of red and alsike clovers, timothy and orchard grass. I have stopped placing any dependence on grass pastures after July 12th, and always calculate to have a soiling crop of oats and peas ready by that time, which are used until too hard (the balance left for grain crop), by which time corn is ready, which is my main stay for both summer and winter feed. Shortly after corn is in shock the rape is ready, when the cattle are turned on rape for one hour every afternoon, and fed a feed of corn from shock, mornings. I find the cattle do better in this way than to have the run of the rape and nothing else, and there is less waste by tramping. The rape is sown in drills and cultivated, but not hoed by hand, and follows rye pasture or clover hay. Sow about July 1st to 5th. I find rape an excellent crop for late fall feed, and brings the cattle into the stables in good trim. I have not yet tried a silo, but cut my fodder corn into inch lengths and mix with cut hay, chaff and pulped roots; salt and dampen, and let lay twenty-four to forty-eight hours before feeding. I will say nothing about the profits of my system, but am making a little money besides a living in spite of the poor crops and low prices of the past few years.

HENRY R. NIXON.

St. George, Ont.

There are several points that we would desire to emphasize in Mr. Nixon's letter. He keeps a number of cows feeding the cheese factory in summer and another lot feeding the home butter dairy in the winter, which enables him to reap a steady inflow of returns all the year round. 2. He raises and fattens for the beef market as well, which will enable him to keep up his land. 3. He grows rape after clover or rye that has been pastured. This enables him to keep the land clean without the loss of a crop by summer fallowing. There is both safety and economy in such a system of farming.—Ed.

### Report of the Judges on the Prize Farms for 1887.

Continued.

ROXBOROUGH FARM.

From "The Cedars," the house of one of your judges, to Simcoe, some miles distant, the well-tilled farms resemble the gentle swells of the sea in their contour. The ample shade, the good growing crops, the comfortable homesteads, all speak of fitness of soil.

On our arrival at Simcoe, on the morning of the 5th of July, a comfortable conveyance was in waiting with a guide, through the forethought of Mr. Thos. Murphy, the secretary of the agricultural society, of whose kindness and attention from first to last we can only speak in unmeasured terms. With such a secretary the explanation is easy, as to why Norfolk County came forward with no less than six entries in this competition—the full complement—while others of them, as Welland and Lincoln, made none.

Leaving Simcoe, we journeyed south-easterly over the hills of Woodhouse. Hills of light and lighter sand, and some heavy enough, came and went in a continued succession. At Lynville we crossed the Lynn, where the black duck sported on its current, stealing on meath leafy shades, like purity, which loves retirement. This busy stream drives many a manufacturer's wheel from its source to its outlet.

Roxborough Farm, consisting of lots 8 and 9, 3d concession, township of Woodhouse, contains 190 acres, and is owned by Mr. Robert Waddell. It is five miles southeast from Simcoe and three miles short of Port Dover. It is entered by a deep ravine, with the woodland on the right, by a private road, which leads past the buildings and on through the farm to the concession in the rear.

The soil is a fertile clay loam, deep and strong, and rests on a subsoil of hard clay. It is, on the whole, a good, well-managed farm—the lines that have heretofore been endorsed by the sanctions of Canadian practice—with sufficient buildings for the wants.

of the farm in keeping with the practice just referred to. In this we have the key to the relatively large amount of wheat grown, the acreage of crop standing thus: Wheat, 50 acres; oats, 15; corn, 5; potatoes  $\frac{1}{2}$ ; peas, 12 to 14; hay, 20; the average of wheat being more than that of all other kinds of crop combined. Our farmers are all too slow to learn the lesson that Ontario can no more maintain her agricultural supremacy through growing wheat. But Mr. Waddell grows it successfully so far as getting a crop is concerned. The averages for wheat for some time past are 30 bushels; oats, 50 to 60; peas, 25; hay,  $1\frac{1}{2}$  to 2 tons. The rotation is a short one. Grass is sown on wheat—alsike and red clover and timothy. This is mown one or two years, or pastured for a similar term. The ground is ploughed after the hay is cut, and, after thorough working on the surface, is sown to wheat. Sometimes the pasture land is broken and sown to peas, then wheat follows, which is gang-ploughed in. Summer fallow follows oats. The ground is ploughed in the fall and the following season as often as thought necessary. The manure is drawn in large piles, re-drawn and spread and ganged in near time of wheat sowing. Amongst the implements, a low truck for drawing grain suggested the idea that much advantage results from the introduction of low-wheeled vehicles in the harvest field in this age of rack lifters.

The stock of this farm consists of 10 cows, the milk of which is sent to the cheese factory. They were mostly of mixed breeding, some young cattle; 18 head of Leicester sheep, and 8 head of horses, of which 3 span of the general purpose order are kept for working.

The strong point in the management of this farm is its cleanliness, owing very largely, no doubt, to the large amount summer fallowed yearly, and to the thorough manner in which this is done. Many farms in the neighborhood are all sprinkled with thistles, and in all probability the owners would excuse themselves for this condition of things on the plea that in such a soil it was impossible to get rid of them. In such a case it is a great matter to have Roxborough Farm in the midst of them, a continual rebuke to the inexcusable sluggishness that permits this state of things from year to year.

The strong point of the farm itself is its naturally strong, deep, rich, friable soil, which, if it gets back again from year to year all that is taken from it, will continue to gladden the heart of its cultivators through all generations.

#### GREENWOOD FARM.

Leaving Roxborough Farm we made for Vittoria. It proved to be a quaint old village, with shaded and grassy streets, the very air of which was impregnated with the charms and real advantages of peace. Not far away is a clear, swift-running stream, much of the water of which is turned, by filtration through the cows, into cheese for England's market. The present court-house stands on, or near, the site of the old one, which, in the troublous times of Mr. W. L. Mackenzie, was turned to ashes, and with it perished the claims and hopes of Vittoria for pre-eminence amongst the towns on this sunny south-land shore. The way from the farm we had left led a little to the west through Doan's hollow, a picturesque landscape, skirted with hills, then south and west into a blow-sand region, a dreary country, but of short duration, where one portion of a field would be nourishing corn and another portion scooped out into caverns by the wind, like one vast burying ground ready to receive the dead of a slaughtered army. We passed the ancient burying ground of Woodhouse; for this is one of the oldest settled regions on Lake Erie, though the settlement of it is not yet quite 100 years old, and yet the only trace of the race by which it was then peopled is a piece of flint or arrow-head turned up by the furrow of the ploughman. Here sleep many of the pioneers, some of them itinerants in duty, the fruits of their abundant seed-sowing blossoming far and near along much of Erie's shore. The whole landscape about Vittoria is simply charming. Groves of hickory, chestnut and oak are numerous. In the yard of Mr. W. Dawson, who acted the part of host for us at midday, we measured a walnut tree planted about 40 years ago by a Mrs. Potts, which, at three feet from the ground, girth 6 feet 4 inches, and the diameter of the space covered by the extension of its boughs was 66 feet. A soil so favorable is surely the location for plantations of this useful tree.

Greenwood Farm, made up from lots 21 and 22,

3d concession, township of Charlotteville, South Norfolk, is owned by Mrs. Joseph Duncan, Vittoria. It contains 167 acres, is a corner farm, with 60 acres attached in the concession opposite, eastward, and is  $\frac{1}{4}$  of a mile from Vittoria, and  $2\frac{1}{2}$  miles from Port Ryerse. Between it and the latter place is the old homestead which gave to Canada the seven sons of the talented Ryerson family.

The farm lies level enough for easy cultivation, and is sufficiently rolling to admit of nice drainage, tile drains, 3 inches and 6 inches, leading down through the principal hollows. It contains 6 acres of bush, oak, pine, hickory and chestnut, the latter flourishing in the sandy loam of this fine soil. A lane leads from the buildings to the rear, with 8 acre fields on the one side and 12 acre fields on the other. A continuation of this lane across the north end, eastward, gives access to the waters of a spring that always flow from all the fields of this farm. The fences are straight rail, stake and rider, board and barbed wire with cedar posts, capped with poles. A thrifty line of maple shades adorns the western border.

The outbuildings on the homestead lot form three sides of a square, and are sufficient of the kind for the wants of the farm. There is also a barn and shed on the lot across the highway. There is no basement, but there is a root-house, protected with sawdust, a good corn-house, wagon-house, etc. The corn crib is 16 by 24 feet, with 8 foot posts sided with weather boards on one side and 1 inch slats between; the other side has slats. It will be observed that a wagon way in the centre, from end to end, makes two compartments of it, one on each side.

The averages of grain usually grown are: Wheat, 30 acres; barley, 12; but the area of this is lessening; oats, 15; corn, 10; hay, 25 to 30. The wheat this year turned 50 bushels to the acre, and the other crops generally looked well. Corn often yields 100 bushels in the ear, and hay 2 tons to the acre. The cultivation was, on the whole, cleanly.

The seeding of grass is done on wheat and oats. Usually it is left two years in hay. Summer fallow follows hay, with two ploughings, when wheat is sown again. Corn comes after sod, and oats after corn.

The manure is piled in the pasture in winter, and this is top dressed in the spring, followed by turnips and fodder corn. The residue goes on summer fallow, and is ploughed in.

The stock consisted of 8 head of horses, including young stock of the general purpose class; 17 pigs of the Berkshire type, and 15 head of dairy cows—Shorthorn grades, a good and well-kept type of cows, and several of them large milkers. The average per cow last year was \$34 during the cheese factory season. There are also 9 head of young cattle.

There was much to be commended in the management of this farm, and the young man who is in charge of it, along with his widowed parent, deserve great praise for the onward tendencies shown in nearly all the methods which he has adopted. But, in the meantime, the contest of Mr. Duncan is against older men, who have been long years bringing their farms into condition for competing for prize honors.

#### PROSPECT FARM,

*To which was awarded the Bronze Medal.*

While the sun was leisurely declining in the west, in this hot July day, we turned toward Simcoe and took in the farm of Mr. Richard Trinder on the way. It contains 100 acres, being lot 5, Woodhouse Gore, three miles south from Simcoe, on the Simcoe and Port Dover road. Mr. Trinder came to this place 32 years ago, the owner of but a pair of hands and a resolute will, and is now the owner of what has proved the first prize farm in South Norfolk, on both occasions in these group contests.

The farm is just undulating enough to send the water to the depressions. The buildings are near the road. A lane leads from these down through the centre to the rear where stands several acres of forest—vigorous white oak, pine, chestnut and hickory. The down timber is closely watched and is worked up for some useful purpose as it falls, which gives it more the appearance of a beautiful grove than of a neglected forest.

There are from four to five acres of apple orchard just come into vigorous bearing, which is at present cultivated with a tillage that is absolutely clean. The fences are board and zig-zag rail staked and wired at the corners, and are kept very neat and tidy. It does add so much to the beauty of a farm when the fences stand along the centre of a gently sloping ridge which

is kept absolutely free from intruding weeds and debris of every kind, in contrast to the general practice—for which there is no excuse—of allowing them to become the harbor for all kinds of trashy, unsightly vegetation, and the dumping ground for all forms of hindrance to cultivation in the adjoining fields. The soil is a sandy loam, clay loam, in some parts a heavy loam approaching to marl, but the degree of the porousness of the subsoil is so exact that but little under-draining is required, and yet the percolation of water from the surface is not so rapid as to carry down too soon from the surface the elements of fertility.

