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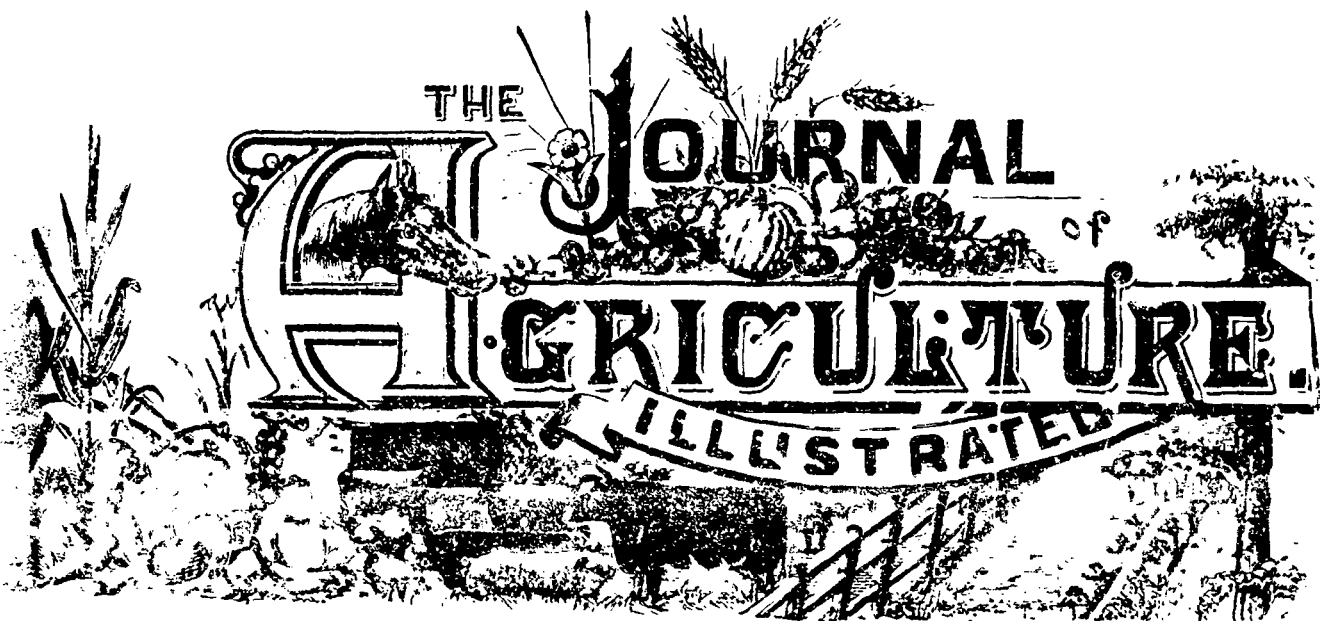
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**NOTICE.**—The subscription to the *Illustrated Journal of Agriculture*, for members of Agricultural and Horticultural Societies as well as of Farmers Clubs, in the province of Quebec, is 30c annually, provided such subscription be forwarded through the secretaries of such societies.—**EDITORIAL MATTER.** All editorial matter should be addressed to A. R. Jenner Fust, P. O. Box 254, Sorel—or to the Director of Agriculture, Quebec.

## OFFICIAL PART.

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### RÉGULATIONS.

Respecting the *Pedigree or Herd Book and the Golden Register for Canadian Cattle*, established under the authority of the Act 48 Vict., ch. 7.

#### PEDIGREE OR HERD BOOK.

- Art. 1.—A pedigree or herd-book for Canadian cattle is established.
- Art. 2. The object of such book is to ensure the preservation of the purity of this valuable breed of milch-cows, and an intelligent and continuous selection to contribute to its improvement.
- Art. 3.—The management of the herd-book is vested in a special commission appointed by the commissioner and the Council of agriculture. (This commission is now composed of Messieurs S. Lesage and Ed. A. Barnard, of the Depart-

ment of Agriculture and Public Works, and of Messieurs D. McEachran, V. S., J. A. Couture, V. S., and A. Casavant.

Art. 4.—The organisation, administration and superintendance of the herd book, are entered in the commission, who order the printing of bulletins, and decide, without appeal, upon all difficulties and disputes which may arise. They appoint one of their members as recording secretary, whose duty is to draw up the minutes. They shall have power to add to their number such specialists whose services may be necessary for the accomplishment of their duties.

Art. 5.—The following animals are entitled to be registered in the herd book :

1. Pure bred stock-getters if well formed and possessing good milking qualities. They are admitted only after a very strict examination. Consequently, it will not be sufficient to merely show a fine bull in to ensure its being registered, but the antecedents of the animal, its origin and qualities must be established to the satisfaction of the commission.

2. The offspring of sires and dams already registered.

Art. 6.—In order to be admitted as original stock, bulls must be at least 12 months old and heifers 2 years old. However, such admission as regards the latter is allowed only provisionally, and they are finally admitted only upon a new examination made after the first calving in order to ascertain their milking qualities.

Art. 7.—Every animal having well defined characteristic marks of a breed different from the Canadian breed is excluded.

The offspring of crossings between Jersey or Guernsey and Canadian cattle are nevertheless considered as cattle of pure Canadian breed, as these several families can be traced to the same stock.

Art. 8.—The register for registration of pedigrees will remain open during the space of two years reckoning from a

day to be fixed by proclamation. From that date the pedigree book will be rigorously closed.

Art. 9.—Registration of pedigree for original stock is effected gratuitously.

Art. 10.—For the offspring of registered parents a specific fee of one dollar, will be charged for the first calf registered within the same year and fifty cents for each calf of the same herd, also registered, within the same year. On payment of such fees a certificate of pedigree will be given.

Art. 11.—Animals brought by breeders are examined by the Commission or their representatives on the premises.

Art. 12.—If one of the members of the Commission should bring animals for registration, he shall not take part in the deliberation or in the vote.

Art. 13.—A book provided with a counter-foil, is given to every owner of registered bulls, for the purpose of keeping a record of his services.

Art. 14.—The owner of a cow registered in the herd book, who brings such cow to a registered bull, must obtain, on the same day, from the owner of the bull, a certificate taken from the aforesaid book, with the exact date entered on it.

Art. 15.—The owner of a registered bull who brings his own registered cow to such bull takes a certificate for himself in the same way.

Art. 16.—In both cases the notice intended for the secretary is detached from the book and is addressed to that person by the owner of the bull within eight days.

Art. 17.—The offspring of this union is entitled to the registration in the herd book on payment of the fee mentioned in article 10, which must be sent to the secretary at the same time as the request for registration.

Art. 18.—Such a request, on a printed form signed by the breeder, must contain the name given by him to the animal and its exact description.

Art. 19.—It must be addressed to the secretary within the 30 days following the birth. In return the breeder receives a certificate stating that the animal is registered in the herd book and bears one of a series of numbers.

Art. 20.—Inscriptions or registrations are published by the commission in the annual bulletin.

Art. 21.—The bulletin comprises also the list of animals whose registration is ratified by the commission.

Art. 22.—Such ratification is given by the commission or by one of its delegates to animals which are the offspring of stock admitted in the herd book or of their ratified progeny. Bulls will be affirmed only when they are one year old and heifers after their first calving.

Art. 23.—The ratification applies not only to the purity of the breed but also to individual qualities.

Art. 24.—Every false declaration or attempt to mislead is punished by exclusion from the herd book, for the present and for the future, of all animals belonging to the breeder who has been guilty thereof. Such exclusion with the grounds for the same will be inserted in the bulletin.

Art. 25.—Owners of animals inscribed in the herd book are bound, within thirty days, to inform the secretary of the sales and deaths that have occurred in their herd, in order that the alteration or cancellation may be made in the bulletin. In the case of a sale for breeding, the name of the purchaser and his residence must be mentioned.

Art. 26.—The commission is authorized to make the by laws it may deem necessary for the proper working, and the putting into force of the preceding regulations.

#### GOLDEN REGISTER.

Art. 27.—In accordance with section 2 of the Act 48 Vict., chap. 7, the herd-book commission shall keep a special register to be called The Golden Register of Canadian cattle.

Art. 28.—In this book those cows shall be registered which shall have given, during a trial of seven consecutive days, a quantity of no less than ten pounds of butter, or 350 pounds of milk during ten consecutive days or 6,000 pounds of milk during ten consecutive months, the whole subject to the by-laws which the commission is authorized to adopt for the purpose of securing the perfect regularity of trials.

Art. 29.—The fee for inscription in the Golden Register is fixed at five dollars per head.

Art. 30.—Cows registered in the Golden Register shall be entitled to gratuitous inscription in the herd-book, and shall be submitted to all the regulations of the herd book.

#### DEPARTMENT OF AGRICULTURE AND PUBLIC WORKS.

Quebec, 16th December, 1886.

The regulations respecting the Herd Book and of the Golden Register of Canadian cattle having been approved by His Honor the Lieutenant Governor in Council, I hereby proclaim the said Herd Book and Golden Register open from this day.

JOHN J. ROSS,  
Commissioner.

#### A NEW HERD BOOK

ESTABLISHED BY THE LOCAL GOVERNMENT FOR  
"CANADIAN" CATTLE.

(Special to the Gazette.)

QUEBEC, December 28.—The Government, through the Minister of Agriculture, has issued a proclamation under the authority of 48 Victoria, chap. 7, establishing a herd book for "Canadian" cattle, the management of which is entrusted to a commission consisting of Messrs. E. A. Barnard and Lesage, of the department of agriculture, and D. McEachran, V.S., J. A. Couture, V.S., and A. Casavant. Rules are published for the government of the commissioners in the discharge of their duties, and regulations established as to what animals shall be entitled to registration, in each case the antecedents and origin being looked into as well as the stock getting and milk producing qualities. Special provision is made against inferior animals being put on the list, and any owner making a false declaration or attempting to mislead the commissioners shall be punished by having his herds forever excluded. No charge will be made for the registration of original stock. There is also established a "golden register," in which will be inscribed the names of all "Canadian" cows which during a trial of seven consecutive days shall have given not less than ten pounds of butter, or 350 pounds of milk, or during ten consecutive months 6,000 pounds of milk. The original herd book will close for entries two years from the 16th inst.

The Department of Agriculture of the province has taken the necessary first steps to place pure Canadian—or, rather, Quebec—cattle on a footing of equality with other fine breeds, and has established a pedigree herd book, which is now open, and the rules for registration in which seem sufficiently restrictive to prevent the admission of unworthy animals. Of late a good deal of attention has been paid to the *habitant* cow, the descendant of the original importations by the French settlers, and which for three hundred years has propagated its stock without admixture of foreign blood. It has points of resemblance to the much lauded Jersey, and has won praise from many close observers. Among others, Prof. Brown, of the Ontario Agricultural college, has spoken in its favor, giving it a high rank in the list of breeds most profitable for the Canadian farmer. The new herd book, therefore, as giving

it a recognized standing, should do a good deal towards improving the general standard, tending to the elimination of the poorer specimens by the selection of choice animals only for breeding purposes, the result being an appreciable increase in the value of this class of farm property in the province.

