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OFFICIAL PART.

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DE OMNIBUS REBUS.

Box 23, Sorel, Que. October 4th 1886.

Headlands.—A very striking point in the economy of the farms in this neighbourhood is the manner in which the *headlands* are treated. As a general rule they seem to be regarded as necessary encumbrances, hardly worthy of attention, and, in fact, troublesome features to which the eye of the inspector should be charitably closed. People do not seem to understand that a foul headland will, sooner or later, infect the whole piece. The harrows in turning will drag out small bits of couch-grass, roots of docks, and other rubbish, and spread them all over the field. I have a farm present to me which is an awful example of this fault. In one division, more especially, the headlands are very numerous; I really

believe they occupy one-eighth of the superficies, and in comparison with the remaining seven-eighths, they return next to nothing for the labour expended on them. The field is 120 yards long; there are three headlands in it, and all three were, at my instigation, sown with buckwheat, as it was hopeless to attempt to sow them with the regular crop in April and June, when the wheat and the swedes were put in. These two crops were excellent, but the headlands were so foul with couch-grass and thistles, that the buckwheat was a complete failure. The soil is a fine sandy loam, in good condition, and, if attacked in the proper season, very easy to work. I say, in the proper season, because if the preparation of the headlands be left till the busy time of spring, it will, almost infallibly, be neglected.

It may be laid down as a law, that every time the main body of the field is ploughed, the headlands should undergo the same treatment, and the same with grubbing and harrowing. But more than that: in fall-ploughing, according to my ideas of good farming, the headlands should be first *split* and then *gathered*. This would bring the land into good shape for drainage-furrows, and would have the additional advantage of leaving all the weeds on the top, where they would be easily dealt with by the harrows in the following spring.

Again, where land is in root-crops, or corn, nothing is more common than to see the headlands left untouched all the summer! This should not be, for the benefit they would derive from aeration, &c., by successive stirrings during the growth of the crops is quite as necessary to them as to the other part of the field, and even more necessary, as they generally have to depend for their manure upon any chance morsels dragged out from the drills by the horse-hoe, and by the subsequent operations of ploughing and harrowing.

I do not propose that in all cases where root-crops are grown the headlands should be sown. The horse-hoeing would

be stopped too soon, were this done, and that is a thing I cannot bear to contemplate. But when the plants have got so forward that this implement can no longer work without doing more harm than good, then the headlands should be split and gathered, and if you like to sow buckwheat or white mustard, to be afterwards turned in, I see no objection to the plan.

Wash for flies.—Where, as often happens in wooded districts, the flies annoy cattle or horses, a very good preventive against their constant worryings will be found in a mixture of:

Carbolic acid.....	1/2 pint.
Kerosene.....	1/2 pint.
Water.....	3 gallons.

The animals should be sponged over with this solution every morning, and not a fly will light on them. It is a little trouble, of course, but cows suffer incredibly from the attacks of the little pests. I observed the Guernsey bull, Rufus, (v. Journal for June, 1886) in torment this summer, walking backwards and forwards under an acacia tree, in the vain hope that the leaves and twigs, which just reached his back, would brush off the troublesome beasts.

Colorado beetle.—This creature has been very active all the season. He got hatched pretty early, the potato-haulm was not strong, and he, consequently, soon became master of it; in fact, by the first week in August, there was hardly a leaf to be seen on the haulm. A late *couvée* of the wretches I found, on the 15th of August, which despairing of finding their natural food, the leaf, were busily engaged in devouring every potato-tuber that had grown out of ground. Later on, they wandered about, eating up the *aubergines* (egg-plants) in my garden, the tomatoes (fruit), and even feeding on the turnip tops. The fact is, the farmers stopped the Paris-green treatment too soon this year: the hay-crop was earlier than usual, and the potatoes were neglected in consequence.

Seed per acre.—Looking over some old books the other day, I met with a statement by the well known Arthur Young, of the quantity of seed sown per acre in or about the year 1770:

	Bushels.
Oats.....	2 1/2 to 7
Barley.....	2 to 5
Wheat.....	3 to 5

In those days, wheat was only sown on the heavy clays, and with the then imperfect implements it was a difficult if not an impossible task to get a good seed-bed. Hence the enormous seeding in use.

By a comparison of the numerous returns furnished to Arthur Young from all parts of the country, I found that, as might be expected, the medium quantities of seed produced the largest crops; the ranks standing thus:

	Bushels.
Oats.....	5
Barley.....	4 1/2
Wheat.....	3 1/2

Rather curious were some of the practices quoted in the book I speak of. Cabbages grown on drills 27 apart, with the dung in the drills, just as we do now, and fancy it is something new! Land prepared for roots in the autumn, and, on

heavy land, the dung to be ploughed in, and the roots to be sown without spring-ploughing, just what I recommended last September, never supposing that the practice had existed in England for nearly one hundred years. But, then, Arthur Young was an extraordinary man, altogether, and his *Letters*, are well worth reading for the sake of the pure English style in which they are written: almost equal to that of the other farmer of later date, William Cobbett.

Washing butter.—I forget who it is that says, "it is the unexpected that always happens." Well, when I took up a trashy novel (I believe I read more *trash* in the course of the year than most men, and I do it because I can't get anything else to read) at Sherbrooke the other evening, I little expected to fall upon the following paragraph:

"The churn was flying round at the rate of fifty turns a minute, and she was listening carefully all the time to the sound it made. The butter was beginning to come; the butter-milk had to be let off every few minutes now; it was always passed carefully through a hair-sieve, and the crumbs of butter returned to the churn."

Crumbs or grains are pretty nearly the same thing, so we have the satisfaction of knowing that in the wildest part of the West Riding of Yorkshire, where the scene is laid, this supposed modern fashion was practised forty years ago!

By the bye, my excellent friend Dr. Bruneau, who is indefatigable in his researches after the best method of making butter, tells me that he has some trouble in draining off the butter-milk. I think I made the plan clear to him at our last meeting, but I shall know more about his success, or want of success, next week.

Prices in England.—Come, there is a rift at last in the dark cloud that has so long overshadowed the prospects of the British farmer. Wool has gone up just sixty per cent. in price, and cheese forty per cent. And the marvellous rise has all come about since last April, in which month, Down teg wool—that is the first fleeces—was selling for ten pence halfpenny a pound, the lowest price known for years, and the best Gloucester cheese for thirty-four shillings per 112 lbs. Teg-wool is now worth seventeen pence and the best Gloucester cheese fifty-six shillings. Grain of all sorts keeps low, but the general harvest was much better than the reports made it out to be, and the rise in the price of wool is of immense importance to all the English and to many of the Scotch farmers. Ireland, too, is blessed with a fair yield, which may make up in some degree for the low price of grain, and the rise in cheese must react on the butter and pork markets, on which almost every Irish farmer depends for the profits of the year.

Potatoes.—The crop of this year is the worst I ever saw. Mr. Lunan, who farms, in very good style, about 130 acres on the West-bank of the Richelieu, is the only man I know who has anything to boast of. As yet, there are no signs of rotting potatoes on the Sorel sand, and though the crop is very poor, the quality is good and the price decidedly satisfactory; fair samples from the field fetching forty cents a bushel; i. e. fifteen cents more than last year. In the spring I fancy they will bring sixty cents.

Sheep.—My friend Mr. William Hale, of Sherbrooke, tells me that since his taking to the farm of his lamented father, the Hon. W. Hale, he has wonderfully improved the state of sheep formerly kept thereon; and this, chiefly, by selection. Some seven or eight years ago, the average weight of un-

washed wool taken at the annual shearing was only three and a half pounds: the present yield is seven pounds a head, and the same increase is to be noted in the weight of the lambs: whereas, formerly, the carcasses of the lambs slaughtered during the months of December and January only averaged thirty-four pounds a piece, the weight of the sheep at the same age now rather overpasses sixty-two pounds. I did not hear with what breed of sheep Mr. Hale originally started, but if he will cross his present flock of ewes with a Hampshire-down ram, and their progeny again with the same, he will in four years' time have a lot of sheep equal, as far as profitable form and wool go, to pure-bred downs. After these two crosses of thoroughbred stock, Mr. Hale can, if he likes, breed from selected rams of his own rearing, taking care not to put ram and ewes of too close affinity together, and in a few years he will have established a genuinely useful flock, bearing a character peculiarly their own.

For the first few seasons, white spots about the heads of the lambs will no doubt show themselves, and the sheep bearing those marks of the long-wool side of their parentage should not be used for breeding purposes. If this precaution is observed, the spots will soon cease to appear, and the whole flock will bear a close family likeness to one another. The same attention must be paid to get rid of those lambs whose fleeces resemble the fleeces of their grandmothers. A strong resolution is required to effect the desired end, and no tempting quality of form must be allowed to stand in the way of effective drafting. It was thus that good old Sam Druce succeeded in establishing the Oxfords, and it took him nearly twenty-five years to obtain the desired family likeness between all the members of his flock.

Exhibits at Sherbrooke.—Will any one have the goodness, if they fall in their way, to send me back my exhibits of roots at the Sherbrooke Exhibition! I sent them off by express on Tuesday, September 21st, prepaid to the Exhibition ground, and nothing has been heard of them since! At any rate, this is a disappointment, for the six swedes weighed seventy-five pounds, topped and tailed, and I did not see anything at the show equal to them either for size or quality. The mangels I sent were fair, though nothing wonderful, but I don't think the swedes would have been easily beaten.

Sherbrooke, October 18th, 1886.

ARTHUR R. JENNER FUST, ESQ.

My dear Jenner Fust.—I must apologize for not answering your enquiries before, but part of my excuse must be the delay in hunting up your box of roots. I find that it came, but as it was several days after the roots had been placed and judged, was not opened by the Committee man in charge. Where it now is I cannot say, but will have a look for it on Tuesday while at the ploughing match, which takes place on the show grounds, and where I wish we might count on seeing you: it is duty you owe the country!

I carefully picked out the largest turnip (swede) in the Exhibition and found it weighed 9½ lbs. So I feel that I can safely say that, other things being equal, your 11 and 13½ lbs roots would have taken an easy first prize: besides those on Exhibition were rather rough and uneven and somewhat wormy. Tylee being busy asked me to acknowledge your post card. As to horses at the show I have been trying to find some one who would undertake an article. For myself I hardly saw them, being at work at other things most of the time.

Believe me, yours ever truly,

W. A. HALE.

I wish the roots had been addressed to me direct. (1) All those sent to the Sec. were taken charge of by a young fellow who was new to the work.

Rennet.—Mr. Hansen, of Little Falls, New York, has had the goodness to forward me a sample box of his "Rennet Extract," one tablet of which is sufficient to coagulate ten gallons of milk. The tablets are about as large as a ten-cent piece, by one-sixteenth of an inch in thickness! The effects of so small a solid on so large a quantity of liquid appear, at first sight, incredible, but when we consider that in the case of calves' vels it is only the trivial quantity of digested food that acts upon the milk, the feeling of incredulity will vanish. It does not take 'much "poison from the adder's fang" to infect the blood of a healthy man, and the tri-millionth solution of the homeopathsists, according to their account, works wonders. I shall give the rennet a fair trial in making Camembert cheese, and will report the results.

