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NOVA SCOTIA



Published under direction of the Board of Agriculture of Nova Scotia.

*Omnium rerum, ex quibus aliquid acquiritur, nihil est agriculturâ melius, nihil uberius, nihil homine libero dignius.—Cicero: de Officiis, lib. I, cap. 42.*

**VOL. IV. HALIFAX, N. S., DECEMBER—JANUARY, 1881-82. No. 20.**

In the County of Cumberland, Nova Scotia, at the present time, there are about 900 pupils studying Agricultural Chemistry, and about 300 in the adjoining part of Colchester. Dr. Mackenzie, who is Inspector of Schools, and Secretary of the Parrsboro' Agricultural Society, is taking a very active part in promoting agricultural improvement in the district, and has introduced Lawson & Tanner's Agricultural Chemistry into all the schools.

Mr. Louis Aug. Stapley, of Prome, British Burmah, has kindly favoured us with the following account of Rice Cultivation in Lappadan, contained in a letter from Mr. Ong Gyaw, Oo Mala's monastery, Lappadan:

When it rained nine or ten times and the fields are flooded with water for several days, the owners of the fields begin to plough them. This process lasts for nine or ten days, till the ground is wet, soft, and spongy. The grains are soaked in water for three or four days in order to sprout, when the shoot of each grain comes out, they are scattered in the fields, which are ploughed several times, to be wet, soft, and spongy. When the plants are half a yard high, they are transplanted into another field, the water of which is drained off. When the transplanting is performed, the laborers sink deeply in the soft ground. At first, the leaves of the plants are faded, and in two or three days the yellow leaves are fallen off, whilst the fresh green leaves come out, whereupon the flooding is repeated and remains so until the rice is ripe.

### NOVA SCOTIA POULTRY ASSOCIATION.

This Society is making arrangements for a Spring exhibition to be held from Tuesday, 13th, to Friday, 17th March. The place has not yet been decided on, but will be announced in a few days.

Prizes are offered for nearly all the varieties recognized by the American standard of excellence. Exhibits to be in pairs. The prizes are as follows:—

Asiaties, Dorkings, Hamburgs, Spanish, French, Polish, Games and Miscellaneous in their several varieties, 1st prize \$1.50; 2nd prize \$1.00. In the above varieties the Association offers 1st and 2nd certificates of merit for the best breeding pens to consist of three hens and a cock.

Bantams, 1st prize \$1.00; 2nd 50c.  
Turkey:—Bronze, \$3.00 and \$1.50; white, \$2.00 and \$1.00; common, \$1.50 and 75c.

Geese.—Toulouse and Embden, \$3.00 and \$1.50; Domestic and Wild, \$1.50 and \$1.00.

Ducks, \$2.00 and \$1.50.  
Poultry and Pheasants, \$3.00 and \$1.50.

Pigeons, Cage-birds, Rabbits, Guinea-pigs, 50c. and 25c.

Aviaries \$2.00 and \$1.00; Taxidermy, \$2.60 and \$1.00.

Eggs heaviest doz., \$1.00 and 50c.

A special prize of \$10 will be offered to exhibitors from outside the Province, for the best collection consisting of not less than five coops, owned and shown by one exhibitor.

The association invite offers of special prizes.

The official prize list will be issued in a few days.

We have had several applications for information respecting Turnip Cutters. That is a cheerful sign. Our farmers must be growing more roots. If any manufacturer in the Province or in the Dominion makes for sale a really good, convenient, and cheap root-cutter, we shall be glad to publish his address in our next number, on the necessary information being supplied to us. Meantime we can give only the address of Samuelson & Co., Banbury, Oxon, England, as the makers of Gardner's Improved Turnip Cutters.

RETREAT FARM,

LOWER STEWACKE,  
Jan. 27th 1882.

Dear Sir,—Why is it that there is no register for Pigs? I have some pure breed and cannot get them registered.

W. T. HARRIS.

Mtesa, King of the Uganda Country, sent three envoys to England, and on their return they reported, *inter alia*, as follows:—"Next they took us to see the cows and sheep and horses. Such a lot of cows and sheep they have. There we saw thousands of pigs, and each pig had six children. These are the food of the Queen."

## BLACK MUD.

To Editor Journal of Agriculture :

Sir,—At the risk of being tedious to a portion of your readers, I have now undertaken to treat upon a topic in agriculture in such a manner as may be found interesting and profitable to the minds of an inquiring few.

It is only after some experience in dealing with the dark and mysterious material which composes our swamps, that I have arrived at certain conclusions as to its nature and properties, and more profitable use and application as a manure. And I may say in the outset, that in certain important qualities any specimens that I have noticed in this country entirely differ from the peat moss of the old country that is in any way used for fuel. We read of mosses or swamps, the material of which would appear to be charged with some preservative or anti-septic quality by which their character remains for lengthened periods unchanged, though exposed to the elements of air and water, and it may be to fire also. To some extent our black muck bears this same common characteristic. But I have observed that in the case of vast areas of this substance in Nova Scotia, comprising innumerable patches of wet, black, and miry swamp, the character of what appears to be of leading importance to the agriculturist is the presence of certain mineral salts, among which sulphate of iron holds predominance. Persons of a philosophical turn of mind may just here and now enquire, how did such a combination get there? The answer would comprise what might be found a very interesting study in chemistry, mineralogy and geology through all its ages. Perhaps there is room here for me to say that the underground portion (which is a very important portion) of this country contains a prodigious quantity of sulphur and iron locked up. Sulphur or sulphuric acid, must have been at one time in the world's history, perhaps several hundred thousand millions of years ago, a very common element in the circulating system or systems of this planet; this circulating system perhaps including many streams, inland seas, lakes, volcanic fires, and hot vapors. At any rate, nearly the half of this Province is composed of various systems (strata) of rock, formed, as they must have been, by igneous deposition. [Should any one be unacquainted with the full meaning of these terms he will have to get a dictionary—there are more of them to come yet] Now, these rock systems, generally the quartzite, the lowest, and the slate, just above, are mainly composed—in ascending order—of silica, silicate of alumina, and this latter, comprising minute quantities of manganese, and very minute quantities of

alkaline material; but the whole of these formations contain, especially in the planes of superposition, in the aggregate a vast amount of pyrites, consisting of sulphide of iron; but, and this particularly in the inferior member of the group, and in its extreme lowest part, where the gold leads occur, a considerable show of soft and dark mineral, which largely consists of arsenic and lead, in connection with the sulphur—always with the sulphur. Next above these, moving across an unspeakable gap in the world's geology, we in Nova Scotia find, very frequently in close position to the aforementioned, the sulphuric acid in a particular and altogether new connection. And we thus find it definitely compounded, unmixed, prodigiously massed, elevated mountains high, in enormous quantity, in hills and fields, and cliffs and reefs, to a sure and certain extent soluble in water, and everywhere showing where it has been immensely dissolved; and the percolating waters everywhere, as in some degree in all sulphate districts, carrying downwards and onwards, over land, and through swamps, to the rivers and sea, these sulpho-salts in a state of solution, or dissolution; for they form new combinations by the way, and re-combinations, the full account of which would no doubt form "a more marvellous tale" than space here is to recount. And that is how and by what means the decayed vegetation of our swamps has become charged with pyritic salts, in a very finely divided state.

Next, let us see what we can do with this black muck, to make a manure of it; because in its natural swampy condition it is very slow of decomposition; indeed, from causes that I intend referring to farther on, there are very few substances that we can connect it with (in their native condition) that will decompose it, and these only sparingly and slowly. We shall have to apply to it something containing an excess of the alkaline principle, that shall be so far decomposable as to combine with the sulphuric acid, to the exclusion of the iron, or whatever base this acid is connected with, or otherwise something that has been deprived of oxygen, as burnt earth, &c. I have in another place referred to the value of the prepared gypsum as a manurial agent. For anything I can see to the contrary, those who have a black muck swamp of the right kind near at hand are about as well off for a manurial constituent as if they had a plaster quarry.

I have in the foregoing described very shortly the principle of decomposing the ferruginous salts contained in the muck. Burnt lime is a very efficient agent for this purpose. So are soap suds; hence the advisability of a good back-door

compost heap of black mud. Soda in I suppose any form will decompose the muck. But there is probably nothing better than ammonia. This is our old friend of the manure heap.

About all the nitrogen we get on the farm comes either out of the atmosphere or the dung-pile. We have it here in a loose but definite compound with hydrogen, termed ammonia; and this ammonia again is combined with carbonic acid, forming carbonate of ammonia. Ammonia is, therefore, an alkaline substance, capable of forming a salt in connection with an acid, and of re-combining with other acids and forming other salts; and when sulphate of iron, in the finely divided form in which we have it in the muck swamp, comes in intimate contact with the fresh manure, the result is a sulphate of ammonia. This is a more convenient and suitable condition in which to apply the ammonia (or nitrogen) to the soil, than perhaps any other, in this country at least.

So far so good on the part of the ammonia. Let us get back for a little to the black mud. This contains plenty also besides pyritic substances. In most instances the elements of common table salt are present. Moreover, we often find incrustations of limestone, in a crumbled and honeycombed form,—the carbonate of lime,—or bog limestone. This has resulted from the decomposition of the gypsum, as this in its turn gave up its sulphuric acid. In some districts in the country we find magnesium salts in the swamps, streamlets and mineral springs.

These foregoing are perhaps the most important of the substances that have come into the swamps by water circulation. In addition, we have whatever is contained in the decayed or partly decomposed vegetation of which the muck is mainly composed. And here we may observe on the very face of it, or rather on the top of it, that out of a well drained and well cultivated swamp, without any manure at all, but well seeded, we get a good crop of timothy for I know not how many years, but probably as long as the bottom part of it can be taken out of the ditches and cast occasionally over the top of the ground. This shows that the muck must be well supplied, from some source, with phosphoric acid, because there is enough phosphate of lime in one ton of timothy, if I recollect right, to make the whole skeleton of a cow.

I wish here to state, for the edification of the ignorant, that this pyritic muck surpasses anything perhaps in the known world in the condensation of atmospheric vapors into water. It is a substance, which, if undecomposed, never dries. It will be found in numerous places full of water to the top; and persons who see these wet places think they behold a

spring; and that water in this instance rises above its own level. But we might get to work and surround these "spa holes" with ditches to the hard earth, and not dry up the "spring"; and then we might cart away the "spring" and all its bed of muck, and find nothing but dry earth, without any spring holes at all; and if we pile up enough of this muck anywhere in one place we shall have a "spring" in it. As a consequence of this peculiarity, we find that swamps are always miry. They may have any amount of fall in them, but the water cannot wholly run off. In fact it forms faster than it can run off. It is as though we lay a sponge on a table, and fill it with water until saturated. This much it will pretty fairly hold. Then pour on more and the water will "seep" out of the sides below; and this is what our swamps are doing all the time.

Let me say that in the application of the muck to the manure, we should begin before the manure is produced, and spread a good quantity wherever either the solid or liquid is to come. Then when it is made, say once a day, or once a week, spread the dung, and over it place a layer of muck of about the same quantity. By doing this, the dung can never heat, and the chemical operation can continually go on.

I have observed, and indeed it was the principal motive with me in contemplating this article, that putting the green barn manure into the potato drills poisons the crop. The tubers grow scabby, small, and sour, and rotten, whereas by the use of the muck all these difficulties are avoided, and we get a good and sure crop. I have observed in the month of June that the unmix'd dung seemed to heat with the warm rain and hot sunshine, giving aid and comfort to a small and active black fly that devoured the leaves of the potato wholesale, and thus added to what other difficulties the tuber had to contend with down below.

I am here going to request somewhat of the clemency of your readers a little further upon a topic rather apart from the subject proper of this article, but which yet has a very important bearing upon the subject of agriculture. I have noticed that some of the Granges have made a move, by way of resolution, to approach the Legislature with the object of procuring lecturers on the all important branches of agriculture, chemistry, geology, botany, &c., in order that farmer's sons and others shall have an opportunity of profiting by these lectures. I wish to state emphatically that the Legislature has already done this same. Already five or six institutions in different parts of Nova Scotia receive aid from the Government of this Province to do just what the members of the Granges

and agricultural societies would request. As a connecting link, in the nomenclature at least of such a course of study, I would suggest mineralogy. The study of mineralogy just about covers what I would express by inorganic chemistry. Geology can be nearly all learnt by the fireside, from a well written, well illustrated treatise upon the science, or at least almost as well and thoroughly as at college, and far better than at any lecture. I have tried it both ways. But after all, the proper field for studying geology is a field of rocks.

Not in the lecture room, but in the college class, is the place to study inorganic or organic chemistry, and in the laboratory, where all may take a hand in experimenting. As for botany, well, it can be learnt at college or school, only we shall have to be out of doors much more to learn it than in the school. We cannot learn agriculture or any other science by a course of lectures, any more than we can learn medicine by such a course. The best place to learn agriculture is on a farm; only let the accompanying course of tuition—maybe self-tuition—be systematic, and as far as possible thorough. As for chemistry in any department, it cannot be picked up miscellaneously, or by the generalizing system of the manuals, or agricultural newspapers. The student must, at some time or other, begin at the proper beginning. Nor can we learn organic chemistry apart from the inorganic. Such a science does not exist. The student of agriculture might as well commence with silicic acid as with carbonic acid, with alumina as with ammonia.

Nor can all the botany we shall learn apart from the philosophy of plant growth, be of much use, except as a fancy appendage or accomplishment. Botany is, in fact, included, in its most important and practical sense, in a true knowledge of applied chemistry.

With all I have said, I wish to say to all farmers' sons who intend becoming students of science, in any form or branch, go to an intelligent master of these things, and buy the books he recommends, and learn what you can yourselves. If you cannot form a club, buy all the books yourself. Do not spare the cash or be frightened about the money. I dare say that out of five parts of natural science you may or can learn four parts by private study; but for the fifth part, you must attend the class. Never mind the lecturers; do not believe in them. They may do their part quite efficiently; but you cannot learn by them.

I had almost forgotten to recommend to all young persons the study of animal physiology, and the philosophy of animal life, in every particular that such knowledge can be acquired. CLOVERDALE.

