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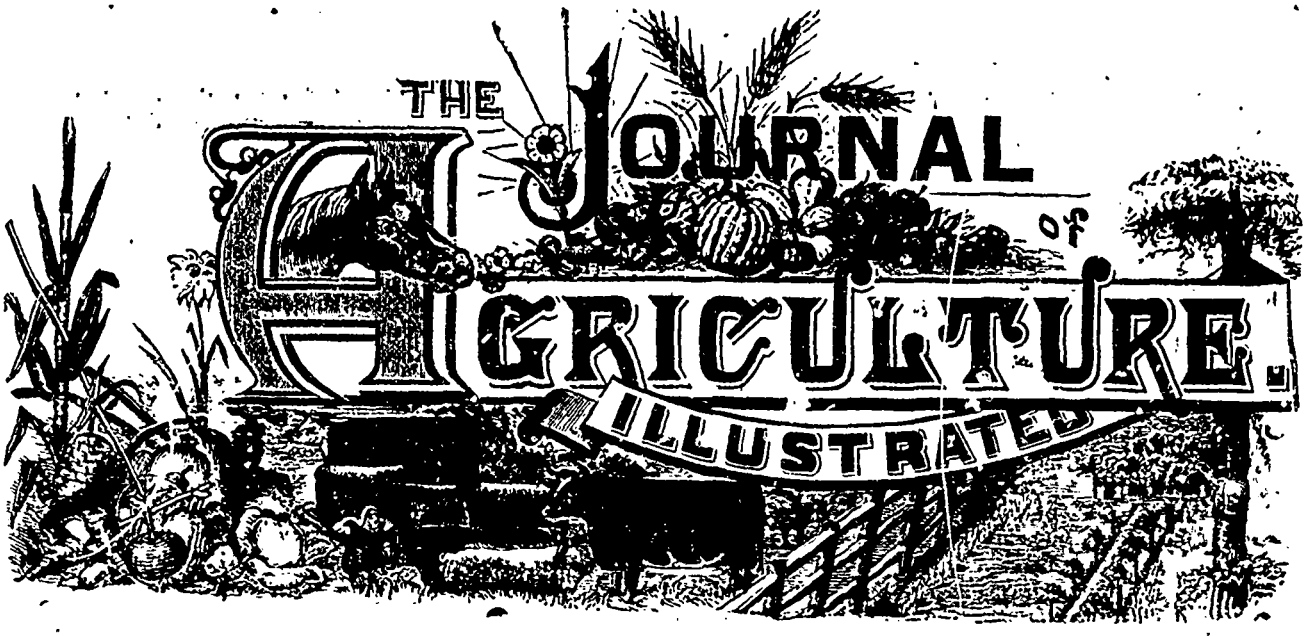


Published for the Department of Agriculture for the Province of Quebec, (official part) by
EUSÈBE SENECAL & FILS, 20, St. Vincent St. Montreal.

Vol. XII. No. 6. MONTREAL, JUNE 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 of the Province of Quebec,

Copy of a report of the Committee of the honorable Executive Council, dated the 10th May, 1890, and approved by the Lieutenant Governor the 12th May, 1890.

No. 193, concerning the proceedings of the Council of Agriculture.

The honorable the Commissioner of Agriculture and Colonization, in a report dated 3rd May instant, (1890), recommends that the proceedings of the Council of Agriculture, dated the 25th and 26th February, 1890, of which copy is annexed to the said report, be approved by the Lieutenant-Governor in Council, in accordance with article 1614 of the Revised Statutes, with the exception of that part which obliges the agricultural societies to pay the fees of Veterinary Surgeons for the examination of stallions entered for competition at exhibitions, and also with the exception of the resolutions already approved of by order in Council No. 143, dated the 18th of April last, respecting the purchase of seeds by certain agricultural societies.

Certified

(Signed) Gustave Grenier,
Clerk of the Executive Council.

Session of February 25th, 1890.

The Council met at 9.30 A. M.

Present: The Hon. J. W. Joly, de Lotbinière, President, the Hon. the Commissioner of Agriculture, the Hon. the Superintendent of public education, the Hon. Messrs. Dionne and Sylvestre, Messrs. Blackwood, A and E. Casgrain, Decarries, Lussier, M. P. P., Marsan, Pilon, M. P. P., Ness, Peloquin, Rochcleau, M. P. P., Ricard, Tarte.

The minutes of the last session (Nov. 20th and 21th, 1889) were read and approved.

Excuses for their absence were received from the Hon. G. Archambault, and from Messrs. Gibb and Ritchie.

1. The president and the vice-president gave the reasons that induced them to recommend the Council to pay the sum of $150.00, retained from their grant, to the Society No. 2 of Pontiac county, for the competition of the best cultivated farms.

2. Resolved unanimously, that in virtue of the 18th regulation of the Council, only $75.00, instead of $150.00, be retained from the grant to those societies which did not hold the competition of the best cultivated farms, in the past year, in the counties where there are more than two societies. And that in those counties where there are more than two societies, the sum retained be proportionate to the number of the societies and to the sum total of their grants.

3. Resolved that the prayer of the Society No. 1 of Compton county with respect to the competition of farms be granted, and that the sum of $150. 00 be paid to it, in spite of the competition not having been held, but on the express condition that for the future this society conform strictly to all the regulations of the Council.

4. A resolution to the same effect was passed in favour of the Society No. 1 of Huntingdon.

Proposed by M. Descarries and resolved, that, for the future, the regular session of the Council be held on the last Wednesdays of February, May, and October.

5. Proposed by M. Marsan, seconded by M. Tarte and carried:

That the Hon. Commissioner of Agriculture be requested to order a regular inquiry, under the authority of the government, into the operations of the Agricultural Society of St. Maurice, with power to summon witnesses under oath, and to call for documents and papers connected with the management of the said Society.

6. In reply to the prayer of the Agricultural Society of Kamouraska, it was proposed by M. Ricard, and resolved, that the Council cannot grant the request of the Society, as the object of the prayer is in diametrical opposition to the law, *but the Council permits the repayment of half the special* subscription in the form of clover- and timothy-seed, or the employment of the whole of the special subscription mentioned in the said prayer, as part payment of the price of a pure-bred stallion.

7. Resolved that the county of Bonaventure be, for the present, divided as follows: Division A.—No. 1—, the N. E. of the county, starting from the River Cascapédiac—. B.—No. 1—, the municipalities of Maria, Carlton and Nouvelle.—B. No. 2.— the municipalities of the county situated to the S. W. of B. No. 1.