Milk competitions.—The seven years averages, as published in the Journal of the British Dairy Farmers Association, of the milk competition at Islington, read as follows:

	Milk lbs.	Solids.	Fat.
55 Shorthorns.....	42.89	12.69	3.52
42 Jerseys	27.34	13.70	4.17
23 Guernseys	27.43	13.87	4.52
9 Cross-breds.....	43.53	12.71	3.57

This, Mr. D. P. H., does not look as if "a typical short-horn was never known to make a good milker"—v. Oct. number of Journal p. 151—For further evidence of the error of this statement, I refer my readers to a letter, received this day, from Mr. Archie Campbell, of Saint-Hilaire, whose father, the late universally respected Major Campbell, kept a large and useful herd of pure-bred—typical—Shorthorns.

In the above list, it will be observed that my favourite Guernseys beat their rivals the Jerseys in yield of milk, in amount of solids, and in the quantity of fat contained in the milk.

In the contest between Jerseys and Guernseys, this year, the competitors stand thus:

	Milk lbs.	Solids.	Fat.	Points.
Ladybird—Guernsey ...	49.4	13.68	4.0	42.31
Stargazer—Jersey	24.4	15.78	5.94	88.03

The way in which the points are calculated seems to be a very fair one: "one point is allowed for each pound of milk, two for each unit of solids, three for each unit of fat, and one point for each ten after the first twenty days that have elapsed since calving." Says The Dairyman, in commenting on these yields:

"It will be seen from these tests, which take place in the second week of October, that very high averages were obtained, and that the work we have done in our "cow competitions," though bearing favorable comparison, does not indicate very high dairy quality, excepting a few Jerseys. There are three very striking facts in connection with this test, which our dairymen should bear in mind. The high position won by the Shorthorns, Guernseys and Ayrshires. Daisy, the unregistered Shorthorn cow, won the

CHAMPION OUP,

the Guernsey Ladybird 2nd gave the large yield of 49½ lbs. of milk, while the Ayrshire ran a tight race for the championship, with 53 pounds of milk, giving a fraction under 5 per

(1) I wish they had, with all my heart.

A. R. J. F.

cent. of fat, and scoring 97.72 points. Her owner, Mr. George Ferme, also won the first prize at the Ayrshire show in April, and the Bath and West of England Societies' first prize at Bristol, in June last. These latter were won by Lady Elphinston, and on the last occasion, she won with 56 lbs. milk of 3.73 per cent. fat, which scored her 105.98 points. She has since won first prize at Henley, Oxford. Mr. Thomas Brown of Petite Cote, recently imported a few animals of the same blood. He is a shrewd judge and deserves to win if he competes." (1)

Superphosphate Harmless!—Such is the heading of an article in a late number of the English Agricultural Gazette, note of admiration and all. To fully understand the value of the note, my readers will please to understand that Mr. Jamieson, an agricultural chemist of some notoriety, has been for years preaching the doctrine that the sulphuric acid which is used in the manufacture of superphosphate, to dissolve coprolites, bones, apatite, &c., is poisonously injurious to our cultivated plants, and strongly recommending the use of finely ground coprolites in place of the superphosphate.

When, some fifteen months ago, I was examined as an expert in a case of the use of artificial manures, I was utterly confounded at hearing that a previous witness in the cause—a civil engineer, too—had deposed that: Artificial manures injured the land, and thereby depreciated its value! I confess I could not understand from whose authority the witness had derived this absurd notion, until Mr. Jamieson's oft repeated assertion occurred to my mind. Mr. Jamieson, it seems, has seen fit to change his mind on the subject, and at a recent meeting of the Sussex Association for the improvement of Agriculture, declared that he had decided henceforth to change the composition of the manures which he recommends in one very essential point. He had found that superphosphate exerted no noxious influence on grain-crops. (1) At the same time the ground coprolite (phosphate) offered on the markets had so materially deteriorated in quality, and steamed bone-dust had become so cheap, that he considered it wise in the mixtures employed to substitute superphosphate (no matter whether bone or mineral) and steamed bone-dust for ground coprolite. He would only retain ground coprolite as a "check" upon other phosphatic manures, to keep them at a proper price.

As Mr. Jamieson has been for years the only supporter of the theory that ground mineral phosphates were superior in effect to superphosphates, I presume that the battle is over; and those who have preferred following out in practice the experiments of Lawes and Gilbert, to bowing servilely to the mere assertions of Mr. Jamieson, may now go on their way rejoicing.

Fodder-Corn.—I regret to say that I have seen, during the past summer, a good deal of fodder-corn sown broadcast on the furrow and harrowed in. Now, this is a wilful throwing away of one of the principal advantages of growing this crop. Sown in drills of from 26 to 36 inches apart, the corn can be deposited at a proper depth, and the horse hoe can be kept going till the corn is too high to admit it without risk of damage; both of these advantages are lost in broadcast work.

ARTHUR R. JENNER FUST.

Inspection of Farms. II.

I presume my lecture at Saint-Césaire was not absolutely

(1) Mr Brown won the 1st prize in the milking competition at Sherbrooke.

A R. J. F.

a failure, for when I had finished, one of the audience, whose name I regret to say has escaped my memory, rose and said: I am seventy-eight years of age, and though I have been farming all my life, I have learnt several things to-day I never learned before! (1)

And I, too, the next morning, though I have been farming for many years, learned several things of which I had been previously ignorant, and I am not ashamed to confess it: and I learnt these things on the farm of Mr. Aries, the president of the Saint-Césaire Agricultural Club.

It was a greasy morning, was the morning of Monday, July 26th; the day was damp, and the road slippery, but I got to M. Aries' farm by a sufficiently early hour, and was fortunate enough to find the proprietor at home.

The farm, a heavy clay-loam, comprises ninety acres, eighty of which are cleared, and the stumps and stones no longer hinder the operations of the plough and harrow. Twelve years ago, when M. Aries bought the place, it was, according to all accounts, in an awful state. In the roughest order, grain after grain had been sown by the former proprietor for 20 years; there were, so to speak, no ditches, stones were abundant, and the fields were unfenced. Some idea of its condition may be formed when I say, that M. Aries paid \$5,000 for the farm and refused this last year, \$8,000! On this small property the owner has reared a family of sixteen children, though he is, comparatively, still a young man, and I was not surprised to hear that, last year, he won the prize for the best cultivated farm in the county of Rouville!

It would really have been wonderful if M. Aries had not won the first prize in the competition, for I may as well say at once, that in spite of my long experience in this country, I have never yet met with eighty acres of heavy land so well farmed as these are—I beg to say that I am not dealing at all in exaggeration, but saying what I most sincerely believe to be true. The horned stock, though not thoroughbred, are most judicious crosses; the yearlings are in good fettle; the calves of the year thrifty; the cows young, and apparently good milkers. However, if I chose, I could pick holes in the stock, but in the cultivation of the land, my most critical pair of spectacles—I put them on expressly—could hardly spy out a fault.

The cattle are twenty-six in number: ten milch-cows, five two year-old heifers, four yearling heifers, six calves of the year, and one bull. The cows and heifers are half-bred Ayrshires and Canadians; the bull half-bred Ayrshire and Hereford. Rather a curious mixture, and if I might presume to advise M. Aries, I should recommend him to discard the bull and get a pure-bred one of some milking breed, Ayrshire or Guernsey for choice. Mr. Abbott, of Sainte-Anne de Bellevue, would furnish a Guernsey bull-calf for about \$25.00, and Mr. James Drummond, of Petite Côte an Ayrshire calf for the same sum. Valuable as Herefords are for beef, I should not like to admit a strain of that breed into a milking herd of mine; and it is astonishing how soon a bull can lower, as well as improve, the character of a dairy. By the bye, what a pity it is that neither Mr. Abbott nor Mr. Sidney Fisher of Knowlton exhibited any of their good Guernsey stock at Sherbrooke. The reason is not far to seek: the classes were for Jerseys and Guerneys, and no real amateur of the breed of one island would like to compete with exhibitors of the breed of the other island; for a man may be a good judge of Jerseys, and yet utterly ignorant of the points of a Guernsey. In fact, it is not improbable that ninety-nine men out of a hundred who visited the Exhibition grounds would not know a Guernsey if they saw one!

(1) Just remembered the name: M. Sansoucis.

The calves of the year were, as I said before, in good fettle; that is, they were fat enough, and had that peculiar *bloom* on their coats which always denotes a healthy, thriving condition. Quiet, and not easily scared, they took my inspection as tranquilly as a lot of thoroughbreds would: a sign that they are in the habit of receiving daily visits from their owner—it is the *master's eye*, &c.—“The proverb is somewhat musty.” These calves had evidently not been brought up on skim-milk.

Dairy.—The produce of the cows is here converted into butter. There was nothing particular to be noted as to the dairy or its management; in fact, I should say if in any district it would pay to send round instructors in the art of butter-making, it would pay here. All the butter I saw was strong in flavour and *salvy* in appearance, and the price was agreeable to the quality—13 cents to 15 cents a pound.

ing. His are a good, useful stamp of animal, about 13 cwt. each when in fair condition. Four seem a large allowance for eighty acres of land; but one or two breed colts every year; Mr. Aries has to drive about a good deal; and the land is *really* worked. He ought to know something about horses, as he castrates, he told me, from 300 to 400 colts every season. Where on earth can he find such a lot of male animals to work on?

A dozen ewes are not a large flock, but when the twelve rear a lamb and a half apiece, they with their young ones make a pretty show. M. Aries' sheep may be described as Canadian-Leicester-Cotswold, the ewes are of a fair size: they would, if fat, probably dress about sixty-four pounds each. The services of a Hampshire-down or a Shropshire ram would promote the early maturity of the produce, increase the clip of wool, and wonderfully improve the quality



SUSSEX BULL. GOLDSMITH.

Until this season, M Aries sent his milk to the factory, but the terrible fall in the price of cheese last year caused the closing of the establishment within reach of this farm, and the butter-business is the result. I don't believe that, taking the average of years, anything pays better than making *good* butter; but how few of our farmers' wives can do this! In this large market of Sorel, an ancient dame, Mde Rajotte, has been receiving twenty-five cents a pound for all her make, ever since May; the market price for the next quality was, at the highest, eighteen cents, but there was very little of it to be had, a difference of all but forty per cent. My friends in Montreal are continually writing to me about the impossibility of getting good butter; and, yet, it is very strange, I go down to Sherbrooke for a few days, and I, even I, who have not tasted butter for two years, ate bread and butter three mornings with avidity!

The Horses kept on this farm were four in number: half-bred Clyde and Canadian. M. Aries, like most of his neighbours, knowing that horses should draw by throwing their weight into the collar, does not care to use ponies for plough-

of the mutton. I was sorry to see the ram-lambs still uncastrated. I have often insisted, in this periodical, on the folly of this neglect. It was only last week that a really admirable leg of lamb, which was served up at my table, turned out almost uneatable, so strong was the *rammish* flavour of the meat. People ought to know that among a dozen ewes, there will always be one or two that come into season earlier than the rest, and if an uncastrated lamb has free access to them, his natural passions are excited, the usual results follow, and his flesh is spoilt for consumption for several weeks, if not months.