The outbuildings form three sides of a triangle, and are very complete of the kind. The main barn is 30 by 60 feet, with root cellar 16 by 32 feet, and other buildings in proportion, including a sheep-house, wagon-house, corn-crib, pig-house, implement-house, etc. The latter was well stored with implements in prime condition. Here we saw a grass-hopper trap, which, in other years, had done good service. It consisted of an oblong platform covered on the top with sheeting and raised at the back. When used it is drawn broadside, an adhesive application having been first applied to the surface. At its approach the excited grasshoppers make their last leap into the air and fall down amongst thousands of their comrades all in the same condemnation. A device in the yards in the form of partitions serves a good purpose where the ordinary kinds of stock are kept in the one building.

The dwelling house, of brick, 24 by 36 feet, with rear apartments 17 by 27 feet, is two storeys high—a good, well-equipped, substantial and well appearing farm house, with a front yard enclosed by young cedar hedge on the sides and spruce fir in front.

The stock consists of two span working horses, 6 head milk cows, much better than the average, some 20 head of Berkshire pigs and a small flock of superior Leicester sheep. About five head of shipping cattle are turned off every spring, some of which are raised on the farm. Those sold at three years average 1,500 lbs., and those at two 1,250 lbs. The home grown ones are all turned off at two years old. Each variety of the stock kept was good of its kind. The stock of horses was lower than it generally is on the farm.

The system of farming here, too, is mixed. Of wheat 21 acres were growing; of barley, 4; of hay, 19; peas, 4; corn, 8, and oats, 12. The usual averages are, wheat, 30 bushels per acre; barley, 40; hay,  $1\frac{1}{2}$  tons; peas, 80 bushels; corn, 90 bushels in the ear, and oats, 45 bushels.

In the rotation, sod is broken up in one or two years. When broken in the spring it is followed by corn; after hay cutting, by wheat, which is sown to grass. Oats or barley follow corn. The only summer fallowing done is the thorough surface working of the sod, after a hay crop, so that there is not an idle foot of land on the farm any year. Some take the stand that farms can't be kept clean without fallowing, the process extending over the entire season. They can in the township of Woodhouse, when farmed by Mr. Trinder, and why not elsewhere? The manure is ploughed in in the spring for corn, potatoes and turnips, and the residue goes on the summer fallow where it is intermingled by cultivation with the surface soil. Every kind of grain is sown to grass, whether intended for hay or pasture or otherwise. The turnips are sown flat in drills, and along the rows, after planting, is sprinkled a mixture of hen manure, ashes and plaster. One result is that there is but little trouble arising from the attacks of the fly, another, that the early growth is vigorous and rapid.

The features of this farm are (1) neatness in every respect, (2) thoroughness of cultivation, and (3) absolute cleanliness. Every foot of it is watched with a care so jealous that before thistles even could get a footing they would have to be sown and grow by sufferance.

The crops were all strong and good, and no one portion of the farm was made to flourish at the expense of another portion.

*(To be continued.)*

WILLIAMSPORT, ONT., Nov. 19, 1888.

SIRS—The picture of the Ont. Agricultural College, Guelph, received all safe. I think this is a grand picture of the farm. Yours, etc., DILLY C. HOLMES.

LENNOXVILLE, Nov. 23, 1888.

DEAR SIRS—Having received your beautiful engraving of the Ontario Agricultural College, allow me to say I appreciate it very much and beg to thank you for the same.

Yours truly, A. W. BRADLEY.



### Two Samples of Bran.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—I send you by mail two samples of bran; the one the coarser, costs me \$20 per ton; the other, the finer, \$18 per ton. The latter is 5 lbs. heavier per measured bushel than the other. What I would like to know is, if there is \$2 per ton difference in feeding value, and which would be the cheapest at the same price. By answering this you will greatly oblige

SUBSCRIBER.

Cowansville, Ont.

The finer bran is from flour or starch the higher its feeding value. This is because the substance that is contained in the bran (protein) is scarcer in the most foods than starch (carbohydrates), and also it has a greater value, as it meets the principal requirements of the animal body. In the new process bran a complete separation takes place, resulting in a whiter flour and a richer bran. The coarser sample sent us by our correspondent is the cleanest sample in every respect, but as the other sample possesses the advantage of being finer it would be slightly more digestible, for on account of its fineness it is more easily acted upon by the digestive fluids of the animal. This, however, would give it but a slightly increased value. We doubt if there is a difference of two dollars between the two samples, but as to which is the best at the same money, if the sample represents the average cleanness of the coarser, we would certainly prefer it.

### The Ontario Agricultural and Experimental Union.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

DEAR SIR:—Knowing that you are aware that the Ontario Agricultural and Experimental Union is doing an important and useful work in agriculture, permit me through your JOURNAL to lay a very important matter before its members.

Our annual grant is very small, and I believe the entire sum is consumed in securing special fertilizers with which to carry on that line of experiments. After the work of experimentation has been done gratis, after all the work of organization has been accomplished gratis, after we have met in committee at Toronto, upon important business, at our own expense, after doing all this gratis, we are entirely without funds to complete arrangements for our next annual meeting at Guelph, a meeting which, by the way, promises to be one of the most successful agricultural gatherings ever held, and will probably take place in February. Now, is our position a just one? Through the energy of the members of the Union, composed of students, ex-students, and graduates of the College, assisted by the progressive agriculturists of the Province, our experimental work has increased very much, and either this work must be checked, or we must have additional funds. Our constitution and by-laws provide:—to take a membership fee or money from any but officers, students, ex-students or graduates of the Ontario Agricultural College.

Under the present circumstances, a few have guaranteed the necessary money to make the coming meeting a success; they however, feel that many hands make light work, and also that there will be many anxious to share the burden, and therefore suggest that the members who feel desirous contribute from 50c. to \$3 to make up the deficiency. The money may be sent to the Secretary, Elmer Lick, Oshawa, Ontario. This much requires to be done to remedy present matters. Next I would suggest that every member make an effort to secure an increase in grant. The very least we should have is \$500 per annum. I do not here wish to criticise the manner in which some of the grants are expended, and I do not even for a moment wish it understood that I could say anything disparaging about the expenditure of the various grants to other associations, but I do wish it clearly understood, that the Union takes the stand, and justly, of being entitled to at least a \$500 grant, as being able to expend it to bring ten-fold, yes, an hundred and a thousand-fold return to the Province, and I would urge the members of the Union to see their members for the Ontario Legislature, be they Reform or Conservative, about this question, which should

and doubtless will be out of politics, and ask them to interest themselves on behalf of this work. When the Union, then composed of a few members, amongst whom I was one, commenced its work, we received the assurance that we should receive what grant we could use to advantage in our work. This is the second time that we have had to call upon the members for a special subscription, besides having to make many individual cash expenditures. I trust it shall be the last, and I trust that the members of the Union will interest themselves in securing the required grant, and the Ontario Legislature will no doubt concede to us what we so justly deserve.

Yours, etc.,

R. F. HOLTERMANN.

BRANTFORD, Nov. 14th.

### The Dairy.

#### Unequal Ripening of Cream.

One of the chief causes of inferior quality in butter of private dairies is the unequal ripening of the cream before churning. The latter being received in small instalments, some time elapses before a churning is gathered; and thus the cream is of unequal degree of ripeness. Not only does this result in a butter of poor keeping quality and flavor, but a large percentage of the butter is lost in the buttermilk. This was demonstrated by Prof. Robertson in a series of six tests, varying only in the degree of ripeness of the cream, and it was found that the quantity of fat left in the buttermilk ranged from 5% to .73%, the latter being that left in the buttermilk by the thoroughly ripened cream.

The method adopted in Denmark to obviate this, is given by H. M. Jenkins, of the R. A. Society, as follows:—"In well-managed dairies a new stock of "souring material is obtained every month by letting "some milk or cream become sour without artificial "aid. A covered can is filled with new milk and "warmed up to 104° Fah.; it is then placed in a "large cubical box thickly lined with hay, and locked "up; at the end of 24 hours, when required for use, "the can is taken out, and it is found that the milk "has become sour and its temperature has fallen "to 68° Fah. This sour milk is then used to sour "the cream which will be churned next day. . . . "The souring material having been added to the "cream in a kind of barrel with a movable lid, "through a hole in which projects the handle of the "stirring stick: it is left 24 hours, being occasionally stirred with the stick without removing "the lid."

A similar method to that of the Danes is to take 2% of the cream to be churned and set it away at a temperature of 70° Fah. for 24 hours exposed to pure air. By this means the bulk of the cream may be kept cool and sweet, and when a churning has gathered the fermentation starter, as it is called, is added 24 hours before churning time, and the whole is thoroughly mixed, and kept at a temperature of about 60° Fah.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

#### The Elaboration of Milk.

BY PROF. JAS. W. ROBERTSON, ONTARIO AGRICULTURAL COLLEGE, GUELPH, ONT.

1. Milk is secreted by and in two longitudinal glands, commonly called the udder.
2. These two are separated by a fibrous partition, which is attached to connective tissue under the skin. That tissue also spreads through the udder, apparently for its support in position.
3. The udder is spoken of as having four quarters. That is popularly correct, although the division between the two quarters on each side is not definite nor distinct.

4. The gland, stripped of its covering, is a reddish-gray substance. In dry cows the deposits of fat in the connective tissue give it a yellowish appearance.

5. The internal canal of the teat opens into a milk cistern.

6. The total quantity of milk held in the four cisterns or reservoirs at the top of the teats, will not seldom exceed one quart.

7. Numerous ducts rise from these and branch into all parts of the udder.

8. The ducts and their branches become smaller as they spread, until each one ends in a vessel, or "ultimate follicle," about  $\frac{3}{8}$  in. in diameter.

9. Into these cavities the serum of the milk, its water, caseine, sugar, albumen, etc., seems to pass from the arterial blood through capillary tissue.

10. A change in the cell albumen of the blood is believed to take place during that transition.

11. The inside of each vesicle is studded with innumerable cells; through these the fat is produced, supposedly by budding.

12. There are ordinarily about 1,000,000,000 of these globules in a cubic inch of milk.

13. They have no organic pellicles or so-called skins.

14. The activity of secretion depends largely upon the vigor of the blood circulation.

15. The production of fat depends mainly upon the temperament of the cow, gentle handling, and feed rich in protein.

16. Violent disturbance of her nervous system has a disastrous effect upon the cell action and capillary activity.

17. Arteries, veins, and nerves together pervade the whole of the udder structure.

18. New ducts, such as those referred to in No. 7, are formed by branching or sprouting out from others.

19. Rubbing of the udder, rapid and clean milking will promote their growth and development until the sixth year.

20. A pressure of fat in the connective tissue on the gland, interferes with and hinders the secretion of the milk.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

#### The Care of City Milk.

BY JAS. CHESEMAN, BOSTON.

As one glides through town after town and city along these Atlantic states from Portland to Baltimore, it is impossible to escape the scores of details connected with the dairy business. Few, if any, of the great milk dealers now use ice water to hold and care for their milk from the time it leaves the railroad car till it is delivered from the dairy by waggon. In place of open water vat, whose water needs such frequent changing to keep it fresh, and an enormous consumption of ice to keep the temperature anywhere below 45°, nearly all of them have closed ice-boxes or tanks. These are square tanks of varying size, with a small flap or drop of eight or ten inches in front to facilitate the lifting in and out of large cans. Some of these are built with dead air spaces, which still further economize ice, and are lined with galvanized iron sheeting. Inside, these are divisioned off for as many cans as the tank will hold, plus about three inches or less round each for ice. Each can sits in a galvanized iron sleeve or guard, perforated with inch holes. Between these guards the broken ice is thrown in pieces of three to five inch chunks. These sleeves or guards are only used to permit lifting in and out in nests without having the surface blocked with ice. Under this plan there is a saving of fifty per cent. of ice at least, and the temperature of the milk is fully ten degrees colder. Milk is often stored in this way for four or

ten days (on board ship longer), by keeping the temperature down near freezing point. The whole success of the operation depends in large measure on the deodorization or aeration of milk on the farm, and its subsequent cooling to below fifty, and the nearer to forty degrees the better.

