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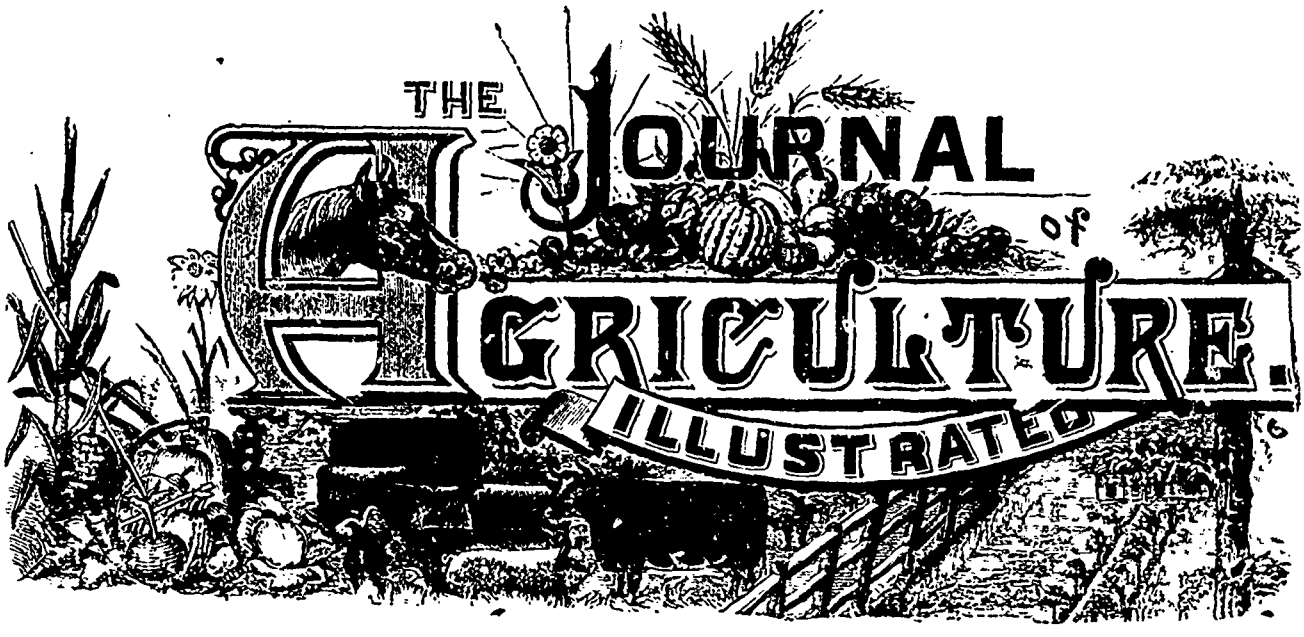


Published for the Department of Agriculture for the Province of Quebec, (official part) by
EUSEBE SENECAL & FILS, 20, St. Vincent St. Montreal.

Vol. XII. No. 10. MONTREAL, OCTOBER 1890. $1.00 per annum, in advance.

NOTICE.—The subscription to the *Illustrated Journal of Agriculture*, for members of Agricultural and Horticultural Societies, as well as of Farmers Clubs, in the province of Quebec, is 30c annually, provided such subscription be forwarded through the secretaries of such societies.—EDITORIAL MATTER. All editorial matter should be addressed to A. R. Jenner Fust, Box 109, Lachine, Que.—or to Ed. A. Barnard, Director of the *Journals of Agriculture*, &c., Quebec.

OFFICIAL PART.

Table of Contents.

Deliberations of the Council of Agriculture. May 28th, 1890.

Copy of the report of a Committee of the honorable Executive Council, dated the 8th September, 1890.

No. 411: concerning certain proceedings of the Council of Agriculture.

The Honorable the Commissioner of Agriculture and Colonization, in a report dated 3rd September 1890, recommends that the resolutions of which copy is annexed to the said report adopted by the Council of Agriculture, dated the 28th May, 1890, be approved by the Lieutenant Governor in Council, in accordance with article 1614 of the Revised Statutes. Certified

(Signed) GUSTAVE GRENIER,
Clerk of the Executive Council.

The "Resolutions" approved of by the above mentioned *Order in Council* are the numbers 3, 5, 7, 9, 10, 11, 17, and 19 of the following deliberations.

ED. A. BARNARD,
Sec. Council of Agri.

The Council of Agriculture met at 10 A. M.; the president in the chair.—Present: Col. the Hon. W. Rhodes, Commissioner of agriculture, etc., the Hon. Messrs. Joly de Lotbinière, President of the Council of Agriculture; Ouimet, superintendent of public education, and L. Sylvestre; Messrs. W. Blackwood, A Casgrain, E. Casgrain, Descarries, Guilbeault, Marsan, Ness. Péloquin, Ricard, Ritchie, and Valois. Were also present, Dr. J. A. Couture, veterinary-surgeon to the Council, and M. Nagant, assistant-editor of the *Journal d'agriculture*.

The deliberations of the last meeting were read and approved.

A letter of excuse for not attending the meeting, from M. Morier, M. C. A., was read and accepted. The Hon. F. Dionne was also prevented, by a serious accident, from being present.

No. 1.—Proposed by M. G. Ouimet, seconded by M. Tarte:

That the Council of agriculture desires to express the profound regret caused to all its members by the death of the Hon. Louis Archambault, whose long services to the cause of agriculture deserve to be acknowledged by the whole province with sincere gratitude;

No. 2.—That the Council has learnt with deep grief the death, in the far East, of Mr. Charles Gibb, of Abbotsford, while he was labouring at a work to which he had devoted both health and fortune; the work of providing Canada

with the most useful fruit trees that Europe or Asia can supply; and believe that his memory should be preserved with gratitude in all parts of the Dominion of Canada. (Carried.)

No. 3. — Proposed by Mr. Ritchie, seconded by M. Descarries :

That, at its session of the 25th February last, the Council of agriculture passed a resolution, No. 11, to the effect that the agricultural associations be obliged to pay the veterinary-surgeons called in to testify to the soundness of the stallions at the exhibitions, and that their fees be not in excess of $10 a day for these examinations;

That his Honour the Lt-Governor has not thought fit to approve the said resolution by order in Council; that this Council humbly prays his Honour to again consider the resolution in question, and to give his approval to it;

That by this means, the agricultural societies will encourage the competitors, and fulfil the promise they gave their subscribers at a time when they were firmly convinced that this resolution would be certainly approved.

No 4.—The request of several persons interested in the payment as soon as possible of the grant in favour of the agricultural society of St. Maurice having been submitted to the Council, it was unanimously resolved that the Commissioners be requested to hasten the inquiry that the Council of agriculture recommended at its last meeting.

No. 5.—Resolved to grant the request of the society No 1 of Lake St. Jean to be allowed to give to its members the amount of their subscription in seed, deducting the cost of freight, and in consideration of the special conditions in which this newly established society is situated; but this permission is only for the present year, and must not be converted into a precedent.

No. 6.—The request to be allowed to form a second society at Lake St. Jean is reserved for consideration at the next meeting of the Council.

No. 7.—The existence of the society No 1 of Chicoutimi is recognised and approved, provided that its programme be in accordance with the resolutions of the Council.

No. 8.—The request for exemption from the competition for the best cultivated farms, made by the Society No 2 of Huntingdon, is reserved for further consideration.

No. 9.—It is resolved that the Society No 1 of Montmorency shall now receive its grant, in proportion to the *bonâ fide* subscription of its members; and that to the present directors be sent copies of the declaration made to the secretary of the Council by the ex-secretary of the society and some of its directors.

No. 10.—The Council having considered the request of the directors of the agricultural association of Portneuf decided, that this society be permitted to allow each of its directors who live more than 15 miles from the head-quarters of the society a sum not exceeding 50 cents for the cost of this journey to any of the meetings of the board of directors.

No. 11.—Proposed by Mr. M. Ness, seconded by Mr Ritchie.

That it is highly desirable that a school of agriculture be, without any delay, established in the Eastern-Townships, and that the Hon. Commissioner of agriculture be respectfully requested to forward the intentions of this resolution.

No. 12—The Hon. L. Sylvestre laid on the table the Programme of the regional exhibition of the counties of Berthier, Joliette, Montcalm, and l'Assomption.

No. 13.—The new society No 5, of Gaspe, authorised by a special statute at the last session, is recognised and authorised by the Council.

No. 14.—In reply to the request of the agricultural society of the county of Stanstead, the Council suggests to that society that it choose between the old regulations of the Council and those of the Competition of Agricultural Merit, the printed regulations of which are to be forwarded to the said society.

No. 15.—At the request of Jos. Coulombe and others of St. Norbert de Berthier, M. O. Casgrain gave notice that, the next session, he will pray that the time fixed for the shearing of those sheep that are intended to be shown at the exhibition, be fixed for the 1st April instead of the 1st May.

No. 16.—The prayer of Dr Daubigny having been read, its consideration was postponed to the next sesssion.

No. 17.—With reference to the prizes paid over by the society of the county of Bellechasse to the owners of those stallions condemned, as not being sound, by the farrier (*veterinary ?*) M. Hard, the Council orders that the amount paid must be returned by the society to the Council of agriculture; and that, in future, the society must conform to the rules under pain of loss of its grant.

No. 18.—M. Marsan moved: that the following declaration be added to the programme of the regional exhibition of Berthier, Joliette, Montcalm, and l'Assomption, which has just been laid before the Council by the Hon. L. Sylvestre.

To the Hon. H. G. JOLY DE LOBINIÈRE,
President of the Council of Agriculture
of the Province of Quebec.

Mr. President,—I have the honour to inform you that the name of the county of l'Assomption, mentioned in the programme of the regional exhibition of the counties of Berthier, Joliette, and Montcalm, and laid before the Council of agriculture, can only mean that the county of l'Assomption is taking a joint part in the said regional exhibition, it having, previous to the adoption of the said programme, taken the initiative in an important exhibition, open to nine counties, including those above-mentioned, the programme of which is now in the press, in conformity with a resolution of the Board of directors of the society of the county of l'Assomption, which resolution forms a part of the documents of the Council of agriculture.

I have the honour to be, Mr. President,
Your very obedient servant,
(Signed) J. J. A. MARSAN,
Sec. Treas., S. A. C. L.

On a division, this motion was rejected.

No. 19.—It was resolved, that the agricultural society of the county of Saguenay, may organise itself by parishes, provided that the directors appointed for each parish meet at the central office at the dates fixed by the law, and that they obtain the approval of their programme by the Commissioner of Agriculture, and by this council as the law ordains.

No. 20.—The committee appointed to arrange the Provincial competition of Agricultural Merit presented its first report containing the programme and all the regulations of the competition, which report was approved.

No. 21.—Resolved unanimously: that the Hon. G. Ouimet, and Mr Tarte be added to the committee on schools.

No. 22.—The secretary to the Council reported that, in virtue of the resolution 42 of the deliberations of the Council, dated February 25th, 1889, he had begun the revision of the deliberations of the Council, and reported progress.

And the Council adjourned.

Certified true copy.
(Signed) ED. A. BARNARD,
Secretary of the Council of Agriculture.