I was in hopes that farmers in general were giving up the vicious practice of shearing their sheep unwashed. Such, I regret to say, is not the case. Mr. Hale, of Sherbrooke, tells me that almost all his neighbours clip first, and hardly any of them dip their sheep afterwards. Of course, if long-wools are in question, and they have to be shorn in April, though I cannot see the necessity for it, tub-washing at that season is a troublesome and perhaps a dangerous job. But as a general rule, sheep need not be washed before 20th of May, and

after allowing ten days for the yelk to rise again, the heavy fleece may be taken off by the 1st of June, and my readers may depend upon it the sheep will greatly profit by the treatment. I suspect people fancy the fleeces are lessened in weight by washing: so they would be, if the shearing followed the washing immediately; but by waiting the proposed ten days, fresh yelk is absorbed from the skin, and the clean fleece will be found equal in weight—barring dirt of course—to the unwashed one.

In this way, it will not be found a troublesome business to wash a dozen or two of sheep: a large tub, a few hurdles, and a couple of men, will do them all within the hour, and when the clipping time comes, the shears will not be blunted so often by the mud and grit which always annoy the shearers, the wool can be taken off closer to the skin, and last, but not least, the buyer will not mind an additional cent or a cent and a half a pound for the brilliant looking fleeces.

Pigs. A useful style of pigs here: cross bred Chester white and Canadian, according to M. Aries, but I confess I am at a loss to understand what is meant by a "Canadian" breed of pigs. I suppose the word implies pigs of unknown breed. However that may be, these are hardy looking animals, with a tendency to early maturity not often seen in these parts. All the males and some of the females are fattened off the first autumn; the remainder of the females have one litter of pigs, and are then also doomed to the knife. It is quick work, certainly, and sounds like profit, but somehow or other I do not quite like it, as it gives no opportunity of selected the best sow for the perpetuation of the race. A sow is hardly ever at her best before the third litter, and to sacrifice a young mother before her real value has been tested, sounds rather like a barbarism to me. The young pigs are fattened on skim-milk, corn, and pease, after running the pastures and stubbles all the summer and autumn. This way of feeding ought to make famous pork; with a fair proportion of lean-meat. The addition of the milk alone ought to add a dollar a hundred to the value of the pork. But, unfortunately, in the country-parts, nay, even in Montreal, pork is pork, and quality of flesh, however fine, counts for but little in the receipts of the feeder.

The buildings on this farm call for no particular comment; they are roomy enough and of the usual form of construction. One point I may mention: the cattle-stalls are level throughout, and there is no trough behind the tied up beasts to receive the dung and urine. As the dung is carted out to the fields, in preparation for potatoes and corn, as soon as it is made, a manureshed would be of no use, but the trough should be made at once, and I fancy I impressed M. Aries sufficiently with its convenience and usefulness to ensure its construction before the advent of winter.

As to the garden and orchard, I cannot say much in their praise. The chief part of the former was taken up with a few rows of long red mangels, the only roots grown on the farm, and the orchard had only about a dozen crab trees to boast of, except one tree, about which, I found, M. Aries had made a curious mistake. He bought it of a pedlar, and took me to look at the fruit, as an instance of how easy it was to grow pears in this climate! I looked at the tree, I looked at the leaf, I looked at the fruit, and they struck me as being unlike the tree, leaf, and fruit of any pear I had ever seen. 'Taste one,' said the proprietor, seeing my look of doubt. I did so, and found the fruit already nearly ripe, and the flavour and shape together showed me were the blunder lay: it was, of course, an apple, but of that variety called the *Pearmain*, an early kind to be found in every orchard in the West of England. I presume the poor pedlar, not being very conversant with the French language, had attempted a literal translation of the word, and had produced something like

poirman, by which construction, M. Aries had been induced to believe that he had succeeded in growing pears, in a climate and on a soil where that fruit would be hardly likely to succeed. I am afraid I was not successful in my attempts at convincing him of his error, for, to tell the truth, he was so generally pleasant that I did not persevere in so ungrateful a task. Are there many *pear mains* to be found in this country? The one in question is the first I ever saw here.

Implements.—The general stock of implements on this farm is sufficient for all practical purposes: a broadest sowing machine, with grubber-teeth for covering the grain; good, useful harrows; and the usual assortment of tumbrils and waggons. Nothing else? Well, yes, there are two Scotch ploughs! What two, on a farm of eighty acres? Rather an extravagant outlay, I should say. Well, I did not imply that M. Aries bought them both; as they cost thirty-two dollars a piece, that would have been extravagant. How did he come by them then? He could not well have stolen one! Certainly not; he bought one, and the other was won at the last ploughing match in the county by M. Aries' son, a young man of the mature age of FOURTEEN!!! Now, if that is not something to be proud of, I don't know what is! And more: these ploughs let me into the secret of the beautifully regular way in which the furrows are laid over the whole farm. I have seen nothing like it during all my life in this province. From the farm-house down to the bush, a distance of some 2000 yards or so, the ridges, or lands, as we call them in England, are so regular in width—ten feet—and so true in direction, that if two very strong men were to lift them at each end, my firm belief is, that, barring the spot occupied by the fences, there would not be the slightest interruption of the continuity, as good old Dr. Johnson would have said! It was really wonderful, and left no room for exaggeration. I would willingly have travelled a hundred miles to see such work. And everything was after the same style: the fences perfect, the ditch-banks cleared of rubbish; grass growing down to the bottom of the ditches, and their sides bevelled off, so that the mowing-machine swept the grass off without jolt or jar; and the water-furrows treated with sloping sides in such a fashion that the reaper and horse-rake met with no obstacle to impede their work. The water-furrows are made by a bout of the Scotch plough, held *slantingdicularly*, in a way easier to conceive than describe. As far as I could understand M. Aries' description, no manual labour was required to clear out the crumbs after the plough. I say, as far as I could understand, for at this moment M. Aries was called away to operate upon a stallion, which poor brute, after the operation, was put into the waggons again, and driven six miles on that heavy clay road, with the thermometer at 87°F. in the shade, and the "*bees was as fell as owt*," (1) as Ten-nyson's Northern farmer says. I should like to have a chance to express my sentiments to that unfortunate animal's master!

Rotation of Crops. I was glad to find that on this farm a regular system of rotation of crops was steadily pursued. In case of the failure of grass-seeds, an innovation of course becomes necessary; but with this exception, and on land so well farmed it rarely occurs, no divagation from the system is practised. The members of the course are seven in number:

	Acres.
Fallow-crops, $\frac{1}{4}$	11
Grain and pease, $\frac{2}{7}$..	22
Meadow, $\frac{3}{7}$	22
Pasture, $\frac{2}{7}$	22
Total	77

(1) Meaning, thereby; "the flies were as fierce as anything."

The fallow crops (*jardinage*) are corn and potatoes;

The grain comprises wheat, barley and oats;

Pease are largely grown, in proportion to the extent of the farm, and yield well. Eight acres, pretty equally divided between pease and corn, produced last year four hundred bushels.

The land is too heavy to grow the best quality of potatoes, but, judging from a few roots that I examined, the return of Early Roses could not be much less than two hundred and fifty bushels per acre, or rather more than six tons. The land in preparation for the corn and potatoes is ploughed about seven inches deep in autumn, cross-ploughed in spring, grubbed, harrowed, and, if cloddy, rolled before setting up the drills with the double-mouldboard plough; the dung—about forty one-horse loads per acre—carefully spread; and the potatoes—smallish whole tubers—set at about fifteen inches apart. The drills, about a yard apart, are then split, and the work of planting is finished. The drills are harrowed length ways, just before the young shoots show themselves above ground; the horse hoe and, if necessary, the hand-hoe continue the cleaning operations, and, finally, the plants are moderately earthed up by the double-mouldboard plough. First rate work, all through, and the piece I saw was, literally as clean as a garden. The land intended for corn is treated in the same way up to the seeding point. The seed is deposited in *hills*, three feet apart each way, and in the intervals are sown, after a horse-hoeing or so, white beans. And this, to my mind, is the sole serious fault to be found with the whole system followed on this farm. When my visit was paid, on the 6th of July, the beans had profited greatly by the warm, moist weather of the previous few weeks; they had climbed up the stalks of the corn on each side; and, if I am not much mistaken, they would eventually choke the corn to that extent that the future maturing of the crop of seed would be materially retarded if not entirely prevented. The promise, otherwise, was very good, but it was really painful to see the prospective damage inflicted by the, I must call it, *greedy* desire to grow two crops where only one should stand. Mixtures of grain and pulse for green-crops I highly approve of; but when such a scourging crop as corn is grown, I do think that if the land will produce that in abundance, the farmer should require no more at its hands.

The kind of corn sown, was the *bon petit blé-d'inde Canadien*; and as it was for seed, I have no objection to offer, as it certainly will ripen when the larger sorts will not.

ARTHUR R. JENNER FUST.

Notes on part numbers of the Journal.

Canadian mutton.—In the last (October) number of the Journal I read: "Here, in the P. of Q., we really do not know what good mutton means..... The little Canadian sheep are so lean, hard and flavourless that one might as well be eating the flap of an old saddle." Now, is this really the rule with all Canadian sheep? From my infancy, I remember the family's predilection for our local (Canadian) lambs. Even the one and two year old (French) mutton I find in this market is fat enough for our taste (and we like fat mutton). It is juicy and tender. I have eaten mutton in England, Ireland and Scotland for many months at least, and if my love of (Canadian) country does not deceive me, I did not enjoy the excellent mutton of England any more than I enjoy the excellent mutton I can buy here for about 5 cents a lb., by the quarter.

I admit readily that a good deal of the lamb and mutton sold even in this market is not such as I would select; but I generally find a sufficiently of really good mutton on our local market. Is there not, therefore, something to be said

in favor of Canadian sheep, for at least the rough pasturages numerous in this province? Being a Canadian, born in this province, I would like this matter closely looked into, as I know by experience that these little sheep are very hardy, excellent feeders and easily improved by selection, and proper food in abundance. Am I wrong?

Let us, by all means, hear of the best breeds of cattle for our Province. Were it not for the difficulty I have often met with in securing the proper working of southdown wool in our French settlements, I would advise the more frequent use of Southdown rams, and Hampshire Downs no doubt. But I am not yet prepared to kick out of existence the sheep of the country—without at least a fair trial.

GENERAL PURPOSE COWS. Query: Can the same animal produce *at the least cost* the best of beef and the best of milk? With all due respect for A. R. J. F.'s views, I am afraid not. The special aptitudes for the production of an abundance of good meat, on the smallest possible quantity of the proper food, and of the largest quantity of the richest milk, appears to me to require animals of entirely different conformation.

It is admitted, I believe, 1. that the quantity of good food required to produce 1 lb. of beef live weight increases with the age of the animal. Therefore: 1. the younger the animal the more beef will be produced with the same food. 2. The sooner the animal is trained to produce beef, and plenty of it, the cheaper the beef.