The town dairy tank being covered, the warm air is effectually excluded, and little attention is necessary or renewing ice. As the ice dissolves it drains away, so that the thawing out of the ice in dry air is slow. Here is a simple fact in physical science which most milk handlers can appreciate. Dry air is a poor or slow conductor of heat, while water is a very rapid one, hence it is that we prefer water in the tempering cream vat, or for heating the cheese vat, it is so equable, and keeps its batch of milk or curd just where you want it. For the same reason water heating is better for dwellings than steam under pressure, and infinitely superior to the abominable dry air furnace or stove.

The next thing one notices in most of the city dairies is the peculiarly convenient form of milk reservoirs beside or underneath counters. These are a trunk form of tank, the top reaching within five or six inches of the hips of an ordinary attendant of five feet six inches. It has a lid cover on hinges which is lifted for removing the cans and replacing the used-up ice. This cover is divided into sections for smaller covers, which form panels in the larger, each having its own pair of hinges, and covering one can of milk, cream, skim milk, buttermilk, or ice cream. Each sets in a guard as described above, and around each of these there is a full charge of ice. As the level of the milk lowers, the attendant is not annoyed with a floating can as in water tanks. Then, again, all milk sold by the glass is dipped as in English dairies, thus securing for every customer a fair share of cream. In the full can with a faucet at bottom and lots of ice in the cylinder within, all the cream rises, and the first customers get skim milk. The richer the milk, the larger the globules and the more rapid is the separation.

One of the best constructed tanks I have ever seen is that of Mr. Geo. Abbott's Philadelphia dairies. In these he has a combined tank and counter of a U form, only the front is square, rather curved like the letter. The attendant stands within this handy counter dispensing drinks from each of the six compartments, which resemble deep sinks. Each five gallon can sets in a perforated guard, and around the guards is broken ice. In the centre of the counter is the ordinary draw till with an alarm. There are two qualities of Guernsey and Jersey milk, A and B, the first 14½% solids, and the second 13½%. Then two qualities of cream, buttermilk and skimmilk. Happily there is no silly legislation against skim milk, and this beverage sells at four cents per quart on its merits. This article is just as enjoyable to me as certain whole milk which one sometimes meets with in some cities where folks are lax about the quality of their goods, and, I might add, on some farms too. Thus, without moving from the same square foot of standing room, the attendant may serve by dipping, the contents of either one of these six reservoirs, and do it rapidly. The top of this tank counter reaches the hips of a five foot seven inch man. They may all be connected with one drain pipe or not. Mr. Abbott's counter is not, and this feature entails the labor of lifting out a square, galvanized iron cage which holds the guard and can, and also the drainage water of the dissolved ice. I should prefer drains.

This form of a counter could as easily be made to hold butter in prints just as a butter-box does.

At Decker's Morrisania Dairy, Park Avenue, New

York, butter is cared for in this way, and it is surprising how much one can handle with this method of work without the loss of time involved in waiting for a call boy or running several yards to a refrigerator, with a store full of eager customers silently but earnestly uttering small prayers that the attendant will act quicker and let them off.

Next month, or later, I hope to send you some of the results of the milk examinations I am engaged on in one of, if not the largest dairy in the world. My clients handle milk from 1,500 farmers in summer, and use one hundred tons per day, drawing milk by the car load from stations varying from thirty-five to one hundred and forty-five miles.

### The Need of Dairy Schools in Ontario.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

The following speaks well for the work of another Canadian abroad. Mr. John Robertson, jr., a younger brother of our Prof. J. W. Robertson, has spent the past season as dairy inspector in the southwest of Scotland. At the great dairy show held at London, England, his pupils carried off the first prize for the best ton of cheese; a second prize for the best four Cheddar cheese, and the cup and medal for the best lot of cheese on exhibition. At the Kilmarnock show of dairy products held on the 26th of October, his pupils won the first prize of £20 for the best cheese of any make, the first place in the sweepstakes competition for the best cheese of any make, and the first for the best ton of cheese exhibited, besides a number of minor prizes. Kilmarnock show is the largest of the kind in the world.—*Guelph Mercury*.

The above clipping from the *Guelph Mercury* records a series of successes very creditable to the superiority and adaptability of the Canadian system of Cheddar cheese-making. The plan of itinerant instruction was successfully applied to that branch of dairying in Scotland some three years ago by the employment of Mr. R. Drummond, a well-known and successful cheese-maker from Ontario. The results were so satisfactory to all concerned—the farmers, the landowners, and the cheese factories—that an increasing desire for such educational aids has been evinced. That feeling is further about to find expression and crystallize itself in a new form. On the date of the show above referred to, a meeting in connection with the Scottish Dairy Association was held at Kilmarnock. It was announced that arrangements were being made for the institution of a dairy school: already buildings for the purpose are in course of erection. It was stated that the Imperial Parliament is prepared to give a yearly grant of £500 sterling for its maintenance, besides a grant of £200 sterling for preliminary expenses. A number of the large land proprietors have agreed to contribute £100 sterling each to the fund, and many other subscriptions of less amount are confidently expected, together with the annual grant of £100 sterling from the Highland and Agricultural Society of Scotland.

Since the sphere of usefulness heretofore so well filled by the Agricultural and Arts Association of Ontario in maintaining the Provincial Exhibition, is now, in the judgment of most intelligent farmers, contracted into almost microscopic size, let me suggest and recommend the establishment of district dairy schools as a field large enough for the economical use of its councils, powers and money.

In England the same branch of farming is receiving unwonted attention from public men. The markets of Britain are practically the only ones presently available for our growing output of dairy products. The competition involved in the keeping of our hold upon these markets threatens to become keener and keener. The dairymen of the British Isles now begin to recognize the value of the means whereby our rapid and successful development of this industry has been effected. They are no longer indifferent. Our dairymen cannot afford to become careless. More than ever we need the aid of the best informed men obtainable for our dairy conventions. Instead of weakening in the work of instruction which we have been doing by traveling inspectors, we should double their number and increase the efficiency of their labors.

New York State Legislature voted \$5,000 this year for itinerant instruction in connection with her cheese factories, besides the usual grant to dairymen's asso-

ciations. In Wisconsin, now the banner State of the Union in dairy knowledge and practice, the sum of \$12,000 is granted annually for the support of farmers' institutes. These meetings offer unsurpassed opportunities for permeating the whole farming population with needful, helpful information and prospering enthusiasm. It will be very much easier for us to retain our coveted and valuable reputation for the superiority of our dairy products than to recover it if lost. Our name and place in the market cannot be maintained unless the pace of our progress is at least continually equal to that of our competitors.

JAS. W. ROBERTSON.

Ont. Agr. College, Guelph.

FOR CANADIAN LIVE-STOCK AND FARM JOURNAL

### Some of the Results at the Dairy Show, Islington, Eng.

Sir,—As there is a disposition among some dairy farmers to experiment in crossing their grade Shorthorn cows with Holstein bulls, in the expectation of increasing their milking qualities, it may not be amiss to direct their attention to two or three matters in connection with the milking and butter trials at the late dairy show, held at the Agricultural Hall, Islington. One subject is the milking competition in which a Shorthorn cow calved 17th Sept., which won the champion cup, gained the greatest number of points over all breeds, and gave the following quantities of milk: first morning, 31.2 lbs.; first evening, 30.3 lbs.; second morning, 36.8 lbs. second evening, 32 lbs. average morning, 34 lbs.; average evening, 31.1 lbs. The analysis of the milk showed that the proportion of fatty matters (i. e., butter) was much higher in the evening milking than in the morning. The first prize Jersey cow gave an average of 29.6 lbs. of milk on the two trial days, and the Guernsey 40.8 lbs. In the milking trials for any other variety, crossed or pure-bred, there were two fine animals, one a cross by a Shorthorn sire from a Holstein dam, and the other by a Holstein bull from a Shorthorn cow. The cow with the Shorthorn sire stood, in the milking test, second only to the Shorthorns in points, and one thing very noticeable was her power of retention, for though she had been calved 3 months, she produced 53 lbs. per day. The quality also was very good. In the case of the Holstein-Shorthorn, there were 48 lbs. of milk per day, after being 11 weeks calved, but the quality was not as good as the other cross. The following are the points of the two cross-breeds:

	Shorthorn-Holstein.	Holstein-Shorthorn.
Points for time since calving	7.9	3.2
" for weight of milk	53.7	48.4
" for weight of fat	39.00	28.54
" for solids other than fat	19.07	17.93
Total	120.31	97.97

From the above competition it will be seen that the Shorthorn is still pre-eminent as a dairy breed, and that the cow next in order of merit was half Shorthorn; it is also evident that the cross of a Shorthorn bull with a Holstein cow, gives better results than that of a Holstein bull on a Shorthorn cow.

G.

### Poultry.

#### The Preservation of Eggs.

There are many ways in which eggs may be kept for some time without losing their freshness. It may be of service to many to know the different preservatives used, as it is often desirable to store eggs away when the hens are at their best, to be used when their production is on the wane; and it also permits of the withholding of eggs from the market until prices improve. One of the most common methods is that known as the "liming" process, in which the eggs are put in a pickle consisting of a mixture of slaked lime, salt and water. A barrel is half filled with cold water, into which is stirred slaked lime and salt in the proportion of about ½ lb. of each for every pailful of water, or as some recommend, ¾ lb. of nitre to a half barrel of water is used instead of the salt. The eggs, which must be perfectly fresh, are let down into this mixture with a dish, when they settle in the

bottom. Packed in this manner, if kept in a cool place, eggs will keep fresh for several months. To obviate the limy taste of the egg and the brittleness imparted to their shells, if kept too long in this way, they should be rubbed all over with lard before putting them in the pickle. Prepared in this manner it is claimed that they will keep perfectly fresh for six months or more, if stored in a cool cellar. Another method strongly recommended by some is to take a dozen or so at a time of new laid eggs, and immerse them for five seconds in boiling water containing about 5 lbs. of common brown sugar per gallon of water. The eggs should then be placed on trays to dry. The hot water is said to cause the formation of a thin skin of hard albumen next the inner surface of the shell, while the sugar effectually closes the pores of the latter. When cool the eggs should be packed in a mixture of 1 part charcoal and 2 parts dry bran. A method adopted by the French is as follows: Melt 4 ounces clear beeswax in a porcelain dish over a gentle fire, and stir in eight ounces of olive oil. Let the resulting solution of wax in oil cool somewhat, then dip the fresh eggs one by one into it so as to coat every part of the shell. A momentary dip is sufficient, all excess of the mixture being wiped off with a cotton cloth. The oil is absorbed in the shell, the wax hermetically closing all the pores. It is claimed that eggs thus treated and packed away in powdered charcoal in a cool place have been found after two years as fresh and palatable as when newly laid. Some use paraffine, which melts to a thin liquid at a temperature below the boiling of water, instead of the wax and oil, claiming for it that is cheap, odorless and tasteless. It is used in a manner similar to the others.