The following is from the *Agricultural Gazette*, London:—"NOVA SCOTIA.—Six cows and heifers and three young bulls of the Polled Aberdeen and Angus cattle breed have been recently selected by Mr. Robert Bruce, of Great Smeaton, and were shipped on Tuesday, November 22, by the Royal Mail steamship *Hibernia*, of the Allan Line, from Liverpool, for the Government of Halifax, Nova Scotia. The cattle were as follows:—Fame (4539), a 2 years and 10 months old heifer; King of Diamonds (1818), an 18 months old bull, and Marksman, a 9 months old bull calf, bred at Ballindalloch, sire Young Viscount (736), dam Maria 2nd (3015). These three are from Sir G. McPherson Grant's herd at Ballindalloch. Fame is a very good cow all over; she descended from one of the oldest Ballindalloch families, some of her ancestresses having made high prices. King of Diamonds comes from stock that have been successful in the prize ring at the Scottish shows and at the Paris International Show in 1878. The sire and dam of Marksman were famous prize-winners at the Aberdeen and Highland Societies of Scotland shows; and his sire was also the winner of the champion prize at the Royal Agricultural Society of England International Show at Kilburn in 1879, and was sold for a very high price. Moonlight 2nd (4603), a 1 year and 10 months old heifer, is a well-grown, thick, strong heifer, with capital quarters, and thick coat of hair. She is from Mr. Skinner, of Drumin, Ballindalloch, and is descended from high-priced and prize stock on both sides. Honesty 4th (3757), from Mr. Robertson, of Aberlour Mains, is a very good straight cow, 4 years old, with well sprung ribs, good top and hip quarters. Besides being a prize-winner herself, her sire Cluny (1283), grandsire Clausman (398), and great-grand sire Young Panama (232) were all 1st prize-winners. On her dam's side she is descended from the well-known Drumin Lucy tribe. Signet 3rd (4355) and Purity 5th (4357) are both from Mr. J. Strachan, of Wester Fowles. They are two well-grown heifers, rising 2 years old. Milly 3rd (3471), 4 years old in March last, a fairish cow, with good loin and long quarter and with a good udder. She comes from Mr. J. S. Findlater, of Balvenie. Jock o' Benton (1894), a soggy bull calf, just ten months old, looks like making a large bull of great length, straight back, and masculine head. He is bred by Mr. C. Stephenson, of Balliol College Farm, Newcastle, Northumberland."

THE short-horn bull "Viscount Oxford," formerly owned by the Amberst Agricultural Society, is now on Prince Edward Island, and is highly valued as the animal that has brought the best stock ever seen on the Island.

**NOMINATIONS MADE BY THE OFFICERS OF AGRICULTURAL SOCIETIES IN THE SEVERAL DISTRICTS, TO THE CENTRAL BOARD OF AGRICULTURE, IN TERMS OF THE ACT FOR ENCOURAGEMENT OF AGRICULTURE.**

*District No. 1.—Counties of Halifax and Lunenburg.*

Halifax County Agricultural Society.....Hon. J. F. Stairs.  
 Upper Musquodoboit Agricultural Society.....Donald Archibald.  
 Lower Musquodoboit Agricultural Society.....Donald Archibald.  
 Dartmouth Agricultural Society.....Donald Archibald.  
 Mahone Bay Bay Agricultural Society.....Col. J. W. Laurio.  
 Bridgewater Agricultural Society.....  
 Lunenburg Agricultural Society.....Hon. J. F. Stairs.  
 Contreville Agricultural Society.....

*District No. 2.—Counties of King's, Annapolis and Queen's.*

King's County Agricultural Society.....Col. W. E. Starratt.  
 Union Agricultural Society of King's.....  
 Central Agricultural Society of King's.....  
 West Cornwallis Agricultural Society.....Thomas Koillor.  
 Aylesford Agricultural Society.....Col. W. E. Starratt.  
 Farmers' Agricultural Society of King's.....  
 Annapolis Agricultural Society.....Col. W. E. Starratt.  
 Clarence Agricultural Society.....Col. W. E. Starratt.  
 Bridgetown Agricultural Society.....Col. W. E. Starratt.  
 Paradise Agricultural Society.....Col. W. E. Starratt.  
 Laurio Agricultural Society.....Col. W. E. Starratt.  
 Clements Agricultural Society.....Col. W. E. Starratt.  
 Nictaux Agricultural Society.....Col. W. E. Starratt.  
 Caledonia (North Queen's) Agricultural Society.....Col. W. E. Starratt.  
 Liverpool Agricultural Society.....Col. W. E. Starratt.  
 Kempt Agricultural Society.....Thomas Koillor.  
 Mutual Benefit Agricultural Society of Brookfield  
 and Pleasant River.....Col. W. E. Starratt.

*District No. 3.—Counties of Digby, Shelburne and Yarmouth.*

Digby Agricultural Society.....  
 Digby Central Agricultural Society.....Charles E. Brown.  
 Hillsburgh Agricultural Society.....Charles E. Brown.  
 Digby Northern Agricultural Society.....  
 Weymouth Agricultural Society.....Charles E. Brown.  
 Barrington West Passage Agricultural Society.....Charles E. Brown.  
 Shelburne Agricultural Society.....Charles E. Brown.  
 Yarmouth County Agricultural Society.....Charles E. Brown.  
 Yarmouth Township Agricultural Society.....  
 West Pubnico Agricultural Society.....Charles E. Brown.

*District No. 4.—Counties of Hants, Colchester and Cumberland.*

Windsor Agricultural Society.....W. H. Blanchard.  
 Newport Agricultural Society.....I. Longworth.  
 Union Agricultural Society of Maitland.....I. Longworth.  
 Falmouth Agricultural Society.....  
 Progress Agricultural Society of Elmsdale.....Longworth.  
 Shubenacadie Agricultural Society.....  
 Onslow Agricultural Society.....I. Longworth.  
 Tatamagouche Agricultural Society.....I. Longworth.  
 Londonderry Agricultural Society.....I. Longworth.  
 Lower Stewiacke Agricultural Society.....I. Longworth.  
 Bass River Agricultural Society.....I. Longworth.  
 Waugh's River Agricultural Society.....I. Longworth.  
 Stirling Agricultural Society.....I. Longworth.  
 Brookfield Agricultural Society.....I. Longworth.  
 Earltown Agricultural Society.....I. Longworth.  
 Amherst Agricultural Society.....Hiram Black  
 Parrsboro' Agricultural Society.....I. Longworth.  
 Middleboro' Agricultural Society.....I. Longworth.  
 Malagash Agricultural Society.....I. Longworth.  
 Minudic and Barronsfield Agricultural Society.....I. Longworth.

*District No. 5.—Counties of Pictou, Antigonish, & Guysborough.*

Pictou Agricultural Society.....D. Matheson.  
 New Glasgow Agricultural Society.....D. Matheson.  
 River John Agricultural Society.....D. Matheson.  
 Millbrook Agricultural Society.....D. Matheson.  
 Pine Tree Agricultural Society.....D. Matheson.  
 Lorne Agricultural Society.....D. Matheson.  
 Antigonish Agricultural Society.....Arch. A. McGillivray.  
 St. Andrew's Agricultural Society.....Arch. A. McGillivray.  
 Bayfield Agricultural Society.....Arch. A. McGillivray.

Guysborough Agricultural Society.....Arch. A. McGillivray.  
 Milford Haven Agricultural Society.....D. Matheson.  
 Argyle Agricultural Society.....D. Matheson.

*District No. 6.—Counties of Cape Breton, Richmond, Inverness and Victoria.*

North Sydney Agricultural Society.....John McKeen.  
 Sydney Mines and Little Bras d'Or Ag. Society.....John McKeen.  
 East Bay Agricultural Society.....Wm. H. Moore.  
 Bonhardie Agricultural Society.....John Ross.  
 Sydney Agricultural Society.....John Ross.  
 Christmas Island Agricultural Society.....W. H. Moore.  
 Richmond Agricultural Society.....John McKeen.  
 Lennox Agricultural Society.....John McKeen.  
 Isle Madame Agricultural Society.....John McKeen.  
 Mabon and Port Hood Agricultural Society.....John McKeen.  
 River Dennis Agricultural Society.....John McKeen.  
 Strait of Canso Agricultural Society.....John McKeen.  
 North East Margaree Agricultural Society.....John McKeen.  
 LeMoine Agricultural Society.....John McKeen.  
 Whytecomagh Agricultural Society.....John Ross.  
 Strathlorne Agricultural Society.....  
 Middle River Agricultural Society.....John Ross.  
 Baddeck Agricultural Society.....John Ross.  
 St. Ann's Agricultural Society.....John McKeen.

**NOVA SCOTIA REGISTER OF THOROUGH-BRED STOCK.**

*Sanctioned by, and published under authority of, the Central Board of Agriculture of Nova Scotia.*

NOTE.—To save useless correspondence it is necessary to state distinctly that Applications for Registration will not be recognized unless made on the printed form provided for the purpose. Forms may be obtained from the Secretary of the Board. Fee for registration, fifty cents, to accompany the application. Transfers must be made on Transfer Certificate Forms, which may also be obtained on application. Fee for record of transfer twenty-five cents, to accompany certificate.

**JERSEY BULLS.**

**34.—ALPHA.**

Pale red, fore feet and legs and switch white. Dropped April 16th, 1881. Raised and owned by Moses Harris, Hebron Co. Yarmouth, N. S. Sire Knight of Lee Farm, 10. Dam May flower, by Plantagenet, 8. G d Manonette 4479 Am.

**35.—KALLEBOGUS.**

Fawn, star, white hind legs, all four feet, belly and switch, black tongue. Dropped 27th September, 1880. Raised by Charles E. Brown, Yarmouth, N. S. Owned by James Kitchin, River John Co. Pictou, N. S. Sire Darling 7, 1371 Am. Dam Nabritza, 5820 Am, by Darling, 7, 1371 Am. G dam. Bramitza, 1, 5388 Am G g d. Foliette 1374 Am, by Defiance 196 Am.

**36.—BERKELEY.**

Red and white, star in forehead. Dropped May 10th 1877. Raised by Charles W. Smith, Sandbeach, Yarmouth, N. S. Owned by Overseers of the Poor, Yarmouth. Sire Darling, 7. Dam Nell 27, by Past Tyler, 4,—g dam by Dick Swiveller 3rd, 2.—G. g. d. Pioneer, 1.

**37.—CENTAUR.**

Yellowish brown and white. Dropped 9th May, 1880. Raised by George E. Francklyn, Emscote. N. W. Arm, Halifax, N. S. Owned by Dr. Lewis, Halifax. Sire Comet 23. Dam Florrie, 18 by Comet 2nd. 22 G d Damsel, 14, imported from Island of Jersey

**38.—GLENCAIRN OF LORNEDALE.**

Light brown and white and steel grey. Dropped March 2nd 1881. Raised and owned by Israel Longworth, Lornedale Farm, Truro, Co. Colchester, N. S. Sire Ajax of Lornedale, 17. Dam Zuldee of Lornedale, 18, by Ronald Robin, 19. G d Seafield Belle 11, by Lord Seafield, 18. G d I. Belle, imported from Island of Jersey — Brownie (a prize cow in Island of Jersey).

39.—ST. JULIAN.

Brownish fawn. Dropped March 1880. Raised by Oscar Davidson, Yarmouth, N. S., owned by F. B. Wade, Bridgewater, Co. Lunenburg, N. S. Sire Darling, 7. Dam Nellie, 36, by Tyler 5,—g dam by Bruno, 3,—g g d by Dick Swiveller 3rd, 2. — by Pioneer, 1.

40.—ROB.

Red, white patches. Dropped April 14th, 1878. Raised by Charles W. Smith, Yarmouth, N. S., owned by Thomas Nickerson, Yarmouth, N. S. Sire Darling, 7. Dam Nelly 27, by Past Tyler, 4. G dam by Bruno, 3. G g d by Dick Swiveller 3rd, 2. — by Pioneer, 1.

41.—FAVONIUS.

Solid, black tongue and switch. Dropped 1st February, 1881. Raised by George E. King, St. John, N. B., owned by Charles E. Brown, Yarmouth, N. S., 5167 Am. Sire Barry's Eddington 2250 Am., by Roter 2nd, the sire of Eurasias. Dam Cedar 2nd, 7726 Am., by Litchfield.

42.—LAIRD OF DRAFFAN.

Solid, except small spots on right foot and behind brisket, right side, mixed switch, black tip. Raised and owned by Charles E. Brown, Yarmouth, N. S. Sire Bon Hampton of Hillcrest, 13, 3240 Am. Dam Branitza 1, 5388 Am.

43.—SEAFOAM.

Fawn. Dropped June 17th, 1877. Raised by William Duffus, Halifax, N. S. Owned by Edward Smith, Windsor, N. S. Sire Lord Seafield, 18. Dam Fairy, imported in Dam Lady Jane from Island of Jersey.

44.—VICTOR OF DRAFFAN.

Solid, black tongue and switch. Calved 4th Oct., 1881. Bred and owned by Charles E. Brown, Yarmouth, N. S. Sire Bon Hampton of Hillcrest, 13, 3240 Am. Dam Nabritza 2, 5820 Am., by Darling 7, 1371 Am. G d Branitza 1, 5388 Am., by Defiance 196 Am. G d Juliette, 1374 Am., by Defiance, 196 Am.

45.—BLUENOSE.

Steel grey, with white markings. Calved March 23rd, 1881. Bred and owned by Edward Blanchard, Ellershouse. Sire Antelope, 30. Dam Ligna 5th, 6494 Am., by Faro, 1749 Am. G d Ligna, 2237 Am.

46.—CHIEF OF THE ISLAND.

Smoky fawn, black tongue and switch. Calved June 17th, 1878. Bred by Joseph Hickson, Montreal. Owned by G. W. Boggs, Bedford, N. S., No. 4338 Am. R. Sire Orloff, 3143 Am. Dam The Fawn, 5270 Am.

47.—BARON OF ST. LAMBERT.

Black and grey points, grey stripe along back, black tongue and switch. No. 5286 Am. R. Calved August 9th, 1879. Bred by Romeo H. Stephens, St. Lambert, Canada. Owned by G. W. Boggs, Bedford, N. S. Sire Stoke Pogis 3rd, 2238 Am. Dam John Favorite of St. Lambert, 5118 Am.

48.—GRAND MASTER.

Light fawn, black tongue and switch. Calved June 4th, 1881. Bred and owned by G. W. Boggs, Bedford, N. S. Sire The Sultan, 35. Dam Cowslip of St. Lambert, 8, 8439 Am., by Stoke Pogis 3rd, 2238 Am. G d Witch of St. Lambert, 5479.

JERSEY COWS.

28.—PRIDE OF MILTON.

Pale fawn, white across forehead, on right shoulder, right hip raised and switch. Calved 25th March, 1877. Bred by Nelson N. Sprung, Senr., Yarmouth, N. S. Owned by Bowman B. Law, Yarmouth. Sire Past Tyler, 4. Dam by Tyler, 5. Grand Dam by Bruno, 3. G g d by Dick Swiveller 3rd, 2.

29.—QUEEN OF GLYNWOOD.

Solid fawn, black tongue and switch. Calved 17th March, 1879. Bred by Bowman B. Law, Yarmouth, N. S. Owned by Henry Dringworth, Charlottetown, Prince Edward Island. Sire Darling, 7, 1371 Am. Dam Pride of Milton, 28, by Past Tyler, 4. G d by Tyler, 5. G g d by Bruno, 3. — by Dick Swiveller 3rd, 2.

30.—MAYFLOWER.

Pale red, with white forehead, shoulder, flanks, legs, and switch. Calved 19th May, 1879. Bred and owned by Moses Harris, Hebron, N. S. Sire Plantagenet, 8. Dam Mañonette 4479 Am.

31.—CASSIE.

Fawn and white. Calved March 20th, 1880. Bred and owned by Charles W. Smith, Yarmouth, N. S. Sire Plantagenet 8. Dam Nelly, 27.