STRAWBERRY CULTURE.

We reproduce elsewhere an excellent article on this subject written by Mr. T. B. Terry for the Country Gentlemen. We have since received a very valuable little book from the same

author "A B C *of strawberry culture*," for farmers, village people and small growers. A book for beginners" (Published by A. J. Root, Medina, *Ohio*, by mail 40 cents). Few writers are more concise, thorough and fascinating than Mr. Terry, one of the most practical agriculturists in the States. Mr. Terry's excellent practice is always and surely based on true science, at least such seems to be his constant aim. May he write many such valuable little books, on agriculture, as we have just perused with such pleasure, on strawberry culture.

ED. A. BARNARD.

DE OMNIBUS REBUS.

Export-sheep.—I think we must really make some exertions tending to an alteration in our breeds of sheep. I see by the market reports that in London there is a difference of three and a-half cents a pound between the best English and the best Canadian sheep: the former are worth 17½ cents, and the latter, 14 cents, a pound, equal to about $3.00 a head on the average sheep. And so it will be until we get rid of the white-faced, long wool breeds. No first-rate butcher will look at a Cotswold or Leicester wether; ewes, unless they are "maiden ewes," they absolutely reject, and nothing but Downs, or, at any rate, Down crosses, will suit their trade: and even they *must* be wethers. As for rams, even though they be lambs, they never touch them. All such inferior animals go to the manufacturing towns, or to the lower class butchers of Whitechapel and other baser districts of London, and of course fetch but unsatisfactory prices. Our export sheep must, to pay our dealers, be of a certain size, or else freight charges will be heavier; and yet, to suit the trade, they must not be too large. A Hampshire-down of about 20 lbs the quarter, is the every thing we want, and that can be secured, from properly selected parents, at 16 months old. The growth of these sheep during the first six months of their life is something positively marvellous. So quickly do the lambs grow, that in April they begin to approach their mothers in size, and by the middle of August they not infrequently are sold to the butcher at from $15 to $17 a head. The last time wether-lambs were sent from the Downton College-farm to Britford fair, Mr. Wareham, butcher, of Bournemouth, paid 73 shillings=$18 a head for the whole lot! This was on the 12th August, 1882; since which date no lambs of this flock have been castrated, as they are disposed of, as ram-lambs, at the same age, and after no greater expenditure than was previously lavished on the wether-lambs, at from $25 to $100 each.

The annexed reports of sales and lettings of the ram-lambs of this breed are worth our attention:

The annual sale and letting of the Winterbourne Stoke lambs, belonging to Messrs. C. and T. Coles, took place at the home farm on Friday last, Messrs. Waters and Rawlence being the auctioneers. Five lambs were first let at from 10 gs. to 26 gs., or an average of £19 10s. 6d., Mr. Dibben hiring No. 2 at 26 gs., Mr. Dredge No. 5 at 23 gs., Mr. S. J. Taunton No. 3 at 18 gs., Mr. R. E. Coles No. 1 at 16 gs., and Mr. M. Wallis No. 4 at 10 gs. The majority of the ninety ram lambs offered for sale were disposed of at prices ranging from 5 gs. to 30 gs., Mr. J. Dean giving the top figure, the other buyers being Mr. Besent (for Lord Ashburton) at 11 gs., 10½ gs., 9½ gs., &c.; Mr. R. E. Coles at 12 gs. and 11 gs; Mr. E. J. Bennett at 11 gs. and 9½ gs.; Mr. E. C. Pinckney at 17 gs. and 11½ gs.; Mr. C. Notley at 13½ gs. and 8 gs.; and Mr. C. Waters at 14 gs. Six shearling rams sold at from 5½ gs. to 7½ gs., the average of those let and sold being £8 5s.

Mr. W. C. Young's ram lambs and rams from his highly-bred Hampshire Down flock at Stratford sub-Castle were let and sold by auction by Messrs. Waters and Rawlence at Salisbury on Monday. Owing to the wet weather the attendance was less than usual, and the sheep did not show off to so much advantage as they otherwise would have done, but still there were all those good points about them which are so much prized by those breeders who value early maturity, producing wonderfully heavy flesh and wool. Six ram lambs averaged £12 12s., the highest prices, 22 gs. and 20 gs., being given by Mr. Dibben and Mr. C. Waters respectively. Seventy-one lambs were sold out from 5 gs. to 16½ gs., Mr. J. R. Taunton giving the latter figure, among the other buyers being Mr. Mattick (for Mr. Henry Harris) at 10½ gs., Mr. S. J. Taunton at 13 gs.

Crops in England.—The first lot of wheat from the crop of 1890 was sold on the Mark Lane, London, market on the 8th August.

Though the heavy storms of July laid a great deal of the very luxuriant crops of wheat in many districts, they did not do the damage that was expected; in fact, very little hand-reaping—a very expensive job—will be required, as there are very few places where the machine cannot do the work. On the whole the crop seems to be likely to turn out quite an average yield. When an English tenant-farmer returns his crop as an average one, you may be pretty certain he does not over state it!

District.	About ordinary yield. Qrs.	Harvest Promise.
Northern Counties	1,000,000	Full crop.
Eastern Counties	3,500,000	
Home & Southern Counties	2,000,000	More or less under an average.
Western Counties & Wales	1,250 000	
Midlands	1,750,000	

So far as the Midlands are concerned this estimate is not borne out by the review of the situation given us by Mr. Gilbert Murray, of Elvaston, Derby, and we think that this district should be put among those which promise to yield full crops. In that case we may say that full crops are expected over an area which on the average produces 6,250,000 qrs., and poor or under-average crops over an area which gives us 3,250,000 qrs. We are inclined to think that this will be somewhere about the mark; but, of course, everything depends on the weather. A continuance of the splendid weather of yesterday might give us a wheat harvest of very nearly an average.

So, you see, I had some reason, when I wrote last on this subject, to say that I would rather wait a while before I accepted the statement made in the United-States' newspapers: that the English wheat-crop was an utter failure. The weather in England during the in-gathering month of August has been a good deal broken, but, on the whole, not unfavourable for the harvest.

A good deal of disease in Ireland among the potatoes, but, here again, we must not jump at conclusions. Speculation and politics may have a good deal to say about the matter. In England, the disease has made its appearance in many districts, but the crop is a very heavy one, and will bear some discounting. Oats, barley, beans, and pease, are good all over the country.

Hay was not a large crop originally, and a good deal of it was "badly got" or "partly spoilt." Turnips, mangels, and other root-crops are very good, and as straw is superabundant—both of oats and barley—there will be lots of cattle-food in spite of the inferiority of the hay-crop.

CORN CROPS, 1890.

	Wheat.	Barley.	Oats.	Beans.	Peas.
Over average	46	98	125	103	58
Average	140	139	139	66	78
Under average	80	25	20	14	23
Total	266	262	284	183	159

PERCENTAGES, 1890.

Over average	17.3	37.4	44.0	56.3	36.5
Average	52.6	53.1	49.0	36.1	49.0
Under average	30.1	9.5	7.0	7.6	14.5
	100	100	100	100	100

HAY, POTATOES, AND ROOTS, 1890.

	Hay.	Potatoes.	Turnips.	Mangels.
Over average	78	95	143	91
Average	88	98	94	102
Under average	120	66	42	49
Total	286	259	279	242

PERCENTAGES, 1890.

Over average	27.3	36.7	51.3	37.6
Average	30.8	37.8	33.7	42.2
Under average	41.9	25.5	15.0	20.2
	100	100	100	100

Newly cleared land, or as M. Caron expresses it, *les abattis,* has no weeds. And why do no weeds grow in newly cleared land? I suppose it is, because there are no weed-seeds to start into life. Whence come, then, the innumerable weeds that we see on this land a few years after clearing? Birds of course bring some, others the wind deposits, and the first ploughing no doubt brings up many seeds that had previously lain inert for want of the vivifying power of the air. Still, if land is originally clean, nothing but the neglect of cultivating hoed-crops, at frequently recurring periods, will account for the terrible state in which we find the majority of fields in this province. Ah! yes, by the bye, there is another powerful cause of the foulness of our farms: the dung-cart! Who turns up his dung to heat? One man in ten? No, not one farmer in a hundred!

A very marked proof of the injury done to land by the neglect of turning up manure to heat is under my eye as I write. A small strip of land on a neighbouring farm was manured last year in two divisions: one division was treated with dung from the horse-stable in which hay had been largely consumed; the other, with manure from the cow-stalls, in which nothing but straw was used. The latter division is, comparatively free from weeds; the former, though kept perfectly clean during the summer—it was in pease and carrots for the table—, the moment the heavy crops were off and the moist weather came, threw up a splendid crop of wild-timothy—*mil sauvage*—and other grasses,(1) all of which, it is fair to suppose, were derived from seed grown in the hay-crop used in the horse-stables, and thence transported in the dung to the field in full force of reproductive power.

You see, I am rather sore about this, for the man who carted the dung for me on to this piece of land—it is my own field-garden I am speaking of—told me he had turned up the dung himself, and that it had heated well: which clearly wasn't true!

Compton and Hatley.—Mr. Robertson, of Hatley, a large farmer, tells me that the hay-crop of his district was not by any means a good one, except in the case of the new grass. The other crops, especially oats, are not much to brag of.

Dawes' farms.—These farms saw the harvest concluded—except buckwheat—on the 20th August: a tantalising sight for their neighbours on each side, who won't finish before the 10th September!

The root-crop, Mr. Tuck, the foreman, tells me, is the best he has had since he has been here—16 years—. The carrots—red and Belgian—and the mangels—orange-globe—are really superb. The potatoes that made such promise of a yield are, I regret to say, likely to run small, and won't fill the bushel. No disease apparent yet; but on the low lands I hear terrible reports of its ravages.

One marked feature of the root-crop is the enormous tops of the swedes! I do not know where the seed was *grown*, but the seedsman, whoever he was, should take care in future not to send out such stuff. (1)

The sainfoin, where it was not destroyed by the alternate frosts and thaws of last winter, is gathering together fast, and will most likely cover the ground well next year, and the perennial red-clover has been very useful for the cows—mown green—all the summer; in fact, Mr. Tuck told me the other day he should not have known what to do without it.

As for the silage-corn, that has been a good deal laid by the heavy winds and rain, but it is a magnificent crop.

A 14 horse-power portable engine has been bought for the use of these farms. A good investment, of course, but an 8 horse power would have been quite large enough, and although the horses are powerful enough to draw anything in reason, there is no good in having carriages too heavy for the roads. I have seen the culverts under gateways broken down by too heavy engines, and the machines come to grief in consequence. The English 2-rowed barley, sown as an experiment, was unfortunately devoured by the brood-mares and their foals. A very unusual accident here, as nothing can exceed the care shown by the foreman in keeping fences in good order and all stock in their proper places.

Price of cheese.—I see by the reports that cheese is up ½ a cent a pound, best being worth wholesale 9 cents.(2) Taking advantage of this rise, my grocer in Montreal has put his price—retail—up 5 cents a pound, as he charged me 25 cents for "Canadian Cheddar" on the 29th August! I still think 177 % rather too large a profit, particularly as I pay ready money for every thing!