8. Resolved that the diplomas for the Veterinary School of Quebec, as requested by Dr. Couture V. S., be granted.

9. In reply to the request of Drs. McEachran and Couture for the Herd-books of the different breeds of animals, it was resolved that the Council is sorry not to be able to grant their request, but it advises the Hon. Commissioner of Agriculture to purchase the Herd-books in question, in order to complete the files mentioned by Dr. Couture as being wanting in the Department, where they may be consulted at pleasure.

10. As to the complaints about the irregularities in the stallion-competition at Bellechasse, the Council determined to request Dr. Couture to send a written report from Mr. Hardy, V. S., who examined the stallions.

11. Proposed by M. E. Casgrain, seconded by M. Ness, and carried:

That after the words, "cannot be present," in the resolution *(on examination of stallions by vets.)* passed at the session of the 20th November last, the following words be added: and that the Agricultural Societies be obliged to pay the fees of the veterinary surgeons (approved by the Commissioner) they employ; the fees not to exceed $10.00 a day. (1)

At 12.45 P. M., the Council adjourned to 2 o'clock.

AFTERNOON SESSION.

M. Pilon, M. P. P., in the chair.

As the Hon. Legislative Councillors, and the members of the Lower House had been called away to their respective Chambers, it was decided that the Council should sit in General Committee, and report to the Council the next morning.

12. Dr. Martin, M. P. P., prayed the Council to suspend for a year the competition of farms in Bonaventure County, as well as to pay over to the societies of that County the amount retained from their grants on account of the competition not having been held. The Council decided to pay over the grant witheld, on condition that the competition be held next summer.

13. The President introduced M. Musy, C. E., of France, who gave certain explanations concerning the Farnham Beet sugar factory, and prayed the Council to advise the Government to offer a certain premium to farmers to encourage them to grow sugar-beets. The Council did not think itself justified in granting this request.

14. Mr. Jas. Dickson, on the part of the Agricultural Societies of Drummond and Richmond, requested permission to hire four stallions for the use of the said Societies. This was granted, subject to the regulations of the Council.

15. A memorial, by Mr. Dickson, was submitted to the Council by the Commissioners, on the working of the Societies, &c. It was recommended that this document be published in the Journals of Agriculture for general information.

16. The prayers of several Agricultural Societies, asking for assistance in importing stallions, were considered: Resolved, that the Council appreciates the importance of im*proving the breed of horses in the province*, but it regrets to say that it has no funds at its disposal to aid in the importation of stallions as prayed.

Adjourned to 9.30 A. M. of the next day.

SESSION OF FEBRUARY 26th, 1890.

The President in the chair.

17. The report of the General Committee was read and approved.

Resolved unanimously:

18. That in order to secure the keeping of the accounts of the Agricultural Societies in conformity with the law, the Secretary be empowered to have brought to his office the books of every Agricultural Society whose accounts require investigation; and, moreover, be authorised to send for the Secretary-treasurer, if necessary, to give all necessary explanations; and be required to report thereon to the Council.

19. The Council ordered the conditional renewal of the insurance on the models and other objects, which for the present are in the possession of the Montreal Veterinary College, subject to their removal to Quebec.

Proposed by Mr. Blackwood, seconded by Mr. Ness, and carried:

20. That all the objects belonging to the Museum of the Council of Agriculture, now deposited in the Montreal Veterinary College, and employed in the curriculum of studies carried on there, remain in the hands of the said College until further orders, on condition that the students of the French Veterinary College be allowed access thereto.

21. Resolved, that the Council of Agriculture recommends that section 1651 of the revised statutes (*Agricultural Societies*) be amended by adding, after the word "rural," at the beginning of the third line, the words "and urban" (*et de ville*).

22. Proposed by M. Pilon, seconded by the Hon. L. Sylvestre, and carried: That permission be granted to the Arthabaska Agricultural Society to hire a stallion—entered in the studbook and certified by the Council's Veterinary—for four years, in accordance with the request of the said Society, provided that it conform in every point to the law and to the regulations of the Council.

23. That the Council remarks with pleasure the establishment of Agricultural Clubs, as a means of insuring the better working of Agricultural Societies, and that it would be glad

(1) This resolution has not been approved and is void and of no effect. ED. A. B.

to hear of these clubs holding *Parish Exhibitions*, as allowed by law as well as by the regulations of the Council. But the law has not entrusted to the Council the funds necessary for such an object. This resolution was passed in reply to the request of the Ste-Rose Club

Proposed by the Hon. J. W. Joly, seconded by the Hon. G. Ouimet, and carried.

24. That according to the law—clause 1615*a* of the revised statutes—it appears that the Competition of Agricultural Merit is to take place over the whole province at the same time; and seeing that the extent of the country is very great, that the seasons and the climate vary immensely, and that a sufficient number of competent judges capable of getting through such a great amount of work at one time would be difficult to find; the Council respectfully advises that the law be so altered that the Lieutenant-Governor in Council be authorised to divide the province into a certain number of agricultural districts, and to devote one year to the competition in each of them.

25. Proposed by M. Rocheleau, seconded by the Hon L. Sylvestre, and carried: That a committee composed of the President, the Vice-president, Messrs. Blackwood, Marsan, Ness, and E. Casgrain be appointed to assist the Commissioner in carrying out the law concerning the provincial competition.

26. Resolved, that the Council invite Drs McEachran and Couture to be present at all future meetings of the Council.

27. Resolved, that as the Témiscouata Society does not wish to run the risk of buying and keeping a stallion on its own account, while a certain number of the members of the said Society are willing, for the benefit of the farmers of the said county, to run such risk, that the said Society be authorised to pay to the aforesaid members the sum of six-hundred dollars, less 18 % on $400.00, for three years, on condition that they subscribe a special sum sufficient, with the share of the government grant it shall obtain, to cover the said sum of six hundred dollars, less the 18 % on $400.00, on condition that the said proprietors of the said stallion shall conform to the regulations of the Society and of the Council.

28. The hour of 1 P. M. then approaching, it was resolved to adjourn till 7.30 P. M., in order to give the members an opportunity of visiting Col. Rhodes' farm, and the farm of the RR. DD. of the Hospital of the Sacred-Heart at Lorette.

The Council re-assembled; the President in the chair.

29. Proposed by Mr. Blackwood, seconded by M. Ouimet, and carried:

That the Council would see with pleasure the appointment of inspectors of creameries and cheese-factories for the different places in which the dairy industry is in operation, as is the custom in the province of Ontario, where the practice has had the effect of considerably increasing the value of cheese and butter.

Proposed by the Hon. J. W. Joly, seconded by the Hon. G. Ouimet, and carried:

30. That the Council is of opinion that the spring is the most favorable season for holding the festival of ARBOR DAY, since the planting of trees in spring gives them a better chance of growing than does autumn planting.