Again, it seems to me proved 1. that the sooner a heifer is trained to produce rich milk and plenty of it, the better, that is *most economical*, the milch cow. 2. That the best producer of milk must be in excellent flesh, but never fattened, from calf hood and until milk ceases to be produced economically. If this be right, it therefore follows that the object of the breeder, in milch cows, must be the production of an animal which shall attain as soon as possible full size and strength to rear its young, and then be trained to turn all its aptitude to the production of milk alone *and neither flesh and fat*, as long as, from age or from accident it shall cease to produce rich milk at the lowest cost for food.

In beef production, therefore, the breeder must aim at obtaining beefing aptitudes in his stock as early as possible, and then—as a rule—kill, whilst in milk production he should aim at maturing his animal in an entirely different direction and secure economical milk production for as many years as he can.

Is it possible that such widely opposed aims be united and bred profitably into the same animal?

The difference of aptitude required in beef production and in meat production appears to me very striking when the following facts are considered, viz: The same food required to produce,—say in 365 days,—the largest amount of matured beef live weight; under the most favorable circumstances, say 600 lbs. of increase, would produce, under similarly favorable circumstances, ten times more milk *at least*, or 6000 lbs of milk. Now, if I am not mistaken, it is admitted that 600 lbs. of beef contain no more food than can be found in 1200 lbs. of milk. If this be right, it follows that the aptitude for the production of rich milk returns, in the same length of time and with the same quantity of cattle food, five times more in the best milch cow than in the best fattening animal.

More could be said on these questions, but the above appears to me enough for this once.

ED. A. BARNARD.

Three Rivers, Q., 14th Oct 1886.

FRUIT FOR CANADA.

We fully commend the following, from the "Orillia Packet": "The Fruit Growers' Association of the Province of Quebec and the Montreal Horticultural Society is doing a good work, and has now for ten years issued an interesting report. It is fortunate in having as a member a man of such ability and public spirit as Mr. C. Gibb, to whom not only Quebec, but all Canada is deeply indebted for researches which must have a most important influence upon our comfort and prosperity in connection with orcharding. After carefully studying the hardy fruits of Germany and Russia, Mr. Gibb is now engaged in like researches in Sweden and Norway."

E. A. B.

CORRESPONDENCE.

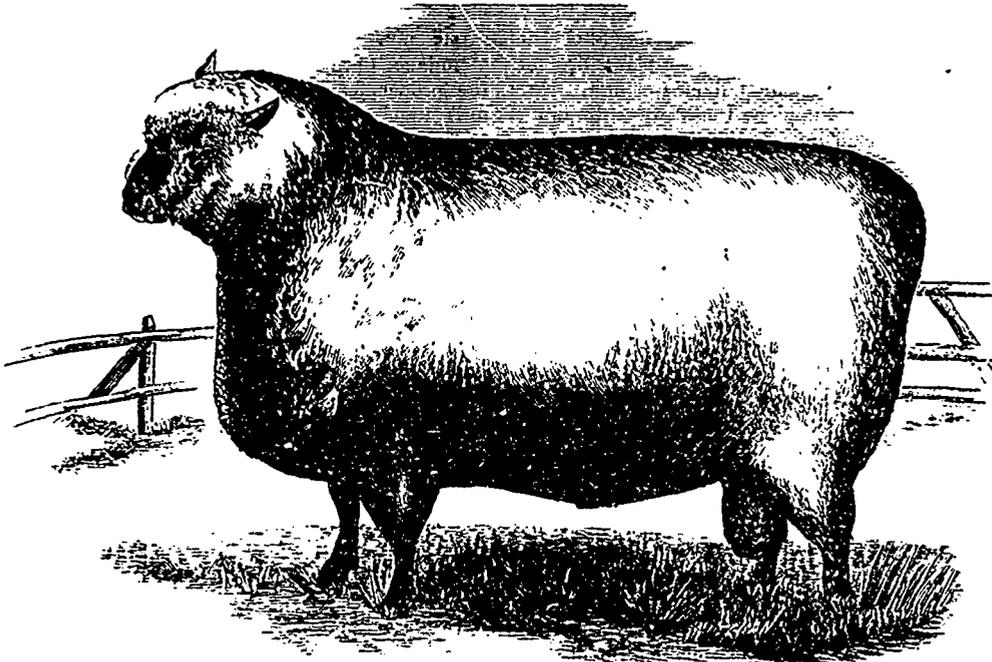
St. Hilaire, Oct. 4th 1886.

My dear Sir,—Who is the writer of that article in your

Now if we estimate hay at \$10 a ton and bran at \$14 (for 2000 lbs), the total cost of such feed, irrespective of labor, would amount to \$145.55, or 67¢. per lb. live weight. However, the manurial value of such feeding, although not alluded to by the Miller, is worthy of close attention wherever manure is needful. In the valuations lately published by Sir J. B. Lawes (see R. A. S. Journal 1885, p. 600) hay—mixed clover and meadow—and bran, fed to full grown fattening stook leave in the manure :

Per 2240 lbs.	Hay.	Bran.
Ammonia.....	50.6 lbs.	64.2 lbs.
Phosphoric acid.....	9.58 lbs.	78.50 lbs.
Potash	34.75 lbs.	31.21 lbs.

Counting ammonia at 12c. per lb., phosphoric acid 6c. and potash 5c., the manure produced from a ton of hay so fed, amounts to, in hay, \$7.54, and bran \$12.48. According to



SHROPSHIRE RAM, ROYAL PRESTON.

Journal for Oct. "Stock at grass"? Whoever it is knows what he writes about: it is as good as D. P. H.'s is bad. Fancy "never knowing a typical Shorthorn to make a good milker." Some of the best milkers we ever had on the farm here were Shorthorns. If I were an Irishman I would say that *far the best part* of D. P. H.'s article was your note at the bottom of it, in fact the only part worth reading. Your description of *cattle boxes* is perfect; we have had them in use for over 20 years and they answer all you say.

Yours truly, A. G. CAMPBELL.

Beef for one cent a pound.

The Northwestern Miller states that experiments made during May and June last, on 15 head of common stock, fed exclusively on hay, bran, salt and water, show the following results :

Total hay consumed.....	14,620 lbs
Total bran eaten.....	11,065 lbs.
Total grain live weight.....	2,175 lbs.
Grass of no account; heat and flies very severe.	

these valuations, which I take to be generally accepted as correct, the real cost of the above mentioned beef production would stand thus :

Cost of food estimated as above.....	\$145.55
Less manurial value.....	124.11
Cost of 2175 lbs. of beef, live weight.....	\$21.44

To the above must be added the cost of the labor of feeding, hauling the manure, &c. But these items aside, the cost is only about 1c. per lb. live weight. In all such calculations, however, the loss of manurial value by rain, sun, stable absorption, &c., before its final covering up in the ground, should also be estimated. On this latter estimate I hold that 75 per cent of deduction would have to be made, in a majority of cases, through the utter neglect of manurial wealth by most farmers on this continent. Here is loss indeed!—*The Homestead.* ED. A. BARNARD.

The Dominion and Provincial Exhibition, 1886. —o tell the honest truth, there is no one item in all my

duties that I dislike more than writing a description of oattle-shows. The same exhibitors of the same breeds; very little variety in the names of the prize-winners; and the difficulty I find in saying old things in a new way; all tend to make me doubtful as to my power of interesting my readers in the oft-told tale.

One thing, at least, was new at the Sherbrooke meeting: the view from the grounds was something superb. Words would fail me were I to attempt to describe the marvellous effect of the faint autumnal tints just beginning to show themselves among the still green foliage of the glorious belt of trees which crowns the summits of the range of hills on the Eastern bank of the St. Francois; while away in the distance might be traced the river itself, running bank-full after the late rains, bordered on each side with a lush verdure, that set me dreaming of my own dear country, and dotted here and there with picturesque groups of cattle and—I was going to say—hundreds of sheep; but there were no sheep visible, I am sorry to say. Mr. Blackwood, whom every body knows, and I agreed, that if ever there was land cut out for rearing and fattening sheep, it is the hill sides and bottoms on the banks of the St. Francois. They should be yeaned and reared on the uplands until twelve months old, and then brought, the second summer, down to the intervals, to run with the horned-stock and fatten at their leisure.

The first lot of cattle I went to see were the *French-Canadians*. To say I was disappointed in them is nothing. A more awful herd of "sorubs" I never saw, and I must express my opinion that it was a very poor return for the extreme liberality of the offerers of the valuable prizes for this breed that no one farmer sent specimens of his own herd. Those exhibited were a speculative lot, picked up here and there by the exhibitor, and should never have been allowed a place on the ground. Had I been a judge, I should certainly have refused to assign a prize to any of the herd. One thing, however, is certain: they really were Canadians, and bore a most remarkable family likeness to one another. In fact, the first impression on my mind was, that they had come from some farm where they had been bred in-and-in till they had lost form, constitution, and everything but hair. After seeing such specimens as *La Major*, and *La Tavelée*, engravings of whom have appeared in this Journal (v. June, 1886, and

August, 1886), no one can doubt the value of the Canadian cow for dairy purposes. I could have brought a dozen of good animals from only just across the St. Lawrence from Sorel, which would have shown the value of the breed to any one who understood a milk-cow, and I do sincerely hope that wherever the exhibition may be held next year or the year after, some one will see that the stewards do not admit such disgraceful creatures into the yard. I only hope that what I was told is true, namely, that Dr. McEachran refused positively to assign a prize to the herd or to any individual member of it.

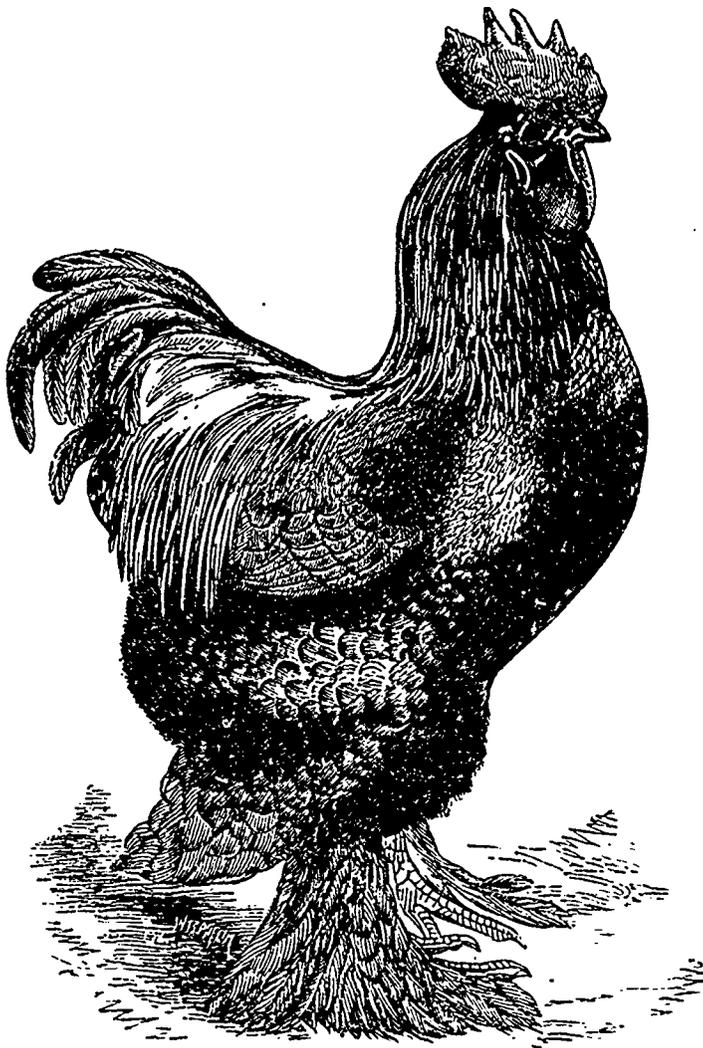
The *grade cattle* made a fine display; but then the farmers of the Townships have so long been noted for this stamp of animal that there was nothing to wonder at. They are, as a rule, good milkers and easily fattened; good roomy beasts, mostly of shorthorn type, and what may be termed, true farmers' stock. Judicious crossing, combined with good keep both winter and summer, has been the source of the wonderful improvement secured during the last twelve years. The draught-oxen were magnificent, particularly the Stanstead herd of twelve, and, to tell the truth, as far as concerns the cattle, the show was an *Eastern Townships' Show*, and very proud of it the farmers of that district have a right to be.