Wheat in the West.—The poor people in the much be-landed state of Iowa are, certainly to be pitied:

BULLETIN No. 6, AUGUST, 1889.

Experiment Station wheat and oats in 1889, R. P. Speer (pp. 199-203).

"*Wheat.*—From the effects of rust, blight, chinch-bug, *deterioration of the soil,* and other causes, the wheat crop in Iowa has declined from an average of 20 to 30 bushels per acre twenty years ago to not more than half that amount now. The people of Iowa are compelled to send to Minnesota and Dakota for large quantities of breadstuffs. The Iowa Station is, therefore, endeavouring to find hardier and more productive varieties of which may be profitably grown in that State. In 1888 rust and blight rendered the experiments with twelve varieties of no avail."

The conclusion I should arrive at after this experience is

(1) *Mallows* by the thousand.

(1) It is barely possible that the enormous dressing of dung and the superabundance of moisture may have had something to do with this excess of leaf. A. R. J. F.

(2) Up again another ½ cent. Sept. 20th.

that: sowing wheat on the same land, year after year, as practised in "the great wheat-fields of the West," is not a profitable proceeding in the long run; that the climate of Iowa is not adapted to the growth of wheat, and that some other crop might profitably take its place. When at Sorel in July, I was glad to see that my friends, who had persistently sown wheat on that very light soil for many years, had at last found out that it paid them better to grow oats and barley and to buy their flour, a conclusion I arrived at on inspecting their farms seven years ago. To aim at growing everything consumed by the farmer's family in his own fields, is one of the greatest mistakes a man can be guilty of.

By "deterioration of the soil," I presume the writer of the report means what we English farmers call the wearing out of the soil by repeated grain crops. Skimming over the land 4 inches deep, and sowing grain year after year on the same piece, will cause any land to "deteriorate," and this is precisely what is being done in our Canadian N.-West, to say nothing of the province of Quebec. Why, when I was seduced into taking a farm at St. Hugues, and wondered at the poverty of some of the soil, I was told by the previous occupant: But, Sir, how can you expect even with your method of farming to get a crop of grain out of this field? Why, I myself sowed oats in it 22 years in succession!" Now, do consider for one moment: the wheat-crop in the comparatively new, fresh soils of Quebec and Ontario does not average 14 bushels an acre; the wheat-crop of the States averages about 12 bushels an acre, certainly not more; and the supposed "utter failure" of the English wheat-crop this year will certainly turn out 29 bushels an acre. And, remember, whereas we pick and choose our soils for wheat, the English sow theirs everywhere, and if the land is not *naturally* suited to that crop, they make it fit to bear wheat by artificial and mechanical means.

As I went down to Sorel by the Trois-Rivières boat, and in a fine summer's afternoon approached the Richelieu river, I saw on the South bank of the St. Lawrence a stretch of land that forcibly brought to my recollection Crabbe's description of the "blowing" sands of his much-loved Suffolk:

From thence a length of burning sand appears,
Where the thin harvest waves its withered ears;
Rank weeds, that every art and care defy,
Reign o'er the land, and rob the blighted rye;
There thistles stretch their prickly arms afar,
And to the ragged infant threaten war;
There poppies nodding, mock the hope of toil;
There the blue *bugloss* paints the sterile soil; (1)
Hardy and high, above the slender sheaf,
The slimy mallow waves her silky leaf;
O'er the young shoot the *charlock* throws a shade, (2)
And clasping *tares* cling round the sickly blade. (3)

"*Thoroughbreds.*"—M. Couture, the well known veterinary surgeon, speaking of the improvement of Canadian horses, strongly recommends the employment of Norman stallions. "The Norman horse," says he, "the finest of all the French breeds, is indebted for its beauty, its carriage, and its free action, to the English thoroughbred. The improve- of this breed dates from 1780, at which period the French government instituted the system of crossing Norman mares with thoroughbred English stallions for the production of remounts for the cavalry. Up to the year 1840, this plan was more or less followed out, but since that time, the importation of English horses has fallen off, half-bred stallions, as they are called in Normandy, having been partially employed. These half-breds are, of course, descendants of the original cross, and therefore partake largely of the pure blood.

"The improvement of the Normans is due to *Young Rattler*, a *Norfolk trotter*, more than to any other imported thoroughbred. To him is due the elegance, the lofty crest, and the showy action displayed by these horses, and his descendants are the most sought after for the stud In short, almost all the good qualities of the Norman horse are due to its descent from the English thoroughbred."

I perfectly agree with M. Couture in his opinion of the immense benefit derived from crossings with the English thoroughbred. By the bye, was *Young Rattler*, a portrait of which horse I saw many years ago, pure-bred? He was, judging from his likeness; a powerful animal, with a splendid shoulder; but I never yet saw a thoroughbred that had any trotting action. They all go too close to the ground for anything but galloping. (1) The celebrated Norfolk hacks are certainly not thoroughbred. Still, it is very possible that the horse in question though not a trotter himself, may have got trotting colts out of Norfolk mares.

And what is a thoroughbred? The Stud-book must settle the question, but in brief, a thoroughbred must trace his pedigree, without recent crosses, to some one of the Eastern stallions imported into England during the 17th and 18th centuries. It is almost incredible that only two hundred years ago, the native horses of the island when held in such small esteem that they were valued by such statists as King and Davenant at not more than fifty shillings each! "Foreign breeds," says Macaulay, "were greatly preferred. Spanish jennets were regarded as the finest chargers. Neither the modern dray-horse, nor the modern race-horse was then known." But a change was about to take place. "The ancestors of the gigantic quadrupeds, which all foreigners now class among the wonders of London, were brought from the marshes of Walcheren: the ancestors of Childers and Eclipse, from the sands of Arabia. Two men whose authority on such subjects was held in great esteem, the Duke of Newcastle and Sir John Fenwick, pronounced that the meanest hack ever imported from Tangier would produce a finer progeny that could be expected from the best sire of our native breed. They would not readily have believed that a time would come when the princes and nobles of neighbouring lands would be as eager to obtain horses from England as ever the English had been to obtain horses from Barbary."

The first Arab of celebrity was bought by James 1st,—about 1614—from a merchant, who imported him. As a racer, he was a failure, and, consequently, the breed fell into disrepute. In Charles 1st reign a lighter horse began to be bred, and the "Greatest Prince that ever ruled England," Oliver Cromwell, a true country gentleman at heart, very fond of hunting and all active sports, kept a racing stud. Place, his manager, imported a stallion called the "White Turk," whose descendants were valuable in improving the breed of native horses. Charles 2nd, an excellent rider—about the only good quality he possessed—had several good mares sent him from Tangier, which settlement formed part of the dowry of his ill used wife. Charles' secretary, Lord Arlington (2) received the "Barb Mare" as a present from the Emperor of Morocco. "The Turk" was brought to England by the Duke of Berwick in his father's time. Berwick was one of James 2nd's bastards. The "Selaby Turk" was the property of Marshall, who was stud-groom to William

(1) Bugloss, or "alkanet."
(2) Charlock, or "wild mustard."
(3) Tares, or "wild vetch."

(1) As the trainers say: He could shin a sixpence all round the Park. A. R. J. F.

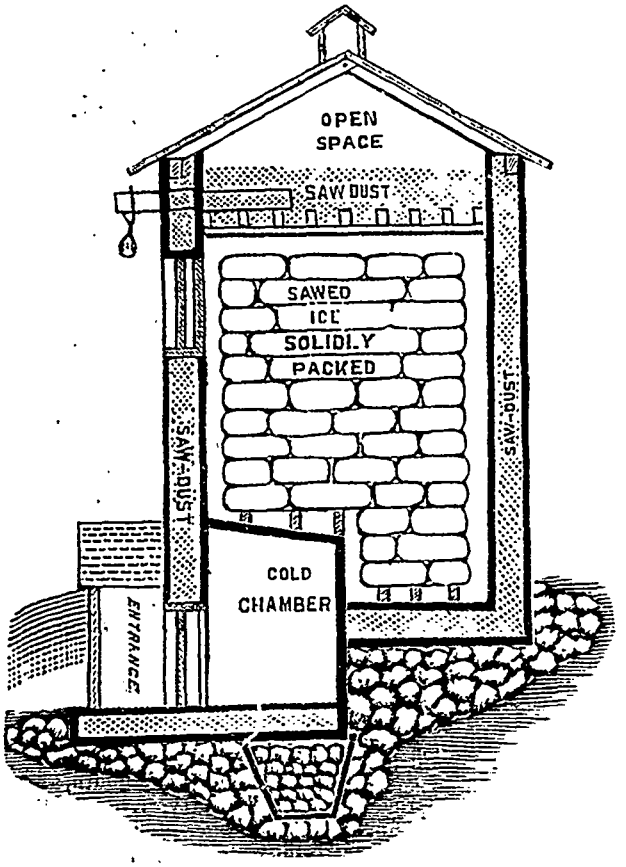
(2) The real name of the place from which Bennet took his title is Harlington, near London! Did English *gentlemen* drop their aspirate letter in those days? The street is still called Arlington St. A. R. J. F.

3rd, Anne and George 1st. The "Brown Arabian" and the "Golden Arabian" were added to Lord Northumberland's stud about 1760, and, the same year, the Damascus Arabian arrived in Yorkshire.

From one or other of these importations descend all our thoroughbreds. M. Couture's plan for the saving of expenditure in the purchase of stallions for the improvement of our breed of horses is excellent, and I cannot sufficiently admire the boldness of his language: "The agricultural societies receive annually $50,000, of which sum A GOOD FOURTH PART IS WASTED. Stop $15,000 of the grant, and borrow from the banks $40,000, which we can easily repay out of the sum retained. With this $40,000, thirty good stallions could be bought." Still, I should prefer seeing the same feat performed by private enterprise. Are we not already too much inclined to seek the assistance of the public chest.

CREAMERIES.

The following article, is from the pen of Mr. MacCarthy, a gentleman of Irish descent but born and brought up in France. He is, I believe, at present engaged in superintending the creameries &c., of my friend M. J. de L. Taché, and will, I hope and believe, soon alter the evil reputation our butter has acquired on the foreign as well as on the domestic market.