31. Resolved, that the members of the Council, before separating, seize this opportunity of thanking the Hon. Commissioner of Agriculture for affording them an opportunity of visiting his splendid establishment, as well as the farm of the RR. DD. of the Sacred-Heart at Lorette and their establishment in the city.

32. Resolved, that the Agricultural Societies of Saguenay and Gaspé, be allowed to dispense with the production of the certificate required for holding a competition of stallions and Canadian cattle, on account of the difficulty of getting the above-named animals examined by a competent veterinary; but on condition that this competition be held under judges as competent as can possibly be obtained.

33. Resolved, that the Agricultural Society of St-Hyacinthe must conform to the general regulations of the Council as regards the distribution of grass-seeds.

34. Resolved that permission be granted to the Societies of L'Assomption, Montcalm, Berthier and Joliette, to hold this year either a regional exhibition or county exhibitions, as they please, provided that these Societies send their programmes to the Council, conform to the regulations concerning the certificates to be given to stallions, and hold a competition of registered Canadian cattle.

Resolved that those Societies that in 1888 returned more than half the amount of the members' subscriptions in the form of clover- and timothy-seed, can now receive the grant of 1888, which has been kept back up to the present time, provided that for the future these Societities conform in every point to the regulations of the Council.

35. The Council then considered the programmes of the Agricultural Societies; it approved of five, which were in all points conformable to the regulations of the Council, and instructed the Secretary to inform all the Societies in fault that they must conform strictly to all the regulations of the Council, or lose for the present year the grant voted in their favour.

36. The Council, considering that the Agricultural Society of Montcalm acted in good faith in its manner of interpreting the regulations of the Council concerning the purchase of grass-seeds to the amount of half the members' subscriptions, decided that the grant retained in 1888 may be paid to the said Society, provided that in future it conduct its distribution of such seeds in a proper manner.

37. The same decision was come to with respect to the retention of the grant of 1888 to Society No. 1 of Montmocency, on condition that this Society follow in all points the requirements of the law and the regulations of the Council.

38. The same decision was come to with respect to Society No. 1 of Ottawa, on the express condition that this Society hold a competition of the best cultivated farms this summer, that it transmit to the Council all the documents demanded by the law and that it conform in all points to the regulations of the Council.

39. Resolved, that at least $400.00 must be subscribed to each of the Agricultural Societies before they will be entitled to the maximum of the grants. Out of this sum of $400.00 subscribed, only one-half may be expended in grass-seeds, that is $200.00.

But if the sum subscribed exceed $400.00, the excess of the subscription may be expended either in the purchase of seed, or for the advancement of agriculture in any form that may seem good to the Societies, on condition always that the approbation of the Council be obtained before the regulations which the Societies may pass for the above purposes be carried into effect.

40. Resolved that the Saguenay Agricultural Society must send its account-books to the Secretary of the Council, and conform itself generally to the regulations of the Council before the grant for 1888, which has been retained by the Council, can be paid.

41. Resolved, that the Agricultural Society of the Division of Sherbrooke can receive the grant for 1883, which has been retained by the Council up to the present time, provided it transmit to the Council the documents demanded by the law and by the regulations of the Council.

42. Resolved, that it is desirable that the resolutions of the Council be revised and consolidated, and that a report of this work be submitted at the next meeting of the Council.

Certified copy. (Signed) ED. A. BARNARD,
Sec. Coun. Agr. &c.

A few hints on Garden crops.—(*Continued.*)

Endive.—This plant, a relative of the dandelion and of the well known chicory, used, too frequently, to flavour coffee, is, if properly grown and blanched, one of the best autumn and winter salad-plants extant. It is an instance of the truthfulness, or rather trustworthiness of the old saying: "Handsome is that handsome does;" for the fine, showy, curled varieties are by far the best flavoured and the most tender, and tenderness and crispness are the chief things to be considered in growing endive and all saladings.

Endive requires a sandy soil. At Joliette and Sorel, I have grown endive that was finer than any I ever saw in England; and the land in both those plans is sandy enough in all conscience.

As no one would eat endive as long as lettuces are to be had in perfection, I do not advise sowing the seed before the end of June. Sow in rows, thinly, about six inches apart, and when the plants are forward enough to handle, prick them out, like celery, to three inches apart, and water with a fine-rose watering pot. The final planting should be at 15x20 inches—not too much room in this country, where, if properly managed, this plant will grow to a, comparatively, enormous size.

Endive, like the cos lettuce, must be blanched to be worth eating. Nothing is more surprising to a foreigner than the scarcity of well managed salading in the Montreal markets. The cabbage-lettuce, which closes in of its own accord, is fine enough there, but cos-lettuce—rare in any form in this province—and endive, when to be seen, are nothing but a mass of green leaves, the principal qualities of which are bitterness and toughness.

If you want to eat endive in perfection, do this: on a perfectly dry afternoon, gather the leaves together with your left hand, with your right, tie them loosely with a piece of bass, and mould them up as high as the knot. This answers well except in wet seasons, when the plant is apt to rot. A safer way perhaps is to cover the plant, after tying, with a large flower-pot; covering the hole with an oyster-shell, concave side downwards: *the air gets in and the wet does not.* Or the tying alone may be practised. The chief point to be attended to is to tie loosely, so as to give the heart room to swell. When blanched sufficiently, the endive should be eaten at once, as it is mighty apt to rot.

Herbs.—Where there is plenty of room in the garden, pot-herbs may be grown; but, as a *rule, the bottled herbs of* Crosse and Blackwell are so good and so cheap, that, in small gardens, I should not trouble myself about sowing them.

Sage must be sown in a hotbed and set out 12 x 8 inches apart. Marjoram, the two savorys, &c., in rows wide enough to get the hoe between, and thinned out to 4 inches in the row. Chervil grows anyhow. All herbs as better in poor than in rich soils: they do no grow so large, but the flavour is stronger. Mint does no good in dry soils. Plenty of sun while growing, but perfect shade while drying, is the secret of having good herbs. Never mix the sorts before bottling It is the duty of the cook to vary the flavour of her soups and sauces, and how can she do that if the herbs are all thrown together?

My mint-bed died out this winter l(1) I always thought that this was an indestructible plant: cause unknown.

Horse radish.—Crosse and Blackwell's, bottled in vinegar, is very good, but if you grow it, try this plan:

Early in the season choose young straight roots, eight or ten inches long, each with a single crown, and plant them out in deeply dry soil a foot apart each way. Thus treated, you will have something very different from the pipe stems one generally sees, grown from plants that have been allowed to occupy some neglected corner of the garden for years. Store in dry sand.