32.—LADY MONTAQUE DEBONNAIRE.

Light fawn, black points, white ring round tail above switch. Calved 28th November, 1830. Bred and owned by Edward Blanchard, Ellershouse, Hants County, N. S. Sire Romeo Debonnaire, 33. Dam Judy Bannir, 16, by Dorstieks, 3387 Am. G d Jade 6197 Am., by Faro, 1749 Am. G g d Juliana 2, 3028 Am. — Juliana 2236 Am., bred on the Island of Jersey.

33.—JADE.

Solid grey fawn, black points and tongue. Calved April 13th, 1877. Bred by W. B. Dinsmore, Staatsburgh, Dutchess County, New York State, U. S. A. Owned by Edward Blanchard, Ellershouse, Hants County, N. S. Sire Faro, 1759 Am. Dam Juliana 2nd, 3028 Am. G d Juliana 2236 Am., bred on the Island of Jersey.

34.—LIGNA 5TH.

Solid grey fawn, black points and tongue. Dropped March 5th 1877. Bred by W. B. Dinsmore, Staatsburgh, New York. Owned by Mr. Neville, Newfoundland. Sire Faro, 1749 Am. G s Vermont, 893 Am. G g s Governor, 890 Am.,—Napoleon, 291 Am. Dam Ligna, 2237 Am., raised on the Island of Jersey.

35.—RUSTIC RUSSY.

Orange fawn and white. Dropped May 9th, 1877. Bred by W. B. Dinsmore, Staatsburgh, New York. Owned by Edward Blanchard, Ellershouse, Hants Co. N. S. Sire Prince of Staatsburgh, 2398 Am., raised on the Island of Jersey. Dam Russy 2nd, 3535 Am. G d Russy, 2235 Am., raised on the Island of Jersey.

36.—NELLIE.

Fawn. Raised by George M. Patten, Yarmouth, N. S. Owned by F. B. Wade, Bridgewater, Co. Lunenburg. Sire Tyler, 5. Dam by Bruno, 3. G d by Dick Swiveller 3rd, 2. G g d by Pioneer, 1.

37.—ADA.

Fawn. Dropped 27th February, 1879. Bred and owned by Oscar Davidson, Yarmouth, N. S. Sire Darling, 7. Dam Nellie, 36 by Tyler, 5. G d by Bruno, 3. G g d by Dick Swiveller 3rd, 2. — by Pioneer, 1.

38.—ROSE OF DRAFFAN.

Star, stripes on left shoulder, both hind feet, switch, black tongue. Dropped 20th April, 1881. Raised by Henry Vaughan, St. John, N. B. Owned by Charles E. Brown, Yarmouth, N. S. Sire Lord St. Vincent, 3466 Am. Dam Pride of St. Croix, 3318 Am.

39.—PRIMROSE.

Red with white star in forehead. Dropped 15th February, 1881. Bred and owned by J. L. Hemmeon, Liverpool, N. S. Sire Aztinbar, 11. Dam by Darling, 7, 1371 Am. G d by Past Tyler, 4. G g d by Bruno, 3.

40.—LALLA ROOKIE.

Light fawn, white switch. Calved March 12th, 1881. Bred by Edward Blanchard, Ellershouse, Hants. Owned by Thomas Cantley, New Glasgow, Co. Pictou, N. S. Sire Antelope, 30. Dam Rustic Russy, 35, 6501 Am., by Prince of Staatsburgh, 2398 Am., raised on Island of Jersey. G d Russy 2nd, 3535 Am. G g d Russy, 2235 Am., raised on Island of Jersey.

41.—ADA.

Fawn. Dropped March, 1881. Raised by Oscar Davidson, Yarmouth N. S. Owned by James Cull, Bridgewater, Co. Lunenburg, N. S. Sire Bon Hampton of Hillcrest, 13. Dam Nellie, 36 by Tyler, 5. G d by Bruno, 3. G g d by Dick Swiveller 3rd, 2. — by Pioneer, 1.

## 42.—BEAUTY.

Fawn, spotted with white, throat and ears grey, white legs, white star on forehead. Dropped April 20th, 1881. Raised and owned by J. B. Lawrence, Barrington, Co. Shelburne, N. S. Sire L'Estranger, 27. Dam Nathalie, 22 by Darling, 7, 1371 Am. G d Maid of Orleans, 6, by Past Tyler, 4. G g d by Bruno, 3. — by Dick Swiveller 3rd, 2. — by Pioneer, 1.

## 43.—ROSE.

Fawn and white. Dropped 16th February, 1881. Raised and owned by D. Sargent, Barrington, N. S. Sire L'Estranger, 27. Dam by L'Estranger, 27. G d by Tyler, 5. G g d by Bruno, 3.

## 44.—FANCY FAN.

Orange fawn and white. Dropped 15th May, 1881. Raised and owned by John Keith, Windsor, N. S. Sire Sultan, 15. Dam Maid of Orleans, 6 by Past Tyler, 4. G d by Bruno, 3. G g d by Dick Swiveller 3rd, 2. — by Pioneer, 1.

## 45.—CANTERBURY BELLE.

Greyish fawn and white, 4751 Am. Raised by C. E. Grosvenor, Canterbury, N. B. Owned by James Kitchen, River John, N. S. Sire Halifax, 681 Am. Dam Millbrook Maid, 1733 Am. G d Maud, 674 Am., imported from Island of Jersey.

## 46.—LILLY OF DRAFFAN.

Fawn, spot on right forehead, white between forelegs, belly, hind legs, fore ankles. Calved 29th Oct., 1881. Bred and owned by Charles E. Brown, Yarmouth, N. S., sire Bilaptaur, 14, 4778 Am. Dam Zabrinta, 4, 10216 Am., by Darling, 7, 1371 Am., g d Branaza, 1, 3388 Am., by Defiance, 196 Am. G g d Juliette 1374 Am.

## 47.—MISS JERSEY BLOOD.

Solid light grey fawn. Calved April 15th, 1881. Bred and owned by Edward Blanchard, Ellershouse. Sire Antelope, 30. Dam Jade, 33, 6498 Am., by Faro 1759 Am. G d Juliana 2nd, 3028 Am., g d d Juliana 2236 Am., bred on the Island of Jersey.

## 48.—NAIAD OF ST. LAMBERT.

Grey fawn, black tongue and switch. Calved March 7th, 1880, No. 12965 Am. R. Bred by Romeo H. Stephens, St. Lambert, Ont., owned by G. W. Boggs, Bedford, N. S. Sire Stoke Pogis 3rd, 2238 Am. Dam Lolly of St. Lambert 5480 Am.

## 49.—LA BELLE CANADIENNE.

Dark fawn, black tongue and switch. Calved April 30th, 1881. Bred and owned by G. W. Boggs, Bedford, N. S. Sire The Sultan, 15. Dam Mermaid of St. Lambert, 7, 9771 Am., by Stoke Pogis 3rd, 2238 Am. G d Pink of St. Lambert, 5486 Am.

## TRANSFERS.

## JERSEY BULLS.

14. BILAPTAUR, transferred by C. E. Brown, Esq., Yarmouth, to Bridgewater Agricultural Society, Co. Lunenburg, April, 1881.

35. KALLEBOGUS, transferred by C. E. Brown, Esq., to River John Agricultural Society, Co. Pictou, N. S., April, 1881.

We clip the following from the London *Agricultural Gazette* of 14th November:—

NEW YORK.—As near as I can ascertain upwards of 100 Polled Angus cattle have been imported into Canada and the United States during the past twelve or fifteen months, and they are obtaining special favor among our breeders at the West, for the purpose of raising bullock; for the European market. The calves got by these bulls out of our native cows almost invariably come of a black color, and grow up hornless or with mere slugs or stubs of horns. This shows the remarkable prepotency of well-bred Angus bulls, some of the choicest of which could be procured in Scotland the Americans preferred to take, even at quite a high price, in preference to those inferior at a lower price. In this I think they acted wisely, for the expense of importing a superior animal is no greater than that of an inferior one, and the improvement to be derived from the use of the

former so far surpasses the latter that it is found to pay much the best in the end, and proves the most profitable. Of these, forty-two head were exhibited at the great cattle show in the city of St. Louis, last September.—A. B. ALLEN.

SIR WILLIAM PALLISER, M. P., addressing a meeting of Odd-fellows at Taunton, dwelt on the question of "fair" trade. While deprecating the imposition of a duty upon foreign corn, he advocated the giving of a bounty upon every quarter of wheat grown in the country. The similar policy in Ireland before the repeal of the Corn-laws had increased the bounties from £5000 to £77,800. The money could be raised by a duty upon foreign-manufactured goods of 10 per cent., which would pay a bounty of 4s. upon wheat.

THE arrivals of live stock and fresh meat at Liverpool last week from the United States and Canada were, of cattle an increase, of sheep a slight decrease, and of fresh beef a slight increase in comparison with the preceding week. The steamers which conveyed live stock were four in number—the "Dominion," with 270 cattle and 752 sheep; the "Bulgarian," with 160 cattle; the "Nestorian," with 164 cattle; and the "Lake Champlain," with 142 cattle and 427 sheep. The steamers which brought fresh meat were as follows:—The "Bulgarian," with 1488 quarters of beef and 54 carcasses of mutton; the "Arizona," with 903 quarters of beef and 150 carcasses of mutton; the "Polynesian," with 872 quarters of beef; the "Nestorian," with 712 quarters of beef; the "Republic," with 630 quarters of beef and 150 carcasses of mutton; and the "Glamorgan," with 600 quarters of beef, making a total of 745 cattle, 1179 sheep, 5210 quarters of beef, and 394 carcasses of mutton.

HOW COOKING AFFECTS POTATOES.—The nutritive value of potatoes is not materially affected by the different ways of cooking them, unless they are wasted in peeling; when potatoes are peeled before cooking, unless they are large and very thinly pared, the waste is about one-fourth, and as most of the mineral elements lie next the skin they are generally cut away with it. The analysis of potatoes boiled in their jackets shows that they contain double the quantity of the salts of potash which remains in those that have been peeled; besides this important fact, potatoes boiled in their jackets do not waste more than an ounce in a pound. The waste in baked potatoes if peeled is about one-fourth; if they are eaten in their skins there is but little waste. Baked potatoes should be served the moment they are soft; after that the steam which escapes in the bursting of the starch cells begins to condense, and is absorbed by the nearly substance of the vegetable until it becomes sodden and heavy; if baked potatoes are served at the right point of cooking they are perfectly digestible and wholesome; they should never be placed in a covered dish, nor allowed to stand an instant after they are done.—*Maritime Farmer*.

MRS. GARFIELD ON WOMAN'S DUTIES.—The late number of the *Student*, a little paper published by the students of Hiram College, quotes an extract from a letter written by Mrs. Garfield to her husband over ten years ago, and intended for no eye but his. It fell into the hands of President Hinsdal, who made use of it in a lecture to the students, and, as it showed the qualities of Mrs. Garfield's mind, and her opinions upon the subject of woman's work, he gave it to the students. The extract is as follows: "I am glad to tell that out of all the toil and disappointment of the summer just ended, I have risen up to victory that silence of thought since you have been away has won for my spirit a triumph. I read something like this the other day—'There is no healthy thought without labour, and though makes the labour happy.' Perhaps this is the way I have been able to climb up higher. It came to me one morning when I was making bread. I said to myself, 'Here I am, compelled by an inevitable necessity to make our bread this summer.' Why not consider it a pleasant occupation, and make it so by trying to see what perhaps bread I can make. It seemed like an inspiration, and the whole life grew brighter. The very sunshine seemed flowing down through my spirit into the white loaves, and now I believe my table is furnished with better bread than ever before; and this truth, old as creation seems just now to have become fully mine—that I need not to be a shrinking slave of toil, but its regal master, making whatever I do

yield me its best fruits. You have been king of your work so long that maybe you will laugh at me for having lived so long without my crown. But I am too glad to have found it at all to be entirely disconcerted even by your merriment. Now, I wonder if right here does not lie the 'terrible wrong,' or at least some of it, of which the woman suffragists complain. The wrong: educated woman thinks her duties a disgrace, and hets under them or shirks them if she can. She sees man triumphantly pursuing his vocations, and thinks it is the kind of work he does which makes him grand and regnant whereas it is not the kind of work at all, but the way in which and the spirit with which he does it."

**TO THE BREEDERS OF POLLED ANGUS OR ABERDEEN AND GALLOWAY CATTLE IN AMERICA.**

At a meeting, held in St. Louis, Missouri, October 8th, 1881, of the breeders of Polled Angus or Aberdeen and Galloway Cattle in attendance at the Fair then in progress, an Executive Committee was appointed, consisting of Frank B. Redfield, Batavia, N. Y., Thomas R. Clark, New York city, and A. B. Matthews, Kansas City, Missouri. Mr. Redfield was made Chairman of the committee, and on motion it was:—

*Resolved*, That all breeders of Polled Stock Cattle be requested to forward to the Chairman of the Executive Committee, their address, together with pedigrees of their cattle, accompanied by a fee of 25 cents to cover the expense of filing the same, until such time as the Polled Scotch Cattle Association shall see fit to publish the first volume of the proposed herd book.

Therefore all parties breeding or interested in the Polled Angus or Aberdeen Cattle or in the Galloways are particularly requested, for the sake of the general and individual good, to forward their pedigrees and address as well as the addresses of any parties known to them as owning or breeding these Cattle to the Chairman of the committee above. It is necessary for the committee to be in possession of a complete list of the owners and breeders of these Cattle in America, therefore attention is called to the latter part of the above request.

By order of the Executive Committee,  
FRANK B. REDFIELD, *Chairman.*  
Batavia, N. Y., Oct., 1881.

An adjournment of the above meeting was voted and the Kansas City (Missouri) Fair of 1882 selected as the time and place of next meeting. A full attendance of breeders is desirable.

At the Poultry Show at the Crystal Palace, London, held late in November, there were nearly 5000 entries, Brahmas, 371, Cochins, 220, Dorkings, 230, Game, 341, Houdans, Crevencours and Lalleche, 138, Bantams, 344, Ducks, 204, Pigeons, upwards of 2000.

The live stock imported from England by the New Brunswick Government were sold at St. John. The *Chignecto Post* gives the following particulars:—

The first animal brought out was the famous Ayrshire bull "Maquis," dropped in April, 1879. Mr. Inches remarked that this animal had taken several first prizes in Scotland. Knocked down to St. John Agricultural Society at \$350.

No. 2. A Red Polled Norfolk bull, "Benjamin," dropped March 22, 1880. Sold to Grand Falls Agricultural Society at \$265.

No. 3. Hereford bull "Capt. Chance," dropped July 21, 1879, was sold to C. F. Todd, Esq., of St. Stephen, for \$205.

No. 4. Short-horn bull (no name), dropped Aug. 21, 1880. This was said to be the finest animal of the lot. Sold to Woodstock Agricultural Society for \$220.

No. 5. A Black Polled Angus bull, two years old, said to be the best in the world for beef. Sold to Robt. Robertson, Petitecodiac, for \$170.