Coated in this way and put in lime pickle, the eggs may be kept for months, or if put in charcoal and kept cool they may be preserved for a much longer time. Dry salt and also dry bran are sometimes used for this purpose, but under these conditions the eggs are not protected from dampness as effectually as by other means.

As a packing material for transportation a mixture of 8 parts bran with 1 of powdered quicklime is of great value.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

### Poultry Association of Ontario.

BY J. W. BARTLETT, LAMBETH, ONT.

The directors of this association met in the board-room of the Industrial Exhibition Association, on September 20th, President Black in the chair. Present, Messrs. Begue and McNeil, London; Sanderson, Stratford; Smith, Guelph; Pay, Lawrence, Crowie and secretary Hammill, St. Catharines.

The Wyandotte class was changed to allow golden to compete with silver Wyandottes and any other variety of Wyandottes added, thus allowing white and black to compete. A class was added for any variety. French and Laskche and Crevecoeurs cut off. Andalusians were also added; and white turkeys made to read white or black. A class was also added for pit games. This last is a disgrace to the association, and we cannot but feel surprised when we consider who the directors are, that they should have taken such a step. First, these birds are not in the standard, and there is no way of giving satisfaction in judging, as each judge must be a cock fighter to enable him to make intelligent awards; and worse than that, it is encouraging one of the lowest and most barbarous sports ever known in Canada. It is to be hoped this step will be reconsidered and the mischief undone at the annual meeting. We shall certainly exert our influence in that direction.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

### The Black Javas.

BY W. B. COCKBURN, ABERFOYLE, ONT.

This breed, to the majority of farmers and fanciers, is a new variety, but to my mind it should be otherwise, as I believe, taken as a whole, they make the grandest general purpose fowl the poultry fraternity has yet produced. They are of large size, are good layers winter and summer, good mothers, and as table fowls they are surpassed by none. Mr. Bicknell says, "They bear confinement, and possess as many points of genuine economy and usefulness as any other variety, with far less faults, and they breed a large per cent. of good birds, instead of a large per cent. of poor ones." They are about the same in size as the Plymouth Rocks, and the two breeds are also somewhat similar in shape. Although the Plymouth Rocks have an excellent reputation as layers, yet I believe the Javas are fully superior to their rivals.

In plumage the Black Javas are a brilliant metallic black, with black beaks and black (or nearly black) legs, the eyes are brown and mild, the comb red, single and evenly serrated, while the wattles and ear-lobes are red. The tail of the cock is ornamented with long and graceful sickle feathers, the breast deep and full and body broad, long and deep, giving the bird a compact appearance. The thighs are strong and covered with soft fluff, and the bottom of the feet are yellow, the shanks being clean, without feathering, and though black, approach willow in color as age comes on.

In the show pen the Javas must, of course, match when shown in pairs or trios, and must be free from crooked backs, wry tails, twisted combs, side sprigs on combs, or red, white or brassy feathers in any part of the plumage. The weight of the cock should be ten pounds, hen eight, cockerel eight and one half, and pullet six and one half pounds. Legs are given eight points, wings six, back six, breast and body ten, earlobes and wattles six, neck eight, comb eight, head seven, symmetry twelve, size and weight fourteen, and condition nine, making a total of one hundred.

One who is not familiar with the Black Javas often becomes confused when in the show-room if the coops containing the Javas are placed by the side of those containing Black Cochins or Langshans. The Cochins and Langshans will be observed as having feathers on the legs, while the legs of the Javas are clean. The Langshans have pink between the toes, the bottoms of the feet being whitish flesh color, while the bottoms of the feet of the Javas are yellow. Both the Langshan and the Java have beautiful flowing sickle feathers, while the tail of the Cochin is full but not flowing. The color of these three breeds is very similar, and they make splendid crosses with each other. There is another class, or rather two, known as white and mottled, which are similar to the blacks in size and shape, but are in plumage white, and white and black intermixed, the shanks being a broken blue and yellow, while the legs and beak of the white Java is pure yellow.

The Black Javas are said to be the fountain source from whence sprang the Plymouth Rocks, and are, therefore, an old established variety. Although black in every part of their plumage, the skin is similar to that of the Plymouth Rock when the fowl is dressed for the market, and the chicks are hardy and make rapid growth.

### The Apiary.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

### Meeting of the North American Society and Other Matters.

BY ALLEN PRINGLE, SELBY, ONT.

The North American Bee Keepers' Association met in annual convention, at Columbus, Ohio, on Oct. 3rd, and following day, holding three sessions each day. The convention was well attended in view of the unfavorable character of the past season, several States of the Union having been represented. Dr. A. B. Mason, Toledo, Ohio, President of the Society, presided over the sessions, which were characterized by interesting and spirited discussions of various topics of vital interest to the fraternity.

After the usual opening preliminaries, the first secular business was a discussion of the experiences of the past season, and reports thereon, nearly all of which were unfavorable, including that from Canada. The season has surely been a peculiar one, and seems to have adversely affected the honey industry almost the world over.

The next topic discussed was:

### THE BEST AGE OF BEES TO GO INTO WINTER QUARTERS.

A diversity of opinion existed amongst the members on this question, some preferring young bees for winter quarters, and some old, each having succeeded, and all know it to be a certain fact that both old and young bees not infrequently fail to winter. In the wintering problem so much depends upon other conditions than the age of the bees that great diversity of opinion on this point, arising from observation and experience, is not to be wondered at. It stands to reason, however, apart altogether from the results of experience, that bees that are hatched, say between the middle of September and the middle of October, will stand a better chance to come through the winter and spring than old or middle aged bees, whose sands are nearly run. The young bees, however, for winter, should, in my opinion, be old enough to have done a little work, and had some excursion *outside*, so that in their relations to the outside world they will "know what's what," and have their young heads steadied properly for the quiescence of winter "hibernation." In regard to the question when the bees ought to begin breeding in the spring, there was a like divergence of opinion, some preferring two months before white clover bloom, and others longer. Upon voting upon the point, there was about an equal division. This question also depends so largely on the circumstances of latitude, climate and environment, that it would be strange to find an unanimity of opinion in a society representing over thirty degrees of latitude, from California to British Columbia, and from Florida to Labrador.

Next in order was the reading of an essay by Prof. G. W. Webster, of Lake Helen, Fla., on "The Honey Plants of Florida," in which the following points were brought out:

Florida presents an exceptionally great variety of bee-foraging plants, etc. Among them are cabbage and saw palmettos, yellow jasmine, grapevines, cow peas, the wild partridge pea, whortle berries, ilex, mangrove, the scrub or spruce pine, the orange, the andromeda, the gallberry, and crooked wood, the latter yielding a poor quality. On the high pine region the honey season is from February to the end of May. Contrary to what we Northerners would suppose, the essayist states that a prominent cause of losses of colonies in Florida is "lack of stores." This sounds strange to us coming from a land of flora and sunshine. A formidable enemy to the honey bee down there is the green dragon fly, which devours the bees in hundreds as they return laden to their hives. The young queens also become their victims while on their bridal tour. Another fact given by the writer astonishes us, viz.: There is about as much trouble in wintering bees in Florida as in the Northern States, owing to the many mild days in winter, which tempt the bees abroad, only to be chilled and worn out to no purpose. The average yield is put down at 40 to 50 lbs. per colony, "the seasons varying as they are wet or dry, cold or warm." But this seems to refer more particularly to the "High Pine" region. In the coast region as high as 300 lbs. each from the best colonies are reported, whole apiaries, yielding 200 lbs. per colony. This, however, was before the mangrove froze

a few years ago, which is said to be "slowly recovering." They use two-storey hives there, extracting from the top storey. And just fancy leaving both of these stores "full of sealed honey for winter use," in Florida. Why, out North here, the lower storey about half full carries the colony through the winter and spring, and right up to the new honey crop. As to the quality of Florida honey, the essayist repudiates the market classification "Southern honey," and the stigma it carries, and claims for the mangrove honey a place alongside our white clover honey, while the orange, palmetto and gallberry honey of the interior, is, he claims, superior to our buckwheat honey. In justice to Florida honey the convention decided that the excellent mangrove honey ought not to be classed with the "Southern honey" of the market, and it was voted "that the editors of the bee papers be requested to quote mangrove and palmetto honey under their proper names, and to continue to keep these names in their quotations."

"Lessons of the Season," was next discussed, one of which was that bee-keeping could with advantage be combined with some other business, and another, that of moving bees to better pastures, both of which were suggested and advocated by Prof. Cook, of the Agricultural College, Michigan. Next came the singing of a song, "Dot Happy Bee Man," by Dr. Miller, who had set music to Mr. E. Secor's words.

#### THE TIME FOR PUTTING BEES INTO WINTER QUARTERS

was next discussed, or rather introduced, and then something else discussed, for, according to the reports, the president and the president only touched the point, the subsequent speakers seeming to forget the question and discuss two or three other questions which had been incidentally raised, to wit: light in the bee cellar; best hive for wintering in cellar, and why best? Touching the original question, Dr. Mason, the president, had put bees into the cellar as early as October 19th, and they seemed to do no better nor worse than those put in later. As to the extraneous questions of "light" and "best hive," the majority were against light, as injurious in the bee-cellar, and Prof. Cook and R. L. Taylor thought the "New Heddon Hives" the best for cellar wintering.

On the question of "Sections open on all sides," Dr. Tinker was strongly in favor of such, while the other speakers seemed to be more or less against them.

As to "How can safety be secured in the mating of queens" nothing definite or practical was elicited, apparently, the same fate befalling the question of the "use of chaff hives."

Letters were then read from Rev. L. L. Langstroth, Mrs. L. Harrison and Mr. E. Secor, the two former regretting their inability to be present, and the latter giving report from his State, Iowa.

"The width of sections," "when shall bees be put out of the cellar?" and the question of "securing more complete organization among the bee-keepers" were duly discussed.

One inch and seven-eighths as the proper width for sections seemed to prevail, and as to time for setting out, there were two opinions, viz.: First, put them out when there is something for them to do; secondly, put them out "about two weeks after the right time." This last opinion, quaintly given, carries with it much truth, for as a general thing bee-keepers are in too great a hurry to get their bees out of winter quarters in the spring.

Prof. A. J. Cook then gave an address on "Experiments in Apiculture," which, he said, the Agricultural College in Michigan, with which he was connected, was about to take up, it being now in a position to do

so. Three lines of experimental work would be prosecuted, "that of crossing different varieties of bees; that of determining the value of special planting for honey, and the third will be in regard to the adulteration of honey." The Professor felt confident that neither bee-keepers nor grocers adulterate honey; that adulteration would not pay. Nor can the chemist tell positively in regard to adulteration, and this would be looked into.

Mr. Thomas G. Newman, editor of the *American Bee Journal*, next addressed the meeting on "the importance of experiments in Apiculture," dealing in an interesting manner with the subject, touching especially on "bee pasturage," and "honey adulteration."

Mr. R. F. Holtermann also read a paper on "the value of united experiments in Apiculture."

The subjects of swarming, comb honey, raising queens, etc., were discussed, but as nothing new appeared on these topics, space will not permit further reference here.

Thomas G. Newman, Manager of the Bee-keepers' Union, gave an address touching the "objects, aims, and successes of the Bee-keepers' Union." In a resolution following, the "Union" was unanimously endorsed by the convention.