By the bye, I tasted, at St. John's, in 1861, horse-radish leaves cooked like spinach. It was in early spring, and they were really not bad, though rather bitter.

Corn.—Every body knows as much as I do about this plant. One thing I must observe: Sow Early Minnesota, and Stowell's Evergreen, on the same day in the same soil, and the latter will be just fit to eat when the former is finished.

Kohl Rabi.—This I have grown experimentally, but I do not recommend it as a table vegetable. It is excellent for cows, but for our use turnips are better and not so troublesome to grow.

Leeks.—I spoke of leeks so lately that I have nothing to add on this subject, except that a few left in the ground all the winter were quite sound when the land was bare this spring. Shorten the leaves before setting out in the trenches. (1)

Lettuce.—No one who has eaten a salad made of cos-lettuce alone, with a properly compounded sauce, cares for cabbage lettuce except as a cooking-vegetable. Ask Mr. Barnard, the Director of these Journals, &c., what he thinks of my cos-lettuces! Lettuce is said to be very wholesome; it may be, for ought I know, but it is certainly the best salad-plant we have, and so delicately flavoured that it bears no admixture *with any other plant: the man that would insult lettuce* by adding onions to it, like Virgil's horror:

"Atque idem jungat vulpes et mulgeat hircos."

would harness wolves and milk he-goats.

Cabbage lettuces must be grown in all gardens, on account of their rapid arrival at maturity. Putting aside forced lettuce, as beyond our usual means, I advise sowing the first seeds in a moderate hotbed about March *20th.* They should be sown thin, and have plenty of air—never allow them to be drawn up. When they can be handled without fear of damaging them, water copiously, and half in hour afterwards, prick them out three inches apart each way, in the same bed; water and shade them. When the weather is settled in May, put them out in rich soil in 15 x 12 inch rows. Hoe *frequently, and water abundantly. If the season is dry, you* may tie them with bass or strips of any stuff that will not cut them. The greatest care must be taken to keep all moisture out of the heart before and after tying, as the least drop will infaillibly rot the plant: all watering, therefore, should be done at the root of the lettuce, the rose of the watering-pot being taken off.

For succession, rows of lettuce should be sown every fort night, and the plants singled 15 x 12 inches. I do not care for the curled cabbage-lettuce; the best, in my opinion, for all purposes, is the old summer cabbage-lettuce for out-door work, and the Tom Thumb for the earliest, though, as its name indicate, it it very small.

Of cos lettuce, the only sort I can get in this country is the White Paris. In England, I used to grow a brown-cos, that stood the winter without protection, but I never found it here. I have seen lettuce growing in the spring in spots where neglected plants had shed their seed in the previous fall: why should we not sow lettuce at that season expressly to stand the winter?

(1) Apparently, only, it has revived. A. R. J. F.

(1) And more; I had a soup last week made with a leek that had been lying in my coach house all the winter. A. R. J. F.

The land for both kinds should be deeply dug and heavily manured with well rotted dung, which should be trenched in deeply, that the plant may find ample food towards the latter part of its growth. Sulphate of ammonia, at the rate of two pounds to the square rod, raked well in before sowing or transplanting, will furnish plenty of starting power.

Cos-lettuce, to be eaten in perfection, *must* be blanched. Tie up rather loosely, at first, with bass or other stuff, beginning the circumvolutions from the bottom of the plant, and drawing them in rather closely towards the top. Ten days afterwards they will be a mass of tender delicate, white leaves, with only two or three green ones around the outside. The very finest, most delicious salad in the world.

Those who have only one hotbed must please to remember that the temperature fitted for growth of early melons is by no means the same as that required for lettuce, cabbage, &c. I have never succeeded in growing both classes of plants in the same frame.

My salad sauce, which I have given before in this Journal, but which I will repeat for the benefit of those who may not have seen it, is made thus:

Materials.—Lucca olive oil; Crosse and Blackwell's malt-vinegar—Bordeaux white-wine-vinegar, which is the best of all, I never saw here—Colman's mustard; two hard boiled eggs, and salt.

Bruise the yolks (I *won't* spell the word *yelk*) of the eggs till no lumps remains; to them add half a teaspoonful of salt and amalgamate; two large tablespoonfuls of oil to be poured in almost drop by drop with continuous stirring; and when the mixture is as smooth as it possibly can be made, add one large tablespoonful of vinegar. If you do not like oil, it is probably because you have never tasted Lucca oil: Bordeaux and Marseilles olive oil are only fit for greasing machinery with. Cream may take the place of oil, but more vinegar must be used with it.

Melons—This is rather a delicate subject with me just now, seeing that on Friday last, May 2nd, a sudden *wind-frost*—(22° F.)—cut off all my early melon, aubergine, and cucumber plants—they were just ready for transferring to their summer apartments! The only survivors were a few Hackensack melons from Mr. Ferry, of Detroit. These must be very hardy, but though called by that seedsman *musk*-melons, they have a different leaf to any of that kind I ever saw. Do any of my readers know if they are worth the trouble of growing?

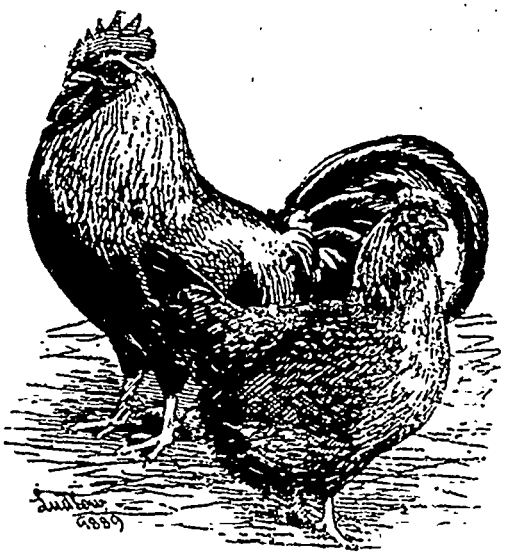
Of all the melons grown here, I need hardly say the *Montreal Market*, the same as *Evans' Superb*, I believe is the finest. I have seen them weighing from 18 lbs. to 23 lbs. a piece, superb indeed in flavour, and a mere skin for a rind. Of water-melons. I hardly know anything; in fact, I only grew them once, and I never tasted one worth eating. We had, in my late father's time, three pine-apple houses; I have eaten the Chaumontel pear in its perfection in the Island of Guernsey; but the finest fruit in the world, to my taste, is a well grown Montreal Market melon, ripened before the sun's rays have begun to lose their flavour-giving power.