In *shorthorns*, the prizes were divided among a greater variety of competitors than usual. Mr. Cochran, of course took several of the most important prizes, notably first for old bulls, and first, for yearling and two-year old heifers; but Mr. John Main, of Melbourne, was first in old cows, and won the diploma for best shorthorn cow with the same animal, whereon, as

an old friend, I congratulate him. Mr. Williams, as well as Mr. Gallop, have made great advances in the character of their respective herds.

But if there was a variety in the shorthorn winners, there was none in the prizetakers in the Hereford classes. Cochran, Pope, and Vernon divided the ribbons amongst them. A magnificent sight indeed were the white faces, and brought out in the most wonderful condition, with that bloom on their coats which, whether in plums, grapes, or cattle, always denotes the highest possible state of ripeness.

About the first prize for old bulls in this class there was a slight dispute. Mr. Blackwood, the elder, without mentioning the owners' name, requested my opinion on the matter; after



PARTRIDGE COCHIN COCKEREL.

comparing the two for some time I gave my decision in favour of the one which turned out to have been the judges choice also, and I am therefore bound to support their decision. But I must say there was little to choose between the two. Both bulls were as fat as they well could be, but in spite of that, I fancied I could detect a slight fault behind the shoulder of Mr. Vernon's bull, whereas that point—a very important one—in Mr. Cochrane's beast was perfection itself. Mr. Vernon's name is new to me, but if he continues to get up his exhibits in such style he will be a difficult man to beat. Such "rounds of beef," here called "steak-pieces," as are those of both first and second prize bulls are rarely met with. I should like to have seen the whole of the prize Herefords walked round the ring. It would have been a rare treat for one who knew the points of the breed.

Aberdeen Angus cattle were among the most popular exhibits of the whole show. It is no exaggeration to say that each was as "round as a billiard ball," and as for the young ones, I never saw anything superior to them. There was a very fair contest between two yearling bulls, one belonging to Mr. Cochrane, and the other to Mr. Pope, but the former just had it. With the exception of a second and a third prize to Mr. Noble and Mrs. Price, Messrs. Cochrane and Pope divided the prizes between them, Mr. Cochrane taken the majority, and winding up with the crowning triumph of the herd-prize for bull and four females. Where were the famous Rougemont cows? And the Lachine herd was unrepresented!

Loud and stern were the objurgations of the judges by the Ayrshire men. One of them went so far as to say that besides not winning prizes to which he was fairly and easily entitled, he had won a prize to which he was not entitled at all! Fact, I can assure my readers. There were not many Ayrshires on show, but there were first-rate animals present of both kinds of the breed, the large and the small. It is rather curious that no other cows than those of this breed were entered in the competition for the best milking cow! There were plenty of Holsteins and a few Jerseys on the ground: were they all so long calved as to be considered "out of it"? As to the prizes for the cattle as they stood, Messrs. Drummond, Brown, Irving, and Nankin, an Ontario breeder, took nine-tenths of them, the last winning the much coveted herd-prize for bull and four females, pretty creatures and fine in bone, hair, and general character, but not showing anything like the milking capacity of others which were present. M. Lachapelle won the first prize for bull-calves, and Mr. James Drummond, the second! The decision was absurd on the face of it, but the former calf had drunk his fill of milk up to the time of exhibition, and was very taking to the inexperienced eye.

Why not have one judge, only, for each class? The present handsome allowance of five dollars, inclusive of railroad fare and hotel-bill, is not likely to attract first rate men, and when you have three such breeders as Drummond, Brown, and Irving, no one but a very skilful judge is likely to give satisfaction.

The following list, furnished me by Mr. James Cheesman, who analysed the samples, shows the difference between mere weight of milk, and quantity and quality combined:

ORDER OF MERIT.

Cow	Owner.	Quantity in lbs.	Points.
Lucerne	Thos. Brown.....	32.62	94.09
Victoria	Jas. Drummond ..	40.26	92.66
Bud	Jas. Drummond ..	36.50	77.10
Nellie	D & A Drummond ..	32.12	72.29
Countess 2nd.....	Thomas Brown..	32.19	68.77
May	Jas. Drummond.....	34.94	68.72

Gladstone	Thos. Brown.	29.94	60.79
Juno	Jas. Drummond.....	31.05	53.79
Rosy	Thos. Irving.....	18.87	51.71
Betsy	Thos. Irving.....	19.44	48.06

The *Jerseys* were nothing wonderful in quality, none of the best known breeders having sent any specimens from their herds. The Fullers, Jones, Reburns, and others, whose stock we have so often admired, were probably at the Western shows: they did not favour Sherbrooke. Mr. Ball, of Stanstead, whose herd, if I remember, was, seven years ago, composed entirely of Ayrshires, took every prize in this class.

In Holsteins, Messrs. Pierce, of Stanstead, and Mr. Ritchie, of Sainte-Anne de la Pêrade, were the chief competitors. I don't care for the breed, except, perhaps, for supplying quantities of milk for town-consumption. They look to me like inchoate shorthorns, which have not been improved by human skill in selection. A cross with a large framed Guernsey would give the cows what they want—richness of milk. Mr. Cotton, of Sweetsburg, got first in the two-year old bull class for a very promising young one, but the points of the males of this breed are so loose, that one hesitates to say anything about them.

Mr. Cochrane, by experimenting on cross-breeding from native cows with pure-bred bulls, seems to be doing a most useful work; the progeny unites apparent hardiness with great readiness to fatten. His Angus-native two-year old, which took the first prize for "a beef animal" of any age, is so like its male parent that it might be mistaken for a thoroughbred. I should hardly have thought that the Angus breed had been long enough established to have created such pre-potency in the bulls as this steer showed to be the case. Well, if the cows are chosen from a good milking family of natives, this cross may be turn out a very useful "general purpose" cow, as there is no doubt about the beef-furnishing properties of the male parent. Mr. Labaree's half-bred shorthorn cows were very handsome, and so were Mr. Killam's heifers, same cross. The *pigs* were much as usual. Mr. Featherstone, in Suffolks and Essex, small breeds, nearly swept the board; and in Poland-Chinas, Mr. Whitman only found one competitor of any consequence, Mr. R. H. Tylee, the Secretary of the Sherbrooke Agricultural Association, to whose exertions the success of the exhibition was mainly due. The Berkshires, to my mind "the farmers' pig," were well represented by the exhibits of the Messrs. Snell, who took the herd prize as well all the first prizes bar one.

The *Hops* were fully picked samples, and equal to any I ever saw in England, with the exception of Farnham and East Kent Goldings, far superior to the Sussex or the North Clays (Nottingham), which, to my taste, are generally rank as well as strong. I did not taste the ales, but the flavour of those brewed by Messrs. Carling is too well known to demand notice from me.

The *Sheep* were splendid! And here I may say that I was surprised to see once more my old friends, the Dorset-horned. I hope the importers of these peculiar animals know their real purpose: they have the peculiar quality of taking the ram at a very early season. The ewes are generally put with the ram about the first of July, and produce their lambs at the end of November. The couples are kept in well ventilated sheds, and one of the principal duties of the shepherd is to keep this shed at a regular temperature, night and day. Both "lamb and dam" are fatted, getting everything they will eat—the lambs thrive well on white pease, which they soon learn to crack. At two months old the lambs are ready for the butcher, weighing at that age about four stone i. e. 32 lbs. I have known very early ones fetch as much as a guinea (5 dollars) a quarter! But that was nearly fifty years ago, and

no such price probably could be obtained now-a-days. The ewes are fit to kill about a month after the departure of the lambs, and ours used to weigh, dead, from 12 stone to 13 stone a piece—96 lbs. to 104 lbs. The mutton was fat enough, and, like the meat of all horned-sheep, had a *soupeon* of wild flavour about it that was very alluring.

The breeding of these sheep is, or was, chiefly carried on among the chalk hills of the county from which they derive their name. The ewes are drafted at the age of four years, when they are called "full-mouthed," i. e. they have eight teeth; they are then sent up, in-lamb, to the neighbourhood of London, where the process of fattening is carried out as I have already explained.

Was is not rather a mistake on the part of the stewards to place the words "Oxford and Hampshire Downes" on the prize tickets of that class? It was all very well to have only one class for these two breeds, but the prize tickets should certainly have indicated to which one of the two the prize-winner belonged; for, every one is not supposed to be acquainted with the distinguishing marks of the two breeds. Mr. Nankin was really *greedy* in this class.

Messrs. Snell, and M. Phaneuf divided the prizes for *Cotswolds* in pretty equal proportions; Messrs. Snell taking all the first prizes, and the diploma for the best pen. If we are to hope to supply the English market with high-priced mutton, *Cotswold* and other long-wools must be discarded, and the *Downs* must take their places. *Hampshire-downs* at twelve months old will weigh more and have cost less than any long-wool.

As for the *Southdowns*, they were the best I ever saw together in one lot since the first time I attended these exhibitions. There was hardly one inferior sheep of this breed present, and I congratulate my old friend Mr. Moore on the great advance he has made in the preparation of his sheep for exhibition. It is all very fine to say: "I show my sheep in good breeding order;" but if every other exhibitor shows his sheep in "full bloom," the "breeding order" man will not have much chance. Mr. Stanford's flock was beyond praise, and so thought the judges, who had no difficulty about their decision.

I beg to congratulate my kind friend, M. J. de L. Taché, on his first prize for factory cheese. When I tasted it, I fancied that if *Archdeacon Denison* had been with me, he would have excepted *Canadian Cheddar* from his diatribe against *American* cheese in general.

The *Canadian Pacific* tent was full of most interesting specimens of the products of the North-West: the finest two-rowed barley, at sight of which I wanted to set to work malt it at once, and brew it afterwards! *Black-barley*, too though I don't see what the use of it is; the heaviest white oats I have nanded for many a day—out green, my friends, but I should say they weighed 43 lbs. or 44 lbs. per struck bushel; vegetables and roots of great size and, apparently, of good quality; the collection, as a whole, reflecting great credit on the superintendent, Mr. Olivier Armstrong.