*Gazette.*

**TREE-PLANTING.**

Near Aberdeen, N. B.,—that means North Britain, not New Brunswick—young plants of Scotch firs were sold for four pence a thousand, sixty years ago!

**TURNIP-TOPS**

What is the value of turnip- and carrot-tops? Of course they are good for sheep, in moderate quantities, or for any other animal that gives hard excrements like deer or rabbits; but for horned stock, with their soft dung, I fancy the tops of our root crops are rather injurious than otherwise. For cows, they probably increase the flow of milk, but at the expense of quality; and they certainly won't put any flesh on a bullock's bones. If I had no sheep, I should plough the tops in.

**Sheep at the Smithfield Club.**

I am delighted to say, that the Champion pen of sheep at the December exhibition of the Smithfield Club in London were Mr. H. Lambert's Hampshire Down, aged 22 months. The gross weight of these superb sheep was 840 pounds, or 280 pounds a piece. So, once more, the Hampshires have beaten all the long-wooled and short-wooled breeds of England, and, therefore of the world.

The first prize pen of Hampshire-down lambs weighed 224 lbs each; but I had better give these weights in tabular form

	lbs.
Hampshire-down 22 months old.....	280
"    "    lambs, 10 months.....	224
Southdown 4 years old ewes.....	205
"    lambs 10 months old.....	173
Shropshire 22 months old.....	236
"    lambs 9 months old.....	130
Oxford lambs, 9 months.....	183

To compare the weight of these lambs, the Hampshires beat the Oxfords by 41 pounds a head; the Southdowns by 51 pounds a head; and, nearly doubling the weight of the Shropshire lambs, beat them by 9½ pounds a head!!! My figures are taken from the English Agricultural Gazette of December the 13th.

Of the long-wools, the Lincolns seem to have been the best. Only two exhibitors of Cotswolds, Messrs. Swanwick and Gillett. The fact is, long-wools have seen their day in England, and the sooner they are given up in this country, the better will it be for the exporter.

From my knowledge of the Hampshire-downs, I should be inclined to say, that the dead weight of the lambs would be about 34 pounds a quarter!!! More we can hardly look for than hardiness and such early maturity as this. As for quality, I have bred, fed, and eaten, both South- and Hampshire downs for years, and I do not believe there is any perceptible difference in the flavour of the meat.

A. R. J. F.

**The Chemistry of the Farm.**

"In the first place let us speak of what the analysis of the soil has done for us. Much has been said of it, and it ought to tell us, of course, the sorts of manure required for our dif-

ferent farms. But I will tell you that I have had soils analysed, and I have never received the slightest benefit from the advice the chemist has given me as to the sort of manures to apply. I know that is saying something which may offend our chemical friends here; but I really never did. It is very disappointing. I will give you a wonderful illustration of it in an experiment I say conducted this year on a chalk farm in West Norfolk. A foot of soil was analysed, and there were supposed to be by the chemical analysis three tons per acre of potash, all of which was more or less available as a fertiliser. Three cwt. per acre of nitrate of soda was applied to a piece of barley, and that extraordinary dressing of nitrogen only produced nine bushels—only nine bushels altogether. Two cwt. of muriate of potash added to the three cwt. of nitrate of soda produced fifty four bushels. There, you have a difference of forty-five bushels per acre by the expenditure of 16s. per acre on this potash, which was added, not by the advice of the chemist, but simply by the judgment of the practical farmer who farmed the land.

Now then, I go on to say, that as far as we are informed a long series of experiments have proved that nitrogen is good for our grain and phosphates for our roots. Geology has come in to help us with regard to a certain discovery—the discovery of coprolites—and chemistry, again, told us how by the use of acid those coprolites were to be reduced. We went on for twenty-five years thinking this was all right, when up jumped a certain chemist (1) of standing and experience in the North, and said that we had been all wrong—that we should not dissolve coprolites by sulphuric acid, but grind them into fine flour. Now here is an illustration of the stupidity of continuously applying superphosphate in the growth of roots. This year in Norfolk we have been experimentalising under the Chamber of Agriculture, and I will give you the results of two remarkable experiments. Four hundredweight of superphosphate actually grew two tons less than nothing at all—two tons less than no manure at all. The addition of half-a-hundredweight of bone flour, which costs 3s., increased the whole by seven tons. That is to say, it grew five tons more than the unmanured portion, and seven tons more than where the superphosphate was applied alone. Besides the good which it did in producing an extra seven tons of roots, the addition of the bone flour to the superphosphate had the excellent effect of making the superphosphate work remarkably well in the drill. Then the application of three hundred of salt to mangold, which cost about 3s., actually produced five tons more roots. But these interesting little experiments were not made nor even suggested by the chemist; they were rather objected to by the Chemical Committee of the Royal Agricultural Society; they were the outcome of some practical minds told off by the Norfolk Chamber of Agriculture to conduct experiments. This shows that although we are very much obliged to science, we cannot follow it blindly, and that after all there is not so much wrong in our practice as some people would have us believe."

The above extract from a speech by Mr. Clare S. Read, formerly M. P. for Norfolk, England,—the tenant farmers' member—will strike many of our readers as bold in the extreme. I need hardly say that, to a great extent, I agree with Mr. Read's positions. I have over and over again expressed my opinion on the subject of the utter uselessness of the chemical analysis of soils, and advised the practical analysis by means of plots of land treated with manures containing, severally, either nitrogen, or potash, or phosphoric acid, or all three. The Liebig theory I have, often I fear, most irreverently laughed at.

I am glad to see that, at last, a man, who is not only a

(1) Jamieson

farmer who lives by farming, but a well educated man, has had the courage to speak out on these most important matters. I only regret that Mr. Read did not express himself as fully on the subject of the analysis of cattle-foods, particularly on the value of roots. The time will come, when the 90 per cent of water contained in the turnip will be no longer estimated at the same value as the water drawn from a well.

ARTHUR R. JENNER FUST.

DE OMNIBUS REBUS.

Box 254, Sorel, Que., December 20th, 1886.

*Clover.* — The question, whence do clover and other leguminous plants obtain their food? is not so easily settled as some agronomes seem to think. It is all very well for us to jump at conclusions and say: Oh! from the air of course; but the more patient investigators of the matter do not seem to be so easily satisfied. They think that still further investigation is needed to prove whether the source of the most important of all foods, nitrogen to wit, is to be found in the soil, or whether the leguminosæ do, in some manner, assimilate free nitrogen from the air. What is really required is *more facts*, and unfortunately these are only accumulated by very slow and laborious processes.

Professor Atwater says, that, "with many others, he is coming to suspect very strongly that plants do, somehow or other, get considerable nitrogen from the air;" and he proposes to carry out some experiments with the view of investigating the subject.

Sir John Lawes, on the other hand, observes: "I am quite of opinion with Professor Atwater that it is exceedingly difficult to account for all the nitrogen which plants obtain, but I am disposed to look upon this point in a somewhat different light since we carried out, at Rothamsted, our experiments with plants, which confirmed those of *Boussingault*, to the effect that free nitrogen was not assimilated from the atmosphere."

The only way in which the point, whether plants do or do not obtain free nitrogen from the air, can be decided, seems to be the continuous growth of crops freely supplied with mineral manures, but left to their own resources to obtain a supply of nitrogen.

*Horticultural Society of Montreal.* — By far the best number yet published is the eleventh annual report. A more practical piece of work I never read. There are a few errors in it of course, but merely trivial ones, such as, "Hardest pears for cider." Apples make cider, but perry is produced from pears, and delicious drink it is, when bottled, and kept for twelve months in a good cellar. I do not see why bottling beer spoils it, and perry and cider should be improved by bottling. If any of my readers would like to try the following recipe next summer, it is at their service:

- One bottle of perry,
- Half-a-pint of sherry,
- Three dessert spoonfuls of sugar.

Would the President of the Society please to cast his eye on the motto in the coat of arms on the title page? The original line from which it is taken runs, to the best of my recollection, as follows:

"Omne tulit punctum qui miscuit utile dulci."

Mr. Mead Pattison's article, on "Out-door grape-culture in the Province of Quebec," is a most interesting one. He has tried more than 130 varieties of that plant, and has still more than 100 varieties in cultivation. Clarenceville, where Mr. Pattison lives, seems, from his account, to be much better adapted to the growth of grapes than many places further

south. This he accounts for by the dryness of the atmosphere surrounding that place, which ensures the fruit grown there from the mildew and rot which are so fearfully destructive to the grape in many parts of the United States. The uniformity of Quebec winters, too, and the natural covering of snow, render losses to the vines from frost very uncommon when reasonable care is exercised. Of course, the vines have to be laid down and covered with earth; but so they have to be in many of the States; and even in the Middle States, this treatment seems to be advantageous.

Mr. J. M. Fisk, of Abbotsford, P. Q., writes on "Fruit-growing in the Province of Quebec. The following extract from his article is well worth reading:

"In the mixed husbandry that is usually adopted by most of the farmers in this country, there is hardly a farm in the Province that has not some portion of it adapted to fruit growing in some form; and this could be profitably introduced without materially interfering with other farm crops. Many an acre, which now yields its owner little or no profit, might be turned to advantage by planting orchards, and where this is not practicable, such fruits as plums, cherries, grapes, strawberries, gooseberries, currants, etc.,; and in low boggy places the cranberry can be introduced from some neighboring marsh, and returns realized from ground that was an actual loss to the owner. I do not wish to suggest that where the apple can be grown, small fruits should be neglected, for most of these can be grown upon a variety of soils with profit, and among them some of our choicest delicacies are to be found; and no modern housewife considers her stock complete without a bountiful supply of canned fruits and jams. Still, the one fruit for the multitude, for rich and poor, is the apple. It stands preeminent in this province, and should be largely cultivated in every county that is adapted to it. The present facilities for acquiring a knowledge as to the varieties to plant, has been practically solved by the published reports of the Montreal Horticultural Society."

The following is a list of grapes worth noticing that have been tested for keeping:

	DESCRIPTION.	GRAPES.
Varieties kept well till.	Nov. 1st.	Lady Antoinette, Carlotta, Belinda.....
	Dec. "	Lady Washington, Peter Wiley, Mason's, Wordin, Venasqua, Romell's, Rickett's 546, Concord, Delaware, &c... ..
	Jan. "	Duchess, Essex, Barry, Massachusetts, Agawam, Dempsey's 5, Burnett, Undine, &c .....
	do 15th.	Salem, Vergennes, El Dorado..
	Feb. 1st.	Wilder, Herbert, Peabody, Rogers' 30, Gaertner, Mary, Owasso .....

I agree with Mr. Fisk that "there is a large percentage of country, known as "The French Country" (clay-flats), which is not adapted to growing apples," but it is a sin and a shame to see so many farms in the lovely Eastern Townships without an attempt at an orchard, and almost without a garden.