The election of officers for the current year resulted as follows: President, Dr. A. B. Mason, of Ohio; Secretary, R. F. Holtermann, Ontario; Treasurer, Dr. C. C. Miller, of Illinois. Some seven or eight vice-presidents from different States and Ontario were named.

#### NEXT MEETING IN ONTARIO.

With but one dissenting voice Brantford, Ontario, was selected as the next place of meeting. I beg here to urge upon Canadian bee-keepers the propriety and desirability of a united effort to give the Association a hearty welcome again to Canada, and make it as successful a meeting as that held here in Toronto a few years ago, which the writer had the great pleasure of attending.

### Horticultural.

We often notice that trees in the orchard bear an abundance of blossoms but fail to give the expected returns in fruit. The main reason of this is the interference of external conditions with the natural process of fertilization. Every flower, to produce fruit, must be fertilized either by its own pollen or that of a plant of the same genus. The effects of imperfect fertilization we see very plainly in the half-developed apple, with one side full and the other shrivelled. The former is the product of the fertilized part of the ovary and the latter the unfertilized. If the weather is such as to prevent the natural agencies for conveying the pollen from flower to flower, such as bees, wind, etc., then the returns from the blossoming are not what they were expected to be. A too vigorous growth on the part of a tree or vine is detrimental to fruiting, and hence the good results often accruing from root and limb pruning.

THE value of a wall of evergreens such as the Norway spruce or our native spruce around an orchard cannot be over estimated in such a climate as ours. We see the ill-effects of exposure to the wind by the slanting trees and broken limbs of many orchards. This is especially noticeable if the soil is light. It has been accepted as a fruit-grower's principle "to plant the trees leaning to the one o'clock sun," on this account. In such a climate as ours a good row of evergreens serves a goodly purpose beyond that of beauty. We venture to assert that fully one-third of the failure

of orchards, especially in the more northern districts, is due to the want of forethought in not setting out a row of spruce before planting the fruit trees.

### Improvement of Farm Plants.

It would be most interesting to compare in every detail the grains and fruits of the ancients with the many field and garden products of the present day. Insufficient data, however, debar us from any extended comparison. It would be reasonable, however, to draw the conclusion upborne by later writings, that though the Romans were skilled in some of the many departments of agriculture, their grains were not as plump nor their fruits as luscious as those of the present day. To them the watermelon was a stringy, insipid fruit, and not as it now is, a product enticing to the eye and overflowing in sweet juices. Oswald Heer, in the records of his researches in regard to the ancient lake inhabitants of Switzerland, places distinctly before us the great advance that has been made in the improvement of our cultivated grains since that not yet distant era. He shows that our present varieties of wheat, barley, oats, etc., greatly exceed in size those cultivated during the bronze period. Coming to still later times, Darwin tells us that Buffon, in comparing the fruits, flowers, and vegetables which were cultivated in his time, with some excellent drawings made 150 years previous, was struck with surprise at the great improvement that had been made since then.

It is with the view of aiding this onward march that we have decided on penning a series of articles on the different methods of improving farm plants, among which we include selection, hybridizing, good cultivation and care, changing seed, and the introduction of foreign varieties, and each of these different methods shall receive due attention.

It may reasonably be asked, have we not reached the limit of plant development? Perhaps with many of our cultivated fruits we are nearing the limit which cannot be crossed without to some extent sacrificing quality to quantity. The field for improvement in meeting the multiplicity of conditions which are furnished by differences of soil, climate, etc., is of large dimensions, and the upward trend should not be stayed until each farm has a strain in accord with surrounding conditions. To do this the farmer must cull and select and feed his plants with this object in view.

Left to nature, the sole object of all plants, so far as their existence is concerned, is to reproduce their kind as economically as possible. This means that the turnip would only store up enough food to maintain the plant while it ripens its seed the second year, and so with carrots and all other biennials. The apple would be small, sour and tough, the peach would be like the green almond nut, and the cereals would be shrivelled and wanting starch. Man, however, steps in, and by careful selection, cultivation, etc., he moulds these plants to meet his desires. In one, as the turnip or potato, he pays attention to the stem; in another his energies are centered on the leaves, as in the cabbage, and so on. These features, however, tend to return to their original form, and hence the great value of constant selection for a definitely fixed type. Nothing is equal in nature. Every plant differs in natural quality or in some feature from its nearest neighbor. As brothers and sisters differ from one another so do seeds, though ripened in the same head. Many instances of what selection has done might be given, but we shall content ourselves with mentioning two. Prof. Buchanan found that by selection and cultivation of the wild oat (*avena fatua*) that in a

few years he obtained very respectable oats weighing nearly 40 lbs. per bushel, whereas the wild oat, if left to itself, ranged from 15 to 20 lbs. per bushel. The Clawson wheat became a stable variety through the selection and care given it by Mr. G. Clawson, of Seneca Co., N. Y. He, seeing a head of wheat that suited him, sowed it separately, and in a few years it was recognized as a valuable variety. Selection does not imply the choosing of only the plump and heavier seeds, as in olden days when a shovelful of grain was thrown from one end of the barn to the other, and thus the heaviest separated from the lightest; but it implies the selecting of the strongest growing and earliest maturing plants, and from these only, selecting the heads, and from these again the best developed seed. That the largest and heaviest seeds will produce the best plants has been proven several times by direct experiment. Prof. Plumb, of the New York Experimental station, took from their grain bin 1,000 of the plump and largest grains he could find, and also a similar number of the smallest seeds. They were planted in rows in soils practically of like nature. The plants of the large seed yielded 3 lbs. 8.2 oz. of straw, and 1 lb. 8 oz. of grain; the small seed gave 1 lb. 17 oz. of straw and 11.8 oz. of grain.

Though this fanning-mill may do the work of separating the heavy from the light seeds, yet there are other ways that might be used in conjunction. An increase in the yield from 58 lbs. to 63 lbs. in a few years resulted from the following method. Every year the seed was chosen from the best field, and this was extra cleaned in the fanning-mill, and to still further this work the lighter grains were skimmed from the surface of a strong brine, which was also used as a preventative of rust or smut. Another method that established a vendor's reputation throughout the district for seed wheat, was to take a sheaf of wheat and strike it against the edge of a barrel, and thus the heavier and ripest grains were secured, to be afterwards cleaned and sifted.

Good seeds are, as a rule, smooth, shiny and full, having a fresh smell, if any. They should sink when placed in water, and spring upward like pop-corn when thrown on a heated metal plate. Poor seeds smell musty and stick together, and are quickly charred when placed on a hot plate. The specific gravity, as shown by putting them in water, indicates the age of the seeds and also their ripeness.

To determine the per cent. of dormant or dead seeds accurately, it requires a special apparatus, such as used in all experimental stations; but for the purpose of telling the practically useless seed from the good, blotting paper, cloth, or saucers of sand may be used. There are many stories in regard to the vitality of seeds, but it may be said that wheat and other cereals will retain their vitality for at least three or four years, if not injured by damp or insects, while grass seeds are of little use as a rule after one year. In using the blotting paper or any of the other methods the seeds should be kept moist but not wet. The temperature adopted by the German seed stations is 62° to 64° Fah. This, however, is not fixed. The aim should be to keep them at temperature as near as possible to that of the ground in spring.

Clover seeds, cereals, radish, oats, turnips, etc., require about 12 days; while parsnips, cucumbers, grasses, etc., take about 14 days to germinate. The Royal Agricultural Society have adopted as their standard of germination, that for cereals, clovers and timothy not less than 90% should germinate, and other grains not less than 70%.

(To be continued.)

## Jottings.

**Readers**—Renew your subscription for '89 and get our premium picture.

**Facts**—The JOURNAL has more than three times the number of cards in Breeders' Directory and stock advertisements than any other farm paper in Canada, and more than double all the papers combined.

**Fat Stock Show.**—We are informed by Mr. Henry Wade, of Toronto, that the Fat Stock Show will be held at Easter in conjunction with the Horse Show, instead of at Christmas, as was formerly the usual time of holding it.

**Wire Netting.**—For the protection of fruit trees from the attacks of mice, etc., E. Greening, of Hamilton, offers a strong, fine wire netting of his own manufacture. It is not costly, and is easily made to answer for the above mentioned purpose.

**Canada Business College.**—The Canada Business College, of Hamilton, now in its twenty-seventh year, is meeting with an unusual degree of success. Being of very high merit it should receive the attention of those who desire to attend such an institution. See advertisement this issue.

**Address Tag.**—Please examine your address tag; if it reads, Dec., '89, your subscription expired with that issue. The sooner you renew your subscription for 1889, the sooner you will get a good premium picture of the Agricultural College and Experimental Farm, at Guelph, Ont.

**Business Cards.**—Even if a breeder has nothing to sell, the publication of his "card" is of use to him. It keeps the name of his herd and his own name before the public. It is virtually an invitation to any one interested to call and examine the breeding stock, and when he has stock to dispose of he will find that they are not strangers to the buying public.—*The Guelph Breeder.*

**Breeders' Directory.**—There are scores of stockmen in various districts who we believe would find it would pay them well to have a card of two or three lines in the Breeders' Directory. Oftentimes their stock is superior, but being known only to their immediate neighbors, they have little chance of getting full value when placed on the market; whereas a card would bring it to the notice of thousands of readers throughout Canada and the United States. The cost is only \$1.50 per line per annum.

**The Ontario Experimental Farm.**—About the middle of November we spent a day very pleasantly at the Experimental Farm, Guelph. The number of students there is a long way in advance of those in attendance at this time last year, and they are still coming. Professor Shaw is pushing on work with his usual vigor. About 1½ miles of fence bottom has been neatly prepared and the fence was then in process of erection. The plowing was all completed, about 175 acres, much of it having been plowed twice since harvest. The debris to the rear of the old buildings is being cleared away, and many improvements have been introduced in and around the buildings. Much credit is also due to Mr. Story, the farm foreman, for the forward condition of the work there. It pains us to note that since the penning of the above, the magnificent barn, just a short time erected, has been destroyed by fire, and with it the hay, grain, etc., raised on the farm this season. Alas! all the stock, however, have been saved.

**A Large Poultry Establishment.**—We have before us a large, excellently illustrated catalogue of Clas. Gammerdinger, of Columbus, O. Besides the fine illustrations of all the leading breeds of fowl, ducks and turkeys, it gives the good qualities of the same. Mr. Gammerdinger has displayed great enterprise in the furtherance of his work, as he has exported no less than forty birds to Europe, most of them going to Germany, with splendid results. At the Centennial show, at Columbus, he exhibited about 140 birds, on which he took 138 premiums, having a total value of \$275, and he also captured the premium silver medal for the finest and best collection of poultry. All interested in poultry should write Mr. Gammerdinger, inclosing 3 one cent stamps, for his catalogue, which will be gladly sent to all such applicants.

**Warming Water for Stock.**—We are in receipt of Bulletin IV, of the Minnesota Experimental Station, which gives an account of an experiment conducted for the purpose of finding out the effect that warm water would have on stock. It was found that cows in a warm stable, little exposed to cold during early spring or winter, did slightly better with ice cold water as against that warmed to 70° Fah. Prof. Porter, who carried on the experiment, thinks that water at 50° Fah. would give better results than either of the others tried, and that any good that results from warming water in winter (and he thinks there is a benefit), is because of bad effect of cold applied exter-

nally and internally at the same time. It was also found that warming water during the spring weather for beef animals proved hurtful instead of beneficial. Prof. Porter forms the conclusion that warming water in any but very cold weather does not pay, but may even do harm. Insect killing fungi, and tuberculosis or consumption in animals, is also treated of in the same bulletin. In the latter, it is stated that a temperature of 125° Fah. (which is higher than that employed in cooking meat), will not kill the germs of this disease, and thus it may be transmitted from animals to human beings.