No. 6. Ayrshire bull "Laddie," dropped Aug., 1879; sired by "Robin Gray." New Bandon Agricultural Society got him at \$215.

No. 7. Red Norfolk Polled bull "Robin," dropped April 1st, 1880. Woodstock Agricultural Society, at \$180.

No. 8. Hereford bull "Hearty," dropped July, 1880. Woodstock Agricultural Society, for \$145.

No. 9. Short-horn bull (no name), two years old. Sold to Jos. W. Turner, for Harvey Agricultural Society, for \$180.

No. 10. Polled Angus bull (no name), over one year old. Sussex and Studholm Agricultural Society, for \$130.

No. 11. Red Polled Norfolk bull "Longfellow," dropped July, 1880. Sussex and Studholm Society, for \$190.

No. 12. Short-horn bull, was bid in by the Andover Society.

The animals brought what was considered by all to be fair prices, except when compared with the cost and charges. It will be noted that Mr. G. F. Todd, of St. Stephen, and Mr. Robt. Robertson, of Petitecodiac, were the only private individuals who invested in this stock.

**A NATIONAL AGRICULTURAL EXHIBITION.**

At the July meeting of the Board of Directors of the American Agricultural Association, a resolution was unanimously adopted in favor of holding a National Agricultural Fair during the year 1882, at some central point in the United States.

Prior to the war the old United States Society held large and successful fairs in the principal cities of the country. From that time until the Centennial Exhibition

nothing was done in this direction more than through State and inter-State fairs. The Agricultural Department of the Centennial was, however, one of the most attractive and interesting features of the enterprise, but even there agriculture did not do full credit to itself on account of the division of interest. Since then nothing has been done towards a national display of agricultural products, except at the Atlanta Cotton Exposition of the present year.

That a national show of agricultural products should be held annually, or at least bi-annually, sorely needs statement. The importance of the industry to every other interest of the country, and the increasing attention that must be given it to meet the new demands that will be made upon it, require that those most valuable of all practical educators, competitive exhibitions, should be properly considered. If agriculture has advanced to the high condition in this country which it now occupies without these agencies, what will be its position and the position of the farmers when these fairs are held? Then, indeed, will England and the nations of Europe have reason to fear competition from American farmers; then will agriculture be recognized and respected in the United States as it is in England and France, and then will the best results be obtained more generally by our farmers, their profits increased, and their care and labor lessened. This country stands already in the fore-front in agricultural productions, raising the largest quantity of corn, wheat, cotton, butter, cheese, and pork, and producing the finest grades of cattle and the best stock in general, employing the best class of agricultural machinery.

Periodical agricultural exhibitions in the leading cities of the United States would be the most interesting and instructive institutions for the general good that could be organized. They would attract such an attendance as no gathering of their kind, outside of the Centennial, has secured since 1860. They would afford an opportunity for the display of stock such as the country has never enjoyed, not excepting the Centennial, where the facilities in this direction were inferior. What would be of greater interest than herds of Jersey, Short Horn, Ayrshire, Holstein, Hereford and other breeds of cattle, thoroughbred horses, sheep, swine, and poultry, dairy products, cereals, cotton, wool, woods, agricultural machinery and implements, and the vast wealth of this great industry? The railroad facilities of the present time would enable the safe shipment of stock from all sections of the country as it could never be done before. Such an exhibition would attract a million visitors, and not only accomplish vast good for the agriculturists of the country, but prove



of the greatest benefit to the city in which it was held.

The Royal Agricultural Society of England holds annual fairs at different points, and they are recognized as the most interesting and valuable of her public enterprises. The St. Louis Fair in this country is largely patronized. On one day last year over 100,000 people were in attendance. The Fair is held annually. The American Agricultural Association is now waiting to ascertain which city will do the most for the encouragement of a fair. Philadelphia, Baltimore, Cincinnati, Chicago and New York are each of them desirous of having it held within their limits. Thus far, Baltimore has offered the best inducements. New York is suggested because of its connections with the Old World. At this point the representatives of all nations would witness it. There is an opportunity for the establishment of a permanent fair here. Wherever it is held, \$100,000 in premiums will be offered, thus insuring the largest and best agricultural and stock exhibition ever held. The Committee on Exhibitions, of which ex-Gov. George A. Crawford of Kansas, who was instrumental in the superior representation of Kansas and Colorado at the Centennial, is Chairman, is ready for immediate action. The other members are Capt. Burnett Landreth, who was Chief of the Agricultural Department at the Centennial; Hon. Thos. A. Galt of Illinois, a leading manufacturer of agricultural implements, ex-Gov. Smythe of New Hampshire, Col. Edward Richardson of Mississippi, the largest cotton planter in the United States, and Col. Robert Beverly, one of the largest stock men and representative agriculturists of Virginia.

An auxiliary committee will be formed of the representatives of the different industries concerned, and of the place in which the fair may be held.

**THE ECHO FARM COMPANY, LITCHFIELD, CONN., OCT, 1881.**—The business of Echo Farm having increased to such an extent as to require more time and attention than Mr. F. Ratchford Starr could give to it, it has been put into a Joint Stock Company, with a capital of one hundred thousand dollars. *Directors.*—Robert W. Kelly, *President.* F. Ratchford Starr, A. I. Morse; Frank W. Eastman, *Secretary.* Correspondents will please address The Echo Farm Company, Litchfield, Conn.

*Prizes won by Echo Farm Jerseys.*—From many parts of this country, north, south, east, and west, Mr. Starr has, from time to time, received letters informing him that animals sold by him, sired by the Centennial Bull "Litchfield," or the almost equally famous bull "John Rex,"

had won first prizes. The following is an extract from a letter received a few days since by Mr. Starr from Mr. J. B. Waile, Atlanta, Georgia:

"At the International Exposition, Atlanta, November 3rd, I won some valuable premiums. John Rex 6th was at the head of the herd awarded the highest premium \$250. For the best bull one and two years old, \$25, and for the sweepstakes, where I had to compete against all the bulk on the ground, some of them over five years old (although John is only twenty months old) he won \$50. This last I appreciated more than any premium he won, not only from the fact that he beat the field, but having already been awarded two first premiums some judges would under such circumstances be inclined to divide honours.

John was entered for every list wherein he was eligible, and won wherever he was entered. He is an exceedingly handsome animal."

John Rex 6th, No. 4579, was sold by Mr. Starr to Judge John L. Hopkins, of Atlanta, and by him sold to Mr. Waile. Mr. John D. Wing, President of the American Jersey Cattle Club, is now the owner of John Rex, having purchased him at Mr. Starr's auction sale at Hartford, last summer.

#### CATTLE FEEDING.—A FULL REPORT OF LECTURE BY PROF. BROWN.

(From the Markham Economist.)

A most interesting and well attended meeting of the Farmers' Club was held at the Franklin House, Markham, Ontario, on Tuesday, the 6th December. Notwithstanding the wretched state of the roads, the large and commodious suite of rooms were filled to their utmost capacity.

Mr. Tran, in a few appropriate remarks, introduced Prof. Brown, Principal of the Agricultural Farm, Guelph, who said:

MR. CHAIRMAN AND GENTLEMEN,—

To be invited to talk "cattle" in these days is one of the highest honors a man can receive. It is a subject away above all other animal biography, and second only to man's higher aims. I think he is a poor subject who cannot fall in love with a prime steer and a fattened wether, and necessarily, the men who build such fairs of food should command the world's highest respect. It would be easy to take up hours on this subject, and easier for me to use no paper, but the standing of the farmers of this quarter having been told me in time, I have, in due respect to them and myself, committed some thoughts in regular order.

I shall, first of all, rapidly sketch some points of practical importance, and upon which I trust to have some discussion, leaving my proof figures for subsequent handling.

#### BEEF IN THE STALL.

As a province we are growers of grain, roots and fodder, and therefore should be stall growers of beef. It is very desirable to

know whether, in every respect, we are keeping up to the times in this valuable line of our profession. In every possible advantage being taken of well digested experience as relates to practical details, and of general principles. Do we freely estimate the big day of small things, when so much handling of individual animals can easily turn the column for a debit or a credit? It is not an unknown thing to the most of us that it is the "hanging out" for the half cent. per lb. that makes the difference between the affluent and the needy farmer, and all the difference also between what we give, when we give, how we give, and how long we give food—in the stall. To put the "cart before the horse" in this story, I wish, first of all, to make the distinct announcement to you and the province that, if a cost value,—not even a market value, which on an average of things is just double the other,—is placed upon any kind of food usually given in the stall, to fattening cattle, so as to obtain rapid production, there is no profit whatever from the extra weight got by the use of that food. It is a very simple matter of calculation to take a store cattle beast, two and one half years old in October, when it weighs say 1400 lbs., give it for the six following months whatever you like so as to bring it out about 1700 lbs., and the result will always be to profit, as between the cost of the food and the additional weight.

Another phase of the question of beefing is, I think, very weak throughout the province, and it is one that does not accord with one of our distinct national characteristics—the being fast, or smart, or premature. It is very curious to study how much, in some things, new countries are old schools, and conservative, and slow, as if they found it hard to wrench themselves entirely from the parent stock. It is not necessary to step out of the stall to discover this: How many of us believe there is more profit in getting rid of our fattening cattle before three years old than after three years old? Comparatively few, and yet it stands as a distinct fact in our practice. A two-year old, properly handled all along, will always return more money for its time and weight than a three-year old can possibly do. The reason why every man does not follow this early disposal, is simply because there is more care required in breeding; more a tention required in keeping up the calf-flesh, and the existence of a false idea that extra weight, under any circumstances, pays best. Yet again, by fattening in the stall many use the argument that as it is unnatural to confine and tie-up, we should counteract as much of this as possible by giving food in the most natural form, that is hay and straw uncut and roots unpulped. I cannot agree with this; I certainly agree that, to the breeding animal, it is best to offer unprepared food, but as all our work in *pre-maturing* for beef is of the most unnatural kind consistent with long life and health, it is better, and more profitable in many ways, to make the high pressure of the most thorough kind. Of course, in this connection, it is obvious that the handling of a small number of animals cannot be so profitable as that which gives full employment to so much machinery and manual labor.

#### EXTRAVAGANT STALL FEEDING.

Once more: I am of opinion that the most of our stall cattle managers are extravagant in their feeding, for the one promi-

nent reason that they look upon straw as fit only for bedding, or, at the most, that only a small quantity should be allowed with hay. I am not prepared to show that singly, or as a mixture, wheat, oat and barley straw is equal in feeding properties to hay of timothy and clover; but I do assert, without fear of disproof, that when properly managed by being changed in form when associated with other things, our common straws are just doubled in value for cattle food, and therefore anyone is not only extravagant, but wasteful and very improvident, who treats straw largely only as bedding. When we think of the fact that we most continue extensive grain growers, and must produce, on an average, as much straw per acre as hay, it is plain that even though only one-third equal to hay as a feeder, the mismanagement of straw stands as a serious national loss.

SCIENTIFIC FEEDING.

This reference to straw brings up the subject of the use of science in cattle feeding. The mere humdrum farmer naturally asks: Is there after all that is said and done, much help to be got from chemistry? Had it anything to do in establishing the Short-horn breed of cattle? Or how much of it, for example, did Mr. Russell, of Pickering, guide himself with in getting up the Dominion champion steer of last year? It is just possible that our best feeders never read a work on this science, general or special, and yet look at the magnificent animals they produce. I have never heard a chemist say the day is near when we will be able to make another champion steer from as much stuff as the farmer can carry in his vest pocket. Well, there can be no chemistry without practical facts—facts that you and I establish in our daily work. Take a familiar example: A farmer has corn, and peas, and oats, all at the same price per pound, and having no experience, is desirous of knowing which would pay him best in the fattening of ten head of cattle. An outside voice would be, give them a mixture of the three and you are sure to make no great mistake at least; but he is of an enquiring turn and wishes to know exactly which would be most suitable, so he applies directly to the chemist, who says: I have no personal experience in the matter, but I can show you that when we digest them with chemicals we find that corn should be first, oats second, and peas third best for your purpose so, "everything else being equal," you may calculate on corn as the most profitable grain of the three. This, "everything else being equal," means a great deal however; such as breed, age, condition when tied up, warmth, management: and that the food was grown under similar conditions to those which were chemically eaten. But another step has been made in this science feeding, whereby animals of various ages, and according to what is required of them, should receive just about so much of the various chemical materials that repeated experiments have shown to be necessary for their best existence and production, whether in working, milking, or fattening. Yet, even here, the "everything else being equal" will still be a powerful agent, and thus altogether, while we must acknowledge the great service rendered the cattleman by the chemist, the real nature of it is still that of a guide only, and not that of an imperious dictator. The farmer is one who cannot bear the idea that he has been selling anything while more

could have been got in the same market at the same time. But very many of you are doing so now, and have been doing so for many years. When you calculate the actual cash cost of producing a store cattle beast up to thirty months and allow, as you must, for the value it has left you in manure, it will be found that you cannot possibly make it less than four cents per pound. If then any one sells a 1,000 pound steer to be put up for stall feeding, at three or three and a half, he is simply disposing of his hay, roots and grain under market prices. It is impossible to gainsay this weak point of our practice. I know of no class of cattle so well qualified to fill up all our yards in the stall as the Short-horn and his grades. In impressive power, early maturity, weight and fattening disposition, they stand unrivalled. Next to them stands the Aberdeen Poll and his grades, with their better quality of flesh and equal maturing, but hardly equal in weight. The Herefords come third with their equal impressive power, and reliability as breeders, but not equal in early maturing, nor weight; and as a stall feeder the Galloway must take a fourth place, except in permanency of character and quality of flesh, in which respects he bows to no one.

ESTIMATED COMPARATIVE STANDING OF SOME BREEDS OF CATTLE FOR STALL FEEDING.

|                         | Maximum Value of Points. | Short-horn. | Hereford. | Galloway. | Aberdeen Poll. |
|-------------------------|--------------------------|-------------|-----------|-----------|----------------|
| Reliable breeders       | 5                        | 4           | 5         | 5         | 4              |
| Impressive power        | 10                       | 10          | 9         | 8         | 8              |
| Early maturity          | 15                       | 15          | 12        | 8         | 15             |
| Weight                  | 15                       | 15          | 19        | 9         | 13             |
| Fattening disposition   | 20                       | 20          | 17        | 15        | 19             |
| Least offal             | 10                       | 7           | 10        | 10        | 6              |
| Quality of flesh        | 5                        | 4           | 5         | 6         | 4              |
| Permanency of character | 5                        | 4           | 5         | 4         | 4              |
| Cost of Production      | 15                       | 14          | 15        | 12        | 14             |
|                         | 100                      | 91          | 80        | 70        | 89             |

AGRICULTURAL STATISTICS BUREAU.