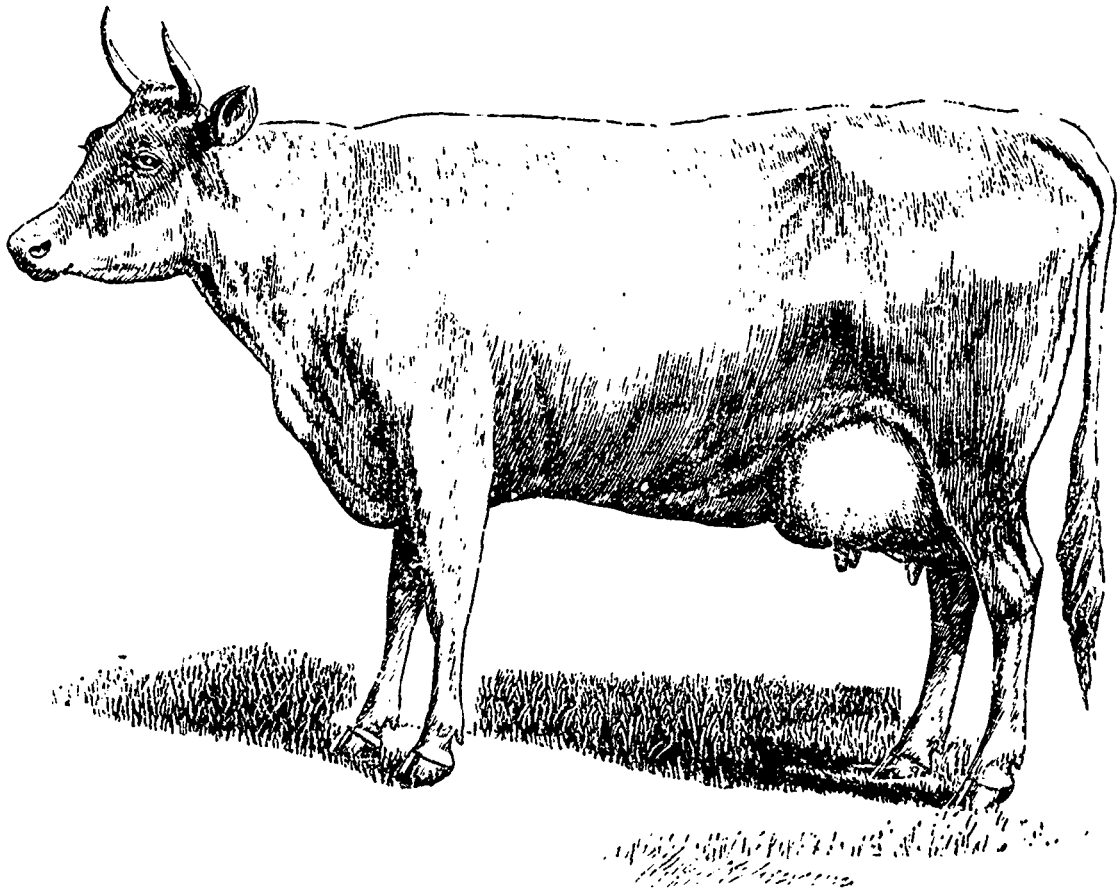
The varieties of apples which seemed to have suffered most in the horridly cold winter of 1884-1885, were the Late Strawberry, Bourassa, Pomme Grise, Ben Davis, Canada Baldwin, and the Newberry Sweeting. None of the Russian apples, except the Red Astrachan, were affected.

Mr. Pattison recommends grapes to be packed, for keep-

ing, in shallow-trays or boxes. Before packing, each bunch should be examined, and all injured berries be removed. If the thermometer, in the store-room, goes much below freezing point, a blanket or newspapers can be thrown on the boxes. Under this treatment, the best keepers will be found in good order up to February, after which the fruit deteriorates. Mr. Pattison is strongly of opinion that if grapes were more generally used as an article of diet, dyspepsia and consumption would be less prevalent.

Window-Gardening, an article written by the well-known Mr. James McKenna, of Montreal, will interest many of my fair readers. And here I would call their attention to one passage in particular: "Almost any plant that can be satisfactorily grown and bloomed in a greenhouse, can be grown and bloomed in a window almost as well, provided, of course,

room where gas is burned; now I believe that the only effect the burning of gas in a room has upon plants is in drying the air. Of course, an escape of gas in a room is another matter, as it is a well-understood fact that coal gas is death to any kind of vegetation. But the dryness of a room may be overcome by some method similar to that which I shall suggest below. A good flower stand can be constructed as follows:—Take a strong plain table, the height of, or a few inches lower than, your window sill, and of a suitable length to fit in close to window, and about two feet wide. Upon this, erect a stage of three or four shelves, using good, clear pine, six inches wide, and one inch thick when dressed. The supports should be at both ends only, and as near the ends of the table as possible. Fasten them to the table with four 4-inch flat-iron brackets, to be placed on the inside of each sup-



TYPICAL AYRSHIRE COW. (R. N. Y.)

that the necessary degrees of temperature and moisture be maintained. I remember seeing, some years ago, in the window of a poor cottager's dwelling at Côte des Neiges, about the end of February, a single plant of Verbena, Defiance, upon a trellis in the shape of a fan; it covered about half the window, and was a perfect mass of the brightest scarlet."

Probably the window in question was the kitchen window, and a kettle of hot water was kept on the stove all the day and part of the night. My own window plants are always healthy and vigorous, and the reason is, that I keep a constant evaporation of water going on—on the coal-stove in my hall,—day and night.

Mr. McKenna's description of a flower stand is worth attending to:

"It is a popular belief that plants cannot be grown in a

port, to give the stage solidity. Then get a pan of zinc, or galvanized sheet-iron, the full width of the table, and long enough to fit in between the supports, about two inches shorter than the table, and about one and a half inch deep. Mount the table on four of the largest and freest-running castors, and you will have a complete flower-stand, on which you can grow any kind of plant in the driest sitting-room. To warm the water in the pan, put hot bricks into it. (1)

Mr. Charles Gibb has several articles in this report. It would be useless for me to attempt to quote extracts from them, as they are so charged with weighty matter that, to be

(1) I cannot agree with this idea. I think when the gas is impure, as it is at Sorel, the plants, in spite of any amount of moisture in the air, would soon die.  
A. R. J. F.

appreciated as they deserve, they must be read in their entirety.

The differences of opinion as to the Champion grape at the meeting for discussions were curious enough. Mr. Smith, of Montreal, likes the Champion, because it fruits a few weeks earlier than the other sorts. He assured the meeting that a good Champion—that is, I presume, a perfectly ripe one—is not a bad grape; wherein I agree with him. Mr. N. C. Fisk thought that a man grows Champions when he could grow nothing else; but Mr. J. Fisk seems to have held a different opinion. Mrs. Annie Jack “had not mentioned the Champion, but the memory of some of our hard-working French-Canadian neighbours, who were tempted to invest in this fraud to a large extent, by unreliable agents, puts it beyond the pale of horticultural mention”—whatever that may mean.

Mr. Auguste Dupuis, of l'Islet, read a very interesting account of the Blue and White Plums of the Isle d'Orleans, in which he enlivened the meeting by an account of M. Durand's plan of growing plums by means of the supernatural effects of horseshoes! “Mr. Durand told me his father's method, which he followed, was to bend, in July, all fast-growing shoots, and keep them bent, by old horseshoes.” But Mr. Dupuis, not having been born yesterday, supplies a reasonable cause for the beneficial effects of the horseshoes: “The bending,” says he, “breaks the tissues of the wood sufficiently to stop the sap, securing an early cessation of its flow, and the early ripening of wood-growth. The success Mr. Durand attributes to the virtue of the horseshoes, was due only to the bending of the branches, but he does not believe it.” Education must be at a low ebb in the Isle d'Orléans, I fear; but caution compels me to add that equally absurd superstitions abound in the south-western countries of my own native land. Talking of plums, I had an immense crop of a large blue plum in my garden at Sorel this last summer, large and long. It ripened, ripened thoroughly, and when it was ripe it was—worth nothing, not even for preserves! The President, Dr. Sterry Hunt, at the second winter meeting, gave one of his tastefully worded addresses on Flowers. I see the learned professor takes the same view of the effects of gas on flowers that I do: “The small amount of sulphur in our gas,” says he, “the escape of the gas itself, is often fatal to the finest growing plants in our greenhouses.” He notices the healthy appearance of the flowers in some of the smaller houses, especially in the French quarter of the city, in low, small rooms, where there is a family living, and where there is a large stove and water boiling on it a great part of the time. The so called “Century Plant,” which by the bye only lives 50 years instead of 100, is an *agave*, not an *aloe*.

I was very much struck during my lecturing expeditions, last spring, with the almost entire absence of flowers in the houses of the habitants. Here, at Sorel, I am happy to see a great change in that respect. I have distributed a large number of the more easily grown perennial plants among my poorer neighbours, and they seem to be inclined to take care of them. *Pelargoniums*, *geraniums*, and *wallflowers*, are among the flowers I have given away, and if the owners would only pinch the heart out of the two former plants they would have ten times as many blooms, and five times as many leaves. But they will let the plants run up, and, though perhaps they flower more quickly, there is, as a rule, nothing but a few lanky stems, a few leaves, and a weak truss or two of flowers. In growing *geraniums* and *pelargoniums*, the heart of the plant should be pinched off when there are eight leaves out, and if the perennial *wallflowers* are treated in the same way, they will, of course, be retarded in blooming, but there will be five times the number of flowers, and a shrubby plant instead of a stick.

The infusorial earth, which is so highly recommended for

packing fruits in for exportation, was exhibited, and its effects shown, by Mr. Fraser Torrance. This earth is composed of a vast multitude of exceedingly minute shells, every cubic inch of it containing more than a million of those organisms. As each of these shells holds a particle of air packed safely in its cavity, an inch layer of this earth is a cushion of imprisoned air, and it acts in a similar way to the double windows upon our houses in winter. It is used extensively in Europe and in the States for covering boilers and steam-pipes, to prevent radiation and loss of heat. The infusorial earth is utterly tasteless, and the experiments made in packing fruit in it seem to have been perfectly successful.

Mr. Louis Beaubien, at the same meeting, spoke on the subject of lawns. He seems to me to have rather depreciated the lawns of Montreal. I can conceive nothing lovelier than the lawns on the north side of Sherbrooke Street. Mr. Linton's, in particular, is equal to anything to be seen in England. As to the means of establishing a lawn, first sow plenty of seed; secondly, mow it constantly from its infancy; thirdly, roll it with the heaviest iron roller procurable. My own lawn, in England, was always rolled twice in the spring and once in the autumn with a roller weighing 25 cwt., drawn by a powerful carthorse, which, in order to avoid injuring the turf, wore great, wide, solid boots.

M. Schmouth, professor of agriculture at Sainte Anne la Pocatière, is rather severe on the stock of the *habitants* and their fashion of feeding. I translate here a passage or two from the professor's address at the 1885 meeting of the Dairymen's association of the province of Quebec.