**J. B. Armstrong's Latest Invention.**—We notice the following in the September 8th issue of the Australian *Town and Country Journal*: "New Patent: The Attorney-General of Victoria has granted letters patent to Mr. J. B. Armstrong, of Guelph, Canada, for six different inventions. The first consists of an improved buggy and carriage pole, the object of which is to improve the appearance of the buggy or carriage by dispensing with the following parts heretofore used in poles, viz: the bent, wooden crossbar in the rear, and the bent end of the wooden pole itself. The effect of this is to produce a vehicle which is light, neat, durable and cheap. The second relates to zig running gears, and its object is to make the body low and easy of access, so to arrange the springs as to secure a steady and easy movement of the body. The third relates to single plate carriage springs. Its object is to obtain a cheap, light, low-setting spring, formed from a single plate of tempered steel. The fourth relates to steel buggy or carriage gears. Its object is to make them adaptable to various kinds of bodies, and to various sizes of vehicles. The fifth relates to sulky gears, its object being to enable a light, handsome, strong and easy riding sulky to be constructed at a cheap rate. The sixth relates to two-plate carriage springs, the object of which is to combine the lightness, strength, quick action and symmetry of a single plate spring, with the carrying capacity of an ordinary laminated spring."

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## FARMERS' INSTITUTES.

The Secretary, President or any member of any Farmers' Institute is hereby invited to send for copies of the Journal, which will be mailed free, to distribute among its members with the view of forming clubs for the Journal—a list of ten subscribers, at least, could be got at every institute in Canada. Clubs of five for \$4.00 and clubs of ten for \$7.50. Farmers' Institutes, agricultural societies, or any person wishing any of our live stock premiums can have them delivered now by guaranteeing the required number of subscribers.

**Stock Notes.**

Parties forwarding stock notes for publication will please condense as much as possible. If written separate from other matter, it will save much labor in the office. No stock notes can be inserted that do not reach the office by the 23d of the month preceding the issue for which they are intended.

**Horses.**

Mr. Jas. Moodie, of Chesterfield, advertises in this issue a number of ponies for sale.

A thoroughbred stallion for sale by James Mathews, of Acton See advertisement.

A Percheron horse is offered for sale or exchange. See adv. of Mr. F. Rusnell, of Mount Forest, Ont.

Mr. A. K. Tegart, of Tottenham, Ont., breeds and imports Clydsdales. He has at present four that were imported this summer. Among others he has a three-year-old stallion Lord Wilton that was sired by Lord Erskine, and the filly was sired by such horses as McNair's Good Hope, McDougal and Brigidier.

Mr. J. J. Wilson, of Bearbrook, has recently purchased from Mr. McLaren, of Hensall, Huron Co., a Canadian bred Clydsdale mare and foal that have been very successful thus fall at the exhibitions in that locality, having captured a number of firsts. He also purchased from Mr. Moore, of the same place, a neat little pair of Indian ponies.

Mr. And. Scott, of St. Laurent, Montreal, has lately imported a number of well bred Clydsdales. One is a two year old filly by Melrose, a grand-son of Newstead, half brother to the celebrated Darnley. She is out of the prize-winning mare, Lady Rouina, the latter being a combination of Gladstone and Lochfergus blood. The *North British Agriculturist* says of this importation: "Like her mother, the filly is particularly good at the ground, with nice clean stinty bones, and otherwise she combines many of the good properties of both sire and dam. It is unfortunate that such a promising breeding mare is going out of the country." The same importer has also brought over Evermore, a grand-son of the celebrated Prince of Wales, bred by Mr. David Alston, and Royal Tar, a son of Duchal, bred by Mr. George Lyon, near Greenock.

Mr. Robert Ness, Jr., of Howick, Que., writes us under date of the 20th, that he has been very successful in importing this summer, having landed in July with 12 stallions and fillies, all in good trim. In the *North British Agriculturist* of July 18th, we find the following: "The largest shipper was Mr. Robt. Ness, Jr., whose annual visits to this country generally result in some of the best specimens of the breed being taken from us. Mr. Ness' purchases on this occasion are quite up to his usual standard. A three year old horse by McGregor, purchased from Mr. Hugh Andrew, Lennoxlove, Haddington, is a first-rate Canadian. His name is James Arthur (5888), and he was bred at Carling out of a first-rate mare, got by Prince of Wales (673), while his gr. dam was by old Lord Lyon (489), and his gr. g. dam by McCay's Samson (740). His breeding is thus exceptionally high, and he has good legs, and an exceptionally good top, his back being short, and ribs well sprung, while his quarters are 1st class." Another horse spoken highly of by this paper is Pure Clink (5379), a get of the noted, prize-winner, Knight of Snowdon (2124), out of a daughter of Paisley Nancy, the dam of Ivanhoe (396). The others of this lot were sired by such horses as Lord Erskine (1744), Old Times (579), Golden Berry (2828), and the Lanark premium horse, Harold (2844). Mr. Ness also brought out 8 Shetland ponies which are doing well. Three of the principal exhibitions, Sherbrooke, Huntingdon and Ottawa, were visited and at each many prizes were won. With seven horses at Sherbrooke he captured 5 firsts, 2 seconds, and sweepstakes and diploma with best of any age with Pure Clink. At Huntingdon with 11 head, 4 firsts, 4 seconds, 1 third and sweepstakes for the best of any age with James Arthur were secured, while at Ottawa he obtained 4 firsts, 2 seconds and 1 third, with seven head. Mr. Ness is to be congratulated on the excellent record of his stock.

**Shorthorns.**

Large auction sale of Shorthorns, grades and pure-breeds, Clydsdales and Berkshire pigs, to be held at Paris, Ont., on Jan. 24, by Mrs. Elizabeth Deans. See advt. this issue.

Mr. J. G. Mair, of North Georgetown, Que., has commenced the breeding of Shorthorns, having selected two years ago foundation stock from the well known herd of John Dryden, M. P. P. Many prizes were won on this herd this fall at Huntingdon and Ottawa exhibitions. Mr. Mair also intends to establish a flock of Shropshire sheep.

Mr. David Hill, of Merton farm, Staffa P. O., Ont., owns nine head of Shorthorns, including three young bulls fit for service next season. See George Gwynne at head of the herd was got by Mr. Richard Gibson's imported 6th Duke of Oxford; dam, Gwynne. The flock of Southdowns now numbers 24 head.

Messrs. H. & W. D. Smith, of Hay, write us: "Our herd of Shorthorns now numbers 18, headed by Prince Albert, the well known son of Messrs. Watts' celebrated Barmpton Hero. Recent sales have been as follows: bull to Mr. John Strang, Uxemborne; bull and boar to Snell Bros., Elmville; boar to Mr. Ching, Exeter; imported boar, Real Briton, to J. E. Brethour, Burford.

NOTICE OF SALE.—The entire Riverside herd of Shorthorns, owned by Professor Shaw, will be sold about the first of March next. The herd numbers about 40 head of females, in good breeding condition, and to 15 bulls, of which nearly all are calves, and sired by the Mantilini Booth bull British Sovereign. They are red in color and of good shapes. Several Shropshire Down sheep and Berkshire pigs will also be sold at the same time, if not sold before then. The exact date of sale will be announced in next issue, and catalogues will soon be ready.

**Advertising Rates.**

The rate for single insertion is 28c. per line, Nonpareil (12 lines make one inch); for three insertions, 15c. per line each insertion, for six insertions, 13c. per line each insertion, for one year, 10c. per line each insertion. Cards in  *breeders' Directory*, not more than five lines, \$1.50 per line per annum. No advertisement inserted for less than 75 cents. Contracts broken by bankruptcy or otherwise, shall revert to the regular rate of 18c. per line.

Copy for advertisement should reach us before the 25th of each month (earlier if possible). If later, it may be in time for insertion, but often too late for proper classification. Advertisers not known at office will remit cash in advance. Further information will be given if desired.

R. J. GEARY, Wellandport, Ont., imp. and breeder of pure-bred poultry, including Toulouse geese and Pekin Ducks.

**FOR SALE.****Shorthorns and Southdowns**

Young Shorthorn Bulls and Heifers, got by imp. Cruickshank and Campbell bulls. Good color and good animals. Also a lot of choice Southdown Rams and Ewes, bred from imported stock. Prices to suit the times. JOHN MILLER, Oct-11

**Holstein-Friesian Stock for Sale.**

One young Bull, sire noted Barmton, aged 9 months, mother imported, also one Bull, 3 months, on as reasonable terms as can be found, stock considered. Correspondence answered. WELLINGTON MUISINER, nov-31f. Port Robinson, Ont.

**FOR SALE—Shropshire Down Sheep and Lambs.** of both sexes. A number of good ones still on hand. THOMAS SHAW, Woodburn P. O., Ont.

**FOR SALE—Ten good, strong, well and evenly developed Bull Calves,** 14 months and under; all reds in color but one, and all sired by the Cruickshank bull Macduff. nov-1f. JOHN I. HOBSON, Mosborough, Ont.

**CHOICE YOUNG HOLSTEIN BULLS AT OAKDALE STOCK FARM.**

The bull calves from Oakdale Farm took first, second and third prizes at Toronto Industrial Exhibition, and again first at London. The young bull, Banker, taking the silver medal for best bull of any age. The Oakdale herd of Holsteins won in 1887 and 1888, more money prizes, medals and diplomas than were ever won at the same number of exhibitions by any herd in the Dominion. Address JOHN DUNN, Foreman, Oakdale Farm, Pickering P. O., Ont.

**FOR SALE—Several good Shorthorn Bull Calves** of different ages. Nearly all red in color and good pedigrees. Will be sold cheap. THOS. SHAW, Woodburn P. O., Ont.

**FOR SALE.****JERSEY and GUERNSEY BULLS**

We have a yearling bull of each of these breeds, which, on account of shortage of feed, will be sold VERY CHEAP, if taken soon. Write for prices.

THOS. BALLANTYNE & SON, Neidpath Farm, STRATFORD, ONT.

**FOR SALE.****Two Choice Shorthorn Yearling Bulls**

Both rean. Prices reasonable. JAMES GIBB, Brookside P. O.

**SHORTHORN BULL FOR SALE.**

12 months old, Cruickshank blood. Sire and dam both won first prizes at Provincial fair.

H. & W. D. SMITH, Hay P. O.

Exeter Station, on G. T. R., ½ mile.

**IMPORTED STALLIONS FOR SALE****AT VERY LOW FIGURES.**

FOUR imported SHIRE Stallions, three two-year-olds, winners of first and second prizes at Toronto and Hamilton, this fall, and one Yearling, first at Toronto. Also one two-year-old filly; first at Toronto and Hamilton. These are all choice Colts, and will be sold at very low figures to make room for another importation. Come and see them. We can business.

ORMSBY & OHAPMAN,

OAKVILLE, ONT.