Melons, cucumbers, and egg-plants demand a separate hot-bed. They want lots of heat and will bear closer confinement than cabbages, lettuces, &c. When treating of cucumbers, I gave enough directions for making up the hotbed, and will only add here, that fewer than six large Scotch-carts of horse-dung to the bed will not be sufficient if the bed is to retain its heat for the desired time. Turn the dung once or twice, equalising it as much as possible, but do not let it lose its fermenting power.

The best soil for melons is a good, rich turf, from a loamy soil. You have seen horses and cattle standing round the gate of a pasture, in the fall, waiting to be let into their stables at night. This soil, enriched as it is by their droppings, is the best of all earth for melons. Market-gardeners in the vicinity of London pay as much as $2 a cart-load for it, and no manure need be added to it. Sow the seed after the fierce heat has sunk to from 80° F. to 90° F.

The earth may be added all at once, but the best growers begin with a small hillock to each light, on which the seed is sown, and more earth is added from time to time, as the plants require more root-room. The soil, coming fresh and fresh, sustains a vigorous and healthy root-growth, which is of the greatest importance, and the hillock being raised close up to the glasses, favours the production of stout leaves and the absorption by the soil of sun-heat, which, more than either soil, air, or water, is the life of the melon.

Two plants to a light are sufficient.



SILVER-GREY DORKINGS.

Melons grown in this way, sown in the first week in March, should, in an average year, produce fruit fit for eating by the end of July. In ordinary practice here, the plants after having been grown in pots in a hotbed are transferred to small frames—about 3 x 2½ feet—, when the soil has become warm enough—generally about the 15th May. The beds for the small frames may be prepared thus:

Dig holes, a little larger than the frames, and about 2 feet deep. In the holes put about 1 foot thick of hot horse dung, on which place 9 inches of well-prepared loamy soil as mentioned before, the *turfy* parts being placed on the dung—the grass will not grow if there are 6 or 7 inches of earth above it. When the earth is warmed through, set out your melon plants, and water and shade for a day or two. It is better to have each plant in a separate pot, and to soak the soil in the pot well before turning out.

Paint the inner side of the lights with thin whitewash, to ward off the too ardent rays of our July sun.

Here, we generally let the melon grow too much stalk and leaves—too luxuriantly. The pruning must be begun as soon as the plant shows *two rough leaves;* then is the time to stop it, being careful in this as at all times, to put a little moist earth on the wounded place to hinder bleeding. After pinching off the point, two side-shoots will make their appearance, and these, too, should be stopped when they have produced six or seven leaves each. The plant then is to be allowed its own way until fruit is formed, when the fruiting shoots are to

be stopped one eye above each melon, only one fruit being allowed on each shoot. If a plant is to produce really fine melons, not more than 6 or at most 7 should be expected from it, the others, if others there be, should be removed when small, but not too soon lest the first one fail. Never shall I forget the rage evinced by Madame St. Aubyn, of Joliette, when I, seeing half a dozen green melons, about the size of a hen's egg, on one of her beds, had the audacity to pick them off to allow the others—very fine they were—to ripen more freely!

After this, all superfluous, non-productive shoots must be pinched off: overcrowding must be avoided.

A new gardener has come, from England, to manage the *five* gardens of the Dawes Brothers in this village of Lachine. By the bye, is it a village or a town? This young man surprised me by saying, that the reason people did not succeed in melon-growing was, that they did not fertilise the female, or fruit bearing flowers with the male blossoms! I thought, and I still think, that though the early flowers, in the absence of the natural agents, flies, ants, &c, want fertilising by the hand of man, the flower of the melon can do without it after the snow is gone. However, I have always, as I have mentioned in this Journal, always fertilised my melons and cucumbers. The process being very simple, it may just as well be done as not:

On a fine, still morning, take a male blossom in full vigour, invert the petals and insert the stamens in the calyx of female flower, turning the former round and round, very delicately, till the farina of the male has become mixed with that of the female. I never found it do much good, as melons are not so early here as to be in fruit-bearing bloom before there are plenty of flies.

Watering is a matter of great importance. Never let the plant get dry at the roots, and give the leaves a slight sprinkling twice a day. Plenty of air, and liberal watering when *coming* into bloom are two of the secrets in growing melons. I do not mean that they should be drenched like cucumbers, but they should have plenty. When the flowers open, the watering at the root should be discontinued, and the watering at night should be the only one practised. When the fruit is as large as the top of a man's thumb, the watering at the the roots may be resumed, and the sprinkling twice a day, too but by that time we may almost trust to the sky for its moisture when the small frames are in use. Very little water is to be given when the fruit is ripening, but care must be taken that the plants do not suffer for want of humidity.

Mushrooms.—I have said so much during the past year about these delicious—fruits or vegetables?—that I pass them by now. I hear that they fetched a dollar a pound in Montreal last February. I wish there were some catacombs here, that they might be had at a more reasonable price. To cook the large flap-mushrooms: for each one take a tumbler, and having put a small piece of butter, with a little pepper and salt on the mushrooms, invest the tumbler over it, and place it in a moderately hot oven. It is so good, when cooked like this, that I do not like to call it a *fungus*, though it is indisputably one. The great secrets in mushroom-growing are: good seed or spawn; a firm, rich bed; warm water for sprinkling, with a fine rose to the watering-pot: and neither too much nor too little water. the bed should be never dry, and never wet.

When do mushrooms show in greatest plenty in the pastures? In the beginning of September when the air and the soil are damp with the autumn rains, and the atmosphere is warm. Imitate these features in your artificial beds and you will succeed.

Mustard and cress.—In England these two little salad plants are always eaten together, and rarely mixed with any others. They are generally grown in a vinery, in narrow, long boxes, and sown very thickly. As they run through their edible state very rapidly, very small sowings, at frequent intervals of time, are the practice. They are not worth growing out of doors, as they get scrawled about in every storm of wind, and then are tough and acrid.

Onions.—Except in Spain, Portugal and parts of Italy, the province of Quebec cannot be beaten in the size and quality of the onions it grows. Any soil will grow this root, to lesser or greater perfection, but, like most vegetables, the quicker its growth, the more delicate is its flavour. A rich, deep, light loam is the best seed-bed for the onion, and the preparation of the land should have great attention: perfect pulverisation, and complete firmness, are both absolutely necessary to success.

Why, of all crops, the onion should be the only one that succeeds year after year on the same land, I confess I do not know; but that this is the case, all growers of the root assert.

For sowing, as we always do in this country, in the spring, the land should be roughly dug in the fall, the dung well buried, and the seed sown on the *stale furrow*, so to speak, after a slight *pointing* with the spade or fork—say 4 inches deep—the work being finished with the rake, and a slight tramping in boots or shoes *without heels*. I generally lay a board on the bed, and, turning over and over, as the ground is tramped, get firmness enough. Our market gardeners in Hertfordshire (England) roll the land with a 25 cwt. wheel roller after the plants are up. At all events, without pressure of some kind, there is no use in trying to grow onions.