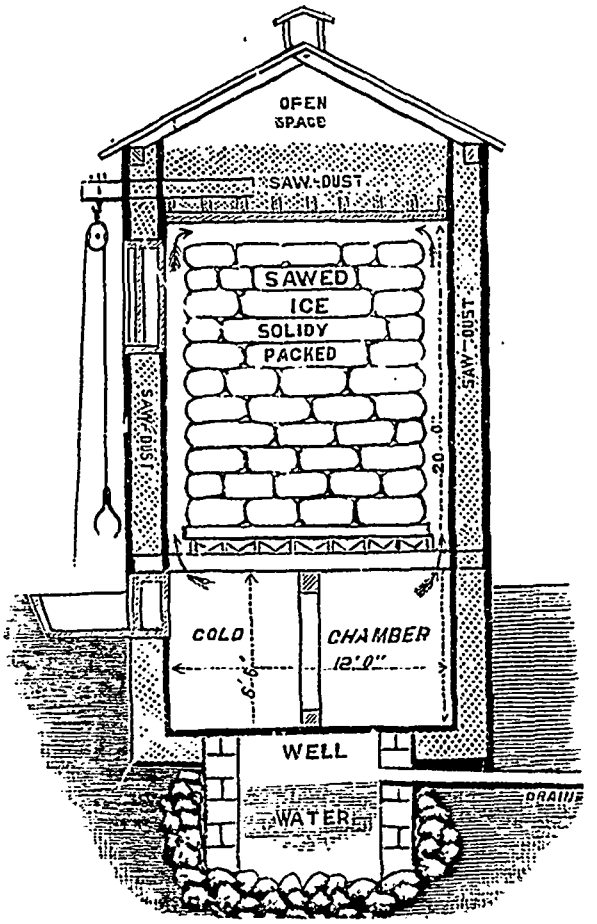
No. 1.—Ice House with cold room.

For the last few months I have been engaged in visiting some of the creameries in the province of Quebec, and, I regret to say, that I find the greater number to be insufficient in size and faulty in construction. I must needs remark here that the present proprietors must not be blamed for these defects, seeing that they took them in the state in which they now are, but those who erected them as a speculation are the proper persons to be found fault with.

To this I must add, that, as a rule, the makers are far from being satisfactory. Among them I found many opinionated men who, almost all, imagined themselves to be very skilful, but who did not possess the qualities necessary to a good butter maker, seeing that they would not listen to or put rigorously into practice the advice liberally offered them by persons of experience.

This is the first of a series of articles for the *Illustrated Journal of Agriculture*, in which I propose to describe what I see, as well as what I have already seen, pointing out as clearly as possible the remedies to be applied to the manufacture of butter in the province, if it desire to hold a position worthy of itself in the dairy-industry.

It is summer, and the butter everywhere is greasy!..... For this there are several reasons: Buildings unsuitable to the reduction of the too high temperature of the dairies; no means of cooling the cream; churning at too high a temperature; butter badly worked (*comme malaxage*). It is a great mistake to think, as people do here, that a creamery can be started in any building whatsoever. The house must be



No. 2.—Ice House, with cold chamber, well, &c.

made so that it shall be cool in summer, and this will also tend to make it well fitted for butter-making in the fall, since a building that is cool in summer can always be easily protected against the cold of winter. (1)

(1) Very true. Hence we find our English *thatched* dairies maintain the most equable temperature throughout the year. A. R. J. F.

The cream is too warm when it leaves the separator. It must of neces-sity be cooled at once, either by refrigerators *à la glace*, or by plunging the pails into cold running water. With cream treated thus, your butter will be firm, and the extraction of the buttermilk will be easily performed. I saw in July a maker churning his cream at 66° F. when it ought not to have exceeded 57°; and what was the consequence? The butter was a greasy mass, that retained the buttermilk, instead of coming "in grains," as it really ought to do.

As butter, made in this way, will not easily part with the buttermilk, the maker works it too long on the butter-press, overworks it, and makes it more greasy than ever. Besides, the press used in all our factories is terribly defective, it requires great skill on the part of the operative to use it without crushing the grain of the butter, and this skill can only be acquired by long practice accompanied by a "knack" rarely acquired. I recommend the abolishment of the present style of press, and the acquisition of the rotatory form of press which has given such excellent results in Europe. I shall devote a special article to this subject shortly.

If many of the makers persist in not rapidly cooling the cream as it leaves the separator, a much greater number will not take the care necessary to the proper development of the flavour of the butter made from it. They almost all leave the cream just as it comes from the separator; they do not stir it from time to time, a procedure absolutely necessary to secure an equal degree of acidity throughout the mass. No butter of delicate and well developed flavour can possibly be made unless the cream from which it is extracted be frequently stirred in the gathering pails or vats.

At Isigny, a district in France where the best butter in the world is made, the farmers' wives are so careful about the fine quality of their butter that they not only attend hourly during the day to the mixing of the cream but even during the night they rise two or three times for the same purpose. All these minutiæ take longer to describe than to do; but careful makers, men who thoroughly feel the responsibility of their engagement, are necessary to our creameries.

Again, I have remarked that the salting is done carelessly and without melting and well mixing in the salt. There is plenty of bad salt, doubtless, but I have observed in this process too the carelessness of the makers, who will not take the trouble to weigh both salt and butter in order to properly adjust the quantities of each. I never fail to advise uniformity and perfect admixture in the process of salting. The quantity of salt required here in general is: not more than 4½ per cent., not less than 4 per cent.

I will conclude this article by calling the attention of the makers to the proper ripening of the cream. That cream be in perfect condition, it must not only receive the attention spoken of above, as regards its cooling and acidification, but it should never be churned till 36 hours in summer, and 48 hours in autumn, after its separation. Well! Not one of the creameries I visited is provided with enough utensils to keep the cream more than 24 hours!

(*To be continued.*) MacCarthy.

(*From the French.*)

Ottawa Meeting of the Dominion Dairymen's Association.—(*Continued.*)

And, now, as to butter. When it is sought to make and sell butter, it is desirable that all that concerns this commodity should be well understood. It has been observed that the chief hindrance to the exportation of our butter is the freight-steamers. The speaker (Mr. Ayer) was not of this opinion, and for this reason. Butter from different creameries and of perfect quality may be placed in the same refrigerator, and if at the expiration of a certain time the refrigerator be opened, some lots of the butter placed therein will be found to be in good order, while others equally good originally will be found to have deteriorated. Wherein lies the cause of this? In the process of manufacture? No. The injury is due to other causes. The season of making, the quality, the temperature, the state of health of the cows, all these affect the keeping of the butter, and bring it to pass that butter, well made, and good when it left the dairy, will not keep sound in spite of every precaution. This is the problem that requires solution. What are the conditions necessary to the manufacturing of a butter that will keep well? Having once found this out, the question arises, whether it is wise to store up butter that may possibly keep well to sell it later at a higher price. To this I reply—certainly not. When only a low price can be got for butter, if it is not offered for sale, those who will not pay more and yet really want to buy will not wait; they will buy butterine, oleomargarine. It is the keeping back of butter in hopes of higher prices that has given rise to adulteration.

There is another point to be considered: even when the butter is good, if the tub is inferior, badly made, dirty, it repels the purchaser and prevents him from even tasting the contents. An inferior package will sometimes depreciate the butter by as much as 5 cts. a pound. There is another point I must mention: in future, dairy products will always be cheap. There is too much competition on the market nowadays, to allow us to hope for the high prices of former times. Our aim at present must be to increase our production so as to be able to sell a large quantity at a lower price. Our motto should be: great sales, small profits. And these profits will still be remunerative if the large quantity produced has been made at the lowest possible cost.

He hoped that the convention would give a practical form to the few hints that he had given by pressing the government to grant to a certain number of factories in each province of the Dominion a small sum to enable trials to be made of the manufacture and preservation of butter in accordance with the views he had laid before the meeting.

Mr. Ayer's lecture, one of the most important delivered at the meeting, gave rise to a long and lively discussion, in which took part: Messrs. Wright, Dill, Taché, Roberts, Fisher, and Senators Reed and Reesor.

The president, seeing that this important discussion could not be suddenly brought to a close, proposed an adjournment for luncheon, with the understanding that the discussion should be continued at the afternoon session: and the session closed.

AFTERNOON SESSION.

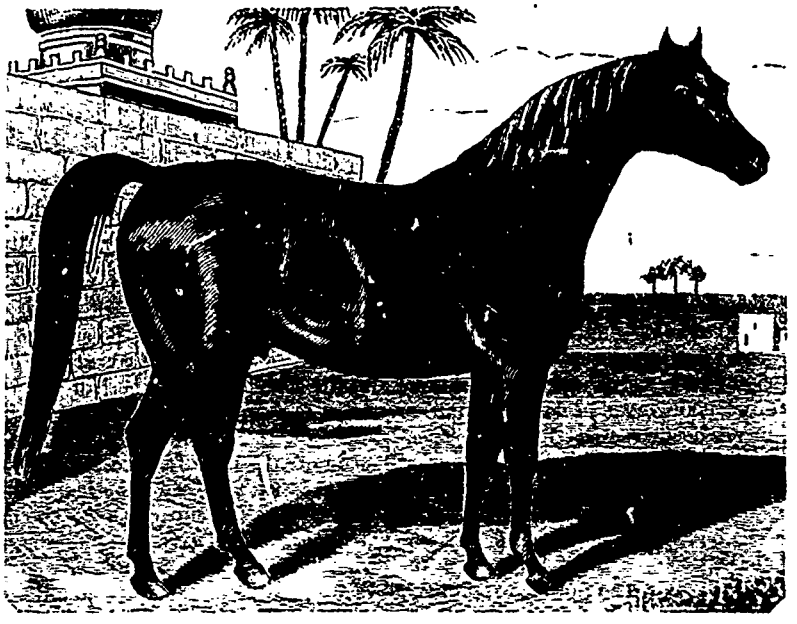
The chair was taken by the president at 2.30. Mr. Ayer, seconded by Mr. Dill, moved: that the government be requested to devote a certain sum to the solution of the questions the mover of the resolution had mentioned at the forenoon session, as being of importance to the cheap production and the exportation of butter.

This resolution was fully and skilfully discussed, by Messrs. Wright, Reed, Reesor, Sproule, Thornburn, Foster, Smith, Ewing, Barnard, Peters, Haggarty, Everett, Fisher, McCrea, and was finally adopted after each of the above named had expressed his opinion of its particular effects on that part of the Dominion which he represented.

The Hon. John Carling, minister of agriculture, whose duties had prevented him from being present at the previous sessions, was then requested by the president to address the meeting.

He began by assuring the meeting that the government of which he was a member sympathised heartily with the De-

minion Dairymen's Association. This was clear from the willingness with which the government had met the suggestions of the convention last April, touching the appointment of a dairy commissioner, and the grant of $5,000 a year for the general advancement of this industry. The government felt that the progress of agriculture was necessary to the prosperity of the nation of which it was the base. For this reason it had established experiment-farms, to facilitate the study of all the numerous problems connected with agriculture, and to make experiments on all kinds of plants, animals, foods and fertilisers, which may tend to the advancement of agriculture and the prosperity of the farming class. But, if it is desired in earnest that the work undertaken by the experiment-farms and the beneficent ideas that presided at their creation produce their intended harvest, farmers for their part must undertake their share of that work which it is fair to expect from them towards the improvement of their condition. What is needed from the farmer, over and above the routine-practice which up to the present time has led him to almost complete ruin, is an enlightened practical application of a sound and well thought out theory. To arrive at this we must develop agricultural instruction, not only at the experiment-stations, the colleges and schools of agriculture, but in all the primary schools; so that agriculture be among the lessons taught to children of the earliest age, and a love for it be instilled into their minds as soon as they are capable of appreciating its value.



A PURE-BRED ARAB STALLION.