The eighth subject to which I invite your attention is one quite new to all: Our Government is establishing a department for the purpose of collecting a variety of information especially serviceable for the farmer. The conception has my warmest sympathy. We ought to be statistically wise in these days in the same: for example, of being able monthly to prejudge what kinds and quantities of products the province is likely to offer for home and foreign markets. This, I am aware is a big thing, involving labor, great care, and the special study of a competent man; but it is one that no progressive country can overlook,—and, to a large extent, Ontario has already committed herself in this regard by the rich issue of the recent Agricultural Commission. Take an illustration of the value that will likely be placed in your hands next season, on this same question of beef growing. The regular township assessors, or other machinery, early in the year go their rounds and receive from every farmer, or other persons in the business, the number of cattle that will be ready for the butcher that season—say the 1st of May,—so that by the 1st of April at latest, the province should receive the report of the statistician on these and other items. The result will be that the owners, and not the purchasers, of beefing cattle that are ready for the market,

will be in a position to regulate the prices, because they know, to a few hundreds, how many can be had; and knowing, also, by the public press, the condition of all outside and inside markets, they can just hold or give as they deem best for their own interests. At present, our purchasers are middlemen, or agents, between you and the consumers, and having to scour the country pretty thoroughly in order to place themselves safely on the point of prices according to number to be obtained, they have accessarily the advantage. You will remember the wild guessing that was indulged in during the last two years in regard to the number of fat cattle being prepared for the British market. The sooner we know what we are able, or not able, to do, the better: if we are only making a yearly batch of one cattle beast per one hundred acres of our cultivated land area, or as much as one from every twenty acres, then we know exactly where to place ourselves in the world's competition. I earnestly trust our legislators will not disappoint the farmers in all this.

FATTENING A THREE-YEAR-OLD STEER.

No cattle feeder can take hold of a two or three-year old steer in the fall, and during the succeeding six months, carry him on and finish for the butcher, at a cost less than \$30,—that is, placing an actual cost value on the food consumed—not a market value remember, which would be just \$20 more. We have no right to charge our fattening cattle, or any of our animals indeed, with the market price of things, because that would be making a double profit,—the profit of the market and the profit of the stall; of course there is nothing wrong in it, so long as it is understood, but for our present purpose it is best to handle the one profit. In addition to this there is necessarily the proportion for attendance, bedding, and the usual risk by deaths. I know of but one way of making up any one's account in any business, which is to debit and credit whatever is given or received,—any other way must be false. Our fattening cattle beast must be debited with everything it consumes, or uses, or requires in any shape whatsoever. A proper value on the three things last named is equal to \$10, so that we have \$10 as the actual cost of the six month's finishing of one steer. This is the one item; the other is the value of the animal when bought or entered for the finishing process. If two and one-half years old it would, or should, weigh 1400 lbs., and be worth \$70. So then it really costs \$110 to produce a three-year-old steer that will weigh about 1650 lbs. by the best management, which may be set down as worth \$107, or 6½c. per pound. Where now then is the profit of cattle feeding? Where would it have been had I followed the usual plan of charging food at market prices? Why, just \$20 less profit apparently,—not real, as just explained in regard to two profits. Have we then made nothing by this process of beef making? If all my standing is correct—and I now ask you to challenge it—it is very obvious that unless the manure is properly valued there is no cash balance in favor of the direct growth of beef. Nevertheless, there is a large profit in beef making. The bottom, or end, of the question is just this:—As manure is indispensable, and as crops must undergo a change through the animal system in order to make the best manure, the growing of beef is also indispen-

sable; so the farmer need not trouble himself with what it costs to produce that beef.

AN IMPORTANT ANNOUNCEMENT.

With reference to the question of greater profit to be obtained by getting rid of beef when two years old, I wish to make an important public announcement to the province, through your agency. All assertions are comparatively valueless and untelling, unless brought home by practical demonstration. It is a fact, as I do now and have elsewhere publicly stated, that the loss or gain to the province annually on this one practice alone is not less than \$1,000,000, it is surely worth while to prove it thoroughly. We have several times given practical proof by the actual cost of producing two and three-year old steers at our farm; but, in order to face the country and drive the lesson home as hard as possible, I am prepared, on having Government consent, to exhibit, say three or four steers, two-year old Short-Horn grades, at any or all our principal shows next year, against a similar number of three-year olds of the same kind, on condition that the exhibitors submit a statement of the exact amounts and kinds of food given twelve months previous to date of exhibition, with the weights of cattle at same date. The judge, or judges, would then be asked to do five things:

1. Value the animals as they stood by age and weight twelve months previous to exhibition
2. Value the foods eaten for twelve months.
3. Allow twelve months interest on value of three-year-olds, as they stood when two years old.
4. Value them at date of exhibition according to weight and quality.
5. To prove age.

This would be simple enough, and I give fair warning that I would show animals that will make the beam kick at 1,600 pounds, not pampered, nor in any way prepared for the occasion, but getting plenty of corn meal, or pea meal, or crushed oats, as the case may be, with turnips, hay, straw and bran—no condiments, nor linseed meal, nor oil cake, but straight, liberal feeding, as an ordinary and profitable investment for the export market.

In order to draw the public on this subject, I shall be glad to give \$25, if the Provincial Association, or the Toronto Industrial, give \$25 also, so as to make a \$50 prize.

THE GRAZING OF CATTLE.

Ontario is not a grazing country; it has no extensive natural or artificial runs for cattle or sheep, where growth of frame even can be systematically relied upon in preparation for stall feeding; there are neither prairies, nor uplands, nor valleys, nor hill ranges, where nature welcomes to a feast of fat things from May to October. The province is too rich all over for the ranche patriarch or strolling shepherd. We are grain growers, and therefore beef growers in this connection. But it must not be said that Ontario cannot graze her own cattle and sheep—it could be done, were we willing to do it,—not yet do we exactly feel the want of it, or rather, the value of, being able to build all our own bone and muscle, along with some flesh and fat, ere topping-off during six months of winter and spring for the butcher at home or abroad. It is a pity we are not feeling this grazing want more keenly; most of us are contented with turning out the yearling to the bush, the hay aftermath,

and the timothy pasture—where, no doubt, progress is often very good—wonderfully good indeed; but there is no annual and monthly reliability, no undeviating round of a variety of plants to meet all the wants of animals that should be rushed for the market. While our remarks apply more to beef and mutton, they are not foreign to production of milk. Such, now-a-days, in every country bearing up to the times, is the value of a rich piece of meadow on every farm, that were every farm in Ontario in possession of a properly managed five acre permanent pasture plot, the gain to the whole country would exceed \$5,000,000 annually.

As some of our more enterprising farmers, and others, have been in correspondence with me of late in regard to the character and probable standing of the entirely new line of cattle grazing opening in our North-West territory, I propose now to enquire somewhat fully into all its bearings; the question is directly ours and cannot be left as one only between the great outside markets of the world and any millionaire who chooses to invest; our sons have the best right to know what chances exist in this line of our profession for their thousands, as well as others for their tens of thousands of dollars. The importance and magnitude of the subject has, during the last two years, been often referred to in the public press and by some travellers—all so much in that tempting indefiniteness which makes "the mouth water" and wish for something more substantial or more practical. Let us try to meet part at least of this want. The first batch of thoughts is: on what terms can land be occupied or owned; what are the conditions of summer and winter reliability of pasturage; the kind of cattle most likely to succeed; how their management may be conducted; and what extent of investment would pay on the smallest scale so as to encourage limited means. The second batch naturally following is: the capital necessary, annual expenses, and probable annual revenue after everything is in working order. The Government conditions are substantially these: a lease of twenty-one years, with a renewal or surrender, on either side, two years previous to termination; no one party to hold more than 100,000 acres, rent one cent per acre; must possess or graze, one cattle beast to every ten acres, and the allowance of five acres to every one hundred acres as a cattle station in one block, as personal property, on payment of \$1.25 per acre. Difficulties may arise—in the near future, I hope, if anytime, in regard to boundaries and other second rate points, but no one can possibly find fault with want of liberality in these terms. To allow one person, or company, as much as 100,000 acres seems extravagant; but I am confident that very few such cattle lords will crop up in our time, and those who do will find the want of the "master's eye" over everything so big an item of debit, that their history will be comparatively short. Yet even 100,000 acre ranches could be repeated *five hundred times* on the best parts of our great North-West grazing lands. The maps now before us show the rich grass country lying to the extreme south-western part of our North-Western territories, in the angle between the boundary line with the States and the Rocky Mountains; not including the rocky mountain portion, the map embraces about 87,000,000 acres, and possibly will give 50,000,000 acres of good pasture. An idea

of the scale of this very interesting map may be best got when I say that the point of the finger covers 50,000 acres. Now my first conception of the make-up of such an enterprise is association—that is, more than one in its practical arrangement on the spot, because of its comparative speculative character, of its hardships in a measure, and of the immense value of the personal supervision on the part of the principals. I would recommend the agreement of three young practical stockmen, in possession, let us say, of \$5,000 each, making a joint purse of \$15,000. Having chosen, by actual inspection, the particular district in view of (1) future railway communication; (2) shelter; (3) water supply; (4) rich enduring grasses; (5) the necessity, ultimately, of fencing cheaply by utilizing any natural advantages, such as rivers; (6) the very model of a choice of a home cattle station, and (7) the easy extension of the ranche should everything smile—we should consider a breeding stock. The sole aim of men, under such circumstances, would certainly be to raise the largest number of the best store beefing cattle, in the shortest time, and place an annual draft of them on a railway, or at sea-board, at the least possible cost. Which breed or breeds, crosses or grades, of cattle will do best on the "south-western part of our North-Western Territories adjacent to the Rocky Mountains?"

SUITABLE CATTLE FOR THE PLAINS.

The selection of cows and heifers must necessarily be confined to what can be had in the United States and Canada—from among those grades, or native stock, that, by their whole stamp as regards roominess, form and disposition, would throw the best possible grazer by the use of some kind of thorough-bred bull. The character of such a cow, otherwise, should be a good ranger, that is, active in searching for the best patches of grass; a good nurse, able to defend herself and charge; not a wanderer; a home-comer when required; hardy as regards changes of climate, and keeping up well on indifferent pasture if necessary. Such are plentiful all over the continent, at prices ranging from \$25 to \$40 per head. No difficulty exists, therefore, in knowing what kind of cows to use; the trouble, if any, lies in telling exactly what breed of bulls will clearly give us what we want from such cows and their offspring. Remember there is really no actual local experience to build upon, and all that can be advanced in these first steps of the rearing of store beefing cattle in our north-west is to experiment with what we do know can make the best average of all the requirements in other parts of the world. Take a systematic view of these requirements and what we know can be done by the leading breeding breeds of our common stock:

|                               | Maximum Value of Pounds | Short-horn. | Hereford. | Galloway. | Aberdeen Poll. |
|-------------------------------|-------------------------|-------------|-----------|-----------|----------------|
| Reliable breeders .....       | 5                       | 4           | 5         | 5         | 4              |
| Impressive power .....        | 10                      | 13          | 9         | 8         | 8              |
| Giving early maturity .....   | 15                      | 15          | 12        | 8         | 15             |
| Giving weight .....           | 15                      | 15          | 10        | 8         | 13             |
| Grazing & disposition .....   | 23                      | 15          | 20        | 13        | 17             |
| Hardiness .....               | 15                      | 10          | 13        | 13        | 13             |
| Least cost .....              | 10                      | 10          | 10        | 10        | 4              |
| Quality of flesh .....        | 5                       | 5           | 5         | 5         | 4              |
| Permanency of character ..... | 5                       | 5           | 5         | 4         | 4              |
|                               | 100                     | 83          | 57        | 82        | 57             |

Practically, there is little difference on the great average of things between these four breeds, and the difference that does exist may be accounted for by difference of opinion between m. n. If asked, however, to make a choice from the four I would not hesitate, under the circumstances, to take them in order as shown, namely, Hereford, Aberdeen Poll, Short-Horn and Galloway. But more specifically: I how to no one in admiration of the splendid Short Horn, the great beefing and milking cattle of the world. Still theirs to make as much history as ever—a breed that never can be anything but grand; yet, when I am calculating, as I now am, to experiment or speculate in a largely unknown land where conditions of civilized animal life are entirely unknown, I must hesitate in making them one of my agents in the enterprise,—and why? Not because of their want of impressive power, nor of their early maturity, nor weight, but simply because we can have other breeds wherewith we know we have more chances of success in reliable breeding, and more given to do well on risk of poor fare. In new things ever become old in the new land, the world's breeder will easily find his place; meantime, what does the Galloway say? No want of hardiness, nor kindly grazing, nor reliability in breeding, nor first-class quality of flesh, but clearly very short in weight and early maturity when close comparisons are entered upon, and thus for the best average of all our wants under the estimated conditions, the Galloway has to step aside. The other poll is not a Galloway, nor ever had anything to do with Galloways. In all their history the Angus, or Aberdeen Poll, stand clearly on their own merits as a distinct breed; they are essentially the Short Horn of the north of Scotland, and by the comparative table we find them ahead of the English Short-Horn in hardiness, in quality of flesh, in adapting themselves to grazing conditions, but not equal in impressive power, according to comparatively limited experience no doubt; equal, however, in early maturing properties, yet deficient, on an average, in weight per head. Because of their white face the Herefords are often designated "these consumptive looking things," by some of their non-admirers, but, placed side by side with their rivals, we find that while back somewhat in early maturing, and considerably so in weight, this breed that has "breadth and depth without height," is, after all, second to none in view of the probabilities of our north-west grazings; they are so strong in impressive power, in hardiness, and especially in making flesh upon grass, that I am strongly of opinion we should ask them to lead in this great experiment.

The next consideration is the capital required for the first two years for settling down, house building, fencing of cattle station, enclosing corrals, in addition to the necessary number and variety of live stock, household maintenance, and some implements for ordinary cultivation. After this two year period some revenue should be accruing, though necessarily not so much as the annual average to be afterwards expected; because, in place of selling all heifers along with the steers, the greater number would be retained to increase the breeding stock. First, the estimate and afterwards my comments upon it:

|  |          |
|--|----------|
| Personal expenses of one examining ground and securing lease .....                     | \$ 400   |
| Price of four yearling bulls .....   | 1,600    |
| Price of three thoroughbred heifers .....  | 900      |
| Price of 250 cows and heifers - mixture grades, Texas and Montana, at \$25 .....       | 6,250    |
| Price of two yoke of oxen .....  | 300      |
| Twelve saddle horses (natives) .....   | 600      |
| Total for live stock .....   | 10,050   |
| Cost of dwelling house, stables and sheds .....  | 600      |
| Fencing 100 acres as cattle station - the home property .....                          | 500      |
| Enclosing two corrals .....  | 150      |
| Agricultural implements, tools, saddles, &c .....                                      | 1,000    |
| Unenumerated .....   | 400      |
| Total for buildings, fencing, implements, &c .....                                     | 2,550    |
| Household maintenance and personal expenses of three principals during two years ..... | 750      |
| Wages and keep of two lads two years .....   | 2,000    |
| Incidental expenses .....  | 250      |
|  | 3,000    |
| Rent .....   | 40       |
| Price of 100 acres, cattle station .....   | 125      |
|  | 165      |
| Total capital required .....   | \$15,765 |

It will be obvious at the first glance of this estimate that we are not dreaming of delegating the investment and management of our money to others, as is usually the case in a much larger concern, or where the heavy purse is a party. Our aim, again allow me to say, is to show that it does not require a millionaire to start and handle a cattle ranch, but that three practical heads, accustomed to and willing to rough it, having \$5,000 each, may safely make the venture. By placing a high cost upon everything—securing four first class bulls and three heifers, with 250 common cows and heifers, two yoke of oxen, twelve native horses for the saddle, with high figures also for the erection of buildings and fences of the usual rough but comfortable cast, the purchase of implements such as ploughs, mowers and waggons, in addition to personal maintenance of themselves and two young men, the three principals would be in possession of a fully equipped ranch of 2,000 acres at the end of two years. In saying 2,000 acres, it will be evident that we are calculating conservatively, *pro tem*, whatever the future may bring about. Until grazing locations become as regular as Ontario farms are to each other, over 2,000 acres may be 20,000 so long as neighbors don't push or out-feed us in the number of stock. Necessarily this implies more trouble and expense in superintendence and collecting, but then it also means very much more revenue. But the most important and difficult part of this grazing question has now to be handled—the estimate of annual revenue after the first two years. In doing this we will assume the non-necessity of much winter keep to breeding stock—all required being an occasional bite of hay at more severe times—the absence of any sweeping epidemic, or extensive stealing, but allowing for ordinary proportion of deaths. Entering upon possession in, say early spring of 1881, the 250 breeding cows and heifers, less deaths and non-breeding, will have dropped 550 calves by August, 1883—one-half of which will be two and a-half years old, and their disposal then best as stores, the other half being yearlings and calves to be retained for another season's culling. Of these 275 head, 25 heifers would be kept for filling up blanks

among breeders, the 250 to be sold. In taking stock, therefore, on 1st September, 1883, there should be about

250 breeding cows and heifers,  
275 yearling steers, heifers and calves,  
250 two year olds for sale.