The next operation is to draw out shallow drills, twelve inches apart, and sow the seed about ½ an inch deep—only just covered, in fact—. I soak my seed for 24 or 36 hours, and keep it in a moderately warm place for three days or so before sowing. I then tramp the land again, and just finish off with a *light touch* of the rake, done more for show than use. My onions of this spring, sown on April 22nd, are now, May 5th, just up.

The moment the rows are clearly visible, the Dutch hoe (pushed, not drawn like the common hoe) should be used between them, but the ground must be as little disturbed as possible: keep it firm till the onions are ripe. Thin out with a two-inch hoe, leaving the bulbs from 3 to 4 inches apart. A thick plant of onions weighs more to the acre than a thin one, but large onions are the more saleable, and, *me judice*, have a more delicate flavour, though I fancy the former are the better keepers. Thin early, and, in thinning, disturb the ground as little as possible.

I have a great liking for the *bottom-sets*, which are easily grown, and are fit to pull for cooking, &c., six weeks after planting.(1) Sow ordinary seed very thickly—say, 20 or 30 seeds to the inch, in drills, and when they are ripe, which, if sown early, they will be by the first week in August, dry them thoroughly, store in a dry place, and, in spring, set them in rows a foot apart and two inches in the rows. Or you may plant them thicker, and draw every alternate one for early use. The necks should be just covered, and the land tramped on each side of the rows as soon as they make their appearance.

Top-onions, as commonly found in the Montreal market, may be treated in like fashion.

The potato onion, largely grown in South Wales, where I have seen the natives devour them raw for dinner by the dozen—eating them like apples—are so strong, that they would make anybody's eyes, but a Welshman's, water even to look

(1) Sown April 22nd, mine are fit for use now: May 27th.

A. R. J. F.

at them. Plant them like potatoes, 12 x 9 inches, and don't earth them up as some people do: they grow much bigger if allow to come into the light.

Every one here knows how to grow eschalots, or shalots as we call them at home. I would not cut the bulbs as I have seen some do for economy's sake.

Sulphate of ammonia as a top-dressing, and well rotted cow, horse, pig's dung, or night soil, under the top spit of soil, are the best manures for all the onion tribe.

JENNER FUST.

DE OMNIBUS REBUS.

Bad practice.—Again, I have to observe that few things are more injurious to pastures than nipping off the first shoot in the spring. Dr Daubeny, Botanical professor at Oxford, showed, at least 45 years ago, that if the first growth of any of the grasses be cut or fed off in the early part of the year, the ultimate produce will be diminished by at least one-third. My neighbour, M. Daignault, tenant of the Boyer estate, with a false view to economy, had all his stock—ten or a dozen cows, six ewes and their lambs, and two colts,—out all over the lower pastures of his farm on the 20th April! And not only that, but, as the fences were not in order, his neighbours' pastures were invaded and suffered accordingly. In the Eastern Townships, a man is held to be a very bad farmer who allows his stock to enter his meadows at any time of the year; but feeding a timothy meadow in the fall is a mere trifling crime compared with what I have cited above.

Doctors differ.—It is curious to see how Doctors differ on the question: which is the best maize for the silo? M. Louis Beaubien, at the Arthabaskaville meeting of the Dairymen's Association, recommended the *Southern-Mammoth* corn from Mr. McPherson's; l'abbé Chartier spoke in favour of the *Western-corn;* while Mr. Barnard, showed stalks and ears of Canadian corn which, he said, had been proved to be superior to all other kinds in the ratio of 2:1. However, they all three seemed to be willing to wait till the analyses of these and other kinds shall have been made by M. Choquette, at the government laboratory connected with the Seminary of St. Hyacinthe, before deciding: which is the best corn for ensilage.

Cultivation of corn.—Again, M. Beaubien remarked that M. Chartier, in his lecture on ensilage, had omitted to mention the earthing up of the corn after the horse-hoeing was finished. M. Chartier, I dare say, agrees with me, that earthing up any crop—except potatoes so far as to prevent their greening—is a vicious practice, as tending to confine the roots to a limited space, instead of allowing them free scope over the whole space between the rows.

M. Chartier recommends very shallow cultivation after the corn is well up, lest the roots be cut; but if one root is cut, nature has provided that four or five more shall be formed to take its place. I willingly allow that after the corn has attained a considerable height, all cultivation should cease; but previous to that time, I should cultivate as deep as possible between the rows, otherwise, the corn would lose half its value as a fallow-crop.

Heads of cows.—M. Couture, at the same meeting, very properly laid great emphasis on the wisdom, in choosing a cow, of selecting one with a *feminine* countenance, adding that bull-headed cows were never good milkers. Of course he is perfectly right, but, as *the exception that proves the rule*, do any of my readers remember the celebrated cow "La Major"? Her head struck me when I saw her in 1887 as being decidedly *austère* in expression, though in looking at the engraving representing her—p. 80, 1886—she appears to be mild enough. Anyhow the rule is a safe one to follow.

"*Snow in May.*—On the 4th May, one inch of snow fell at St. Paul, Minnesota, and four inches at Jamestown"; to this the reporter adds: "A fall of snow at this season is generally considered to be favourable to the crops." What on earth does he mean by that? The snow in question had disappeared twelve hours after its fall. What possible good or harm could it do to any crops? except by the addition of about $\frac{1}{3}$ of an inch of rain to the soil!

Old follies.—"I have three geese sitting on their own eggs, with a few duck's eggs among them, else they won't hatch." Mary Bellenden to Mrs. Howard (Countess of Suffold), 1730. If people, like the above two "Grandes dames," believed in such nonsense as that goose-eggs would not hatch unless mixed with duck's eggs, I am not surprised at a Huntingdon farmer being very angry with me the other day because I would sow my pease when the moon was in the wane, and would not believe that pork would not take the salt except when the moon was on the increase!

The season.—Another disastrous year, I fear, is at hand. Reports from the North-West are discouraging; it has been raining for the last three days almost continuously; the lower pastures, here at Lachine, are a pond; nothing to speak of is sown yet; flour is up a dollar a barrel, and bread two cents a loaf! The rain, this morning, May 6th, looks like continuing. What must be the state of the land in the heavy districts? (1)

Sensible reply.—"We know of no chemical examination of the onion with a view of determining the best fertilizer. It would be more important to ascertain the character of the soil, to be tested by field experiment. In some places bone manure has been found advantageous; in others of little value; but more commonly well rotted barn manure has been quite successful, being used for a few inches of the surface.