Addresses have been heard on the necessity of developing production, of improving agricultural products, and of facilitating their sales. Certain figures were given showing the increase of exportation during the last few years, and giving evidence of the possibility of a far greater increase in the future, provided that we devote ourselves to an increased production at a lower cost. We could hold the English market, if we knew how to seize upon it, and it is only by working together in a common aim in conventions like this, that we shall learn what must be done in order to take possession of this valuable market.

The president proposed a vote of thanks to the minister of agriculture for his favourable words, and for the efforts he had made to meet the views of the dairymen's association; which thanks were voted unanimously. After an invitation to all the delegates to meet the committee on finance in the Mayor's room, the session terminated.

SPECIAL SESSION OF THE FINANCE-COMMITTEE.

This committee met at 4.30 P. M; Mr. McPherson in the chair. The delegates' accounts for travelling expenses were verified, and ordered to be paid, by the secretary. Session closed.

EVENING-SESSION.

Combined session of the Dairymen's Association and the Fruit-growers of the Dominion.

This session was devoted to the consideration of the following points. The keeping, packing, and carriage of goods damageable by heat, such as dairy products and fruit. A special invitation had been sent to the different freight companies, the railroad and steamboat directors, to send representatives to this meeting. The following companies were represented:

Allan line.....	Mr. Torrance.
Beaver line.....	" Watts.
Dominion line.....	" Webb.
Donaldson "	" Tims.
C. P. R.....	" Houston.

Professor Penhallow, president of the Montreal Horticultural Society and of the Fruit growers Association of the Province of Quebec, took the chair at 8 30. The members of both associations were all present, as well as many senators and members of parliament.

After having stated the object of the combined session to the meeting the president called upon Mr. A. Mc. D. Allan, of Goderich, to speak. He chose as his text: The carriage of fruit. "This," said he, "is a most interesting subject to all fruit-growers in the the Dominion. Fruit must be gathered at the right moment, well sorted and classified, packed just as they are classified — that is, without an admixture of inferior fruit with the best kinds—in barrels, boxes or baskets of suitable sorts, clean and strong. Good packing is an art. The fruit must not be crushed in closing the barrels. The necessary cars should be furnished by the railroad companies at the exact time at which they are required. The rough way in which the freight-trains are "made-up," during which act the cars are subjected to violent jolts, contributes greatly to the smashing of the barrels. Steamboat-companies have adopted certain precautions to improve the carriage of fruit, but a great deal remains to be done. They still have to take means to prevent fruit from imbibing the bad smells proceeding from matters in its neighbourhood, as well as to prevent it from rotting, by giving good ventilation to the place in which it is stowed. He stated that the Beaver line was the best managed in this respect, and had done its best to accommodate the shippers of fruit. In his opinion, the freight companies ought to pay their share of the losses caused by the loss of weight and the damage suffered by the products in transit. The freight-rates should be lowered, for as far as the lecturer could judge, they were much too high at present.

Mr. P. C. Dempsey, of Trenton, succeeded Mr. Allan, and

spoke on the selection and packing of export-fruit; then, the representatives of the different freight-companies, named above, each gave their ideas of the reforms suggested to improve the present means of exporting fruit and dairy products; all agreeing that the companies they represented would do their best to put in practice the improvements mentioned, and that their sending representatives to the convention was a sufficient proof of their good will.

In order to bring the business of the present session to a practical end the president suggested the appointment of a committee to study the question of the exportation of fruit and dairy produce. This was unanimously agreed to, and the committee was constituted as follows:

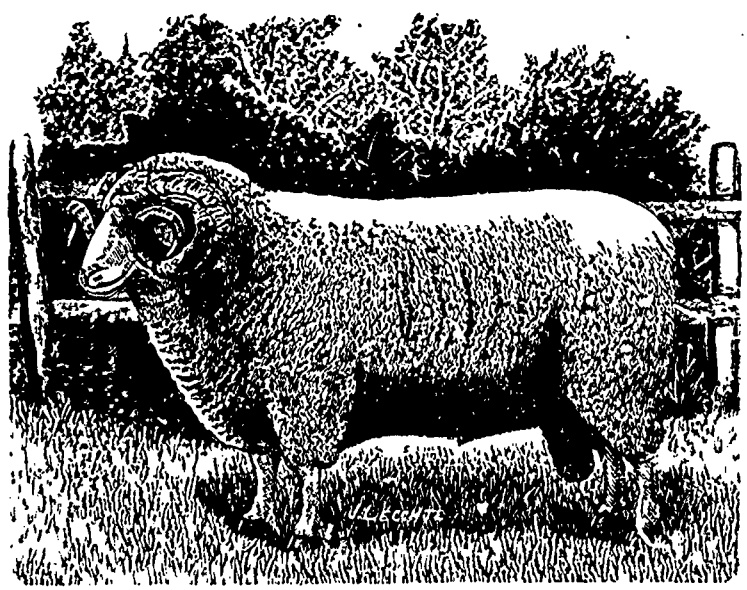
Messrs. A. Mc. D. Allan, Shepherd, A. M. Smith, C. R. H. Staus:

The session then closed.

After this last general session, the executive committee of the dairymen's association met. The delegates received their travelling expenses, and certificates for their railroad fares.

M. J. de L. Taché, seconded by Mr. F. S. Foster, proposed the following resolution, which was carried unanimously:

The executive committee of the dairymen's association of the Dominion, while thanking the federal government for having appointed Mr. J W. Robertson as commissioner of the dairy-indust-, humbly pray that an assistant be named who speaks French, in order that the chief places occupied by persons speaking that language may benefit equally with their English compatriots by the advantages which must flow from the appointment of a commissioner of the dairy-industry.



AN ENGLISH DORSET-HORN YEARLING RAM.

And the Convention of the Dairymen's Association of the Dominion of Canada here closed its final session.

From the French. J. C. Chapais, S. S I. L. P. C.

Le Guide du Cultivateur.—The Farmer's Guide.

By C. E. Rouleau; pp. 456.

Québec, J. Demers & Frère.

This book is stated by its compiler to contain "the true principles by which all farmers should be guided in the management of their farms; as it is simply a condensation of the course of instruction followed in one of our agricultural schools."

Some statements contained in this voluminous work I cannot agree with. For instance: "With a good sowing-machine, there is no ne- of *harrowing either before or after sowing*," and then the wonderful assertion appears: "We already know that two species of wheat exist: autumn-wheat and spring-wheat." "Wheat," says the book p. 127 "is rolled with a roller, a horse and a man;" but if the writer had seen how English wheat fields are rolled with a roller, 4 horses, and a man, what would he have said?

Fancy leaving ten to eleven inches between the plants in singling field-carrots, the rows being from 20 to 24 inches apart!

The Canadian name, *chou de Siam*, expresses the swede far better than the more elegant form *navet de Suède*, since the swede is not a turnip at all, but a cabbage (*chou*) that happens to have a tendency to form a swelling at the base of the stem.

"It is calculated that for every 100 lbs of the turnip crop, roots and leaves together, 40 lbs of dung (*fumier*) are taken from the soil." A very vague statement, and one needing more specific explanation. A. R. J F

A few Hints on Vegetable-growing. (*Continued.*)

Well, if the strawberry is a fruit, so is the melon, and yet they are both denizens of the kitchen or vegetable garden, and therefore come within our range of subjects.

Nothing in the line of this fruit can be finer than the berries grown on the flat land just alongside of the lake shore at Lachine. The thrush, indeed, commits horrid ravages on those that are exposed to its attacks, but my neighbour, Mr. Briggs, who has a very productive bed, took my advice this summer and netted his whole crop, to the utter discomfiture of the birds, and the delight of the cats, who finding the robbers hopelessly entangled in the meshes of the nets, enjoyed the game prodigiously.

Few of our hardy fruits are as certain in their production as the strawberry. It is not particular in its wants, for I have often seen a fine crop on very inferior soil. Plantations of strawberries, grown for the London market, were very numerous in the part of Kent in which I passed most of my time till I came to this country in 1858. They were to be seen on all kinds of land; the district being situated on the outlying beds of the London Clay formation, rejoiced in an infinite variety of soils: heavy clay, fine sandy loam, and poor sand, being to be found in close juxta-position in every direction; but in almost every part, strawberries seemed to do well.

To set out a strawberry bed, we have a choice of seeds, divisions of the plants, and runners. The latter way is the best to select, and is the one, I may say, universally used. The land should be prepared in the following way: Plant as early in the spring as the runners are fit; autumn planting is a mistake; I have tried it more than once, and never found it answer: this by the way:

Choose a rich, moist sandy loam, if you can find such a thing. Bastard trench it, as described in the Sept. number of the Journal, burying a heavy dressing of rotten dung at the bottom of the top spit. If planting on a large scale, I

suppose we must be content with ploughing in the dung as deep as as the soil will permit; but in gardens, every bit of land will pay for bastard-trenching once in three years. It is of immense service even in England's moist climate, but here, where our hot sun exerts its power so early in the season—think of 92° F. in the shade in May 1889!—nothing will help land to resist its desiccating influence so surely as trenching deeply. By burying the manure down below the top spit we prevent the danger of too excessive growth of leaf. The great object of this mode of preparation is to give the plants at first starting as free a range for their roots as possible, that they may become firm by being established in the upper layer of soil, and when they are in full vigour of growth and require additional food to support them in forming their seed, they may find it ready for them at their very toes. When once the plants are fixed in their new abode, and have obtained a firm hold on the soil, it matters not how hard the land becomes.

"We have plenty of land in this country, as a friend of mine remarked to me the other day: "What can it signify, if I sow my swedes at 36 inches or 24? "I think it signifies a good deal, and so we will not give the enormous space to the strawberry plant that we sometimes see here, but content ourselves with two feet apart for the rows, and eighteen inches between the plants in the row.

The general plan of setting out strawberry plants is to jam them in anyhow, but it will pay to spread the roots out carefully and press the earth firmly round them: don't hurry, though the seasons are short. When up, keep the hoe going and remove all runners as fast as they appear. Mulch between the rows with strawy manure in the fall, but rake it off clean in spring, and replace it with clean straw: bad flavour in the fruit is often caused by mulching during the with grass, growth of the blossom which rots in damp weather, encourages the presence of snails and slugs, and smells, ough!

I said, keep the runners cut; but when you want plants, do this: when they begin to push out, allow a sufficient number to come out from the side of the rows, and as they approach maturity, lay stones on them close to the rooting place, or peg them down: they will grow all the better for this. And a better plan still is to peg them into small pots, filled with fine earth, and sunk into the ground up to the rim.

When the harvest is over, cut off all the large *old* leaves, this will admit light and air to the *young* leaves, for on the free growth of these the formation of good crowns for the next year's use depends. By encouraging the young leaves root action is promoted, and the embryonic buds are formed that next summer will develop into fruit.

I do not think the *mat*-plan judicious. I prefer renewing the bed every two, or at furthest, every three years. After well mulching in the fall I always recommend my friends to cover the bed with hemlock or other boughs to retain the snow.

As to forced strawberries; in our garden at Chislehurst, Kent, we always grew about 200 pots, placed in the hothouse, close to the lights. These plants ripened their fruit about the end of March, when strawberries in Covent Garden market were fetching about 50 to 60 cents an ounce (1845). and though very pretty to look at, on their bed of vine-leaves, at dessert, they had about as much flavour as a turnip.