The *Shropshire* were, as usual, a strong lot of practical, useful looking sheep. Mr. George Fuller took the diploma and five first out of six prizes. My old friend Mr. Selah *Jedediah Pomeroy*, of *Compton*, has I see been successful in breeding this valuable class of sheep, winning a second and a third prize. Really, *Compton* has carried off more than its fair proportion of prizes at this exhibition!

Will any one kindly explain to me how it came to pass that Mr. Vernon's old *Hereford* bull, which ran second to Mr. *Cochrane's*: the class for aged *Hereford* bulls, won the gold medal as the best *Hereford* bull in the yard?

ARTHUR R. JENNER FUST.

THE DEAD MEAT.

The killing of the prize animals at Chicago—cattle, hogs and sheep—was begun early Tuesday morning, and was finished late that night. The carcasses hung on the hooks two days—cutting up and blocking beginning early Thursday morning, not all being done before near 5 o'clock. The judges were of course restricted in time, having only about two hours to examine and make up their minds upon some twenty carcasses. But the public were worse served, in that they were not admitted to see the meat till about 6 o'clock, and the exposition closed finally at 10 p. m. During the two days that the carcasses were cooling, the average temperature was not above 50°, with the result that the meat did not cool enough to prevent decomposition starting in several of the larger sides. In one of the largest and fattest, at the joint on the round end of the loin, the fat was "off color" and "on smell" (as one of the spectators observed, when the committee made the awards. The butchers present seemed to be of the unanimous opinion that most of the carcasses would have to be sent to the rendering establishments, they being in such condition that neither ice nor salt would have them.

The awards went, for the three-year-olds, to the *Polled Angus*; for the two, to the grade *Hereford*, and for the yearling, to the *Sussex* full blood. The *Hereford* also got the grand sweepstakes, which may thought should have gone to the *Sussex*, and perhaps would, had it not been for the objection of "baby beef." The meat on block, as a whole, was superior to the show of last year, in that tallow predominated less. Still, the meat would have been better with half the tallow and double the amount of lean. Of all the carcasses, there was only one that showed the right proportion of fat and lean, and that was of the *Sussex* steer with the shrinkage of 90 days' quarantine upon him. Perhaps the large development of lean in the *Sussex* meat is due to peculiarities of race, but more likely to the different character of the fattening ration, on the other side. Perhaps no more important or significant fact was made public in the whole course of the show than this striking exhibition of lean. Certainly there was none of more interest to the consumer, unless it be another that Mr. Gillett, some time since, learning the peculiar merits of the *Sussex* beef, has ordered an importation of thirty head of full bloods, male and female, for his own use. To the consumer, the slighty proportion of fat and lean of the *Sussex* was at the same time a revelation and a lesson, giving him to know and understand that there are breeds of cattle that, on being long fed and high fed, develop into something more than vast masses of tallow. Or, if this is denied, and it is claimed that all breeds are alike in this particular, then it is made plain that the *Sussex* have been fed and fattened on different rations, and that when other breeds are served with them, the results will be similar. In a few words, the case of *Ohio Belle* last year, and that of the *Sussex* steer this year, have taught the public that high feeding need not reasonably result in an undue proportion of tallow. (1)

OUR ENGRAVINGS.

Shropshire Ram.—*Royal Preston* is a thoroughly good example of a valuable breed of sheep. By a long course of careful selection the type of the *Shropshires* has become fixed, and, barring my favourite *Hampshire-downs*, I know no sort more profitable to the farmer.

Sussex Bull.—*Goldsmith* is a fair representative of the *Sussex* cattle, so long the primo favourites of the London butchers. They are coarser than the *Devons*, their cousins, and

(1) Corn, as a continuous ration, is not likely to produce anything but "mountains the fat." A. R. J. F.

are, no doubt, descended from the aboriginal stock of Britain. The cows are fair milkers, and the steers famous in harness.

Partridge Cochín Cockerel.

Faith of Oaklands—The celebrated Jersey cow.

ARTHUR R. JENNER FUST.

BUTTER-MAKING FOR BEGINNERS.

T. D. CURTIS.

DAIRY APPARATUS.

Write to reliable dealers for lists of dairy implements, with prices. Study the lists, and note the different articles and styles of each. Then visit as many noted dairymen as you can; see what they use, how they use the different implements, how their dairy rooms are fitted up, and with what conveniences, their mode of handling milk, cream and butter, the quality of their goods, and all the details. Time spent in this way will be well repaid. Note every particular so as to compare the work of each with that of the others; see wherein improvement can be made, and adopt the best methods of each. After this, make up your mind what you need for your dairy, considering size and all the conditions and circumstances. Go to the dealer in whom you have the most confidence, consult him freely, listen to all his explanations and suggestions, use your own judgment, and buy accordingly. As a rule, buy the simplest articles; they are less liable to get out of repair. Avoid all rough surfaces and sharp angles, where dirt may collect or ferments may be retained. Simplicity and neatness are important points in everything pertaining to the dairy.

THE HERD

should be composed of healthy, thrifty animals, giving a good flow of rich milk. Full-bloods will be too expensive for practical dairying, unless you wish to couple with it fancy breeding. Grades are usually available at reasonable prices. There may be some difficulty in getting just what you want, but buy the best you can. Then buy the best pure-blood bull you can get, of the breed which you prefer. Never use any other, and continue to use the same breed, unless there are very strong and convincing reasons to believe that a cross will be advantageous. In crossing, still adhere to pure blood, and get the best male, with the best pedigree, that you can—for blood surely tells in the dairy, and it will tell for good or evil, according to your selection.

CLEANLINESS

is indispensable in the dairy. The cows must have clean food and clean water, and plenty of both, without working too hard or going too far to get them. Labor saved to the cow adds to the amount of the milk product. The milk is elaborated from the food and water consumed by the cow, and partakes more or less of their qualities. Good milk never came from poor food and foul water. Let the milking be done in a cleanly manner, and in a sweet atmosphere. Foul air inhaled by the cow will impart taint to the milk. Clean the udder before milking, so as to keep all filth out of the pail. Once in the milk, no strainer will take out what is dissolved. Milk readily absorbs odors, and more especially if it stands in an atmosphere warmer than itself. Everything which the milk touches must be carefully rinsed, then washed in water as warm as the hands can bear, but no warmer. Clean soap will do no harm. Some use soda in the water; but borax or ammonia is better. When washed, scald every article with water boiling-hot, and follow by giving it a good airing. A sun bath is a good thing. Milk things treated in this way, have a smell that is grateful to the olfactories and a certificate of cleanliness.

HANDLING MILK.

Set your milk for cream-raising as soon as possible after it is drawn from the cow, and before it has time to cool. Every degree of temperature lost is a waste of the force that separates the cream from the milk. The cream rises fastest when the temperature is falling; slowly when the temperature is stationary, and little, if at all, when the temperature is rising. The watery and caseous portions of the milk, being better conductors of heat, cool and shrink faster than the fat globules. This makes the fat so much the lighter relatively, and hence it rises more rapidly, by force of gravity, as a balloon rises through an atmosphere denser than the gas with which it is filled. Agitation of milk has been found to retard the separation of the cream, though all other conditions remain the same. Hence milk should be agitated as little as possible before setting for cream-raising. The fat globules in milk have been found to range from one fifteen hundredths to one three-thousandths of an inch in diameter. The larger ones rise the most readily, churn the most easily, and make the best quality of butter. In some European countries two qualities of butter are made from the same milk, by skimming off the first cream that rises to make the first quality; and the cream that subsequently rises to make the second quality. The time is coming when the dairymen will look for and breed for large butter globules, and those of uniform size. The beginner, who is likely to be young, should take in these facts and be prepared to avail himself of any advantages in this direction. The dairyman of the future must be wide-awake and progressive. Skill, judgment, and deftness are of paramount importance.

HANDLING CREAM.

In the old method of shallow setting in pans, it was the custom of the best butter-makers to skim as soon as there was the least sign of acid; generally, the skimming was done daily. The cream may be safely taken off at any time when it is found to be fully separated. The skimming should always be done before the milk "loppers," and so as to have the cream as free as possible from caseous matter. Keep the cream in a clean, sweet place, and give it frequent stirrings to expose all portions of it to the air, and make it of uniform consistency and condition. In shallow setting and a gradual fall of the temperature, the cream will rise slowly and be dense and sometimes, if the air is too dry, leathery. In such case, it is well to run it through a fine sieve to reduce and dissolve all lumps which might otherwise remain solid, and make white specks in the butter. In deep setting, the cream is always more liquid, contains more milk and caseous matter, and is less dense. It needs more airing than cream raised by shallow setting, and seldom makes good-flavored and good-keeping butter if churned sweet. Well-aired cream from shallow setting may be churned sweet, and make deliciously flavored butter, having good keeping qualities. But few are in the habit of churning cream sweet, and the public are habituated to the taste of sour-cream butter. Some even want it to have a fresh butter-milk taste. This requires that a large amount of butter-milk should be retained in the butter, and it is not safe to make such butter, unless it is to be immediately consumed, as it will keep sweet but a short time. But butter churned from slightly-soured cream and well washed, has a fine flavor, keeps well, and generally brings the highest price; hence, it is best to churn the cream as soon as it takes on a slightly acid taste. It should never be allowed to sour enough to cause a coagulation of the cream and a separation of the whey from the solids—a practice followed in some of the Western creameries. Never put a fresh lot of cream into the cream jar just before churning. The chances are that it will not churn as soon as the other, and will

remain in the butter-milk and be wasted. It is quite certain that there is loss of butter from mixing the cream of different breeds, the cream of each having different churning qualities. At all events, the cream should be of uniform condition throughout, in order to secure perfect churning.