Mr. Dryden reports the demand for Shropshire sheep and Cruickshank Shorthorns to be steady and continuous. About 240 Shropshires have been sold since August last. Inquiries still continue, although they cannot now be supplied from Maple Shade. These sheep have been scattered from Quebec in the east, to Manitoba in the west in our own Dominion, and from New York State to Dakota Territory in the United States. Late sales of Shorthorns include the show heifer Meadowweet to W. Ballantyne, Stratford; to E. S. Butler, Ridgeway, Ohio, the two-year-old heifer Mulberry accompanied by a red bull calf sired by imported Sussex and out of imported Velvet of the Victoria tribe; one bull to Donald Robertson, Blantyre, Ont.; to H. A. Colton, Syracuse, N. Y., the highly bred Cruickshank bull Sittytan Chief, the imported yearling heifer Winter Flower, the third prize heifer calf Sadie. All these animals have been sold for show purposes in the future.

**Ayrshires.**

Here is encouragement for Ayrshire breeders from Thos. R. Jack, of Lansing, Mich.: "I note the remarks about the Ayrshire cattle in the November number of your JOURNAL, and I hope the farmers on the other side will be getting well prepared, as it is almost certain that the Ayrshire breed of cattle will be in great demand before long. Only a short time ago we gave \$75 apiece for two Ayrshire heifers, not over a year old.

Mr. E. W. Ware, of Hamilton, is the owner of a herd of thirty-five head of Ayrshires, all traceable to imported stock, and also of ten Jerseys. All are going into winter quarters in good condition, and give every indication of doing well. Mr. Ware is a strong Ayrshire man, and thinks the Ayrshire cannot be surpassed for meeting our conditions of climate, food, etc. Mr. Ware is thoroughly satisfied with the work of his herd this fall at the several exhibitions, where, as usual, they did honor to their owner.

**Holsteins.**

The Bollert Bros., of Cassel, Ont., write under date of Nov. 21st, that their Holstein-Friesians have now moved into their winter quarters, and are in very fine condition, the yearling heifers being especially so. Last week they sold to Mr. N. L. Roth, of Cassel, the imported cow Bedji No. 4505, H. H. B., her three-days-old heifer calf, and her four-year-old daughter. They are stated to be a remarkably fine family of large milkers. We are pleased to see that our German friends are beginning to take interest in improved stock.

Mr. Stevenson, of Ancaster, writes us: "I have recently returned from a visit to the great Holstein-Friesian stock farm of Smiths, Powell & Lamb, of Syracuse, N. Y. While there I purchased a very choicely bred young bull to head our herd. We believe this bull to be one of the very best bred bulls for both butter and milk ever brought to Canada, being a grand-son of the great Netherland Prince and Albino the 2nd, whose butter record of 106 lbs. 14 ozs. in thirty days as a three-year-old has, we believe, never been equalled by any heifer of the same age of any breed. This bull's six female ancestors have made an average of 81 lbs. of butter a week, and he is as handsome as his pedigree is good.

**Sheep and Pigs.**

The worth of our columns as advertising mediums is constantly being testified to by those that have employed them as such, and many unasked-for testimonials warrant us in drawing the conclusion that, not only in this respect but in many others, we are second to no other agricultural paper in Canada. Mr. N. H. Meagher, of Halifax, writes us that since he has advertised his Calloways, etc., in our JOURNAL he has made a number of sales of which the following are noted: Gracie, Tidy 24th, and Corporal Murray to Hon. D. Ferguson, of Charlottetown. He also says, "I have sold a large number of Shrops, the New Glasgow Agricultural Society, A. G. Barton, A. C. Bell, and J. H. Canaugh, all of Pictou County, being the principal purchasers."

Mr. J. Y. Ormsby, V. S., of Oakville, one of the firm of Ormsby & Chapman, reports their stock is in good condition to go into winter quarters, and that they are meeting with every success in the breeding of Clyde and Shire horses, Shropshire sheep and improved Yorkshire pigs, and especially so of the latter. They have at present five head of imported Shires. A short time ago they sold to Mr. E. M. Jarvis a two-year-old imp. Shire filly that was winner of 1st at Brampton; and secured 2d at Toronto and Hamilton this fall. Of pigs they carry at present 23 head, and have lately made the following sales: Boar and sow to J. Hurley, Belleville; boar and two sows to J. R. Campbell, Pennsylvania; boar and sow to Andrew Gilmore, Huntingdon, Que.; sow to Chas. Holmes, Richmond Hill; boar to J. J. Palmer, Ellesmere; boar to J. Hodgson, Horning's Mills. Mr. Winger went to Kingston Provincial especially to see these pigs, and concluded his investigations with the purchase of a boar of six months; also they have sold a yearling Shropshire to R. S. Stevenson of Ancaster, and a Shropshire ram lamb to A. Mitchell, of Credit. See their advertisement this issue.

Unsolicited, the fruits of advertising in our JOURNAL daily come to hand. As the value of advertising in any paper is gauged by the returns obtained from the same, we would ask all to read the letter quoted below, written under date of Nov. 7th, by Mr. Mungo McNabb, Jr., of Cowal, Ont.: "Since advertising my Leicester rams in the JOURNAL, I have disposed of them all at good, fair prices to the following purchasers: Dugald McColl, Iona, a lamb that has secured first every time shown; John McCallum, Iona Station; Samuel Clarke, Dulton; A. C. Campbell, Cowal; H. Miller, Lawrence Station; J. McKay, Dulton; J. Mulligan, Dunwich; and N. Silcox, Iona." Continuing, Mr. McNabb says: "The sire of these has added three more 1st prizes to his list, making fourteen first prizes won by him, besides numerous diplomas. He was bred by Thomas Lee, of Oxford, whose stock is so favorably known in the West. A number of my best ewes have also been bred by Mr. Lee. I have a few Shorthorns tracing to Beauty, imp. by Hon. Adam Ferguson. At their head is Coooper Boy (imp.) bought from W. Redmond, of Millbrook. He was bred by S. Campbell, of Kinellar, and is out of Ruby Hill 9th, by Banner Beaser (10034). He has in his pedigree such sires as British Flag (4600), Sir Christopher (2289), Dipthong (17681), Scarlet Velvet (16916), and numerous others."

Mr. F. J. Ramsey, of Moultondale Stock Farm, Dunnville, Ont., reports the following sales this fall: In Suffolk pigs—Wm. Fraser, Forest, 2; J. Thomson, Pointe Claire, Quebec, 4; J. E. Couse, Wyoming, 3; Seth Hodge, Attercliffe, 1; W. Thomson, Niagara Falls, 2; Louis Grant, Dunn, 2; J. M. Vankensar, Dunn, 2; Dan Culver, Rainham, 2; Chas. Walker, Cayuga, 5; James Porter, Linwood, 2 and 2 Berkshire; Jno. Yorkston, Pictou, Nova Scotia, 2 Shropshire; and Leicester Ram Lambs—W. Clark, North Wiltshire, Prince Edward Island, 1 Leicester; Jno. A. McNab, Alexandria, 1 Leicester; E. A. Carver, Colpo's Bay, 1 Leicester and 1 Shropshire; Jos. Phillips, Maidstone Cross, 1 Shropshire; J. D. Clement, Vanessa, 1 Shropshire; A. Neice, Sherbrooke, 1 Shropshire; W. Pool, Moulton, 1 Shropshire; Peter Johnson, Moulton, 1 Leicester; Emerson Martindale, 1 shearing Leicester and 1 Shorthorn bull calf; H. J. Ince, Willow Grove, 1 Leicester and 1 Shorthorn bull calf; J. M. Vankensar, Dunn, 1 Leicester ewes, 3 ewe lambs, 1 shearling ram. In Shorthorns—2 bull calves to Senator McCallum, Stromness; 1 to Wm. Neice, Sherbrooke; 1 to F. Splatt, Dunn; 1 to Jno. Bradley, Thorold; 1 to C. Risley, International Bridge; 1 to Asa Ninor, Sherbrooke; 2 heifers to A. H. Bradley, Marshville; 2 cows and a heifer to J. F. Rebstock Buffalo; 1 Holstein bull calf to Em. Martindale, Mount Healy.

**Poultry.**

Bronze turkeys for sale by Mr. A. Baird, of Chesterfield. Advertisement in this number.

**FOR SALE**—A few young Berkshire Pigs, of Autumn litters. THOMAS SHAW, Woodburn P. O., Ont.

**SHORTHORN BULLS FOR SALE**

We offer the following well-bred Scotch bulls for sale:

**MARQUIS OF NEIDPATH**, roan, calved Sept. 12th, 1887, sired by the Duthie bred bull METHLICK HERO (imp.), a son of the \$1000 cow purchased for the Exp. Farm; dam, Marchioness 4th (imp) by Cayhurst (4756); 2nd dam, Marchioness of Derby, by the great show bull Earl of Derby and (31061), etc. Also

**2nd MARQUIS OF NEIDPATH**, red with little white, calved April 1st, 1888, sired by Lord Stratford, a son of Methlick Hero; dam, Marchioness 6th by Furbelow Duke (imp.); 2nd dam, Marchioness 4th, as above.

They are first class bulls, and fit to head any herd.  
THOS. BALLANTYNE & SON.

dec-3 Neidpath Farm, STRATFORD, ONT

**FOR SALE OR EXCHANGE.**

The dapple gray PERCHERON STALLION *Charleston* (1740) 1504; foaled 1882; imported by M. W. Dunham, Illinois, U. S. A. Will exchange for either Percheron or Clydesdale stallion. Apply to FRANCIS RUSSELL.  
dec-1 Mount Forest P. O., Ont.

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**PURE GOLD**, rising three years old; stands 16 HANDS, weighs 1,150 lbs.; sired by Morgrave Gold Dust, dam Whalebone, by Buckland's Imported British Champion; color, chestnut; as handsome as a picture; has taken a number of first prizes. This stallion would have received the first prize at Buffalo only for a temporary injury to his front leg at time of show, from which he has entirely recovered.

dec-1 JAMES MATTHEWS, Aton.

**FOR SALE.**

My stock bull STATIRA DUKE 12th (50518), Bates; color, dark red; 5 years old, splendid server and a sure getter. Has every year from a calf taken first prize and diploma at county and other local shows. Would exchange him for one equally as good.

**BULL CALVES** of his get also for sale.  
A **HOLSTEIN BULL CALF**, 8 months old, from imported stock. Dam, sire from Lord Barrington. Grand dam imported.  
**SUFFOLK PIGS**, 6 weeks old, for \$5 each, or \$9 a pair.

Address, **F. J. RAMSEY,**  
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**TWO IMPORTED HORSES**

ONE Cleveland Bay, 3 years old, weighs 1470 lbs., 16 hands high; winner of 3 first prizes and 1 silver medal. One Clydesdale, 2 years old, weighs 1,580 lbs., 16 1/4 hands high, and registered in 10th vol. C. S. B. of G. B., also C. S. B. of Canada, winner of 4 first prizes; also 12 varieties of pure-bred Poultry, at low prices. Bronze Turkeys a speciality. Correspondence answered by sending 3 cent stamps. Address,  
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1 bull, aged 5 years; 1 bull, aged 19 months; 1 bull, aged 14 months; 1 bull, aged 12 months. All of Dom. S. H. H. B. reg-try, except the bull aged 19 mos., which is eligible to N. S. H. B.

A. C. BELL,  
Troutbrook Farm, New Glasgow, N. S.

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—WILL BE HELD AT—  
**PICTON, ONT.,**  
Wednesday and Thursday, Jan. 9 and 10, '88

President's Address, by D. DERBYSHIRE.

Systems of Testing Butter-fat, by Dr. Macfarlane, John Gould, and James Cheesman.

Breeding Dairy Cattle, by Valancey E. Fuller.  
Fodder Crops and Corn Ensilago, by John Sprague and J. S. Pearce.