Ah! if the farmers on the sunny slopes of the Eastern-Townships would only go largely into strawberry-growing, what fruit we might have, to say nothing of the profits they might make! Those lovely trickling streams of limpid water that meet one's eye all along the road from Sherbrooke to Coaticoke, seem intended by nature for the irrigation of innumerable beds of this delicious berry. But though I have pressed this upon my friends at Compton for many years, I do not hear of any one having tried the experiment.

The generic name of this plant is *Fragaria*, whence the French call it *Fraise*. There are several species, named principally from the country or district whence they derive. Only one is indigenous in England, the Wood-strawberry, a very tiny fruit that I have often found in isolated spots under bushes or thickets. The *Hautbois*, a larger fruit, is clearly an escaped prisoner from gardens, and is not unfrequent in woods and under hedges. It is really a native of North-America. Those usually grown in our gardens are regarded as varieties of these species, and of the *F. Caroliniana*, the Pine, or F. Ananas, and the Chili, all from America, as their names denote.

It is generally thought that the straw used as a mulch has something to do with the name of this fruit; but I prefer the derivation which deduces it from the word *stray*, from *strae*, to wander about; the latter is what is commonly called Anglo-Saxon, but, in deference to Mr. Freeman, I prefer calling it old English.

Smoke-consumption.—I took the liberty of pointing out to Mr. Tuck, when talking to him about the new portable steam-engine bought for use on the Messrs. Dawes' farms, of which mention is made in a former part of this number of the Journal—see p. 148—, that the smoke from the chimney when the engine was at work would not only be a nuisance to the men engaged in threshing or chaff-cutting, but, if unconsumed, would be the cause of unnecessary expense in the outlay for coal. Smoke is neither more nor less than the unburnt particles of fuel. With ordinary bituminous coal not only may the volatile hydrocarbons, which sometimes yield 20 % of the heating-power, pass up the chimney unburnt, but nearly $\frac{2}{3}$ of the coal may be wasted by the conversion of the carbon into carbonic oxide instead of carbonic acid.

There is a great difference of opinion even about the apparently simple question of how the fuel should be fed in. One purely scientific man says that the fresh coal should be laid on *the front* of the fire; another one, of great practical experience, that they should be mainly piled up at *the back* of the fire; while Mr. Wye Williams, a great authority on the subject, would spread the coal evenly over the furnace-bars.

I learned my furnace-work from Dr. Ure, some forty years ago; and it is this: In the fire-place door I have a hole cut of about 3 inches long by 2 inches deep; this can be closed by a sliding door: any smith will make it for a dollar, or less. The fire well started, I push back the lighted *braise*, or embers, in a sloping position towards the chimney, feed on more coal at the month of the furnace, in a heap, and open the small door, more or less, as required. The moment this is done, the smoke, which previously was pouring abundantly from the chimney, will be no more seen: shut the small door, and the smoke will be as rife as ever. When the fresh charge is brightly burning, close the small door, and when a fresh charge is required, proceed as above. As I had three 8 horse power portable engines in constant work, in England, for some years, the saving of coal was of some importance to me, and I found this, whether theoretically right or not, worked a great economy in the consumption of fuel. The desired objects are attained, that is, the smoke passing over the lighted braise is consumed, a saving of fuel is effected, and the nuisance of the men being half-choked and the beams of the barn being covered with soot, is entirely obviated. ARTHUR R. JENNER FUST.

In connection with the article from the pen of Mr. MacCarthy, I reproduce the two accompanying engravings of

ice-houses that appeared in this periodical in 1879. Mr. Barnard gives the following description of them :

One thing must be especially attended to : the location must be so selected that all the water proceeding from the melting ice shall find an easy mode of dispersal, whether by a ditch filled with stones, or through a regular drain.

The cold chamber of No I only extends under part of the ice-house, but is sufficient for the needs of a private farm-dairy.

No. 2 is more costly, the cold chamber being as large as the ice-house. The engraving shows a deepish well, which is intended to receive the water before it is carried off by the drain. This well might be used to cool milk, cream or butter when necessary.

Ed. A. Barnard.

Summer-use of Ensilage.

Sir,—Many of your readers no doubt have been using ensilage as a winter food for some years, but have any of them tried it during the summer? If not let them put up enough this fall to carry them through next summer and they wont regret it. My farm being a very small one, I have no land to waste for pasture, so, three years ago, I adopted the soiling system. My only difficulty was in getting enough green-meat for the cattle, especially in early summer before the clover, pease and oats, &c. were ready to cut. This year the silo has removed that difficulty, and I find that my cows not only give more milk but that it is richer. I don't think it makes much difference what you put into the silo : corn, clover, pease and oats, marsh-grass—in fact you can fill up with anything you like. Still I think the best results will be obtained from corn, the cattle will eat all alike and relish it. But here let me say that ensilage alone is not a complete ration and that some grain must be fed with it. I found good wheat bran the cheapest. I have heard some complaints this summer that cattle fed on ensilage during the winter had not done well, and on making some enquiries I found the cattle had had no grain ; nothing but ensilage and a little straw—so I was not surprised. I fed ensilage morning and night with either a little chopped straw or marsh-hay. and bran mixed with it. After breakfast, they got a thin bran slop thrown on cut straw, and at noon, they got about a bushel of cut marsh-hay well dampened and a little dry bran thrown on. After dinner they got all the water they could drink. The total ration for the day was about 40 lbs ensilage, 10 marsh-hay, 5 straw, 5 bran. On that ration my cows averaged me one pound of butter per day. From November to the middle of April, the cows were never out of the stable. The water they drank stood in a barrel in the stable for 24 hours before they got it, so that it was about the same temperature as the stable and did not chill the cows. The cows were fed the above ration until the grass was long enough to cut, and the only change I made was substituting fresh cut grass for the marsh-hay and straw, at noon, and with their slop. I now give them all the grass they will eat at noon, and again when I let them out into the yard between 3 & 4 in the afternoon for a couple of hours. It does not seem to make much difference how much grass they have eaten, they are always ready for the ensilage in the evening.

The great advantages of this mode of feeding are : no inside fences are required ; the fertility of the farm is greatly increased by the large quantity of manure saved during the summer months, and every foot of arable land is available for crops. When the cattle are pastured, ensilage can profitably be fed to them night and morning when they are brought to the stable to be milked, and if they are kept in the stable over night, the labor of bringing them to and from the pasture will be diminished and the manure-pile increased at little or no extra cost.

In feeding ensilage during the summer months, great care must be taken not to leave the ensilage in a heap after it has been taken out of the silo and mixed with the hay or straw, as the case may be. If left in a heap a second fermentation will certainly take place and it will become so hot that the animals will refuse it. My attention was called to this fact by the quantity of ensilage left in the boxes, and also by noticing that the cows occasionally took up a mouthful of bedding to cool their mouths. So I then took to spreading out on the floor enough ensilage to last at least one day ; fed it when cold, and had no further trouble. I have never put any salt in the ensilage, not even to get the cattle accustomed to it when I first began to feed it. One need not be surprised if the cattle do not take to it kindly for the first few days.

Now, if milch cows will keep up a good flow of rich milk and get fat on the above winter ration, will it not pay the farmer of this Province to raise beef on the same rations. Could not some of the Agricultural schools which receive government grant, be asked to try the experiment? The only time one hears anything about them is when they are after their annual grant. I have yet to learn of any of them trying any experiment that would be useful to the farmers generally, and I think it is about time they were asked to begin.

The weather has been frightful here the last week—August 24. Three days of rain, and at it again hard to-day. If it does not clear up at once all the grain lying out must grow. I fear, from what I gather from private telegrams, that at least one-third of the wheat in Manitoba and the North West has been damaged, if not destroyed, by the frost of the 21st and 22nd inst. and by the succeeding rain.

A. R. J. F.

I fed ensilage up to the 1st August and was very sorry when it was done. Chas. D. Tylee.

Fairfield ; Ste-Therese de Blainville, August 1890.

The London Mark Lane Express of July 7th, from which we reproduce the accompanying engraving says: "Dorset-Horn sheep have lately come into fashion, many of them being purchased for America, thus dividing with the Shropshires the attention of transatlantic buyers. Our animal picture to-day is a portrait of "The Colonel," a very fine ram, bred by and the property of Mr. Thomas Ghick, of Stratton, Dorchester. It was one year and five months old when the photograph was taken in May last."

"The London Live-Stock Journal" lately published an engraving, which we reproduce herewith, of the pure-bred Arab stallion "Speed of Thought," belonging to Capt. W. A. Kerr, and bred by the Gomassa tribe of the Anezah. Captain Kerr describes him thus :

"He was a dark, rich chesnut without white, save a star. His near eye had been knocked out by the point of a lance in a *razzia*.(1) Height 14·3, girth 72 inches, measured 8¼ inches below the knee, and stood on perfectly-shaped feet, tough as the nether millstone. He was possessed of superlative quality from head to feet, of great muscular development ; sinews clean and hard as pin-wire, and stood fair and square on the best of limbs and joints. High couraged, as proved when he beat the famous (?) horse Long Trump by a short head after a desperate race ; full of what the Americans term '*vim*'; (2) a strong vigorous galloper ; his bold, free and jaunty walk, quite up to five miles an hour, being the theme of general admira-

(1) Hence, our word *raid*. A. R. J. F.

(2) And why they won't use the nominative *vis* I cannot tell. A. R. J. F.

tion. Across country, though somewhat headstrong, he was as clever as a cat, and would face anything, no matter how big, how yawning, and on parade bore himself bravely as became his ancestry. Great depth through the heart, strong shoulders, a muscular neck with marked breadth in front of the withers and immediately behind the ears, denoting lung, staying and weight-carrying power."

ABOUT RAISING A CROP OF FLAX.

MR. GERALD HOWATT —I wish to know about the successful growing of flax, and address you on the subject, as a friend tells me he has seen a very fine crop raised by you, and that from remarks heard in your neighborhood, he had no doubt you would be willing—as you certainly had proved yourself able—to give me practical directions for its growth and after treatment. I have a clayey soil, sandy soil, and muck bottoms. I have been told that any soil suitable for oats will grow it. Does it require much manure, or any? Is superphosphate good for it? You will understand that I am entirely ignorant, as to culture and treatment of flax, and any suggestions will be most thankfully received.

G. M. *Fairwood, N. J.*

(*Answer by* Mr. HOWATT.)

On all farms there is a specialty; it may be hay, corn, potatoes, cows or horses. Every other crop is a side issue, and gets what spare time there may be from the specialty. But flax will not play second fiddle to any other crop or animal, and from the plowing of the ground to its sale, it wants no boy's work; indefatigable zeal and attention to all its wants--on that depends your financial success; expending $10 per acre will give you $5 of flax to sell. A cabinet manufacturer once said to me, "Oh, how I should like to be a farmer!" I asked his reasons. "Why," he said, "a farmer has nothing to do all winter but sit by the fire and eat buckwheat cakes." I mentally concluded that the profession had not lost a great star; the man who wishes a big success in flax-growing must have ambition above the cabinet-maker.