775 head in all.

ESTIMATE OF INCREASED VALUE AT END OF TWO AND A HALF YEARS

|   |          |
|---|----------|
| First draft of two year old steers and heifers, averaging 550 lbs; 250 head at \$23, delivered at railway ..... | \$7,750  |
| Value of 275 yearlings and calves, retained at \$12 .....   | 3,000    |
| Value of seven additional thorough bred bulls and heifers .....   | 1,500    |
| Gross increase from live stock ..   | \$10,550 |
| Depreciation in value of older breeding cows and bulls—none over five years old .....                           | \$100    |
| Depreciation in value of horses, oxen, implements, etc .....  | 300      |
| Miscellaneous debits .....  | 300      |
|   | 1,000    |
| Net increase during 2½ years .....  | \$9,550  |

It is not necessary to charge, or discharge, anything more than what has been done in connection with the cultivation of perhaps fifty acres of grain, roots and household stuffs, and ample allowances have been made for "unforeseen and unprovided," so that this net balance of \$9,550 gives \$3,820 as annual clear revenue from the investment of \$15,765.

A PROPOSAL.

From what other agricultural subject can such a return be made year after year? We but need some facts to confirm these estimates, and I think it would be well that the Dominion Government at once employ a practical expert, one clear of all influences whatsoever, to thoroughly examine during winter and summer the best sections of our great north-west grazing lands, in order to the issue of a report showing the question in all its possible bearings. The value of a reliable document would be immense. Does any one doubt the existence of a market for all the flesh that this continent can produce? Speaking for ourselves, and on the supposition that we do our very best with these north-western grazings, even to fitting the animals for the butcher, the 50,000,000 acres of reliable area should give us 5,000,000 head of cattle yearly, which is about 4,000,000,000 pounds of saleable dead beef. Why this would give every Briton only 100 pounds a-piece per annum. With all her apparently enormous importations of food for her 35,000,000 souls, the United Kingdom last year could only get \$140,000,000 worth of fish—alive, dead, fresh and salted—which distributed gave the pittance of fifteen pounds a-piece. You cannot possibly overstock that market for some time.

The President, Mr. Slater, regretted his unavoidably being a little late in arriving, and thereby missing the Professor's commencement. He had heard most of the lecture, and was sure that all would agree that cattle feeding was a very important subject to the farmer, and had been most ably handled by the Professor. Every branch of the subject had been carefully and practically dealt with, and although all might not agree with the statements adduced, yet no one could deny their correctness, as there were so many conditions to be considered.

The one little item of the waste of straw, which meant a waste of wealth to every farmer, was in itself a lesson to us all. Relative to the forcing the maturity of stock, that might be debatable ground. Can maturity be forced profitably? Would it not be best to provide natural food for stock and allow natural maturity. Grass was the natural food for cattle, and with that fodder only we cannot mature steers in two and a-half years on our quality of grasses. Our soil is not suited for a permanent pasturage. If we could grow the blue grass of Kentucky, then we could produce a permanent pasturage and Ontario might become a grazing country, but he doubted whether we could produce such grasses.

Mr. J. Gibson said he was highly delighted with the lecture, and was very much interested with the masterly manner in which the subject of "Beef in the stall and pasture" was handled by the Professor. He was not a cattle feeder, but a grain raiser; there were many of that class present, including Messrs. Crawford, Lawrie, Rennie and others, many of whom were not with us every meeting of the Club, whom he would like to hear from now. He would, however, remark that our educational system should be so modified as to have agricultural lessons taught both in our High and Common school, to more practically prepare our youth for agricultural pursuits.

Mr. John Crawford said he was very much pleased with the lecture and the practical way in which it was delivered. He was agreeably disappointed in the appearance of the lecturer; he came with the expectation of meeting a gentlemanly person, delicate and dainty, with long hair hanging in ringlets over his shoulders, dressed in broadcloth of the most fashionable cut, with dainty kid gloves and gold-headed cane. They would not wonder then at his being so agreeably surprised at meeting a stalwart son of the soil, as rugged and practical as himself, in the person of Prof. Brown. This rendered his very practical lecture all the more impressive, and he would congratulate the Ontario Government upon having secured so practical a Principal for our Agricultural College at Guelph. He thought that, notwithstanding these high pressure times, we were in danger of using too much pressure in maturing stock, especially on some breeds of cattle. The Short-horns, the Aberdeen Poll and Herefords were all that he claimed for them, but he had omitted the Ayrshires, which, though wanting in weight, yielded pound of meat for pound of food with any other breed and of a superior quality, and were excellent foragers. The Short-horns were bad foragers. In portions of Scotland they could not raise them profitably, as they required such careful attendance and waiting on; they must have the most tempting food, so that they could eat and lie down. To expect a profit from feeding beef in Ontario, it is necessary to place a great value on the manure.

Mr. Lawrie said that he also was much instructed in listening to the lecture, but would liked to have heard something said relative to the good qualities of the Ayrshires. He had had considerable experience in raising and feeding, both in Grade, Short-horn and Ayrshire cattle. His experience was that the relative position of High Grade cattle and Ayrshire was three to two. The milking qualities of the Ayrshire was far

superior to High Grades, and the Ayrshires yielded as many pounds of beef to the quantity of fodder as any other, and of better and more delicate quality. They were steadily gaining ground in the estimation of the cattle raisers.

Prof. Brown said the Ayrshires had not the frame; they were good milkers, consequently good beefers, as all good milkers fed well and easily; but they were too slow in maturing—cannot wait for them. The reason cattle left the rank timothy and clover and sought the short wild grasses of the fence corners was because they were sick of it and needed a change of food. Animals required a variety in food as much as human beings did.

Mr. Tran said that he was no cattle feeder for beef, although he kept a great many cattle. He quite agreed with the Professor, that to simply use straw for bedding was a great waste. He fed all of his straw by cutting and mixing with turnip pulp.

Mr. S. Rennie came to listen to the very interesting lecture, and was pleased and instructed beyond his expectations. He was only a beginner at stall feeding. He had for some years been dairying, but did not find it profitable. He was now feeding seventeen steers as an experiment. If the profit proved light he would be content, as he required the manure, which in itself would be very valuable and prove a source of profit.

Mr. Wm. McDonald said that he had given careful attention to this the most interesting lecture on cattle feeding that he had heard, and as he was of an inquisitive turn of mind, he would like to know the comparative value of manures produced by feeding straw, or straw for bedding and trampled under foot; which yielded the most ammonia, humic and ulmic acids. In his experience he found the greatest profit in stall feeding for beef was the product of good manure.

Mr. Dinna had little or no experience in feeding beef for a profit; but he was well pleased with the lecture, which evinced a thorough practical knowledge of the subject of which it treated.

Mr. H. Jennings said that he was very much pleased with the very practical lecture on "Stall feeding." It was a branch in connection with farming that he was especially interested in, and one that he had practiced for over forty years. Although he had not during that time kept a debit and credit detailed account, he had usually found the general results very satisfactory, and a profit reached his pocket as well as the land. He fully endorsed the necessity of saving and utilizing all kinds of fodder, whether straw, milk, turnips or grain offal. In illustrating his profits on stall feeding at a previous meeting of the Club, he intimated that his profits had been a certain amount in cash, manure and a calf that he had raised on dish washings. That calf was on the same diet fit for the butcher at a large price. He believed in a judicious and generous feeding, and knew that it was the only kind that would pay. It was folly for any farmer to turn his cattle out on the frozen aftermath in November and December, and because they appeared full at night supposed they were keeping up their condition for successful wintering. They required careful housing and regular feeding in these months, as well as in February or March, to produce profitable results. He would like to get some information from the Professor relative to ventilation; although, as a rule, he could tell

as soon as he entered his cattle stable, by the general colour, whether all was right or not; sometimes he would find an animal quite wet, and the others on each side dry and healthy, a condition that he could not account for, all being apparently equally thrifty. He could not set down without thanking Professor Brown for his admirable practical lecture on a theme in which he had taken an interest during his whole life. He had given them so much that it would take him a long while to digest it. He, however, felt that he would be able to comprehend its full value, as he could take the *Economist* and read portions of it at his leisure, and by reflecting as he read from time to time, treasure up bit by bit until its merits were fully realized.

Mr. William Rennie carefully criticised the Professor's estimate of profits in cattle feeding, and thought the profit in stall feeding depended on purchasing in the fall, at low prices, steers for feeding, and the manure, with prospects on the rise of beef in the spring. He would like very much to know which was the best method for preparing food—whether boiling, steaming, or feeding without cooking. He would also like to know the best mixed grasses for permanent pasturage. He was now preparing his catalogue for next season's operations, and would like to know the best for soils in all conditions: high, low, loamy, clayey, rocky or otherwise. The Kentucky blue grass did well in parts of Ontario, so did the clovers. Blue grass and red top were the natural grasses of this country. Rye grass and clover made excellent hay and pasture. He thought the North-West, as regards grasses, had no particular advantages over us. The profits lay more in requiring less attendance.

In answer to questions the Professor said: The value of straw for feeding purposes was enhanced by being cut and mixed with root pulp, and letting the mixture remain twelve hours before feeding. Steamed or boiled feeding did not pay, unless for preparing food for 1,000 head of cattle.

Mr. Gibson proposed that, as this subject was so broad, it would be well for the Club to further discuss it at the next meeting. He then moved, seconded by Mr. Jennings, that a cordial vote of thanks be tendered the Professor for his able lecture, both in connection with feeding cattle and grazing here and in Manitoba. Which was enthusiastically carried.

Professor Brown expressed the pleasure he had in meeting with them as a Farmers' Club, stating that such clubs were too rare in Canada, and hoped on some future occasion to meet them again.

## AGRICULTURE IN THE UNITED STATES.

It is important that our farmers should know what is going on the other side of the line:—

ROOMS OF THE AMERICAN AGRICULTURAL ASSOCIATION, 127 WATER STREET.

New York, Jan. 7th, 1882.

In connection with the annual meeting of the American Agricultural Association, a National Agricultural Convention will be held at the Grand Central

Hotel, New York, commencing Wednesday, Feb. 1st, 1882, at 10 a. m., and continuing three days.

## PROGRAMME.

**WEDNESDAY**—*Subject*—"How the Crops are Moved." To be discussed by the most competent Railroad and other authorities in the United States. The annual business meeting will also take place on this date, and addresses will be delivered on practical subjects.

**THURSDAY**—*Subject*—"How the Crops are Marketed." To be discussed by representatives of the Produce and Cotton Exchanges, and other leading authorities on the subject. Reports of Chemical, Botanical and Cattle Diseases, and Agricultural Engineering Committees, in writing. Visits to Produce Exchange, American Exchange, Abattoirs, etc. **EVENING SESSION**—*Subject*—"Ensilage." Discussion by H. M. Clarkson N. Potter, C. W. Mills, Esq., Francis D. Moulton, Esq., Dr. J. M. Bailey, J. W. Brown, Esq., and others; and reports of individual experience. Addresses.

**FRIDAY**—Visits to Stock Farms, Dairies and Silos of Theo. A. Havemeyer, C. W. Mills, V. B. Potter and other, convenient to New York.

During the convention addresses and papers will also be delivered by leading men in Agricultural Science and Practice, including Hon. Chauncy M. Depew, Prof. C. V. Riley, Hon. J. T. Updegraff of Ohio, Dr. Byron D. Halsted, Prof. Arthur Perry of Williams College, Mass., Prof. X. A. Willard of Little Falls, N. Y., Major Henry E. Aivord, Dr. Alfred L. Kennedy, Dr. E. Lewis Sturtevant, Hon. J. R. Dodge, Dr. Peter Collier, Prof. Albert R. LeDoux, Dr. Thos. P. James, Prof. J. M. McBryde, Prof. Jas. Law, Prof. I. P. Roberts. Hon. Samuel J. Randall, Hon. S. J. Kirkwood, Hon. Theo. F. Randolph, and other leading men, are also expected to be present.

It is believed that this convention will be the most important, interesting and instructive of any ever held in connection with Agriculture. All interested in Agriculture and the products of the soil, are invited to attend and to become members of the Association. Registration Fee and Dues for 1882, three dollars, including the *Journal* and free admission to the Society's Exhibition.

Accommodations will be provided at the Grand Central Hotel for all attending the Convention, at three dollars per day, and upward, including room and board. This hotel has just been re-furnished, and is one of the largest and best in New York. It is centrally located on Broadway, between Bleecker and Third streets. Rooms may be engaged in advance by addressing the proprietors, Messrs. C. Keefer & Co.

N. T. SPRAGUE, *President*.  
J. H. REALL, *Secretary*.

The January issue of *The Journal of the American Agricultural Association* (Vol. 2, No. 1) will contain a report on the International Cotton Exposition held at Atlanta, Ga., by Frank H. Norton, late editor of Frank Leslie's publications, author of Frank Leslie's Centennial Register, the most comprehensive report of the Centennial Exposition published; also author of Frank Leslie's Report on the Paris Exposition.

This Report on the International Cotton Exposition, will be the first complete report published of this great enterprise, which embraced not alone Cotton and its products, but the principal features of the great International Exposition of the world. Only those who have visited it can have any conception of its comprehensiveness and merit. Mr. Norton's report will occupy about seventy five pages of the *Journal*, and describe in detail the buildings and exhibits, processes of Cotton growing and manufacture, descriptions of machinery, implements, etc. It will also give a history of the enterprise from its inception to the close on December 31st, 1881, including the addresses delivered, etc., and will alone be worth more to every farmer, capitalist, merchant, manufacturer, and private citizen, than the price of the *Journal*.