It is not probable that an analysis of the soil would throw light on the subject, as much depends on mechanical condition and other influences not pointed out by analysis."

Country Gent. ARTHUR R. JENNER FUST.

Trees and Plants for the Cold Regions of the North.

(A lecture delivered by M. J. C. Chapais before the Convention of Fruit-growers of the Dominion, held at Ottawa, 19th, 20th, 21th, February 1890.)

MR. PRESIDENT AND GENTLEMEN,

It is highly probably that not one of the persons here present grows fruit-trees in so northerly a locality of the province of Quebec as I do. St. Denis, Kamouraska, where I live, is situated 90 miles below Quebec, in lat. 47° 30' N.

I thought it might be useful to the fruit growers present to know the sorts of trees and plants that we are enabled, in spite of our rigorous climate, to cultivate successfully. Nobody will be surprised at finding their number very limited,

(1) And so it has gone on! The land to-day, 27th May, is soaked, and it rained all last night. A. R. J. F.

when I tell you that our winters are always very cold, and the thermometer often falls to—30° F. Our summers are short, the autumns frequently long and devoid of snow, very cold, with alternate frosts and thaws which injure vegetation more than the great colds of winter which are not present until the ground is covered with several feet of snow.

Now that I have given you an idea of the conditions under which we pursue horticulture and fruit-growing, I will give you a list of those varieties of plants from which we obtain good results :

APPLES.

SUMMER.	Red Astrachan.
	Summer Calville.
	Duchess of Oldenbourg.
	Peach.
	Tetofsky.
AUTUMN.	Alexander.
	St. Laurent.
EARLY WINTER.	Fameuse.
	Hermine.
	Wealthy.
LATE WINTER.	Winter Calville.
CRABS.	Hyslop.
	Montreal Beauty.
	Transcendent.
	Whitney.

Other comparatively new sorts are being tried, especially of the Russian varieties. Time alone can tell if they are of value to us.

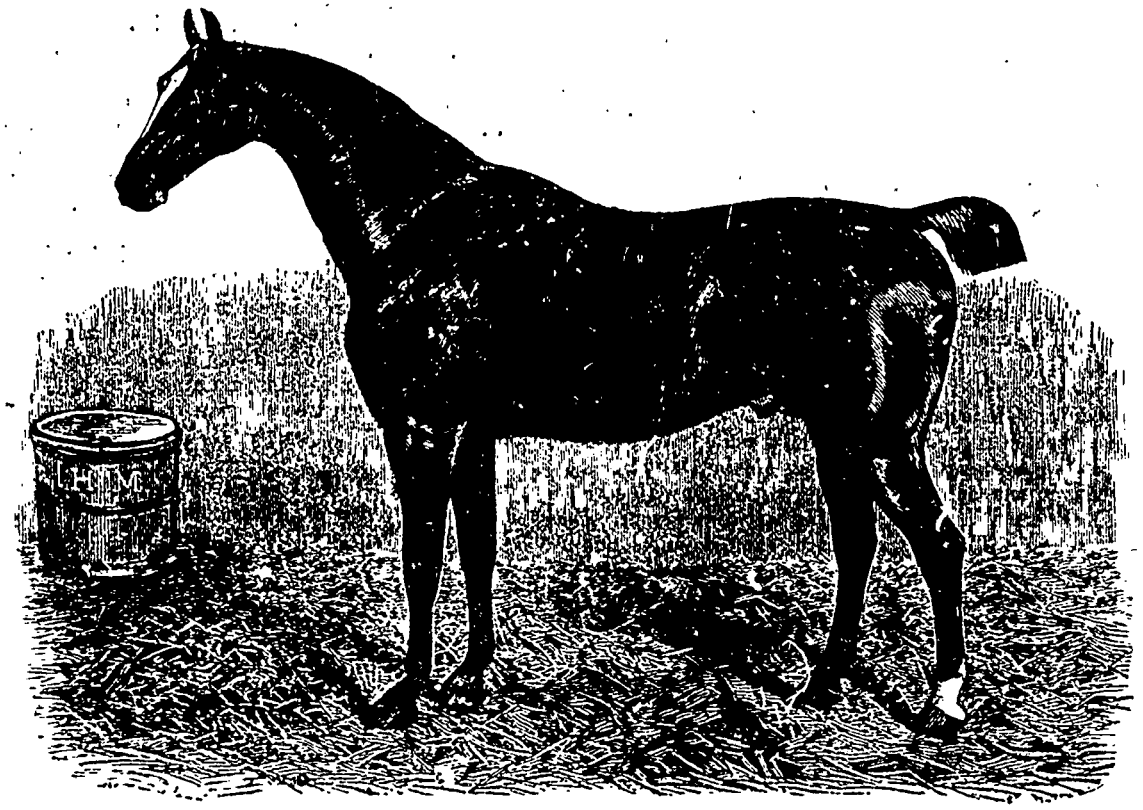
PEARS.	Summer Doyenne.
	Clapp's Favourite.

Pear-culture can only be pursued in our district *en amateur*. The varieties here named have been grown and have produced fruit in some places near my house, and I am giving them a trial in my own orchard.

PLUMS.

BLUE.	Damascene (vulgo: Damson).
	Lombardy.
	Orleans.
YELLOW.	Imperial gage.
	Orleans.
	Reine-blanche.

One curious fact connected with the above named plums is, that the trees live much longer here than in the latitude of Montreal.



HACKNEY STALLION, RUFUS; 1343.

CHERRIES	The Flemish.

No cherry can surpass this variety in our region either as regards yield and quality of fruit. It is supposed to be identical with the Early-Richmond.

GOOSEBERRIES.	
GREEN.	Downing.
RED.	Houghton.
CURRANTS.	
RED.	Cherry.
BLACK.	Naples.
WHITE.	Grape.
RASPBERRIES.	
RED.	Antwerp.
WHITE.	Orange.

The latter variety is apparently of French origin, since it has occupied a place in our gardens from an unknown date. The hardiest and best variety known.