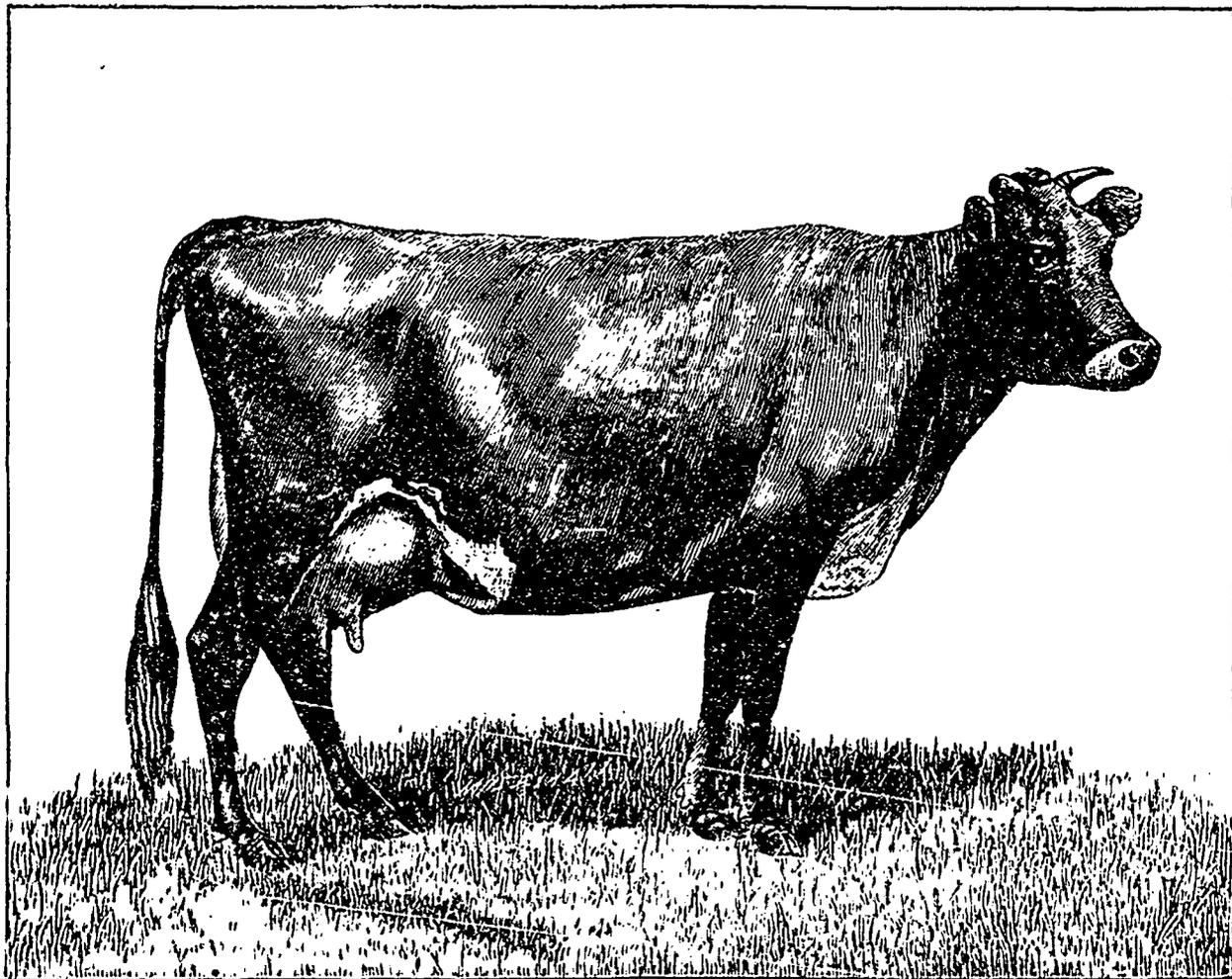
Concentrated Misrepresentation about Pigs.

F. D. CURTIS.

The American Cultivator says that the Poland-China pigs are perhaps the very best to cross with the smaller breeds. The sows are always kind, have large litters, and rear them with less difficulty and

than those of the smaller breeds, for the reason that there is more growth. The Chester-White ranks next to the Duroc-Jersey for crossing. Now for the reasons:—

The Poland-China hogs are the weakest breed in bone and muscle of any of the large or medium breeds. The cause of this condition is found in the close in-breeding and the universal system among the breeders to crowd the pigs with corn from birth. This is the fancy breed of the West, and breeders have tried to outdo each other in piling on fat, and in pushing the hogs until they have gone to the front in numbers and in "perfection," according to the fashionable and deluded



FAITH OF OAKLANDS.

loss than any other breed the writer has tried. The Chester-White and Jersey-Red sows become cross and unmanageable after rearing one or two litters, and it is at this age that a good sow should be worth more to the breeder than she is at any other. The Poland-Chinas are of the large breeds, and are well adapted to furnish the sow in crosses with the smaller kinds.

A more preposterous pig paragraph was never written. The man who wrote it was a Poland-China crank. There is no large breed of hogs which has smaller litters and raises a smaller per cent. of pigs than the Poland-China. The Chester-White and Duroc-Jersey breeds average one-third more pigs born and raised. The best breed of hogs to cross with the smaller breeds is the Duroc-Jersey; although all are good, and the pigs of such crosses will be more profitable

notion of perfection. They get their best qualities from the Berkshire, and are, in fact, three-fourths of that good blood. The excessive condition of fatness which these hogs have been kept in, for years, has begun to tell on them, just as it would on any other breed.

Another thing—they want fresh blood, which the Berkshires get from England, and which keeps up their stamina. The Duroc-Jersey hogs, on the contrary, are full of fresh blood, as they have been bred scarcely long enough in a direct line to have become thoroughly established in all respects. There is no mistake about one thing—they have more vigor, better appetites and growth on coarse food than any other breed, and this is just what the small, fine breeds lack, and the Poland-China hogs are rapidly reaching the same

stato. Simple assertion will not give hogs stamina, or lots of pigs, or large udders; nor will fat.

The assertion that "Chester White and Jersey Red sows become cross and unmanageable, after rearing one or two litters," is very absurd, and proves to me that the writer is blinded by self interest, or an utterer of things he knows nothing about. I have had both Chester-White and Duroc-Jersey sows young and old, and it is not true that they become cross; nor is it true of any breed. There may be instances of this kind in individual sows of any breed; but, as a rule, old sows make the best of mothers. I always keep a well-bred sow till quite old, for this reason.

RAM SALES AND LETTINGS.

HEYTHROP OXFORDS RAM SALE.—On Tuesday last the first of the ram sales of the breed took place at Heythrop, when sixty shearlings, selected from the famous flock of Mr. Brassey, were sold at the Home Farm, Broadstone Hill, Chipping Norton. A large company assembled, but, as the event proved, buyers were few and cautious. The average made was only £8 8s. 2d., as against £14 10s. 6d. last year, and £17 10s. in 1884. Mr. Treadwell gave the top price—32 gs.—for one got by a ram of his own. Next to this in price was one got by Mr. Druce's No. 10, for which Mr. Wright paid 17½ gs. There were only six other double figure quotations, the rest of the sale being mostly "at sixes and sevens." It is to be regretted that Mr. A. Blake, the farm-bailiff, to whose enterprise and insight the high character and position of the Heythrop flock is due, could not be cheered by better prices, seeing that this was his farewell sale prior to his removal at Michaelmas to the charge of the Queen's farm at Osborne.

Wheat—Plowing—Cultivation.

EDS. COUNTRY GENTLEMAN.—The plowing of wheat land has already begun to some extent in Northern Ohio, but the severe drouth which as yet is only partially broken, retards the work, and every one seems to be waiting for a "soaking rain."

There is much to recommend about early plowing, if the operation is followed up by frequent harrowings. This, especially on friable land, that can easily be made mellow, is important, so that the soil becomes both firm and fine before drilling. The harrow cannot follow the plow too closely when the ground is fit to plow. The practice of plowing and leaving the preparation until ready to put in the crop, is one that should be avoided as much as possible in the Western Reserve. The soil, when left in lumps and ridges, seems to burn and bake in our hot August suns, and, unless under very favorable conditions, it calls for much extra labor to get it down smooth and fine for seeding. (1)

When the harrow follows the plow within a few hours, the soil is easily pulverized, and then, if followed by occasional harrowings, the ground is put in its best state for the coming crop of wheat. Especially is this true if top dressing with stable manure is practiced. If this manure is applied to wheat land after plowing, it cannot be too soon incorporated with the surface soil, and the finer condition the better. If they can be kept free from standing water, our best wheat soils are the clayey loams—a soil that is not only quickly responsive to stable manures, but notably so after plowing under a

(1) Won't the first rain of any consequence moulder down the clods like slaked lime? A. R. J. F.

(2) I would never leave a harrowed surface unsown. In most, if not all heavy land it would cake after rain. The U. S. people may not think so, but we English people really do know something about growing fall-wheat A. R. J. F.

crop of clover, the latter practice often making a more marked change in the character of the land than stable manure. (1)

That land may be too well tilled after the crop is in, is possible, but never before, and after close watching of methods and customs, I am convinced that the best half of cultivation can be performed before the crop is up, or large enough to be injured by the harrow. Cultivation is not so much to aid the plants by direct influence as to prevent weed growth, and to keep the surface of the ground fine and free from crusting, and thus give the air a chance to penetrate the soil. As Mr. A. P. Sharp would express it, give the oxygen of the air a chance at the carbon of the soils, and thus produce plant food (2) Since I have been dragging the fields more before planting, and harrowing as long as possible after the corn and potatoes are up, the battle with the weeds has been far less serious, and my crops of better average than when more dependence was placed upon the hoe. T.

THE POULTRY-YARD.

Diseases of Poultry—I.

THE DIGESTIVE ORGANS.

EDS. COUNTRY GENTLEMAN.—There are very many of the diseases with which poultry are troubled, due to derangement of the digestive organs. A slight alteration of the usual course of things may lead to very serious consequences. Hence the necessity for proper feeding, and proper conditions of life. The precise form of the disease depends greatly on the state of the system. If in a perfect state of health, the probabilities are that the disease will pass off in a slight attack of indigestion, but if the body is not in good order, or any of the organs are not acting in the right manner, then some other disease will be developed. It is therefore most important that the first symptoms of digestive derangement be attended to, so as to prevent any more serious state of things.

INDIGESTION.—Many fowls suffer from a form of digestive derangement which is simply indigestion, and which may be cured if taken in time, but like the same complaint in the human subject, if neglected, is very difficult indeed to find a cure for. The symptoms are an indolent appearance, as if the bird were unable to exert itself, and a bad or deprived appetite, generally the former. The food is hardly touched at all, and there seems no desire for a natural diet. The face, if examined, has generally an unhealthy look, and the feathers lose their brilliancy. The droppings are scanty and fetid, though there is sometimes an attack of diarrhoea. The breath is usually bad, and this is one of the best methods of diagnosing disease of the digestive system.

The first step to be taken is to give a mild aperient with the view of removing anything from the bowels or intestines, as sometimes a slight obstruction is the exciting cause. Six hours afterward an ordinary rhubarb pill may be administered, followed by the same at intervals of two days, for a week. I have also known very great good results from the use of homoeopathic medicines. The right ones to use for indigestion would be, when there is an apparent sickness, *nuxvomica*, and when there is a dizziness, *chamomilla*. In both cases the dose should be two drops of No. 3 tincture in a wineglassful of water, and a teaspoonful of this given three times a day. The food should be limited, and of the plainest

(1) Oh, dear me, I suppose I shall never make people understand that the roots of the clover contain the real plant-food. A. R. J. F.

(2) Isn't there enough carbonic acid in the air to suit Mr. Sharp? A. R. J. F.

nature. It is better cooked. A little green food may be given, and some powdered charcoal can, with advantage, be mixed with the soft food. This complaint is very apt to return, and thus it is very necessary to be most careful in the feeding of birds that have been once affected with indigestion.