This number will also contain articles as follows:—"Landscapes" by Hon. Cassius M. Clay, of Ky. "Is our Soil being Exhausted," by Dr. Peter Collier, Chemist U. S. Department of Agriculture. "Chemical Maturity on Wheat" by Prof. J. M. McBryde, of the University of Tenn. "Cotton Culture," by Paul F. Ammand. "Rice Culture," by J. Vogle. "Co-operative Experimenting," by Prof. W. O. Atwater, Wesleyan University, Middletown, Conn. "Forest Culture Survey," by Gen. Wm. W. Burns, U. S. Army. "Separating Cream by Machinery," by Dr. DeKlinz, Munich, Bavaria. "The American Farmers' Alliance," by W. J. Fowler, Esq. "Improvement of Country Homes," by Rear-Admiral Daniel Ammen, U. S. Navy. Address of Mr. Francis D. Moulton at the Atlanta Cotton Exposition, pronounced by the press the ablest of all made there. "Entomology," by Prof. Charles D. Zimmerman, of Ohio. "The Sources of Nitrogen of Vegetation," by J. B. Lawes, LL.D., F.R.S., St. Albans, Eng.

The April number of the *Journal* will contain, amongst other papers, a detailed description of Cattle Raising on the Plains, with particulars of the Cattle, Sheep and Swine Industry of the Country, including the rearing, transportation and marketing of stock. An exhaustive report on Ensilage, and how to do it. Also, "Carp Culture," by Capt. Multon P. Peirce of N. J. "The Golden Fruit of Florida," by Geo. J. Hagar. "The Composition of Grasses at various periods

of Development," by Clifford Richardson, U. S. Department of Agriculture; and the first instalment of an article on "Esculent Plants," by Dr. E. Lewis Sturtevant, of Mass. Director of the N. Y. Experiment Station just organized. This paper represents a life time work of Dr. Sturtevant, and will occupy two years' issues of the *Journal* in its publication, at the rate of forty pages to each number. The April number will also contain a report of the Annual Meeting of the Association, and the National Agricultural Convention to be held February 1st, 2nd and 3rd, with the addresses, papers and proceedings, and other articles by leading writers in America and Europe.

The *Journal* is free to members of the Association, in which the Registration Fee and Dues for 1882 are \$3.00.

Address

J. H. REALL, *Sec'y. & Editor*.  
127 Water St., N. Y.

## MONTREAL VETERINARY MEDICAL ASSOCIATION.

At a recent meeting, Dr. Jas. Bell, president, in the chair, Mr D. E. P. Campbell described a case of opacity of the cornea of two years standing, which he had treated by the application of calomel, followed by a 5 grain solution of argentine nitrate and had a good recovery. Dr. Wm. McEachran read a paper on the subject of Tetanus. He described very fully and graphically the history, causes, symptoms and treatment of the fearful malady. He spoke of the fatal character of the disease, and said that nothing makes us feel more our helplessness in combating disease, and at the same time the terrible nature of disease, than to witness a noble horse die of Tetanus. The agony which is depicted in every feature of the poor dumb creature pleads strongly for our help, but such help as we can give can only at most alleviate the suffering except in rare cases. In speaking of the treatment, he stated that in this city during the past summer the majority of cases were due to injuries from picking up nails in the street, the result of throwing ashes containing them on the streets. He recommended when a horse picked up a nail, that the nail being extracted the foot should be paired down and the soft parts exposed, so as to prevent any irritant remaining in the wound, following this the wound should be poulticed and some sedative applied to allay irritation and pain. Owing to the high nervous excitement present, absolute rest and perfect quiet are essential. In speaking of the internal treatment, Dr. McEachran stated that there was no remedy known which could be said to cure the disease, though the whole pharmacopoeia had been ransacked and tried

in vain. The indications, however, were always to relax the spasms and allay the extreme pain which the animal suffered. The essayist had tried various remedies to effect this purpose, and was satisfied that belladonna, in the form of the solid extract, gave the best results. Hypodermic injections he had found to cause such violent spasms that he had ceased to use them. He concluded by describing some of the cases which had come under his observation during the past twelve months, one of which was in the practice of the College, and had recovered. The sedative which had been used in this case was belladonna; and another case in the practice of Mr. Wm. Jakeman, V. S.; Halifax, had also recovered under the use of belladonna alternated with chloral hydrate. In the discussion which followed, Principal McEachran and Mr. C. J. Alloway, V. S., both related interesting cases which had recovered in their hands. Mr. Alloway advocated hydrocyanic acid as the sedative and anti-spasmodic. The President, Dr. Bell, said that, as a medical practitioner, he was astonished to hear the large percentage of recoveries which had been stated. In his experience of human practice, in the General Hospital, he had seen only two cases of recovery, both of which were chronic tetanus. He considered that, theoretically, opium was the best anti-spasmodic and sedative which could be used, as it did not, as many others, depress the heart's action. He had never given it a fair trial. There was a great deal, he thought with the essayist, to be learned yet concerning the pathology and etiology of the disease.

A vote of thanks was passed to the readers of the papers, after which some pathological specimens were exhibited by Mr. A. W. Clement, and the meeting adjourned.

THE VETERINARIAN.

NOTES ON HORSES.

**Worms.**--These offensive parasites not infrequently affect the horse. They are the bane of yearling life. They create constitutional disturbances in a marked degree. Horses afflicted by them have harsh, staring coats, especially an abnormal growth of hair in the region of their flanks, accompanied by a light pinky or cream coloured powder on the anus; a harsh, dry cough, constipation of the bowels, alternating with immoderate purging. Such horses are ravenous in their appetites; some become pot-bellied and their muscles flabby; they fall away or train back; they sweat profusely on the least effort, and are incapable in advanced stages of a moderate day's work. My working horses are watered fifteen minutes before being fed. I find this plan attended with many advantages.

**The Horse's Foot.**--One of the medium size is the size to wear. Large feet, weak crusts. Besides, the liability to brush is

greater where abnormal growth is observed. Horses with very large feet have faulty, heavy, unpleasant action; and they soon tire. Small feet are invariably brittle; especially have I remarked this in red roans. The horse is uncertain, and blunders in grounding his foot. Difference of size is often an indication that disease, either recent or chronic has been or is present. Flat platter feet are subject to corns. The true angle for the foot is about 45° with the ground. Hind feet differ in shape from fore, and are more upright. If hollow on tapping, seedy toe has resulted; if wavy or ringy, one's suspicions are aroused as to the presence of laminitis. If the foot is small both in the fore and hind feet, it is natural to his breed. Seasonal effects may arise to produce suspicious appearances in the foot, retarding or accelerating growth unduly, the result of excessive drought or rainfall. See to the correct growth of the foot from the first. No foot no horse is a very safe maxim. When a horse turns his foot out he is in at his elbows, or his cannons are twisted outwards; turning them in, he is out at his elbows, or his cannons are twisted inwards. With horses turning their toes out the bone is straight and weak on the inner quarter, but with these that turn them in, the outer quarter is straighter, with greater circularity on the inner quarter. Oblique pasterns and open round feet would appear to be natural accompaniments. Again, short pasterns, strong, upright heels, narrow feet (pony feet) in big-bodied horses should be avoided. Higher-bred horses incline to small feet, under-bred horses to large, ungainly feet. In the riding classes good feet are imperative. Although horses in harness may wear a long time with malformed feet, yet no horse can command a satisfactory return to the breeder, and insure a high price or afford credit to the salesman, unless he is well bred and sound at the ground.—JAMES PHILLIPPO, *Commission Stables, London, E. E.*—From the *Agricultural Gazette*.

English farmers are being urged to raise cavalry and artillery horses so as to meet home need without sending government money out of the country to foreign nations. If English farmers won't do it, there is no reason why loyal Nova Scotians should not go heartily to work to recruit the equine forces of the Empire.

As anthropologists are aware, Mr. R. G. Haliburton, Q. C., has been for many years engaged in investigating the legends of the Pleiades and Great Bear, chiefly in Polynesia. During his residence in Canada he has greatly enlarged the scope of his researches, and expects to produce a volume in the spring.—*London Athlete*.

FOR SALE

BY THE

Pugwash Agricultural Society.

The Ayrshire Bull DAN. O'CONNELL, one year old. Pedigree guaranteed. Will be sold cheap. Apply to THOS. A. FRASER, Secretary.

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SHORT HORN COWS AND HEIFERS.

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| 1 Beauty, (July 1880), Vol. IV, p. 51 | 2 Cameron's Rose, do do do | 3 Lady Lucy, do do Vol. IV, p. 52 | 4 Rose, do do do | 5 Mohl of Oxford 4th, do do do | 6 Princess Jane, do do do | 7 Daisy Dean, do do do | 8 Rose Gwynne 4th, do do do | 9 Polly Vaughan, do do do | 10 Fortune Teller, do do do | 11 Cambridge Witch, do do do | 12 Lady Mary, (July, 1880), Vol. IV, p. 52 | 13 Nellie York, do do do | 14 White Rose of Lucy-<br>field, do do do | 15 Princess Harrington, do do do | 16 Lora, do do Vol. IV, p. 53 | 17 Lady Peerless, do do do | 18 Princess Dohy<br>Gwynne of Lucyfd do do do | 19 Rose of Delhi, (July, 1880), Vol. IV, p. 53 | 20 Blossom, do do do | 21 Molly, do do do | 22 Queen Caroline, do do do | 23 Lady Moore, do do do | 24 Princess, do do do | 25 Duchess 2nd, do do do | 26 Princess Louise of<br>Lucyfield, do do do | 27 Belle of Loredale, do do do | 28 Laura, do do do | 29 Pearl Blossom, do do Vol. IV, p. 54 | 30 Princess Adelaide, do do do | 31 Princess Helena, do do do | 32 Second White Rose<br>of Lucyfield, do do do | 33 Highland Lassie, (July, 1880), Vol. IV, p. 54 | 34 Princess of Lucyfield, do do do | 35 Fair Rosamond, do do do | 36 Eliza Stewart, (Aug. 1880), Vol. IV, p. 60 | 37 Daisy, do do do | 38 Rose, do do do | 39 Colchester Queen, do do do | 40 Evangeline, do do do | 41 Peerless, do do do | 42 Nellie, do do do | 43 Snowflake, (Aug. 1880), Vol. IV, p. 60 | 44 Nelly Gray, do do do | 45 Princess Louise, do do do | 46 Isabella, do do Vol. IV, p. 61 | 47 Rose Gwynne 5th, do do do | 48 May Rose, do do do | 49 Daisy Queen, (Sept., 1880), Vol. IV, p. 70 | 50 Belle Clayton, do do do | 51 Rose of the Valley, do do do | 52 Molly Dawn, do do do | 53 Princess Lightburne, do do do | 54 Urania, do do do | 55 Minerva, do do do | 56 Violet, do do do | 57 Oxford Princess of<br>Lucyfield, do do do | 58 Lady Lightburne, do do do | 59 Rose Halton, do do Vol. IV, p. 71 | 60 Laura, do do do | 61 Violet 2nd, do do do |
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| 62 Pomona, <i>Jour. Ag.</i> (Sep., 1880), Vol. IV, p. 71 | 63 Duchess, do do do | 64 Spa Spring Lass, do do do | 65 Parity, do do do | 66 Red Rose, do do do | 67 Pils Josephine 4th, do do do | 68 Princess Royal, do do do | 69 Evelyn, do do do | 70 Lily, do do do | 71 Miss Maud, (Oct. 1880), Vol. IV, p. 69 | 72 Elsie Nor, do do do | 73 Peckless the First, do do do | 74 Duchess 2nd, do do do | 75 Lady Dufferin, do do do | 76 Princess Louise, do do do | 77 Ora, do do do | 78 Elsie Vane, do do Vol. IV, p. 61 | 79 Red Lily, do do do | 80 Lady Washing-<br>ham 2nd, do do do | 81 Lady Washing-<br>ham 3rd, do do do | 82 Lady Washing-<br>ham 3rd, do do do | 83 Lady Washing-<br>ham 3rd, do do do | 84 Lily, do do do | 85 Zilla, do do do | 86 Duchess of Warwick,<br>3rd, do do do | 87 Merry Face, do do do | 88 Rosiecat, do do do | 89 Evangeline 2nd, do do do | 90 Minnie Warren, do do do | 91 Not named, do do do | 92 Not named, do do do | 93 Daisy Dean, (July, 1881), Vol. IV, p. 151 | 94 Lady May, do do do | 95 Vermillion, (Nov., 1880), Vol. IV, p. 181 | 96 Beauty, do do do | 97 Lady Lucy 2nd, do do do | 98 Jessie, (Nov., 1881), Vol. IV, p. 182 | 99 Winona, do do do | 100 Rowena, do do do | 101 Cherry, do do do | 102 Jess, do do do | 103 Sarah, do do do | 104 Daisy Deane 2nd, do do do | 105 Daisy Deane 3rd, do do do | 106 Effie, do do do | 107 Flora, do do do | 108 Lena Maude, do do do | 109 Annie Laurie, do do do | 110 Lady Mary 2nd, do do do | 111 Rose, do do do |
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AYRSHIRE BULLS.