From no plat culture, nor for fancy purposes, I have realized as follows: Flax and seed, $65 per acre; culture and preparing for market, $25 per acre; growing specially for flax (no seed), $58 per acre, and $20 for culture. The last result has the most money in it. Flax allowed to ripen its seed is the most exhausting crop of any we grow on the soil. (1) By growing for fibre alone a three-year rotation will do, if for seed and fibre, a five and six-year rotation is required. Start out to excel this and you will succeed.

Following is my system of culture and treatment: There may be some details omitted, covering too much space, but to the intelligent cultivator or director they will develop themselves as he proceeds in the work. A good fibered loam is best, such as a wheat soil, and the best preparation is a grass to be plowed in the fall to the subsoil. First crop, potatoes; these to be manured in the drill, and land kept perfectly clean of weeds; this is a main item—to have your ground perfectly clean for flax. After the potatoes are off, plow and leave without harrowing; frost will mellow this; leave it so until first week in May. If your land is not of an equal quality, give the thin places a dressing of manure (2) —your point being to get your growth of flax of an equal length as far as possible. By this time, any seeds of weeds that are in the soil will show themselves. Cross plow; then harrow thoroughly with straight-tooth harrow, which will draw any potato haulms or other weeds to the surface. Leave these in winrows; then burn, and run a chain harrow over all, which operation should be continued until all is as fine as a tobacco seed-bed. Should there be any lumps, run the roller over it and follow with chain harrow.

Select good seed, of a brownish color and oily to the hands, using one and a half to two bushels of seed per acre. Sow one-half across the land, the other half the reverse way, to have it as evenly dispersed as possible (this sowing is broadcast); cover with chain harrow, then bush harrow, letting the roller follow. If fibre and seed are required from the same plants, half this quantity of seed will do, drilled in, and only rolled when finished, as the plants in this case will throw out laterals, but the former is preferable. If specially for seed, six quarts is ample, putting it in with a garden-seed hand-sower; drills 18 inches apart. When plants are over ground, hoe them before the laterals touch on either side; hoe again. All further weeds are killed by shade.

When your flax plants of the broadcast system are yellow at the *bottom*, about same color as denotes wheat when ripe—the difference being that the yellow in wheat is below the ear—the flax will then be out of flower, and proper time to pull for extra fibre. In pulling lay your handfuls across each other, heads lying each way; try and keep your hands of an equal length together—a deft hand will easily accomplish this in running the fingers of one hand through for the short and the other for the long—leave on the ground in this position until dry, then gather and tie in bundles about size of oats when so gathered, but do not tie tight; set up, one sheaf against the other, thus leaving an air cavity between them. When you are convinced that the outside is *quite* cured, reverse them; see that all your straw is thoroughly ripened.

If your propose to sell it the same season, and you have a running, stream, cut from it a canal or pit to what we term "bog;" let this be four feet deep and six wide, and in, or adjacent to an old pasture. Let the water into this pit for three or four weeks before you are ready to soak it, as this is to get the water soft and of an even temperature *all through*. Water that has iron in it will not answer, as it will stain your fibre, making it second class. Should your ground be porous, or any doubt of the water keeping through it, flush bottom and sides with a subsoil clay, either yellow or blue, and make it of same consistency as cement mortar; lay this on with a plasterer's trowel, ¼ inch thick. If the sides are dry have a white-wash brush and bucket of water and wet sides; this makes your earth mortar adhere more easily. Should this crack before letting your water in, moisten and smooth over with trowel. If you have not a stream get it from a well or pump; allow in filling for evaporation. The water when you are ready for immersing the flax, will feel *all through* warm to the hand. By having it an equal temperature it will facilitate and equalize the separation of the fibre from the bark. The length of time for soaking in dry, warm weather is a week or ten days, but should be carefully watched, that it does not rot. When the fibre slips from the straw, great judgment must be observed to avoid waste; when it comes off a little stiffish, is the surest to a beginner, as it can be allowed a little longer on the grass. In immersing the flax, let your bundles be one-half the roots at top.—in other words, tops and bottoms. Should have said in proper place, when your pit is opened, before slushing, place three wattles (poles) at the end—first one 18 inches from the bottom, next one 12 and third one 6 inches, letting six inches of each end, into the sides. This keeps the whole in a slanting position. When your pit is full, place some green branches on top, and on them plank or any material to keep the flax under water.

When the flax is ripe, remove to grass land, which should

(1) But if the seed is used at home?

(2) Manure should invariably be applied to previous crops.

A. R. J. F.

be mowed close down; spread the flax just about as thick on the grass for bleaching as grain will be after being cut with a cradle. In spreading it, lay root ends one way, heads facing south, leaving a space of about six inches between each row. In this position it lies for a week or ten days, or until the fibre separates easily from the stems. During this process it must be examined daily. Should a heavy rain occur, it must be loosened from the grass; get a hickory pole 8 feet long, and strip the bark from it to within 2 feet of thick end (the bark on this end lets the operator have a firmer grip of it); run this under the flax and turn it over when thoroughly bleached. When so, tie in sheaves and house. You have, no doubt, mills that will prepare it for market; If not, I shall give you the home system of it, which is winter's work.

After flax, when flax is again to be grown on same soil, sow oats and seed with clover, to remain in clover two years. If this could be well manured at end of that time and a preparatory crop of corn grown, so much the better. If the rotation is followed, as gross a feeder as flax is, it will not hurt your farm; in fact, it will cleanse it, as you will find. What you have grown for seed you will pull when seed is ripe; lay it on ground until capsules are about ripe; when ripe have a tarpaulin or heavy fibre cloth, on which you place your rippling board, somewhat in shape of a cooper's horse; five long iron spikes inserted in a two inch plank; the rippler sits on this and draws the flax, those iron pins separating the capsules from the head of the flax. Bag this up and keep from mice and rats until winter, then thresh. You will have first and second quality of seeds; make both, as your best seed sells best; you can so adjust your fanning mill. Boil second in a Mott farm boiler lined with tin; object of lining with tin is that jelly well stick to the iron and if burnt, cattle will not eat it. Boil those into a jelly, say putting in 1 quart of seed to 8 quarts of water.(1) This is the most fattening food we have for cattle; feed one to two quarts a day in cut hay, bran, &c; this must be used only for fattening.(2)When the seed is taken off, the straw can be soaked and prepared as the other, but it will be only second-class fibre..

Peruvian guano is A No 1 manure for this crop.(3) As I understand your sandy soil it will not be profitable. Muck bottoms are so varied I could not give an opinion except I saw sample. In slavery times in the vicinity of Lexington, Kentucky, I saw large crops of flax cut and saved as we do hay I remonstrated; they said my way was profitable. In their case, if they let their slaves hurt their feet there was a doctor's bill to pay or likely a death, but could they get white labor at $1 a day—our then general wages—they would make money out of it. What their system at present is I do not know. I have no doubt but what you can make it pay handsomely if well grown. GERALD HOWATT.

CRIMSON CLOVER AND ITS USES.

EDS. COUNTRY GENTLEMEN.—In answer to the inquiries of Harry H. Stevens, and many others that have reached me, asking further information concerning Crimson clover, I will say: *Trifolium incarnatum* is an annual plant—that is, its seed must be renewed every year—but unlike most annual plants, it will survive *one winter* perfectly, if its seed is sown early enough in the fall to secure a good root before winter sets in. I notice that the seedmen's catalogues advise sowing it in the spring, and state that it grows about a foot high Now, I think that is just where the mistake has been made by some with this plant. All plants succeed best, and reach their highest perfection, if sown at their proper season—and the proper season for sowing Crimson clover, at least in Delaware, is during the month of August. This plant requires cool, moist weather, and if sown in the early fall, it makes its entire growth and matures its seed during the cool portion of the year.

As I have said, it stands *one* winter perfectly, I have seen fields of this clover in the month of February, when the ground was frozen hard and mercury nearly down to zero, standing perfectly green and unharmed—the only green thing to be seen except evergreen trees and bushes. I have seen those same fields of clover renew their growth during open spells of weather, when the frost came out temporarily, and afford good picking for poultry and young stock, and as soon as spring opened up, those same fields of Crimson clover made an early and vigorous growth, that seemed little short of magic, and by the 6th of May stood not only one foot high, but from two to three and a half feet high, and a perfect sea of crimson bloom intermingled with the luxuriant dark green foliage.

It is the most beautiful of all clovers, and a field of it in full bloom will seldom fail to draw exclamation of pleasure from all observers, and the practical beauty of it is when it comes to be utilized in either of the ways for which it is adopted—early pasture, soiling, hay, seed or green manure—it produces a comfortable and beautiful feeling in the pocket of the grower that is quite refreshing in these times. Its great value for me lies in its use for green manure,(Oh! A.R.J.F.)coming as it does to its perfection early enough in the season to turn under for corn, potatoes, cabbage, beans and many other crops. The time for sowing is also in its favor, coming as it does when the farmer is comparatively at leisure, and it is often sown among corn or other cultivated crops about the time they are laid by, so that really almost the whole expense of this crop is for the seed, and that at 10 cents per pound, and say ten pounds per acre, would give the cost for seed at $1 per acre.

Choose a favorable time for sowing—say that after a rain, when the soil is fresh and moist, and cover lightly.(1) As far north as Massachusetts, New-York and Northern Ohio, I should want to sow it about the first week in August while further could it may be sown later. The seed is sold by the large seed houses in Philadelphia who advertise in the COUNTRY GENTLEMAN, or it may be obtained here, where considerable of it is grown for seed. I should be glad if those who are interested in it would procure enough for trial this season and report their success or failure next year. In sections where it has not been tried I would advise treating it entirely as an experiment, and sowing only a limited quantity the first year to prove its value. It may fail in some sections, while it succeeds admirably here.

E. G. PACKARD.

Kent County, Del.

(1) Crush first A. R. J. F.
(2) I always use it for milk too. A. R. J. F.
(3) For seed; but it makes the plant branch out, and ruins the fibre. A. R. J. F.

(1) Sow on stubble, harrow, and then roll. A. R. J. F.

THE POULTRY-YARD.

USEFUL AND ORNAMENTAL BREEDS.

LAYING OR NON-SITTING VARIETIES.

Of these there are quite a large variety, all of which without exception have been developed in Western and Southern Europe. The most numerous are known as the Mediterranean family, and include Anconas, Andalusians, Leghorns, Minorcas and Spanish, and these have spread very widely, as

they are wonderful layers of large white-shelled eggs. They are very sprightly in carriage, of medium size in body, moderately long in the neck with a rather prominent breast and a flowing tail. The legs are medium in length and the head is surmounted by a large single comb, standing up-right in the cock, and falling gracefully over in the hen. In all the earlobe is white, but in the Spanish this has been permitted to spread so much that it not only covers the face, but hangs down several inches below it. The Hamburg is another large family, but is more of a fancy breed, as their eggs are too small for marketing purposes.

Anconas.—A variety which as yet has not been much bred, but is an excellent one. The plumage is speckled or mottled.