DIARRHŒA.—The pre-excitng causes of this complaint are very numerous indeed, and it is impossible to enumerate them all. But fortunately the thing itself is so apparent that no one who takes the slightest interest in his stock can fail to discern it at once. The most frequent causes are improper feeding, and cold, and the presence in the intestines of some irritant. It is desirable, however, to note here that the slight looseness, by means of which nature sometimes corrects herself, should not be stopped. This is often the prevention of a serious disease, and the use of some strong astringent would be productive of very serious harm. Unless, therefore, the diarrhœa continues and increases it is not advisable to stop it. I should first suggest the use of bone meal mixed with soft food; this is not useful as a cure, but is a great preventive of diarrhœa, especially with chickens, and it should always be mixed with the soft food given to them. Boiled rice in which some powdered chalk has been mixed is also very useful in the earlier stages. If neither of these are successful, stronger measures are necessary. I have been most successful with chlorodyne, giving two drops in a teaspoonful of water, twice or thrice a day. This is usually effective in stopping the progress of the complaint. Failing that, a pill may be given, composed of a grain of opium and five grains of rhubarb. The fowl should be fed entirely on soft food, and have very little green meat after the diarrhœa has passed away.

DYSENTERY.—This is really an aggravated form of diarrhœa, and often follows the neglect of it. The symptoms are the same, only in a worse degree, and the evacuations are generally tinged with blood. The first object must be to stop the discharge, and for this purpose five drops of laudanum should be given, mixed with the same quantity of fluid carbolate twice a day. The food should be rice well boiled, and the sufferer must be kept warm and dry. It is only fair to say that dysentery is very difficult indeed of cure.

LIVER DISEASE.—I have, in a previous article, (Sept. 18, 1884), gone so fully into the causes, &c., of this disease, that it is not necessary for me to do so again. But for the sake of those who have not seen the article referred to, I may just give the causes, symptoms, and cure in a very brief manner. There can be no doubt that liver disease is hereditary, but it can also be induced, chiefly by feeding on too rich foods, and by improper conditions of life. I am firmly convinced that the great increase of liver disease in this country of late years has been due greatly to the use of maize or Indian corn. This grain, strong as it is in the fat producing elements, is far too rich for poultry-feeding, causing the development of internal fat, which is in itself an incentive of disease. For this reason I am strongly opposed to the free use of this grain. The symptoms of liver disease are, a moping about on the part of the birds, an irregular appetite, and there is generally a yellowish hue on the comb, face and wattles. The best treatment is to give some aperient medicine, preceded by a couple of grains of calomel every other day. The homœopathic tincture of podophyllum is also a most useful remedy for this complaint, and can be used after the first dose of the aperient and calomel. It is hardly necessary to say that all rich food must be abandoned at once, and the fowls put on the plainest diet, the healthy as well as the affected fowls.

GASTRITIS.—This is inflammation of the stomach, and is a very dangerous disease, running its course very rapidly. The causes are over-stimulating food, poisons, irritants in the

stomach, or internal injuries. The symptoms are not easy to enumerate, as many of them apply equally to other diseases, but they may be stated as intense thirst, constipation, quick breathing, and prostration. To allay the inflammation, the best medicine is homœopathic tincture of aconite, which should be given four or five times a day. A little salad oil is useful to overcome the constipation, and this may either be given in the usual way or be injected. The food must be good and nutritious, and to allay the thirst, lime water and milk may be given.

ENTERITIS.—The result of post-mortem examination shows that a large number of animals die every year from this disease, which is inflammation of the bowels. The causes are the same as in gastritis, and the external symptoms are not very different. The most noticeable is that there is an absence of retching, which is generally present with the former, and the bowels are alternately loose and constipated. The same treatment can be used with the exception of the lime water which should be omitted.

STEPHEN BEALE.

H—England, Sept. 28.

VALUE OF THE SILAGE SYSTEM.

EVIDENCE FROM GLOUCESTERSHIRE.

The Agricultural Department of the Privy Council has issued a return of replies to questions relating to silos and ensilage which were put by that Department to persons who have silos in Great Britain. The questions, amongst other matters, dealt with the number, dimensions, and drainage of silos, their materials, the crops put into them, their compression, and their condition on being opened, together with the results of feeding stock on ensilage. From these replies, it appears that the number of silos in Great Britain is 1183, varying in capacity from 96 to 55,440 cubic feet. Various materials are used in the construction of silos. They are below, partly above, or entirely above the surface. The cost varies greatly, from a merely nominal sum to upwards of £400. Meadow grass, clover, trifolium, and aftermath have been generally preferred for ensilage crops. Various modes of compression are adopted. The evidence tends to show that the cost of making ensilage is less than that of making hay. The results of feeding cows on ensilage are, on the whole, satisfactory, and almost unanimous testimony is afforded as to its favourable effects on the health of stock. Several witnesses remark that the chief advantage of ensilage is that it enables farmers to grow and preserve two green crops in the same season on the same land. Experience has taught most ensilers the importance of keeping silage out of the cowhouse at milking-time, of requiring men who have handled silage to wash their hands before milking, and of removing the milk as quickly as possible from the cowhouse. Such precautions against the tainting of milk are not necessary where sweet silage only is made. The following summary of the opinions of witnesses who have tested the effects of silage upon the quantity and quality of milk and butter produced by cows fed on it is as conclusive as evidence could well be in favour of the system of ensilage:

	Milk.	Butter.
No change.	22	1
Improved in quantity and quality.....	95	18
Decreased quantity and deteriorated quality....	1	—
Increased quantity.....	93	13
Decreased quantity.....	5	2
Improved quality.. ..	34	26

Deteriorated quality	5	3
Improved quality and decreased quantity.....	4	—
Increased quantity and deteriorated quality.....	5	—
Favourable results (whether in quantity or quality not stated).....	30	15
Unfavourable results " "	—	1
Total number of opinions	294	79

The agriculturists in this county who have furnished returns were:—Mr. E. Burges, Chipping Sodbury; Mr. J. W. Cadle, for Lord Sherborne, Bibury; Mr. J. E. Dorington, Lypiatt Park, Stroud; Mr. J. H. Elwes, Colesbourne; Mr. W. James, Rodborough; Mr. E. Egerton Leigh, Broadwell; Mr. B. Perry, Tidenham; Mr. J. Peter, for Lord Fitzhardinge, Berkeley; Rev. A. Pontifex, Yale; Mr. T. Porter, Baunton; Mr. J. Taylor, Rendcomb Park; Mr. E. W. Trinder, for Mr. T. W. C. Master, Cirencester; and three unnamed returns. In the first case the silo was a converted horsepond, and its contents were "all sorts," including rough grass, nettles, &c. It cost 3s. a ton cutting, carting, and pressing. (Hay in favourable times is set down as costing 12s. 6d.) The condition of the silage was good, and the feeding results most satisfactory. In the next case there were two silos, made by the landlord, and the stock did well. Mr. Dorington had three silos. The grass, &c., was very wet. The silage was much liked by cattle, and was excellent as a mixed food. The cattle did well, and the grass went much farther as silage than as hay. Mr. Elwes had six large silos. He considers the cost of carting and storing higher than making hay, but the results are greater and more certain. The general effect of the feeding was perfect health. He has this season filled five of the above silos and two new ones, though the haymaking was better than for many years past. With the certainty of a very short root crop he considers the contents will be of even greater value than in 1884-5. He can winter 160 head of cattle and 1200 sheep on the contents of these silos, without any roots or cake at all, and will be able to keep half his hay over, or sell it if he wishes. Mr. James had two silos. The total cost was about the same as making hay in fine weather. The cows did well; quantity of milk good, about the same as with hay, roots, cake, and meal, but much richer in cream. The health of the stock was good. He found grass or clover taken from rich soils did not keep its colour so well as crops taken from poor thin soils, poor materials coming out brighter than richer kinds. And he adds the surprising statement that twenty cows were the same time eating sixteen acres of hay as they were in consuming four acres of clover silage, although they had roots and cake with the hay and none with the silage. Surely there must have been a very light crop of hay and a very heavy one of clover to give such a tremendous difference in feeding capability. Mr. James also remarks that sweet silage does not keep on exposure as well as sour silage. That is true, because deterioration has done its worst in the case of the sour silage, and has not commenced previous to exposure in that of the sweet silage. Mr. Leigh had one silo. He only fed cows with the silage. The quality of the milk was much improved. The cows have never done better than in the two winters he has used ensilage. He thinks the ensilage may be too much squeezed. This year it (1) was lighter per square foot than last year, and it was much better. Mr. Perry with one silo of 25ft. by 18, by 12, filled it with unchaffed meadow grass. The weather was rainy during part of the filling. The milk was of better quality, but not quite so much in quantity as with roots. Health the same as usual. He intends trying this year a stack with Amos and Hunt's pressing gear. Mr.

(1) // means, I suppose, the pressure.

J. Peter had three silos made by the landlord, at a cost of £25. Thirteen acres were siloed, weight 53 tons, the labour with horses reckoned at 6s. a-day each cost £11 6s. The cows were very fond of the ensilage, the quantity and quality of the milk and butter was the same as with hay and roots. The health of the stock was good. Rev. A. Pontifex, with one silo at from £25 to £30, made by the landlord, found six heifers did well on the silage with hay once a day through the winter. He thinks farmers would do wisely to grow oats and other green crops suitable for ensilage, and feed more stock. Mr. T. Porter had the end of a barn walled off by his landlord. He did not see any difference in the stock with the silage which was given with chaff, and their health continued good. Mr. Taylor had two silos, built by the landlord; cost £76 8s., and £24 for iron roof. The weather was showery and wet when the silage was put in. Dairy cows and store stock did well. Mr. Trinder had four silos. The cattle thrived upon the ensilage. The dairy rations were about 20 lbs. each with straw and hay chaff. The grass was out when very young, and the ensilage made in one silo from clover and rye grass was much the best. The three unnamed returns are equally favourable. One adds—I consider ensilage cut into chaff after being taken from the silo, and mixed with straw chaff the day before consumption, causes the latter to be more palatable and digestible, and is certainly stimulating and nourishing.

It seems to be pretty clearly established that with most moderate-sized and large farms the setting up of one or more silos, the size and position of which must be determined by local circumstances, would be a most useful means of supplementing the profits of the farmer, as he may thereby be rendered practically independent of the weather, and may be provided with an increased amount of winter keep by silaging the aftermath and rough stuff which abounds in odd corners of most farms and in the neighbouring lanes. Probably the Agricultural Department of the Privy Council never rendered a more important service to agriculture than in publishing this series of replies to the questions they issued in regard to silos and ensilage. The importance of the practical results arrived at can scarcely be overrated. We commend the volume to those farmers who have not yet taken up the question. It may be obtained through any bookseller from Messrs. Eyre and Spottiswoode, East Harding-street, Fleet-street, for 1s. 8d. The concluding words of the summary drawn up by the Department are cogent and convincing:—"Of the importance of ensilage as an auxiliary to other food for animals, whether for dairy, store, or young stock, among cattle as well as other kinds of stock, there can now be scarcely any doubt, if the sum of the aggregate results of the replies recorded may be taken as a guide. If the rate of the development of the system shown in the past year proceeds as rapidly in the future, it appears probable that it will be far-reaching in its effects, and that farmers will be, by its adoption, in considerable measure compensated for the loss which they sustain in bad seasons for haymaking, while the importance of the statements to the effect that a larger number of stock can be kept on land where the method of ensiling crops, even of an otherwise unpromising kind, is practised, will hardly fail to receive attention."—*Gloster Chronicle*.

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A HARD FATE

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