“There is not a single Canadian farmer, who would not admit that our indigenous (?) animals are very defective in form and in yield. Precious qualities they have indeed: they are easily kept, and are marvellously hardy, nevertheless they have numerous defects, and the sooner these are improved away the better it will be for the farmers. I confess that I share in this opinion; but, at the same time, I cannot forget the principle I laid down just now: the animals on our farms are just what their food makes them. (1)

If our stock are defective, if our milch-cows are small, bony, flat-sided, narrow, fore and aft—all this comes from the miserable way in which they have been reared. For many a generation they have never known what plenty means. In summer they have had the run of the pastures, at times abundant, but too frequently insufficient for their support. Far worse for them was it in winter—famine itself then ruled. The meanest form of food was thought sufficient for them—nothing but weather-damaged straw. It is doubtful if they ever tasted really good hay. To tell the whole truth, the Canadian farmer carried his ideas of economy to the borders of the most culpable barbarity. (Bravo, M. S.)

Unfortunately for our agricultural prosperity, the treatment formerly undergone by our milch-cows is still prevalent in too many of our farms. We must not, then, be surprised if after a long endurance of such barbarous treatment, the cows of the country have become small, angular, ill-formed, diminutive in every way. It would be a miracle were it otherwise.”

M. Schmouth goes on to say that, now-a-days, the Canadian cow, from better feeding, has wonderfully improved, and instead of being treated contemptuously by all, has obtained a reputation inferior to none; and that this improvement is principally due to the belief that has at last obtained among the Canadian farmers, that richer and more abundant food is the main source of the improvement of all kinds of

(1) The English phrase in common use is: size goes in at the mouth.

stock. The Canadian cow is no longer condemned, because, being better fed, she has improved in size, in shape, and in yield of milk.

To my mind, it is rather unsatisfactory to find how little stress Mr. Schmouth lays upon the main cause of success—selection. He only notices it *en passant*: "Cattle can be brought to perfection by two methods: by good food, and by a judicious choice of breeding animals:" by which he means of course, selection of parents. Farther on he says, "the English have, no doubt, made great use of the influence of choice breeding animals; but they have invariably insisted on good feeding as the main source of the size and build of their most distinguished races."

This is, as most of my readers know already, a singular error. The real means by which the Shorthorns, among cattle, and the Leicesters, among sheep, were brought to perfection, was the carefully selected sires and dams sought out wherever they could be found.

Good keep, of course, was not neglected, but selection of parents was the main point to which the successful efforts of Bakewell, Bates, Booth, and other eminent breeders, were directed. Good food alone would never have done it. It might have increased the size of the progeny, as I said before, but the form of the original Shorthorns would have remained as awkward and rough as the form of the Teeswaters whence they sprang, had not Bakewell and the others grasped the grand idea of "selection."

No one would be better pleased than I to see the Canadian cow elevated to a higher standard; but I am certain that unless a most careful consideration of the points of the parents is substituted for the present happy-go-lucky style of coupling them, no amount of food will have the desired effect. As a beginning, I would recommend people to be a little more careful about keeping their bulls at home. Here, one meets half-a-dozen brutes running all over the country every day, and as long as this freedom is granted to them, so long will all the efforts of earnest and intelligent breeders be thrown away.

*Woodstacks.*—Can any one tell me why the ground on which a stack of wood or of faggots has stood is richer than the ground alongside of it? It is so, but I really cannot see why.

*Cato.*—This great Roman writer on agriculture, in one of his *lacones*, addresses the following pregnant sentence to young farmers: "Do not rashly condemn the practice of others." Which, of course, means: when you move into a new district, do not imagine that all the practices which differ from that followed in your former district are wrong.

*Tobacco stems.*—I wonder, if tobacco stems are worth, as much as the Massachusetts Experiment station says they are, \$14.00 a ton; I wonder, I say, how much cabbage-stalks would sell for! According to the Country Gentleman, even this firstcost price is not all the outlay, as the land requires to be three times ploughed to mix the stalks well with the soil! Three or four tons to the acre are about the usual dose. Hum! pretty expensive manuring; four tons at \$14.00 = \$56 an acre! Is it possible for the force of nonsense to go further?

*Bran vs. linseed.*—Bran, at Sorel, sells for \$20 a ton; and linseed for 85 cents a bushel = 29.75 a ton. Now, theoretically, the average composition and value of the two foods is as follows, omitting water and ash:

	Albumi- noids.	Fibre.	Other Carb- hydrates.	Fat.	Value per 100 lbs.
Linseed.....	20.5	7.2	19.6	37.0	\$2.47
	12.9	8.1	59.1	3.5	1.01
					1.46

It appears therefore, that if linseed be worth \$29.75 a ton, bran should be worth only \$13.80, which discrepancy between the real value of the bran and the selling price would be worth looking into. Bran was selling this autumn for \$12.00 a ton in Montreal, and it seems to me that \$8.00 a ton for profit and carriage is rather too much of a good thing.

*Hansen's Rennet.*—Nothing can work better than this handy form of rennet. The tablets are about the size of a marrow-fat-pea, and one of them, dissolved in two table-spoonfuls of cold water, coagulates five gallons of milk, at 85° F. in about 25 minutes. I observe that, at the last dairy-show in London, the Messrs Hansen won the second prize for rennet, with hearty commendations from the judges for its perfect purity and keeping qualities. The Camembert cheese I am now making is as sound and well-flavoured as need be. My friend, M. Séraphin Guévremont, is making all his butter Devonshire fashion, and converting the skim-milk into cheese with the Hansen rennet. The butter fetches 25 cents a pound, and the cheese, 8 cents.

*Maintaining the Fertility of the Soil.*—It is a great mistake to suppose that, by feeding sheep or cattle on what is grown on the farm, anything can be added to the fertility of the soil. As M. Lippens very sensibly remarks, the animal originates nothing, it only changes the form of the food it consumes, appropriating a portion of the constituents of that food to supply its own wants, and rejecting the rest, which is returned, in part, to the land in the form of manure. Even with the very best care, in saving every particle of both the liquid and solid dejections, there is a constant and unavoidable loss to the farm from the abstraction of the nitrogen, phosphoric acid, sulphur and potash, requisite for the formation of flesh, milk, bones, hair, &c. Neither cows, sheep, nor pigs can add anything to the fertility of the farm.

"What shall be done with the surplus land," asks professor Roberts, of Cornell University. "Let it go to grass," he replies. "No longer fight your best friend. Make peace with him. Lay down the implements of warfare, climb on the fence, and see the grass grow, and the clover sweat with the labour of pumping up the nitrogen from the subsoil to the surface." Which pumping up of the nitrogen from the subsoil is, I humbly believe, the true solution of the question; why is the wheat-crop after clover almost invariably good?

*Milk-selling.*—Selling milk in our country towns and villages ought to be a pretty profitable business, judging from the price I find ruling at Sorel. A cow calving down in October ought to give at least 10 quarts of milk a day during the seven months ending May 1st = 210 days = 2100 quarts, which, at six cents a quart, = \$126! You cannot make a cow cost more than:

25 lbs. turnips &c .. .. .	\$0.06
5 lbs. linseed, pease-meal, &c. ....	.06
20 lbs. straw .. .. .	.02

1.14

a day = \$29.40 for the seven months, and leaving a balance of \$96.60 to represent labour, interest, or rent, &c. I say



nothing about the value of the dung as that about here has always been considered a *corpus vile*, which should never be taken into consideration in estimating profits. With such keep, the cow, at the end of the season, will be found in better order than she was when she entered the stable. As to the price charged for the turnips, Messrs. Guévremont reckon that their roots did not cost them more than 3 cents a bushel, in proof of which, M. Séraphin Guévremont offered his swedes for sale at 15 cents a bushel in quantities not less than ten bushels.

The straw is so dirt cheap, that it is hardly worth reckoning. I should have allowed something for bran, as it certainly adds greatly to the flow of milk; but as grain and linseed are both, relatively, so much cheaper than bran I have omitted it in the ration.

**Pease for horses.**—Long ago I advocated the substitution of pease for a portion of the oats given to horses in hard work during the winter months. I could never see why, since we find in England so much benefit from the use of beans, which grow freely and yield well in that country, we should not try pease here. Pound for pound there is little difference between the price of pease and oats and the following table shows the theoretical difference between their feeding value per cent.

	Albumi- noids.	Other Carb- hydrates.	Fibre.	Fat.	Value per 100 lbs.
Pease.. .. .	22.4	52.5	6.4	2.0	\$1.44
Oats .....	12.0	55.7	9.3	6.0	.98

The excess of fat, or oil, in oats could easily be made up by a small portion of linseed—crushed—as a means of keeping the bowels of the horse in a comfortable state, and making his coat shine, if that is an object; but practically it does not signify much.

I was led to make these remarks by seeing the following "Scale of feeding of various tramway-companies' horses in the United Kingdom :

SCALE OF FEEDING OF VARIOUS TRAMWAY COMPANIES' HORSES IN THE UNITED KINGDOM.

North Metropo- litan.	London.	London Street.	South London.	Birming- ham.
Maize ... 13 lb.	Maize ... 7 lb.	Maize ... 12 lb.	Maize ... 7 lb.	Maize... 6 lb.
Oats ... 3	Oats ... 3	Oats ... 3	Oats ... 7	Oats ... 10
Beans ... 1	Peas ... 3	Beans ... 1	Beans ... 1	Beans .. 4
Peas ... 1	Hay ... 12	Bran ... 1	Hay ... 11	Chaff... 12
Hay } In 7	straw ... 1	Hay ... 11	Straw ... 3	
Straw } chaff 3				
Total ... 28	26	28	29	32



HORNS.

The "London Tramway Compa-ny," it will be observed, give their horses three pounds of pease a day—Canada pease, too, I believe.

I wonder why the Edinburgh Compa-ny's horses require 32 pounds a day, and the London Compa-ny's only 26 pounds. Edinburgh is a terribly hilly place, I know, but the difference is very great. Marshlam, I take to be the same thing as Mas-lin, mixed grain, pease and oats, probably—what is called in some part of this province—*gabourage*, and in others, *goudriole*. (1)

**Wheat for Sheep-  
food.**—Professor Voelcker has been

continuing the Woburn experiments on sheep feeding, and has arrived at a rather startling conclusion: at present prices in England, it pays to give wheat to sheep! The tables appended show the value of wheat, as compared with linseed and cotton cake, oats, barley, and beans.

Liverpool.	Manchester.	Glasgow.	Edinburgh.	Dublin.
Maize ... 12 lb.	Beans ... 15 lb.	Oats ... 6 lb.	Oats ... 8 lb.	Maize.. 14 lb.
Beans ... 4	Oats } 15	Maize ... 11	Maize ... 4	Oats .. 3
Cut Hay... 14	Maize } 15	Hay ... 8	Beans ... 4	Hay .. 12
Bran ... 1	Hay ... 15	Straw ... 1	Hay ... 14	Bran .. 0 1/2
		Bran ... 0 1/2	Marshlam 2	
Total ... 31	30	27	32	29 1/2

(1) *Marshlam* and *Maslin* are both from the same root: *mélér* ac-ciently spelled *mester*, to mix. A. R. J. F.

The cost of the additional food, taking the then market prices as already given, was as follows :—

PEN I. (8 Sheep).

Linseed-cake :—		
33 days at $\frac{1}{4}$ lb. each	...	132 lb.
76 days at $\frac{3}{4}$ lb. each	...	456 lb.
		588 lb. Cost, £2 7s. 3d.

PEN II. (8 Sheep).