Andalusians—Sometimes called the Blue Spanish, for with the exception of the white face it is the same in all other respects. The color of the plumage is deep blue on the breast, the rest of the body a deep slate blue, with lacing of darker color, save in the cock, where the hackle and sickle are of a rich glossy black or a deep purple. Is fairly hardy, but does not stand unfavorable conditions well as do some other breeds, and should not be kept in confinement.

Hamburghs.—Of these there are five colors, namely, the blacks, the gold-penciled, the gold-spangled, the silver-penciled, and the silver-spangled. The blacks and the two varieties of spangled have been bred, in Britain for generations, chiefly in the counties of Lancashire and Yorkshire, and they are at once exceptionally good layers—in fact, the best layers we have—and beautiful birds. The penciled varieties come to us from Holland, where they or the progenitors of our much improved Penciled Hamburg are called Campines. For the reason already stated they are not to be recommended for farmers.

Houdan.—Best known of the French varieties, almost all of which are non-sitters, even where they are tried for the table. The Houdan has been very widely spread, and at one time appeared to be about the most popular of all the later introductions, but has been eclipsed by the Mediterranean and American breeds. It is a large fowl, with a squat-like body, and clean legs, the feet bearing the fifth toe, time showing its relationship to the Dorking, which it resembles in shape. The comb is that known as leaf, and the head surmounted by a moderate-size. The plumage is speckled black and white, the former color predominating. It is an excellent layer, a good table fowl and hardy, well suited to farmers.

Leghorns.—The most important of the Mediterranean races, a splendid layer, moderate for the table, and very hardy. At first there were only two colors, but these have been greatly added to since the time of their introduction, about 18 years ago. The colors now known are—black, brown, buff, chamois, cuckoo, duckwing pile, rose combed and white. The browns and the whites are the most popular, the others being variations, which are of great interest to those who keep poultry for the sake of pleasure, and one or two may become more popular. The white is self-colored, the brown has markings like Black-Red Game fowls. All have yellow legs.

Minorcas.—Sometimes known as Red-Faced Spanish, but while the latter were developed in Holland with an excessive white face, the Minorca has been bred in Devon and Cornwall more on the original lines. It is a pure black fowl in one variety, and pure white in the other, but the latter is seldom seen. The body is medium in size, with square appearance, set on moderately long legs, which is characteristic of the Mediterranean races. The comb is exceptionally large, and the legs are black or white respectively. It is the best layer of all, if we except the Hamburghs, and where eggs are the first consideration cannot be beaten, being hardy and an excellent forager.

Polish.—Come more into the category of fancy varieties, for though they are undoubtedly excellent layers under favorable conditions, they are too delicate for such work as that under consideration. There are six colors, the chamois, the ermine, the gold-spangled, the silver-spangled the white, and the white-crested black. The most notable characteristic in this breed is the large crest surmounting the head.

Redcaps.—A breed which has recently come into notice as a wonderful layer. It would appear to be an unimproved Gold-Spangled Hamburgh, and probably the progenitor of the latter variety, as it has the same color and shape, though the markings have not been perfected as in that breed. The name is derived from the enormous comb surmounting the head, not unlike a cap in shape, a loosely fitting Tam o'Shanter cap. It is equally prolific with the Hamburgh, but the eggs are much larger in size, and consequently, it is of more value for practical purposes.

Spanish.—Reference has already been made to the white face of the Spanish, which has been bred to such an extent that the natural stamina of the breed has been lost, and though an excellent layer of large white-shelled eggs, it is too delicate for practical purposes. There are three colors, the black, blue and white, the first named being the most common.

Scotch Greys.—A very valuable breed, which as its name would imply has been chiefly bred in Scotland It has somewhat of the Mediterranean carriage, though perhaps more like the Dorking. It is large in body, has a single comb, white or mottled legs, and the body is white in ground color with markings of neat black moons on every feather. They are good layers, capital table fowls and hardy, bearing confinement well. They are well suited to the purpose under review, as the quality of the flesh is higher than most of the non-sitting varieties.

In selecting I should recommend as the best layers, Minorcas, Leghorns, Redcaps, and Scotch Greys, in the order named; best layers and on the table, Scotch Greys and Houdans; hardiest, Minorcas, Leghorns, Redcaps, Scotch Greys.

Stephen Beale.

H——, England.

There has appeared in the Gazette at different times, letters (I presume from practical farmers) giving certain quantities of foods to yield definite results in producing milk, butter, and beef. I am sorry to say I am not so intimately acquainted with chemistry as to pass an opinion on their respective merits, but, at the time I read them, it occurred to me they could only be mere guess work. And after reading the article on pastures on page 50, July 21st, by Sir John B. Lawes, Bart., I was more fully confirmed in my opinion. He says, and I think truly: "One mouthful of grass taken by an ox from one pasture may contain much more nutritious ingredients than the same quantity from another pasture and, if with grass, so with hay, straw, roots, &c., &c." Now, if such is the case, which I do not think many will gainsay, how can a farmer make up a definite food ration without a correct analysis of what each portion of food contains? I myself have often seen roots grown on different fields produce far different results, also the same with hay and straw; but the various writers on food rations give quantities, irrespective of quality, leaving one to infer that all the hay (for instance) had the same feeding value. I am rather afraid it is too intricate a method for ordinary farmers to adopt, but without sticking to a hard-and-fast line, it ought to be the aim of everyone to do his best to approach it. J. W.

Eng. Ag. Gazette.

STRAWBERRIES IN NORTHEAST OHIO.

Eds. Country Gentleman—Mr. Terry, p. 568, gives no account of the mode of strawberry cultivation by which he obtained the remarkable results which he narrates, nor of the varieties raised. The first, those of your readers who were subscribers "last fall," and have the file, can obtain, but others get no benefit from his interesting letter except that they may be stimulated to experiment. Can you not induce him to give in detail his methods and varieties so that others may profit by his experience?

Would you not also be doing a good thing by inducing all managers of agricultural fairs to make it an absolute condition of the bestowal of a premium for excellence in any agricultural product exhibited that the true name of the variety be attached; and if it were the result of any peculiar treatment, that there be attached a full statement of the mode?

H. S. *Baltimore, Md.*

(*Answer by* Mr. Terry.)

We selected good land, well drained, with an easterly exposure. The land is strong enough to bring 40 bushels of wheat, or 80 of corn, or 300 of potatoes, in a favorable season, and is well adapted to growing the crops. In the fall of 1888 we spread a moderate coat of fresh strawy manure on a heavy young clover soil (we have no trouble with white grubs.) This was plowed under in the spring, as soon as it was dry enough, the plow running as deep as the good soil went, but no deeper; this was about ten inches. Then with cutaway and Acme and Thomas harrows, and roller, we pulverized the soil fine enough for a garden bed. The strip was long and narrow, for convenience in working with horse. The rows were marked four feet apart, and plants set two feet apart in the rows, about the first May, as soon as the ground was dry enough to work properly. (Farther south this would be earlier.)

The plants used were of our own growing. They were young ones that had not produced fruit, and grown from parents that had not been allowed to bear. We set out only large strong plants. These are important points. All runners and blossoms were cut off the newly set plants until the latter part of June. Meanwhile the very best of tillage was given. It took but an hour or two, on account of the long rows, to run through with the cultivator, or cultivator with harrow teeth, and I presume we did it twice a week on the average. The very little soil that was left unmoved along the rows was stirred with hoes. No weeds had any chance to grow. No crust was ever allowed to form on the surface. We let the runners start earlier than most growers. Our plants were so large and strong, from having good ones to start with, and very careful setting and thorough tillage, that they were probably better able to throw out strong runners the last of June that many are the first of August. And I believe the sooner you can get the runners started, if strong and vigorous, the better the chance for a big yield. In transplanting, the plants were taken up, shaken and trimmed, and instantly put in a pail of water. When taken out they were put directly in the ground, care being taken that only moist earth came in contact with the roots, and the earth about the roots was well firmed, but left loose right on the surface. Thus treated, every one grew right along, and did not appear to know it had been moved. At the setting out, as well as in every other particular, we tried to do all our work just as well as we possibly could, rather than to do it fast.

When the runners got well started we went through two or three different times and trained them as they would cover all the ground as soon as possible, except enough for a path. After this the cultivator was not used, but the surface was stirred with hoes, not over an inch deep, wherever it was not covered with vines. We used a common hoe in the paths and a very narrow one among the plants. Our reward was a perfect stand, without a single break, of strong stocky plants. Some time in October we ran lines through and hoed up plants where necessary to make the path 10 inches wide leaving 32 inches for the vines. Then we cut out all the weak plants and enough of the strong ones, so that what were left were about six or eight inches apart. Altogether we probably destroyed ⅔ of the plants that had grown. We had, as we thought, good reasons for everything done, which of course cannot all be given in a single article, but I will give the wherefore of this as an illustration. It is the nature of the vine to run and spread. We let it have its natural way. But if we had left all the plants that grew, the result would have been too small berries, and this wet season, too soft ones, and too many rotten ones. So after the plants had got about through running we took out, in a way not to disturb the rest, enough so that what were left could have a chance to do their best.

About the middle of November we covered the surface, beds, paths and all, with cut straw from one to two inches thick. Then we put on all over a coat of long wheat straw, just thick enough so one could barely see through.

We are subject to late spring frosts, and do not attempt to get early berries, but rather to keep them back as long as we can. We watched closely, and when the soil under this heavy mulching had got warmed up so the plants were found to grow any way, and before they had grown so as to have a white, tender look, we raked the long straw from the beds and trod it down in the paths. This was done in a rainy day, for the good of the suddenly uncovered plants, and because the straw could then be best packed. When the next rainy day came we went over again, so as to get the straw well packed in the narrow paths. The cut straw was of course left for the vines to grow up through. We thought from previous experience that thus treated we could be sure of a crop in spite of drouth. The season was very wet, and we learned that the cut straw kept our berries perfectly clean. Our Haverlands would have been worthless, almost, without the cut straw and long straw in the paths, as they lay right on the straw in piles. With the straw they were all right. One customer said: "We have always washed our strawberries when we picked them over, before; but with yours it is labor thrown away."

In regard to the Haverlands, our rows should have been 5 feet apart for the variety, giving the extra foot to the path. It throws its fruit stems out over the paths, so that at 16 inches they almost came together, and we had to be exceedingly careful in picking not to step on them. All other varieties were right as we had them. Let me here say, that bed is plowed under, and another half acre treated in just the same way is getting ready to bear next spring. Had we left it, we should have got next season a few good berries and a mass of common ones, such as there is no money in.

Treated as described, our patch brought berries the equal of which in quality and size few people ever saw in market. All that is necessary to sell such fruit is to pick carefully when fully ripe, and get it to the consumer at once. The owner can make his own price in any market if he keeps anywhere within the bounds of reason. H. S. speaks of our crop as "remarkable. It was simply this: About $25 worth more labor and systematized care were expended on the half-acre than is usual. For that $25 we received seven hundred fold.

H. S. Also asks about varieties. In my last letter to you these were spoken of. Had we had more Haverlands and fewer of some others we might have reached $800 per acre instead of $600. It is only by years of testing on one's own ground that he can tell certainly what varieties are best for him.

NON-OFFICIAL PART.