Creamery Work. How it is Done, by John McHardy.

SECOND DAY.

The Value of Dairy Farming to Ontario, by Hon. Chas. Drury.

One Year's Creamery Work, by Jas. Cheesman.  
Small Packages for Encouraging Home Trade, by D. Derbyshire.

The Ontario Creameries, by Prof. Robertson.

Creamery Inspection, by Mark Sprague

The Dairying Demanded by the Times, by John Gould, Ohio.

The blackboard will be used for illustrations. Further information from James Cheesman, or from Local Secretaries, John Sprague, Ameliasburg, and R. J. Graham, Belleville.

Grand Trunk Railway and C. P. R. will sell tickets at full fare one way, and a third returning, on presentation of certificates, which may be had from the Secretaries.

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—OF—  
**Durham and Grade Shorthorn Cattle, Clydesdale Horses and Berkshire Pigs**

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(The property of the late James Deans)  
2 miles west of PARIS STATION, G. T. R.

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22 head of pure-bred Durhams, all registered in the D. H. B. 23 head of Grade Shorthorns (good).

The whole will be sold without reserve, as the farm has been leased. Sale at 10 o'clock sharp.

TERMS—\$10 and under, cash; over that amount 12 months' credit by furnishing approved joint notes. Catalogues on application after January 1st, to

MRS. ELIZABETH DEANS, (Administratrix), Paris Station P. O.

or, D. A. ANDERSON, Auctioneer, Paris P. O. Trains met on day of sale at Paris Station. dec-2

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One dark brown, 13.3 hands, 700 lbs., from T. B. mare and half Arab stallion. One light brown, 13 hands, 600 lbs., from a 4 minute trotting Exmoor pony mare, and a 144 hands, Phil Sheridan stallion, 2:40. Both very kind and nicely broken to saddle. Address,

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H. WADE,  
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**A-1 Shorthorns,**

Baron Constance roth heads the herd.

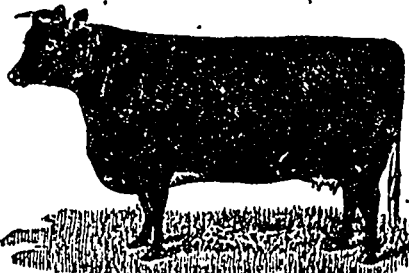
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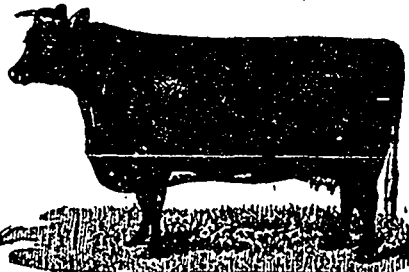
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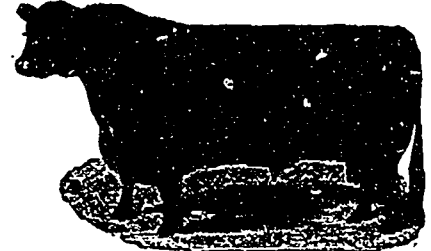
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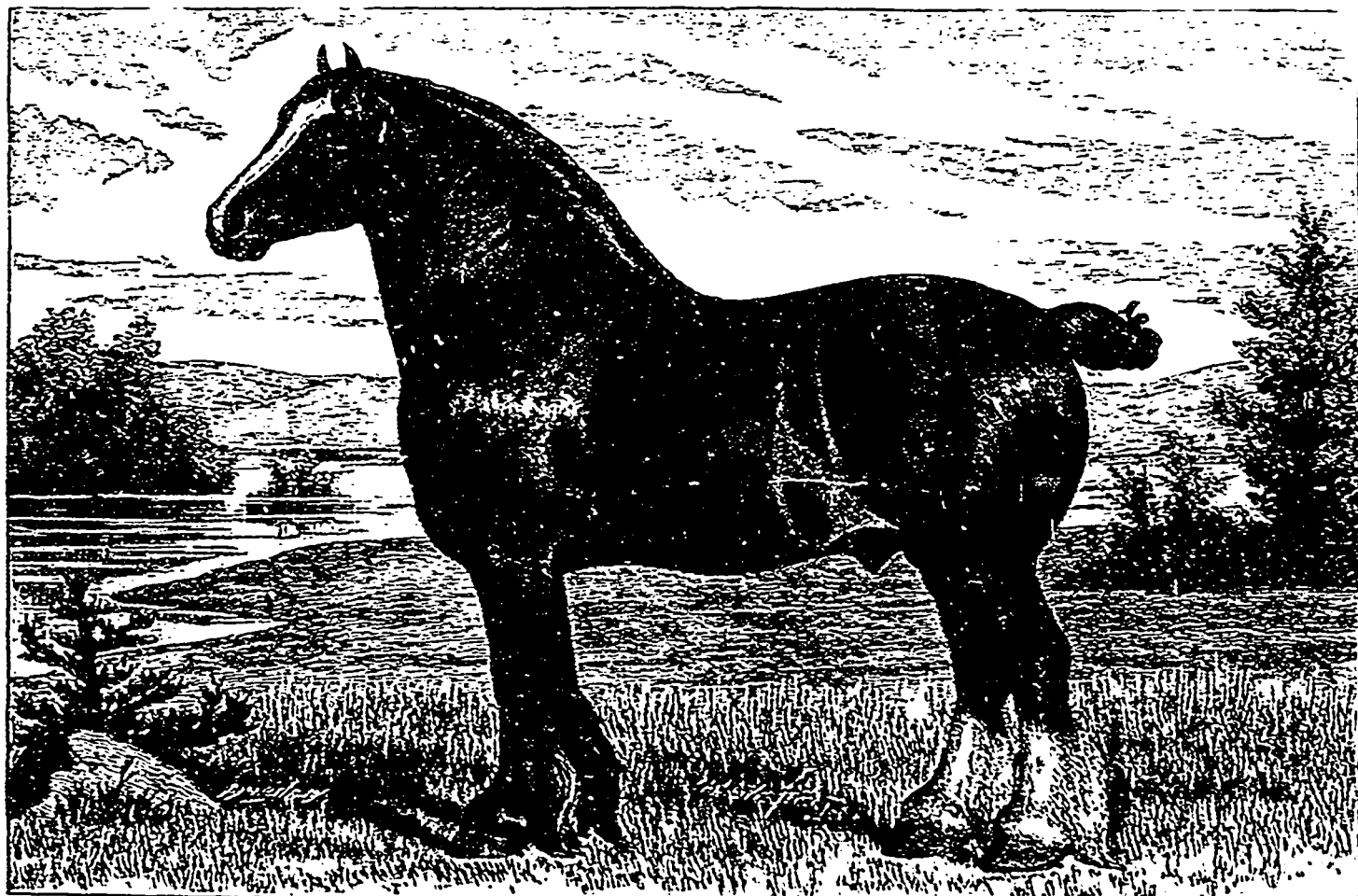
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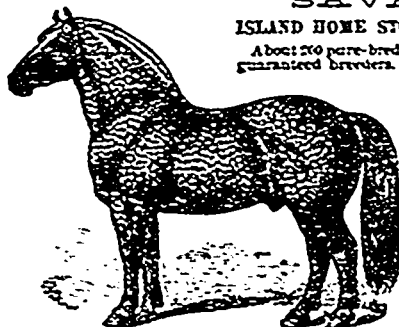
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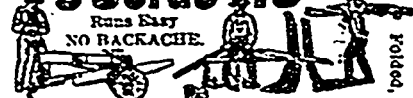
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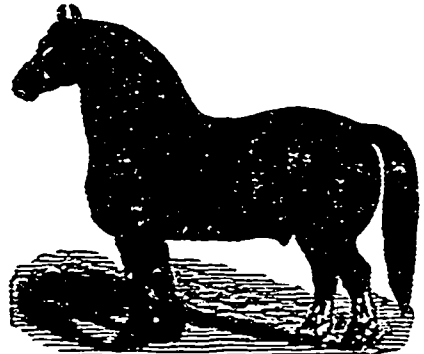
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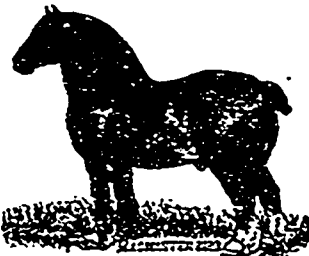
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Which are registered in the Clydesdale Horse Society of Great Britain and Ireland. One of my present importations is Duncan Bruce, winner of the first prize at the Stormont Union Show, Scotland, last year as a year old

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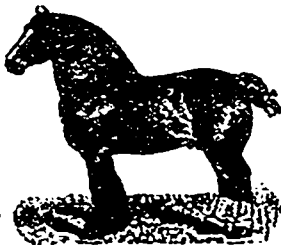
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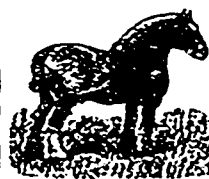
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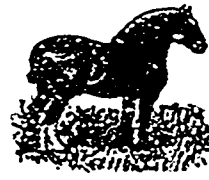
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**SHORTHORNS AND**  
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We have on hand and for sale a superior lot of imported and home bred

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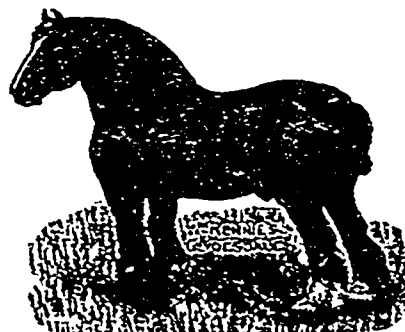


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Prices to suit the times.

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of superior breeding and quality

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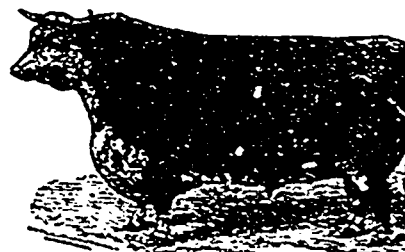
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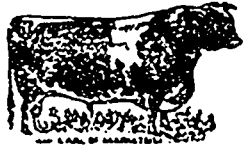
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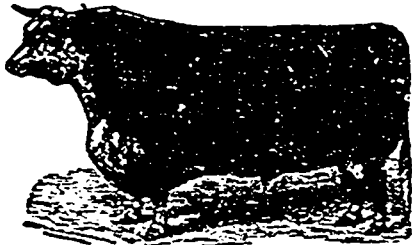


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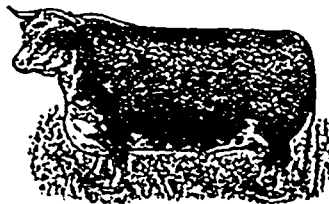
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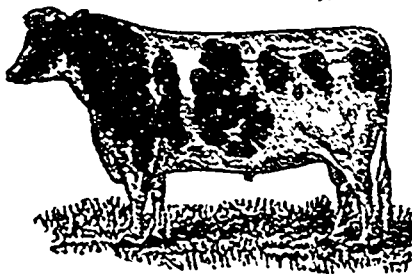
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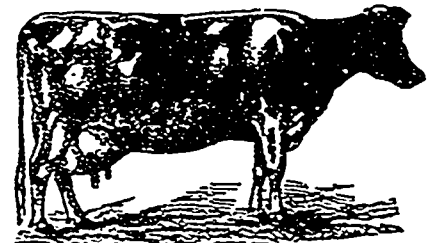


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