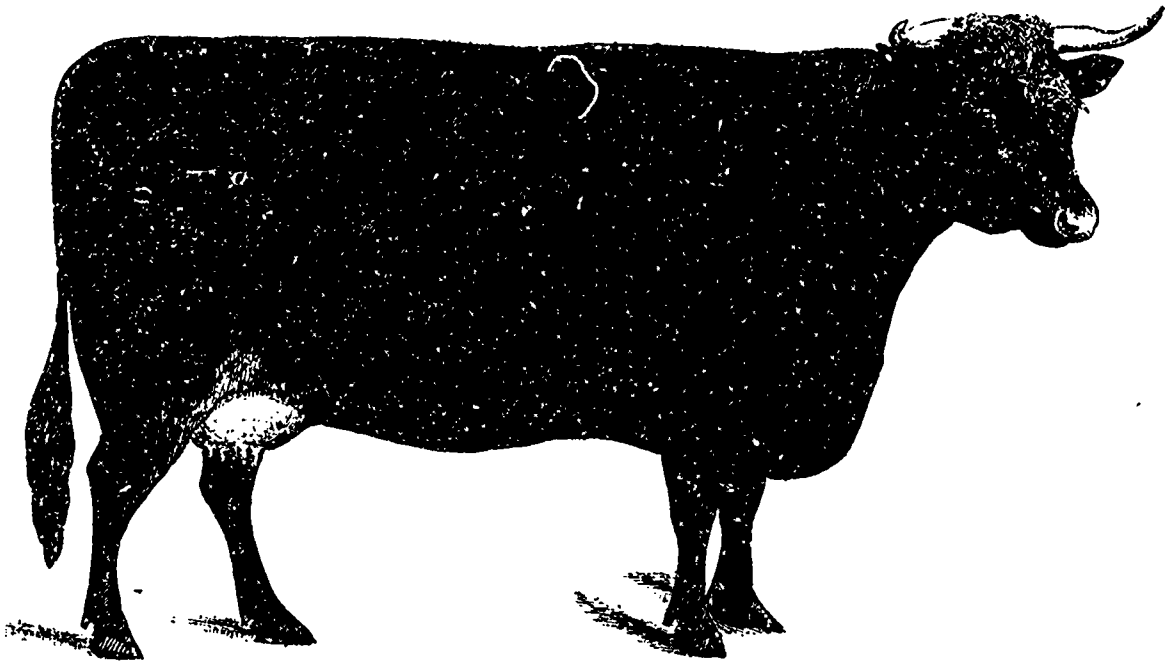
			£ s. d.
294 lb. linseed-cake	...	cost	1 3 7 $\frac{1}{2}$
294 lb. undecorticated cotton-cake	...	"	0 14 8
			£1 18 3 $\frac{1}{2}$

PEN III.

			£ s. d.
558 lb. wheat	...	cost	1 14 11

dearest. Also that the addition of undecorticated cotton-cake to linseed-cake has not given a more profitable feeding result.

*Tobacco in England.*—Tobacco growing has been tried this year in England for the first time for many a long year. Knowing the climate as I do, I predict that, though a fair sample may be produced there in a year of exceptional sunshine, the seasons in general are too moist and cloudy to ripen this crop before the early autumnal frosts set in. Again, as foreign tobacco, in the leaf, pays a duty on entry of 82 cents a pound, the constant vigilance of the excoise officers will be a terrible nuisance to the farmers. When there was a duty on hops the growers cared almost more for the domestic visits of the officers than they did for the actual outgo of the money. The Messrs. Carter, the great seedsmen, have succeeded pretty well with  $\frac{2}{3}$  of an acre : crop = 15 owt ; but one unfortunate man, trying to dry by artificial heat, burned down his



WELSH COW, LADY BEST.

PEN IV.

			s. d.
294 lb. crushed oats	...	cost	18 9 $\frac{1}{2}$
294 lb. barley-meal	...	"	18 8 $\frac{1}{2}$
			£1 17 6 $\frac{1}{2}$

PEN V.

			£ s. d.
294 lb. crushed oats	...	cost	18 9 $\frac{1}{2}$
294 lb. split beans	...	"	1 6 6 $\frac{1}{2}$
			£2 5 4 $\frac{1}{2}$

Hence the cost per lb. of increase was :—

Pen I.—Linseed-cake	...	...	1.39d.
Pen II.—Linseed-cake and undec. cotton-cake	...	...	1.38d.
Pen III.—Wheat	...	...	1.00d.
Pen IV.—Oats and barley	...	...	1.39d.
Pen V.—Oats and split beans	...	...	1.66d.

From this last calculation it appears that wheat, regarded only as a feeding material, is the cheapest ; linseed-cake, linseed-cake and cotton-cake mixed, and oats and barley mixed, being equal ; whilst the mixture of oats and beans is the

barn with all its contents ! They had better be satisfied at present with drying by natural heat ; the artificial heat gives a better colour, no doubt, but it may be purchased too dearly.

*Price of Cheese.*—The English market is rather high for cheese this autumn. The price quoted from Liverpool for the best Canadian Cheddars is 63s. a cwt. = 13 $\frac{1}{2}$  cents a pound. Unfortunately for us, we are pretty well run out of stock, and cannot take advantage of this favourable turn of the market.

*Welsh Cattle.*—An immensely improved race of cattle are these Welsh runts, as they used to be called. Forty or fifty years ago, I remember Col. Douglas Pennant, afterwards raised to the peerage as lord Penrlyn, and who is still exhibiting, though arrived at his 87th year ; I remember him, I say, showing his black heifers at the old Baker's street exhibition of the Smithfield club. These animals were not heavy, seldom exceeding 75 stone of 8 pounds ; but they sold well to the London butchers, and if properly fed, cut up well in the loin and the other prime parts. Great droves of them, in a lean state, were to be seen at the Croydon, Barnet,

and other fairs in the neighbourhood of London, and the noise and chatter of their North-Wales drovers resounded far and wide over the fair grounds. Why do all the Keltic nations make such a row about nothing?

*Cattle on the Ranches.*—Says a writer in the *Picayune*: "Live stock ranching by which untold numbers of cattle on the western and southern ranches suffer the pains of a hundred deaths, and tens of thousands of them die in indescribable agonies, is the most heartless business on earth: an abomination in the sight of God; and the *kings* are monsters of cruelty." Can this be true? I know that, three years ago, the deaths of cattle from starvation in one of our own Canadian ranches amounted to two-fifths of the whole stock; but since then, I have always understood that means were taken to provide food for the support of the cattle in winter.

*Pickling oats.*—C. S. Plumb, of the New York Experimental farm, says that "he has found that seed oats, soaked in sulphate of copper (four ounces to one gallon of water) for 40 hours, have produced a crop free from smut." *Connu*, Mr. Plumb; the sulphate of copper was used fifty years ago in England for pickling wheat, but was discarded for the much safer plan of using non-poisonous materials for the purpose. Take four bushels of wheat or oats; make them into a conical heap, on which place a pail of scalding-hot water; put a couple of good-sized lumps of quick lime into the water, and when the lime is slaked, poured the contents of the pail over the wheat and turn the heap several times. Some of the lime, if not of first rate quality, will remain unslaked, and should be allowed to stay in the pail.

*Ammonia for six cents a pound.*—Strange as it may seem, such is the price at which Mr. Viccars Collyer, a well known Leicestershire manufacturer of artificial manures, advertises his ammonia. The alkaline salts and phosphates (4.9 and 5.2, per cent.) I have neglected in the computation. This would make the sulphate of ammonia at the gas-works worth only \$29 per 2,000 pounds.

**Colyer's Dry Concentrated Pure Organic Manure.**  
**REPORT OF ANALYSIS OF A SAMPLE OF THIS MANURE BY**  
**H. MEADOWS, ESQ., M. B., PUBLIC ANALYST, LEICESTER.**

	per cent.	
Moisture .....	6.5	The organic matter contains
Phosphates .....	5.2	
Alkaline Salts.....	4.9	7.4 per cent. Nitrogen,
Ammonia.....	6.1	equal to Ammonia... 9.0 per
Organic Matter.....	76.4	cent.
Iron .....	0.9	Ammonia as
		per analysis
	100.0	6.1 "
		15.1 "

Circular gratis and post free, containing full particulars of the best manure for all purposes that it is possible to procure, but offered at such figures as preclude the possibility of saying any more about it here. Dry as shot, and can be drilled with the corn or sown by hand.

Price, £4 7s. 6d. per ton (2,240 lbs) on rails. Cash with order only.

PINT SAMPLES, POST FREE, 9d.  
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*Permanent pasture*, according to the *Orillia Packet* of 1881, was an utterly ridiculous business, put forward by

amateur farmers who neither knew our climate nor our soil. This paper has, like many another one, changed its views on the matter, as the following extract will show. It is a dangerous thing to laugh, as well as to prophesy, unless you know:

PROF. BROWN'S ideas of permanent pasture are strongly opposed by Prof. Arnold, of New York State, who considers them an undesirable hobby and a stumbling block, paying the poorest of any part of the farm, and only advisable in portions unfit for cultivation. In good land he asserts that cultivation will prove six or eight times more profitable than pasture. We think these sentiments need qualification. Grass, where crops will not grow, must be inferior, and poor pasture is undoubtedly unprofitable. But surely good pasture would pay. If animals can fill themselves in an hour, instead of in a day, as is usual, surely there is much advantage. Until full and fair tests prove the contrary, we shall maintain that Canada, or at least Ontario, is capable of growing good pasture. The northern and eastern States, probably so, though inferior to Canada, but in Texas and the "sunny south," generally, thick, green, sward is an impossibility. *Orillia Packet.*

*Improvement of stock.*—I mentioned above that the main point to be regarded in the improvement of stock was the selection of breeding animals. As Messrs. the professors at Ste.-Anne and l'Assomption, evidently like authority, I give a few extracts from a work of dear old William Carr on the "Booth Herds of Shorthorns."

The animal on which Bakewell first tried his improving hand was the sheep; and by a careful study of Nature's laws of reproduction, and studious selection of the best animals within his reach, he succeeded in producing a new and improved breed, the New Leicesters.

"He next carried out the same principles of improvement with regard to cattle, and was in a great degree successful; and if he was not so pre-eminently successful as he was with regard to sheep, it is because he had not in the Craven cattle such good material to work upon as his successors had in the Teeswater, and the Bakewell Longhorns have therefore given way to the superior merits of the Improved Shorthorns.

Mr. Thomas Booth began the improvement of the short-horns previous to 1790. A race of cattle had existed in the valley of the Tees for many years previous to the above date, and were selected by Mr. Booth for his proposed experiments. "The defects to be cured were an undue prominence of hip and shoulder point, a want of length in the headquarter, of width in the floor of the chest, of fulness generally before and behind the shoulders, as well as of flesh upon the shoulder itself. The cattle had a somewhat disproportionate abdomen, a too lengthy leg, and a want of substance, indicative of delicacy, in the hide."