|   |                         |                        |                    |                             |                                |                    |                     |                      |                         |   |                       |   |                         |                         |                            |                           |  |                   |                      |                               |                           |                              |                         |                          |  |                     |                       |                          |                         |                                |                     |                             |                    |                       |                       |                            |                               |                      |                   |                           |                         |   |                     |  |                              |                      |                         |                             |                             |                                 |                       |                              |                         |                         |
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| 1 Bruce, <i>Jour. Ag.</i> (June 1880), Vol. IV, p. 45 | 2 Boulardarie, do do do | 3 Sir George, do do do | 4 Johnny, do do do | 5 Prince of Wales, do do do | 6 Young Fr. of Wales, do do do | 7 Reform, do do do | 8 Charlie, do do do | 9 The Shah, do do do | 10 Lord Clyde, do do do | 11 Avon Water, (June, 1880), Vol. IV, p. 45 | 12 Bismarck, do do do | 13 Prince Albert, (Aug. 1880), Vol. IV, p. 61 | 14 Yakob Khan, do do do | 15 Sir George, do do do | 16 Young Royalty, do do do | 17 King Humbert, do do do | 18 Thrift, (Aug., 1880, Vol. IV, p. 61 | 19 Mars, do do do | 20 Leopold, do do do | 21 Hero, do do Vol. IV, p. 62 | 22 Lord Canning, do do do | 23 Prince Bismarck, do do do | 24 Lord Clyde, do do do | 25 Lord Raglan, do do do | 26 Mienae, (Oct. 1880), Vol. IV, p. 73 | 27 Kenelm, do do do | 28 Nicholas, do do do | 29 Wallace 3rd, do do do | 30 St. George, do do do | 31 Oscar, do do Vol. IV, p. 74 | 32 Albert, do do do | 33 Young Bismarck, do do do | 34 Romeo, do do do | 35 Sir Hugh, do do do | 36 Bellahli, do do do | 37 Royal Charlie, do do do | 38 Marquis of Lorne, do do do | 39 Marmion, do do do | 40 Hero, do do do | 41 Mark Anthony, do do do | 42 Robin Hood, do do do | 43 Julius Caesar, (Oct. 1880), Vol. IV, p. 74 | 44 Ianthe, do do do | 45 Champion, (Oct. 1880), Vol. IV, p. 74 | 46 Prince Imperial, do do do | 47 Francis, do do do | 48 Mark Train, do do do | 49 Prince William, do do do | 50 Persian Prince, do do do | 51 Pompey, do do Vol. IV, p. 75 | 52 Woodside, do do do | 53 Duke of Canuing, do do do | 54 Talbot 3rd, do do do | 55 Sir Albert, do do do |
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| 56 Peter, <i>Jour. Ag.</i> (Oct. 1880), Vol. IV, p. 74 | 57 Joseph, do do do | 58 Lord Cornwallis, do do do | 59 Sir John, do do do | 60 Sir Wallace, do do do | 61 Colchester, do do do | 62 Rob Roy, do do do | 63 Wragmattcook, do do do | 64 Scott, do do do | 65 Charley, do do do | 66 Von Moltke, do do do | 67 Inverness, do do do | 68 Zulu, do do do | 69 Bruce, do do do | 70 Dominion Champion, do do (Vol. IV, p. 83 | 71 Independence, do do do | 72 Chief Wauban-<br>off, do do (June, 1881), Vol. IV, p. 145 | 73 Col. Fieldmore of<br>Fieldmore Farm, do do do | 74 Zulu Chief, do do do | 75 Lord Nelson, do do do | 76 Endymion, do do do | 77 Duke of Sussex, do do do | 78 Hermit, do do do | 79 Beaconsfield, do do do | 80 Aberdeen, do do do | 81 Wallace, do do do | 82 William, do do do | 83 Lord Dufferin, do do do | 84 Prince Charlie, do do do | 85 Prince Leopold, do do do | 86 Friar Napoleon, do do do | 87 Captain J.M.S., do do do | 88 Lord Dufferin 2nd, do do do |
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AYRSHIRE COWS AND HEIFERS.

|   |                       |                        |                               |                                     |                   |                       |                       |                       |                            |                    |                         |                     |   |                          |                          |                    |                         |                    |                         |                      |                   |                   |                        |                   |                    |                      |                   |                     |  |   |   |                                  |                            |  |  |                                    |                    |                     |                   |                   |                     |                   |                      |                          |                        |                            |                        |                    |                   |                           |                         |                      |                             |                         |                       |   |                      |                      |                     |   |                       |   |                            |                           |                     |                           |                            |                   |                           |                     |                    |                               |
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| 1 Miss Cuthbert, <i>Jour. Ag.</i> (June 1880), Vol. IV, p. 44 | 2 Josephine, do do do | 3 Nora C. F., do do do | 4 Belle of Avondale, do do do | 5 Miss Strang, do do Vol. IV, p. 45 | 6 Daisy, do do do | 7 Lilly 2nd, do do do | 8 Lilly 4th, do do do | 9 Lady Avon, do do do | 10 Merry Duchess, do do do | 11 Blyth, do do do | 12 Pearl Drop, do do do | 13 Cherry, do do do | 14 Park 4th, do do (Aug. 1880), Vol. IV, 53 | 15 Merry Gipsy, do do do | 16 Dendrop 2nd, do do do | 17 Sadie, do do do | 18 Crocus 2nd, do do do | 19 Daisy, do do do | 20 Crocus 3rd, do do do | 21 Blossom, do do do | 22 Spot, do do do | 23 Rose, do do do | 24 Buttercup, do do do | 25 Fawn, do do do | 26 Grace, do do do | 27 Cowslip, do do do | 28 Lily, do do do | 29 Dorcas, do do do | 30 Belle of Paradise, do do (Aug. 1881, Vol. IV, p. 63 | 31 Cuthbert Lassie, do do (Oct. 1880), Vol. IV, p. 63 | 32 Lady Beatrice, do do (Aug. 1880), Vol. IV, p. 62 | 33 Rowena, do do (Vol. IV, p. 63 | 34 Lady Cuthbert, do do do | 35 Primrose, do do (Oct. 1880), Vol. IV, p. 75 | 36 Lady Mary, do do (Oct., 1880), Vol. IV, p. 75 | 37 Braw Lass, do do Vol. IV, p. 76 | 38 Gypsy, do do do | 39 Juliet, do do do | 40 Ruth, do do do | 41 Nora, do do do | 42 Minnie, do do do | 43 Zulu, do do do | 44 Heiress, do do do | 45 Island Lass, do do do | 46 Buttercup, do do do | 47 Lady Clements, do do do | 48 May Queen, do do do | 49 Flora, do do do | 50 Helz, do do do | 51 Lady Halifax, do do do | 52 Evangeline, do do do | 53 Blossom, do do do | 54 Marie Bismarck, do do do | 55 Alice Gray, do do do | 56 Clarissa, do do do | 57 Princess Alice, do do Vol. IV, p. 77 | 58 Ophelia, do do do | 59 Octavia, do do do | 60 Juliet, do do do | 61 Cleopatra, (Oct. 1880), Vol. IV, p. 77 | 62 Primrose, do do do | 63 Rebecca, do do (Oct. 1870), Vol. IV, p. 77 | 64 Little Durril, do do do | 65 Queen of Ayr, do do do | 66 Stella, do do do | 67 Dolly Varden, do do do | 68 Polly Perkins, do do do | 69 Rose, do do do | 70 Lady Franliu, do do do | 71 Bessie, do do do | 72 Torts, do do do | 73 Fairfield Beauty, do do do |
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74 Miss Cecilia, *Jr. Ag.* (Oct. 1880), Vol. IV, p. 77  
 75 Miss Ida, do do do do  
 76 Phidore, do do do do  
 77 Daisy, do do do do  
 78 Myra, do do do do  
 79 Daisy the Second, do do do do  
 80 Cecily, do do do do  
 81 Flor, do do Vol. IV, p. 77  
 82 Maid of Fern Hill, do do do do  
 83 Hortense, do do do do  
 84 Flora, do do do do  
 85 Mary Gray, do do do do  
 86 Alice Gray, do do do do  
 87 H. terns, do do do do  
 88 Lady Fannie, do do do do  
 89 Cecily, do do do do  
 90 L. dy Blandford, do do do do  
 91 Felle of Bellahill, do do do do  
 92 Rose of Lellahill, do do do do  
 93 The Nun, do do do do  
 94 Olive, do do do do  
 95 Spotted Lady, do do do do  
 96 Rosbud, do do do do  
 97 Dairy Duchess, do do do do  
 98 Daisy Duchess, do do do do  
 99 Gipsy 9th, do do do do  
 100 Shifty or Stanstead, do do do do  
 101 Belle of Brookside, do do do do  
 102 Mayflower, do do Vol. IV, p. 79  
 103 Laury Windsor, do do do do  
 104 Lilydora, do do do do  
 105 Mierva, do (June, 1881), Vol. IV, p. 145  
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 107 Molly, do do do do  
 108 The Abbess, do do do do  
 109 Louise, do do Vol. IV, p. 146  
 110 Maple Leaf, do do do do  
 111 Elm 2nd, do do do do  
 112 Elm 3rd, do do do do  
 113 Flora Baker, do do do do  
 114 Nellie, do do do do  
 115 Lady Blanche, do do do do  
 116 Lily 2nd, do do do do  
 117 Lily 1st, do do do do  
 118 Lily 6th, do do do do

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1 Pioneer, *Jour. Ag.* (July 1880), Vol. IV, p. 54  
 2 Dick Swifeller 3rd, do do do do  
 3 Bruno, do do do do  
 4 East Tyler, do do do do  
 5 Tyler, do do do do  
 6 Yarmouth, do do do do  
 7 Darling, do do do do  
 8 Plantagenet, do do do do  
 9 Prince of Lee Farm, do do do do  
 10 Knight of Lee Farm, do do Vol. IV, p. 55  
 11 Azimbar, do do do do  
 12 Bartizan, do do do do  
 13 Bon Hampton of Hill-crest, do do do do  
 14 Bilapaur, do do do do  
 15 The Sultan, do (Aug. 1880), Vol. IV, p. 61  
 16 Prince Imperial, do do do do  
 17 Ajax of Lornedale, do do do do  
 18 Lord Scalfeld, do (Oct. 1880), Vol. IV, p. 81  
 19 Round Robin, do do do do  
 20 Gambetta French, do (Oct., 1880), Vol. IV, p. 81  
 21 Eloyer, do do do do  
 22 Comet 2nd, do do do do  
 23 Comet 3rd, do do do do  
 24 Bellerophon, do do do do  
 25 Eloyer 2nd, do do do do  
 26 Lorne, do (Oct., 1880), Vol. IV, p. 81  
 27 L. Stranger, do do do do  
 28 Prince of Springfield, do do do do  
 29 Springfield Boy, do do do do  
 30 Antelope (Sep. 1881), Vol. IV, p. 160  
 31 Abdurahman do do do do  
 32 Louis Debonnaire, do do do do  
 33 Romeo Debonnaire, do do do do  
 34 Alpha, do (Jan., 1882), Vol. IV, p. 192  
 35 Rat. Augustus, do do do do  
 36 Berkeley, do do do do  
 37 Centaur, do do do do  
 38 General of Loredale do do do do  
 39 Julian, do do do p. 193  
 40 Bob, do do do do  
 41 Favorus, do do do do  
 42 Lord of Draffan, do do do do  
 43 Scafism, do do do do  
 44 Victor of Draffan, do do do do  
 45 Eugene, do do do do  
 46 Chief of the Island, do do do do  
 47 Baron of St. Lambert do do do do  
 48 Grand Master, do do do do

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1 Branitz, *Jour. Ag.* (July 1880), Vol. IV, p. 55  
 2 Nabitz, do do do do  
 3 Golden Doublet of Hillcrest, do do do do  
 4 Zabritia, do (Aug. 1880), Vol. IV, p. 61  
 5 Oriole of Hillcrest, do do do do  
 6 Maid of Orleans, do do do do  
 7 Mermaid of St. Lambert, do do do do  
 8 Cowship of St. Lambert, do do do do  
 9 Sultan, do do do do  
 10 Little Buttercup, do do do do

11 Scalfeld Belle, *Jr. Ag.* (Oct. 1880), Vol. IV, p. 81  
 12 Heather Belle, do do do do  
 13 Beatrix, do do do do  
 14 Damsel, do do do do  
 15 Florie, do do do Vol. IV, p. 82  
 16 Lady Bonair do do do do  
 17 Bel Aer do do do do  
 18 Zaidie of Loredale do (Oct. 1880), Vol. IV, p. 82  
 19 Lady Scalfeld, do do do do  
 20 Ganant of Brooklyn, do do do do  
 21 Jersey Queen, do do do do  
 22 Nathalie, do do do do  
 23 Gipsy Queen, do do do do  
 24 Janet do air, (Sept., 1881), Vol. IV, p. 169  
 25 Liza Debonnaire, do do do do  
 26 Better Belle, 2nd, do do do do  
 27 Neely, do do do do  
 28 Pride of Milton, do (Jan., 1882), Vol. IV, p. 193  
 29 Queen of Glynwood, do do do do  
 30 Mayflower, do do do do  
 31 Cassie, do do do do  
 32 Lady Montague Debonnaire, do do do do  
 33 Jade, do do do do  
 34 Liza 5th, do do do do  
 35 Rustic Russy, do do do do  
 36 Nellie, do do do do  
 37 Ada, do do do do  
 38 Rose of Draffan, do do do do  
 39 Promose, do do do do  
 40 Laita Bookh, do do do do  
 41 Ada, do do do p. 194  
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 43 Rose, do do do do  
 44 Lancy Fan, do do do do  
 45 Canterbury Belle, do do do do  
 46 Lilly of Draffan, do do do do  
 47 Miss Jersey Maid, do do do do  
 48 Nalad of St. Lambert do do do do  
 49 La Belle Canadienne, do do do do

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1 Primrose, *Jour. Ag.* (Sept. 1880), Vol. IV, p. 65  
 2 Lady Pink, do do do do  
 3 Maid of Miller Hill, do do do do  
 4 Margaret, do do do do  
 5 Blossom, do do do do  
 6 Violet, do do Vol. IV, p. 66  
 7 Buttercup, do do do do  
 8 Mayflower, do do do do  
 9 Lily, do do do do  
 10 Verbena, do do do do  
 11 Miss Grant, do do do do  
 12 Orange, do do do do  
 13 Kahlia, do do do do  
 14 Snowdrop, do do do do  
 15 Pansy, do do do do  
 16 Myrtle, do do do do  
 17 Marjold, do (Sept. 1880), Vol. IV, p. 66  
 18 Poppy, do do do do  
 19 Moss Rose, do do do do  
 20 Larkspur, do do do do  
 21 Carnation, do do do do  
 22 Heartsease, do do do do  
 23 Duchess of Edinb'h, do do Vol. IV, p. 67  
 24 Princess Victoria Adelaide, do do do do  
 25 Princess Alice, do do do do  
 26 Hawthorn, do do do do  
 27 May, do do do do  
 28 Peony, do do do do  
 29 Azalea, do do do do  
 30 Princess Beatrice, do do do do  
 31 Dahlia, do do do do  
 32 Princess Helena, do do do do  
 33 Cowslip, do do do do  
 34 Balsam, do do do do  
 35 Trillium, do do do do  
 36 Princess Louise, do do do do  
 37 Acacia, do do do do  
 38 Camellia, do do do do  
 39 Princess Victoria 3rd, do do do do  
 40 Lady Barbara, do do do do  
 41 Princess Alexandra, do do Vol. IV, p. 68  
 42 Foxglove 2nd, do do do do

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1 Prince Alex'r, *Jour. Ag.* (Sept. 1880), Vol. IV, p. 63  
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 3 Carly Prince, do do do do  
 4 Sir F. Williams, do do do do  
 5 General Wolfe, do do do do  
 6 Lord Chelmsford 2nd, do do do do  
 7 Carly Prince 2nd, do do do do  
 8 Lord Keave, do do do do  
 9 Lord Clive, do do do do  
 10 Hartland 2nd, do (Oct. 1880) Vol. IV, p. 82  
 11 The President do do do do  
 12 Haybeck, do do do do

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1 Avui Jones, *Jour. Ag.* (Oct. 1880), Vol. IV, p. 82  
 2 Bonanza, do do do do  
 3 Gold Dust, do do do do  
 4 Prince Edward *Jour. Ag.* (Oct. 1880), Vol. IV, p. 82  
 5 Duke of Kent, do do do do  
 6 Prince Arthur, do do do do

**GUERNSEY COWS AND HEIFERS.**

1 Bertha, *Jour. Ag.* (Oct. 1880), Vol. IV, p. 82  
 2 Bertha 2nd, do do do do  
 3 Lady Bird, do do do do  
 4 Daisy, do do do do

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