And how did Mr. Booth set about curing these numerous defects in the Teeswater cattle? By feeding them well? Not at all; but by selection. He appears to have proceeded on the principle that, whilst the general similitude and mingled qualities of both parents descend to the offspring, the external conformation—subject, of course, to some modification by the other parent—is mainly imparted by the male, and the vital and nutritive organs by the female.

It is a mere waste of time to cite any more authorities on the subject of improving stock by selection of breeding animals. Nobody denies for a moment that the Canadian cattle are half-starved all the winter and half of the summer (1),

(1) But it must be confessed," says Mr. Barnard. (*J d'A Illustré* 1886, p. 86) "that for one farmer that gives sufficient food to his Canadian cattle, there are 99 who deprive them of it more or less con-

but an improvement in the food given them will do but little to forward the general improvement of the race. Nothing but *selection* will do this, if it has been determined to keep the race pure and unmixed. (1)

ARTHUR R. JENNER FUST.

#### INSPECTION OF FARMS; NO IV.

Upon the whole, if I were to choose a farm anywhere in the neighbourhood of Rougemont, I do not think I could pick out a better spot than that occupied by Mr. Paquette. I confess to a *penchant* for variety in land as well as in other things, and here is variety enough—light sand, sandy loam, and black-earth. Corn, grain, roots, and potatoes, to say nothing of grass and leguminous plants, all find here their proper homes, and sheep and horned cattle find their choicest food.

Mr. Paquette's system of rotation is much the same as that of his neighbours, and is rather an irregular one:

Hoed-crops... Corn, 3 or 4 or 4½ acres each year according to circumstances.

Followed by Oats, Barley or Wheat.

Followed by Meadow for two or three years.

Followed by Pasture for three or four years

Followed by Oats.

Pease are sometimes sown, at the rate of 1½ bushels to the acre. An acre, or so, of potatoes occupy part of the hoed-crop division, but I saw no beans. There are generally five acres of wheat; quantity of seed, 1½ bushels to the acre, and of oats two bushels. A fair-sized piece of land near the farm-

buildings is devoted to tares and cats for mowing green for the horses. This looked well, when I was there, but not half enough seed had been allowed, and this false economy was visible all over the farm, both in the grain-crops and the hoed-crops. The corn and potatoes were planted in hills, three feet apart each way; as to the corn, as that was for grain, I say nothing against it, but potatoes, of the small-top Early-rose sort like those M. Paquette plants, require nothing

stantly. The greater number are satisfied with preventing them from dying of hunger at those seasons when the pastures are more or less wanting in grass."

(1) If, as Mr. Barnard says: The Canadian cow, like the Guernsey, must have originated from continued crossings of the Breton and Norman races." I cannot see any valid reasons for refusing to promote the rapid improvement of the breed (crossing makes breeds, not races) with its cousins the Guernseys. v. p. 17, art. 1.

like this space to grow in; two feet by one foot is plenty, and a horse-hoe will work well between two-foot rows, which is the principal thing. M. Paquette's horse-hoe is a very good one, and I only wish he would use it more frequently. But the usual error obtains here as elsewhere in the province: hoeing is to kill weeds, and when it has done that, nothing more is, or can be, required. It is not so, indeed; hoeing does kill weeds, and a very important function it discharges in doing so; but that is only one half of its object. A field of never mind what crop: corn, roots, potatoes, properly worked with the horse-hoe four or five times during the summer, will, I do not hesitate to say, be found to yield, in the

grain-crop of the following year, at least one-third more than a field in the same course of cropping that is merely skimmed over once or twice, and then allowed to remain dormant for the rest of the season. The grass of the succeeding four or five years will be infinitely benefited by the hoeing, and I fancy it is this improvement by cultivation at which people aim when they talk of roots being an *ameliorating* crop. Looseness of language is a horrible fault, and very prevalent among us who write on farming. It arises, I fancy, in the majority of instances, from a desire to confine ourselves to the use of non-scientific terms. As, for example, to say that the cultivation of roots by hand- and horse-hoe is a meliorating process, is perfectly true; but to say that: roots are a meliorating crop, is not true. Nobody sins in this way more than I do; but if I write at all, I must



NO HORNS.

write *currente calamo*, and I can't help it.

The stock kept by M. Paquette seemed to be in good, farmer-like order. The horses, three in number, were good, serviceable beasts, of no particular kind, except a fairish Suffolk stallion, and weighed about 12 cwt. or 13 cwt. a piece. The pigs, 21 in number, were half-bred Berkshires, and were doing well on plenty of skim-milk and meal. As for the sheep, I did not see them, as they were away on the out-farm, but M. Paquette told me that he had six ewes, and each ewe had a single lamb in the spring. The lambs had been sold at Montreal, at \$2.75 and \$3.00 a head, a fair return for the keep. The ewes clipped 5 lbs a head of washed wool, which, for half-bred Cotswold, as M. Paquette said they were, seems rather a light fleece.

It seemed queer to see, when I went into the pastures, ten good, useful, cross-bred milk cows, with every signs of giv-

ing plenty of milk, accompanied by a *Galloway* bull. I suppose if M. Paquette wished to injure his future heifer-stock, he could not have hit upon a more certain way of doing so. The bull was a good enough beast of the sort, and if it were intended to breed for beef I should have said nothing against it; but as it was, the presence of a bull of such a breed—notoriously the worst milch-cattle in existence—was a fatal error, and I took the liberty of telling its proprietor so in the plainest terms. I fear that a low price was the bait that tempted the purchaser, and the notion that a bull is a bull and a calf is a calf, was the argument that involved M. Paquette in such an absurd error.

A roller weighing 1200 pounds is a treat to see, and M. Paquette, in association with M. Martel, has one of that size. Both roll their meadows in spring, and I wish they would roll their pastures too.

The other implements on this farm are much as usual. The ploughs are by Wilkinson, an Ontario maker, whose exhibition of different sorts of ploughs were such a marked feature at Mile-End in 1884.

Upon the whole, M. Paquette is carrying on his business in a sensible, practical way, and, I fancy, makes a good thing of it. There is a good deal of stone-clearing to be done yet, before the farm is comfortable to work. One thing struck me very forcibly at Rougemont, as it did at M. Aries' farm at Saint-Césaire: nothing can exceed the care taken by Messrs. Martel and Paquette in laying out their lands or ridges. They are all staked out and "feered," as the Scotch call it, as carefully as our own South of England heavy-land ridges, where every harrow and drill fit the ridge to a nicety.

An immensely thick solid-looking wall separating two of M. Paquette's fields shows how he won the prize of ten dollars for "the greatest extent of land cleared of stones in one year"—1884, I believe.

M. Martel's land is in the immediate vicinity of the farm I have just described, and is cultivated much in the same way, except that he grows has a few roots, though nothing to speak of. M. Martel unites commerce with agriculture, and seems to succeed in both pursuits.

Stock on M. Martel's farm:

12 cows;  
4 two-year-old heifers;  
2 yearling heifers;  
2 calves-heifers;  
3 horses for farm-work;  
3 horses for road-work;  
Sow and 4 pigs;  
Sheep 2, which, from their wandering propensities, were sent out to keep.

Extent of the farm 83 arpents.

On the North side of M. Paquette's farm, running up the mountain on the upper side of the road lies a small farm of poorish sand belonging to Mr. Batchelder: 68 acres under cultivation.

Some draining, for springs, had been done here; the first I had seen since I started on my tour. Stones, broken into small pieces and laid on the top of three larger stones—one as a base, and the other two as the sides of an acute-angled triangle—were the material employed, and seemed to be efficacious enough. But, in truth, the broken stones are superfluous, and only add to the expense. If I did not entirely approve of the drainage, I was highly pleased with Mr. Batchelder's sheep; eighteen ewes with eighteen lambs at their feet, made quite a nice little flock. Cross-bred Cotswolds, these, and in first-rate condition. Ten lambs were being loaded into a waggon for the Montreal market—a long drive—and were expected to fetch three dollars a piece. Oh, thought I, what a pity they have not a touch of the Downs in them!

Mr. Batchelder's farm, as it runs up into the poorest land of the district, where the grass is short and sweet, is peculiarly well adapted to sheep, and the only pity is that he has not practised *folding* at night on the lower part of the occupation.

Rotation.—Oats and potatoes after grass pastured;

Corn and roots;

Wheat with grass-seeds;

Meadows } time irregular.

Pasture }

The potatoes and corn were in rows—not hilled—and some use is made of Brookville superphosphate, which Mr. Batchelder speaks very highly of. The roots, mangels, carrots, and swedes, were late and not well singled. Stables well arranged; the horse and cow manure falling into a basement cellar where pigs burrowed in it to their hearts content. Complaints of the seed potatoes and seed-corn not being true to sort.

ARTHUR R. JENNER FUST.

(To be continued.)

#### Silos and Manure Cellars, &c.

A correspondent writes us as follows:

DEAR SIR,—I have read with great interest your communications in the last journal and shall be very glad to see the description of your silo, (1) and especially your method of making *sweet* ensilage, (2) as I have about decided to build one and wish to get the latest information possible on the subject.

What is the name of the corn you use (3) and how far apart are the hills. (4) Do you find the butts of the stalks softened down so the cattle will eat all up clean? (5) There are two gentlemen near Quebec, partners, who have a silo and they find it better to sow 20 grains to the foot so as to have the stalks fine and tender but is not this unnecessarily close? (6) I have always had the impression that the great heat generated in the mass of ensilage, would soften down the hard parts of the stalks, rendering them tender enough for easy mastication (7)

The description of your manure cellar is very interesting, I should like very much to have a rough sectional drawing of it, for I do not quite understand how the spreader is backed down into a cellar 7 ft. deep without the manure rising up the slope as the cellar fills. (8) How many cubic feet do you allow for each animal to hold its manure? (9)

(1) My silo is of the simplest: Upright posts 3" x 9", two feet apart, with very common unmatched boards nailed solidly to posts and on both sides; common sand well packed between these boards: such is the silo,—size: 15' x 13' inside, and 16' high. For convenience sake, I made it as a lean-to to my barn, and touching the stables. We can thus fill the silo from the barn floor, and carry the ensilage into the stable with the least trouble. The subsoil being quite dry, the silo was dug about 5' below the surface and the sand used to fill up spaces between boards. Any soil would do as well as sand; of course, saw dust or spent tan bark would be lighter, when convenient.

(2) Sweet ensilage is made by allowing each layer of green fodder laid in the silo to heat up to 125° and not more than 150°, before a new layer is brought in. The less each layer is pressed as laid, the quicker the fermentation. The ordinary grasses and cereals can be put in the silo without being cut up in the straw cutter. Corn fodder may also be put in without cutting, but it thus takes about double the space, and is not so acceptable to stock as when cut up fine, thus allowing the butt ends to be fed as well as the leaves in an equal and proportionate mixture. When uncut, each layer may be laid three feet thick. When cut up in the straw cutter, one foot thick will contain a great deal more than the three feet of larger uncut fodder and will not ferment as well if laid any thicker.

(3) Common Canadian corn, either white or yellow.

(4) Sow half a bushel to the acre, or double the thickness put in for maturing corn.

(5) The cattle eat the Canadian corn quite clean and with great relish. Even Western dent corn will be eaten clean generally, but I gather from various experiments made in the states that it only contains 60% of the nutriment possessed by our small tender but solid Canadian varieties.

(6) 10 or 12 grains of Western Corn would be enough, whilst 5 or 6 grains of Canadian corn would be plenty. I make the rows 26" apart.

This question of quantity of *nutrition* per acre is yet unsolved. It deserves serious consideration. I have reason to believe that 30 tons of Western corn ensilage contains no more real food than is contained in 20 tons of Canadian corn. If so, why carry ten useless tons of water from the field to the straw cutter, and again, into the silo, and once more to the stock? Or in all why carry 30 tons of useless weight?

(7) Ensilage is no doubt softened by fermentation. However, the mixing up of butt-ends with leaf &c., through the straw cutter will be found a great improvement.

(8) The sectional views given at page—explain themselves. The elevated roadway and shed connected with it are still to be erected. The rest of the building is represented as it is with the exception of the sky light which is not made yet. The main barn and lean-tos were built some 28 years ago. The only change which I would now advise is in the width of the stables which I would make 16' broad instead of 14', outside measure. The internal arrangements, with (centrifugal) butter factory &c, were made quite lately.

The manure cellar is under the barn. The barn was built 4 feet above the soil, which was dug 4 feet, giving 8' feet of a cellar (not 7). A graded descent, covered, about 20 long, allows the easy ascent of the manure distributor.

(9) Using no litter, of any kind, it takes from 8 to 10 cubic yards to store the manure of an ordinary cow during the winter, say 6 months. The liquid and solid manure of a cow as dropped, contains 86% of water and 96% of soluble matter. It is therefore in the best possible state for assimilation if buried lightly as soon as spread, in order to prevent all escape of ammonia. It would be otherwise where large quantities of straw or other litter are used as absorbents. In this case, the amount of fermentation necessary for proper assimilation depends on the nature of the soil to be manured, and the mode of application. In drills and heavy soil we would use such mixed manure rather green, in order to keep the soil more loosened; in light soils, I would prefer it more decomposed, in order not to lighten the soil excessively.

ED. A. BARNARD.

HAMILTON, Dec. 18th, 1886.

MY DEAR SIR,—I am in receipt of your kind long letter with reference to Dorset show sheep and thank you my much indeed for your kindness in writing.

Situate as we are so near Toronto, with an establishment there and here, where we handle and do a good class of business with the very best families, and having facilities of reaching a market in even New York City, I am satisfied that I could place from 75 to 100 lambs any Christmas at good figures. If such be the case, these are the most profitable sheep we can handle.

I propose to take a batch of ewes, just lambed, to Chicago Fat Stock Show next year, where the novelty of sheep lambing at that time of the year will make them sell.

I am very much afraid of disease in sheep though, which makes me hesitate to launch out much in them, or risk the expense of stables &c., necessary to carry many. My manager professes to understand care of sheep perfectly and tries to dispel my fears. But rightly or wrongly I have this dread.

I again thank you for your kindness, and shall certainly avail myself of your kindness of asking questions as occasion arises.

Yours very truly,

VALANOEY E. FULLER

ARTHUR R. JENNER FUST Esq.,  
Sorel, Que.

Does Clover obtain its Nitrogen from the Air?

Some of us may recollect the lecture given by Professor Kedzie, of the Michigan College of Agriculture, at the Natural History Society's rooms, in the month of August, 1882. The published reports of this lecture made the learned professor say, what I felt sure he never did say, "That plants obtained their nitrogen from the air," and, consequently, I took the liberty of writing to Mr. Kedzie, asking him to allow me to contradict the published statement of his supposed views. To this request he most goodnaturedly assented in the following letter, which I published in the October number of the Journal—v. p. 85, vol. IV.

"My Dear Sir,—No man should be held responsible for the work of a reporter unless he has read the "proof." I confess I hardly recognise my ideas in some parts of the report you sent me. I am not a disciple of Ville, and in my article I distinctly said that the results reached by Boussingault, and by Lawes and Gilbert, were *everywhere* received as scientific truth, except by the followers of the French school of Ville.

I consider, however, the classification of plants into nitrogen consumers and nitrogen producers, made by Ville, an important one, and having a substantial basis. The error of Ville was in assuming that the nitrogen-producers derived their excess of nitrogen from the air. What I seek to establish is, that clover is a nitrogen-producer by obtaining its surplus of nitrogen from the "inert nitrogen" of humus in the soil. I do not consider this proposition established, and would be very cautious in announcing such result, but my experiments and investigations have this as the objective point.

Yours, &c.,

R. C. KEDZIE.

At the same time, Mr. Kedzie was good enough to forward me a copy of what he really did say, which will be found on page 84 of the above named volume of the Journal.

M. Ville is of all scientific writers the coolest. Without taking the slightest notice of the researches of Boussingault, or of those of Lawes and Gilbert, he says—v. p. 226—Eng. ed. 1879: "Clover draws its nitrogen from the air, therefore the incomplete manure, which does not contain nitrogen, is all it requires." Conceive the boldness of the man, who imagines that his *ipse dixit* will carry it over everything, on a point on which the greatest farm-experimentalists that ever lived dare not express themselves with any degree of certainty.

A. R. J. F.

Sherbrooke, Dec. 30th 1886.

Dear Jenner Fust,—After fifteen years of unsuccessful attempts to make apple trees grow, I came to the conclusion that in this otherwise fertile Valley of the St. Francis there were in many places certain elements against which it seemed useless to contend; and as I saw the last fifty hardy crab-apples succumbing to this mysterious destroyer, I thought I would try and get at the bottom of the matter, and set about trench-digging portions of the orchard and garden where these, almost literally *fruitless*, experiments had failed. There, in the subsoil from one to two feet below the surface, I found in many places a reddish brown "hard-pan", to break up

which, the pick had to be called into active play, and which often overlaid a lighter coloured, sandy, open soil. In many places this subsoil varied in its texture and shade from light buff through reddish brown to dark gray and black. Now I have listened patiently to all the numerous theories of cause and cure, from river fog and want of lime to cutting off the taproot and paving the tree pit with flag stones, and have believed in them, and faithfully tried them, and yet in three years from planting out I have never seen a living Fameuse tree as a reward for my credulity. I have never had this subsoil analysed, but am inclined to believe that therein lies the trouble, and that protoxide of iron is the enemy against which it is useless to struggle, and until I hear of a better theory, this one will suit my purpose as well as any other; which brings me to another subject, viz., that of deep versus shallow ploughing. Of course I am fully aware of the great value of a uniformly deep rich soil when you have it, and that deep culture should go hand in hand with it, but are we right in being in such a hurry to plough down beneath the influences of Nature's laboratory all the materials that she for centuries has been collecting upon the surface ready to be worked up into wholesome plant food? burying her carbon filters, which, if left near the surface would catch and hold most of the soluble substances upon which plants thrive, sending down the raw material from which she by the influence of air, heat, and moisture manufactures these compounds, and leaving them, for years perhaps, buried where their decay would be so slow as to render them partially useless, and bringing to the surface in many cases a deleterious subsoil devoid of all vegetable and fertilizing material, which requires years of culture, and quantities of manure to bring back to the state in which the surface soil originally was. I have seen sods which were buried four feet deep under an embankment brought up after thirty years almost as unchanged as the day they were buried, whereas, if near the surface, two years or less would have seen their perfect disintegration. Fence-posts seldom show signs of decay five inches below the surface and within those five inches seems to be the active workshop for preparing the food for future crops. If deep culture must be the order of the day, may we not plough shallow and flat on our loamy soils and send down the subsoil plough to stir and lighten up to any depth you like the uncertain foundations of our fields, and keep the vegetable mould as near the surface as nature meant it to be, for does she not invariably conduct her fertilizing operations upon the plan of "top dressing"? The leaves, bark, twigs, and blossoms of trees have since the world began been piling on the surface all their fertilizing properties, and when the forest disappears, the dead and decaying leaves of vegetation which follow add their share in the same way and place, the droppings of all animals are deposited on the surface, while the humble earthworm silently but surely brings up from various depths the best top-dressing we can wish for. Then, are we not often rash in upsetting all these conditions of things and giving ourselves much trouble, loss of time, and expense, in trying to redeem the loss we have occasioned? I am willing to admit that a soil which will bear deep culture should receive it, even by very deep ploughing, but I do believe that most of the soil which has but recently been brought into cultivation from its forest state should be handled carefully, and, before its virgin loam is ruthlessly turned down out of sight, let a portion of each annual ploughing be tried at various depths ranging from four to nine inches, where practicable using a subsoil plough in the same experimental way, and note the result during several succeeding years.

W. A. HALE (1).

(1) I will discuss this letter next month.

A. R. J. F.

#### Vick's Floral Guide for 1887.

This really beautiful ANNUAL reaches us with the new year. It is really a most agreeable new year's gift. We commend it to all interested in horticultural matters. The cost (10s) is purely nominal, as this amount will be returned in seeds with the first order addressed to James Vick, seedsman, Rochester. We have tried Vick's seeds annually for many years back, always with full satisfaction.

ED. A. BARNARD.

#### Ferry's Catalogue and Seeds.

We heartily commend both Catalogue and Seeds from D. W. Ferry & Co., Windsor, Ont. The catalogue is carefully printed and highly ornamental. The seeds are excellent and offered at reasonable prices. Our readers will do well to test such seeds in comparison with those they generally obtain from other firms. Such tests if carefully made every year, even on the smallest scale, would prove of great benefit.

ED. A. BARNARD.

#### AYRSHIRE CATTLE.

Among the various breeds of cattle whose merits for the shambles or the dairy have justly won them popularity, the Ayrshire is of the most recent formation. The nineteenth century was from 10 to 15 years old before the cattle of Ayrshire, which have since become known by the name of the county in which they originated, are known to have possessed those distinctive characteristics and that power of transmitting them with certainty to their progeny, which would entitle them to be considered a breed. The changes effected in the appearance of the Ayrshire within the last 50 years have been considerably greater than in cattle of any other well known breed; for in this period the improvements made in Ayrshires have been of a more radical nature than those effected on any other breed. As may be inferred from its recent formation, it is preëminently a breeders' breed, owing its origin less to environment—surrounding conditions—and more to care and judicious selection than any of the other well known breeds. (1) More than a century ago, it is true, the rough cattle of Ayrshire had a local reputation for hardy and deep-milking qualities, but the meagre descriptions that have come down to us from those days show that they differ greatly from the Ayrshires of to-day. It is generally believed that the cows from which both they and the Short-horns are descended were the country cows belonging to the district between the Wear and the Tees, and it is quite probable that some of these cows—immemorably good milkers—were bought by Scotch dealers or drovers when returning north after disposing of their "droves" of black cattle in England. On the cows thus introduced, it is very likely that West Highland bulls were used for crossing; for cows of that breed have always been good milkers, and the Ayrshires of to-day often in color, and always in the size and shape of their horns, afford clear evidence of West Highland blood. Moreover, both breeds are spiteful and pugnacious in disposition, and ever ready to gore or rip up each other whenever a chance offers, even when bred together. The Jersey, Guernsey, Short-horn, and even the Holstein are all supposed by different authorities to have contributed either by direct crosses on the original rough, but hardy, stock, or by "dashes of blood" to the formation of the breed, and some of the distinctive traits of all these breeds occasionally, by atavism, crop out in the modern Ayrshires.

Medium in size, short in the legs, excellent foragers, with clean, strong bones, and not a pound of superfluous flesh, cows

(1) And therefore certain to fall all to pieces the moment the breeder's care falls off.

A. R. J. F.

of this breed thrive and give large messes of milk where less hardy animals, with less activity and more fastidiousness, would hardly pick up a living. Ayrshires are considered specially valuable where the pasture-land is not of first-class quality, for their mouths seem to be harder than those of Short-horns and most other breeds, and they do well on dry, wiry pastures on which the more aristocratic cattle would starve. On second or third-rate land heavy, costly cattle require much extra care and artificial food or they will certainly lose money; but on such land Ayrshires do well. But, although these cattle manage to thrive on poor pastures and scanty fare, they make a generous return for abundant food and good treatment. Under such circumstances, the milk records of Ayrshires compare very favorably with those of any other breed and in comparison with the amount of food consumed, good judges, speaking from experience with this and other breeds, declare that cows of no other breed can compete with these. Under the microscope their milk is found to be rich in caseine, and the cream globules are numerous but very unequal in size. This is considered a defect in the Ayrshire as a butter-cow, for the cream doesn't rise well when the globules are unequal in size, and it requires skillful churning to get all the butter out; yet on both sides of the Atlantic many butter-makers are quite content with the proceeds of their herds of this breed, although it is true their reputation for cheese is still higher.

When in milk, the Ayrshire is an excellent machine for converting all her food beyond the economical requirements of her system into milk. She lays on little or no flesh; all that goes into the mouth, beyond what is needed to run the machine, is poured into the milk pail. When dry, however, and well fed, she readily takes on flesh of an excellent quality, in which fat and lean are much more evenly intermingled than is generally the case in the distinctively milk breeds. Although the meat is not laid on so thickly in the choice parts as in the Short-horn, Hereford, or black polls, yet it always brings a good price, and, as a rule, the carcass weighs considerably more than the appearance of the live animal would indicate.

At page 21 is shown a typical Ayrshire cow. The favorite color is a light brown, or brown and white; some few are found black, or black and white, and now and then even a pure white is seen. Red and white, however, is the most common color; though there are a considerable number of red, or mostly red, some white and red, and a few flecked, but seldom or never is a roan-colored Ayrshire met with. The colors rarely mingle together, the line of separation being generally quite distinct. Some years ago an Ayrshire was hardly conceded pure unless it had a black nose, but now a white nose is not looked upon as a drawback, though dark-red or black noses are still the favorites. The udder is the chief point from which we can infer the milking capabilities of any cow, and especially of an Ayrshire. It should reach well forward, and be firmly attached to the body; it should be broad behind, without projecting too far, filling up well the space between the legs. It should not be fleshy, nor should it hang down loosely. The quarters should be alike in size, and the teats be set on widely and equally apart, not hanging down like a bunch of carrots under a loose, flabby bag. The head is preferably short; the forehead wide; the eyes rather small, but lively and intelligent; the horns set on wide, but inclining upwards and curving slightly inwards; the neck long and straight from the head to the top of the shoulder, free from loose skin on the under side, fine at its junction with the head, the muscles enlarging towards the shoulder; forequarters thin in front, generally increasing in depth and thickness backwards; skin rather thick, but soft and elastic; general form of the body, when viewed from the side, wedge-shape. This peculiar wedge-shape form, more noticeable on the Ayrshire

than on any other breed, is due less to deficiency forward than to the large bulk of the carcass aft.

Great attention has been given of late years to the improvement of the breed in Scotland. An Ayrshire Herd Book has been established, milking competition have been held, and an annual exhibition of cows called the "Ayrshire Derby," has attracted to Ayrshire many visitors from other parts of the United Kingdom and the competition for the 38 prizes offered at the "Derby" has been very keen. Large numbers of Ayrshires are annually imported into England and Ireland, and the Cork and Kerry Agricultural Societies have endeavored to promote the importation and breeding of these cattle by offering special prizes for them. Ayrshires were first imported into the United States in 1831; but the breed has changed considerably in appearance since then, especially in color. At first their flow of milk was less than in their native home, where the moist, uniform climate—cooler in Summer and warmer in Winter—making fresh, green pastures, was doubtless more favorable for milk secretion. The American Ayrshires of to-day, however, are thought to be fully as good as those in the Old Country, while the milk is said to be richer. Many experienced dairy farmers think no cow is equal to an Ayrshire for milk or cheese, especially under adverse circumstances—on hilly land, with scant herbage, and a climate subject to sudden and extreme changes of temperature. (1)

Any faults? Yes; what is there in this sublimity world without some? The teats of young cows are generally too short for convenient handling; but with skillful milking they become quite long enough after the second or third calf. The sleepless belligerency of the cows is also a drawback; and knobs or other devices should be fastened to the ends of the horns to lessen the danger from this cause.

#### The Drumlanrig Ayrshires.

The sale of the Duke of Buccleuch's Ayrshire herd on Thursday was extremely successful. There was an immense gathering of people from all parts of the United Kingdom, as well as representatives from America and the Continent. Bidding was spirited throughout, and the prices realised were very high. There were 164 cattle brought into the ring and the following averages were obtained:—48 aged cows, £29 3s.; 30 two-year old heifers, £22 8s.; 30 yearling heifers, £29 7s.; 30 heifer-calves, £14 5s.; four aged bulls, £35 3s.; five yearling bulls, £67 4s.; and thirteen bull-calves, £40. The principal purchasers were Baron S. Josbrom, Finland, the Marquis of Bute, the Dowager Duchess of Athol, Sir Michael Shaw Stewart, Mr. M. Stewart.

#### OUR ANIMAL PORTRAITS.

##### WELSH COW, LADY BEST, 236.

Less than 50 years ago the Glamorgan cattle were probably the most numerous in Wales; but it is a question now whether any survive in their purity, as they seem to have entirely disappeared before the advance of the Short-horn, Hereford, and Devon. They were excellent milkers and their flesh was considered of superior quality. The Pembroke or Castlemartin cattle still flourish, however, as a distinct breed, although they are hard-pressed by English rivals, chiefly the Short-horns. They are fairly good milkers—as good, it is said, as most of the improved breeds, and both in texture and quality their meat is of a superior kind. As a rule, they are black in color, though a few have a brown tinge and sometimes a little white appears on the face and udders. About a dozen years ago a herd book of the breed

(1) When a cow gives hopelessly poor milk she is generally said, by her owner, to be first-rate for cheese. A. R. J. F.



was established, and a patriotic effort has been made to perpetuate the race.

The Anglesea cattle, claiming to be a distinct breed, very closely resemble the Pembrokes. They are of blacker color, and a trifle larger. They have been raised chiefly for beef, and their milking qualities have therefore been greatly neglected, and consequently they are of little use in the dairy; but their flesh is of excellent quality, and considerable numbers of them are finished off in England for the London market. A herd book has also been established for these of late under the name of the North Wales Black Cattle Herd Book, and as they are extremely hardy, and thrive on the scanty mountain pastures on which most English breeds would starve, it is likely that they will long survive the other native cattle of the Principality. At page 25 is an illustration of a fine cow of this breed—Lady Best, No. 236, Vol. II. of the North Wales Black Cattle Herd-Book. She has been during the past year a frequent prize winner among Welsh cattle both in England and Wales, and inherits, according to the (London) Live Stock Journal, from which the illustration has been re-engraved, "the purest blood of pedigree Welsh cattle."

A breed to be profitable and, therefore, popular among the farmers and dairymen of England must be good for both beef and milk—hence the transcendent popularity of the Short-horns. R. N. Y.

#### THE HORN QUESTION.

THE story told by the pictures shown at pp. 24 and 27 needs but little explanation. It can be understood at a glance. It may be claimed that both pictures are exaggerated, and yet we believe that there is much food for thought in this drama so graphically placed before us by our artist. Whenever we stop to consider the matter, the utter uselessness of horns upon domestic cattle becomes more and more apparent. Why should cattle carry these deadly weapons about with them? No man has yet been able to give any satisfactory answer, and it is probable that there is hardly a prominent cattleman or breeder in the country who would not gladly let the horns go, if by their loss his cattle would not, for a time, lose value from being different from other specimens of the breed. We fully believe that the public could in time be brought to look upon polled cattle of every breed with satisfaction. One mistake is made by the advocates of polled cattle in ascribing too much gentleness to their favorites. The picture of the little girl leading the great bull by the ear is purely an ideal one. Polled cattle are, as a rule, more gentle than their horned companions, but they are by no means lambs. They can strike a terrible blow with the head, and in many instances have beaten horned animals. Still they are quieter and more easily handled, and far less dangerous, as a rule. R. N. Y.

#### CORRESPONDENTS' VIEWS

I DON'T like the way pitchfork handles are made. The handles are too large round towards the fork. I had one such and the men all shunned it. I used it and my hand was cramped grasping so large a hold. I could get no others at the store, so I bought two of the usual size and shape. I took them into my shop and with plane and spoke-shave altered one-third of the lower part to an oval, the widest way up and down. These forks are now the favorites in the field, as the hand easily grasps the handle and it will not turn. Try one and you will like it. Some manufacturer might use this idea to his advantage. R. N. Y.

Creedmore, L. I.

H.

PEOPLE complain about our poor country roads. My opinion is that the principal cause for this is the laziness of the men when working out their taxes. They lean on a hoe-handle and talk, as though they had plenty of time. They ought to work for the public as they work for themselves. R. N. Y.

MANY good farmers think they must leave their comfortable homes and move into the town or city, so that the children can have the advantage of city schools and city ways. At first they do not mean to leave the farm permanently, but almost before they know it, the city becomes the home. The farm is rented and runs down. When at last the children grow up to be a little ashamed of father and mother, and the old folks go back, they have to spend their old age in bringing up the neglected farm. This plan is all wrong. Why not improve the country schools so that there will be no need of running to the city for an education? The farmer's place of business is on the farm. R. N. Y.

I KNOW men about me who think they must have their own reapers when they have not work enough to keep such machinery busy, and have to run in debt for it. It would pay them better to have their grain out by a neighbor, but they have a pride in doing it themselves. They get into debt for the implement, and the note is sure to fall due just at the wrong time. They have no place to house such a machine, and the consequence is that it is about destroyed by the weather. They had better wait till they can buy the implement right out. R. N. Y.

MANY farmers who complain of lame horses have themselves to blame. They start into town and forget to oil the wheels. Before they start home they oil themselves up with a little cider or something stronger, and home they come too fast for the horse. In the morning the horse shows a little stiffness in front. They hitch up the old mare in his place, and throw a foot of straw under him to induce him to lie down. Such treatment is all wrong. Better take him out and exercise him a little. His stiffness is likely to become permanent if he is left too long. I like a medium-sized horse. I don't want one so small that he has to strain every muscle to keep end his up, nor one so large that he never has to make an effort. R. N. Y.

#### NON-OFFICIAL PART.

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