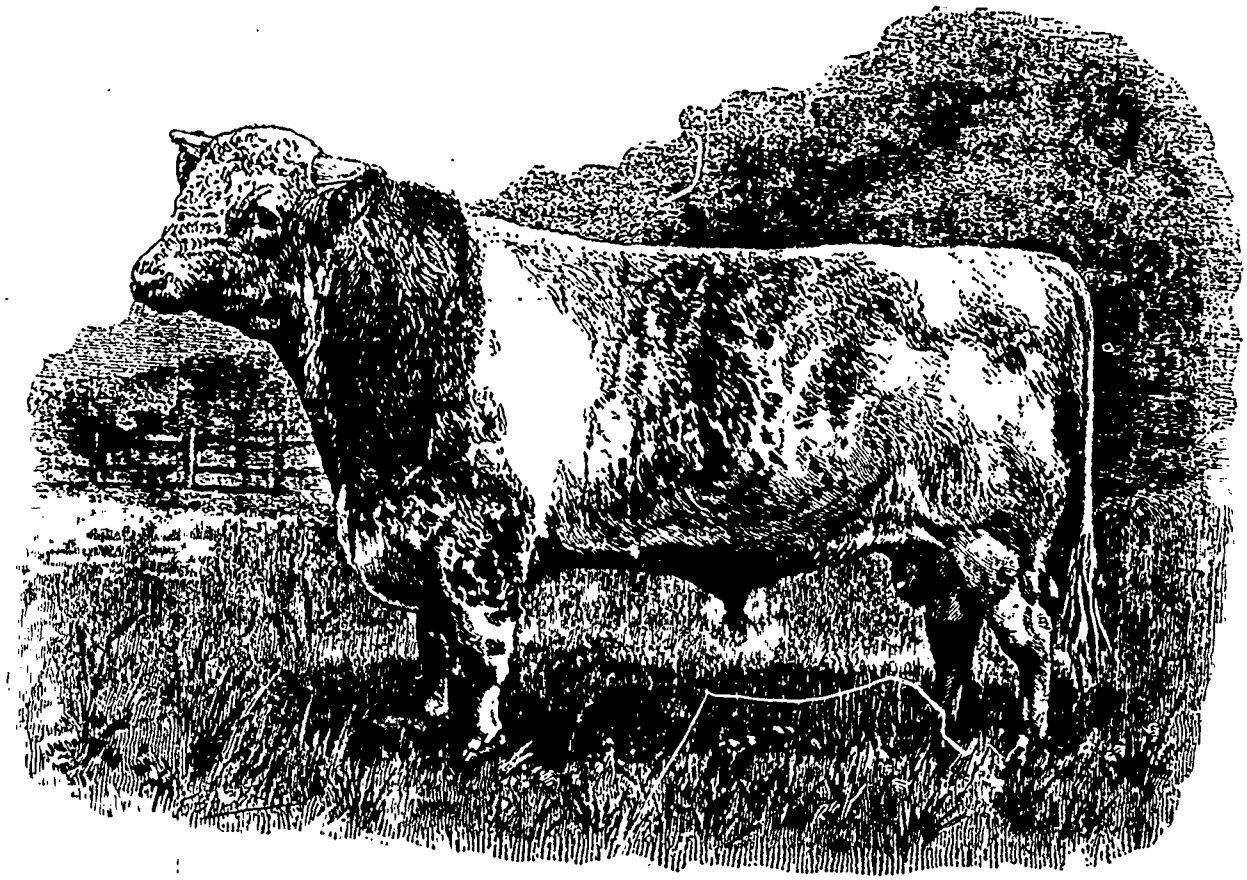
VINES.

BLACK. { Champion. Hartford.

Grape-growing with us ends at St. Roch des Aulnaies; lower down it is out of the question. Even between Quebec and St. Roch des Aulnaies it is only grown by amateurs. Covered with earth, the vine will endure our winters, but its fruit does not ripen every year.

ORNAMENTAL TREES.

European White Weeping-Birch.
Norway spruce.
Horse-chestnut.
Box-elder or Ash-leaved maple.
Butternut.
White Poplar.
Lombardy Poplar.
Locust.
Kilmarnock weeping-willow.



SHORTHORN BULL, NEW YEAR'S GIFT; 57,796.

STRAWBERRIES.

WHITE. —

RED. { Sharpless. Wilson.

The white Alpine strawberry is a perpetual bearer, giving fruit during the whole summer: very hardy, stands our winter without covering, and the flavour is exquisite.

CRANBERRIES.

FOR MOIST SOIL. Common cranberry.
FOR DRY SOIL. Cherry-cranberry.

To complete my essay, I will now enumerate a few ornamental trees and shrubs that have been acclimatised in our district though not indigenous to it.

ORNAMENTAL SHRUBS.

Virgin's bower.
Bagenaudier or False Senna.
Climbing ivy.
Tartarian ivy.
Bleeding Heart.
Japan Weigelia.
Venette-thorn.
White lilac.
Persian lilac.
Double-blossom plum.
Sweet-scented currant.
Wax-ball.
Dwarf-flowered wax-ball.
Snow-ball. (1)

(1) I do not know some of these by their French names. A. R. J. F.

We can grow almost all the kitchen-garden plants of the Eastern part of the province without sowing in hot-beds, except the following:

Celery, cauliflower, leek;

and the cultivation of these six is either impossible or their produce is small and of inferior quality, the season being short and not hot enough to mature them.

Artichokes.	Water-melon.
Aubépine (*white-thorn!*) (1)	Peppers.
Melon.	Tomatoes.

In the flower-garden, 31 families of flowers furnish us with 54 varieties of hardy plants which stand our winters without any protection whatever.

In the eyes of Europeans who inhabit the same latitude we must seem rather harshly treated by nature as regards horticulture. Indeed, if we follow the isothermal line which traverses those regions having the same climatic conditions as ours, we shall ascend in Europe as high as Stockholm, 60° lat. N., a difference from our latitude of 12° 30'.

J. C. CHAPAIS.

CORN-SILAGE.

I have just, May 7th, received the following from the Rev. C. P. Choquette, Director of the Experiment-station of the Seminary of St. Hyacinthe, and translate it from the original French for the benefit of my readers.

"I lay before the farmers of the province the analysis of fifteen samples of silage, from all parts of the province, which I have just finished. I think it advantageous to furnish certain explanations connected with the subject, to serve as a guide to the proper method of sowing corn for ensilage.

The annual report of the "Agricultural Experiment-station" will appear next autumn. In addition to a more developed article on these analyses, it will contain some information connected with agricultural chemistry, as well as explanations of the technical terms at the head of the subjoined columns.

The substances used for food for stock,—forage-plants, grain, &c.—as well as those used for human food, contain several digestible compounds, the quantity of which, be it less or more, determine their commercial value. Protein and fatty matter are the most valuable of these; the non-nitrogenous, sugar, starch, &c., come next.

The price I have assigned to each of the silage-samples is based on the value of the best timothy hay, and on the relative percentages of digestible matter contained by these two fodders. These figures are not *absolutely* correct; to make them so it would be necessary to establish exactly, by experiment, the food-value of each of these digestible matters, as well as the value of the constitutional water of the plants, which, probably, plays a more important part in the nutrition of animals than does ordinary pure water. (2)

If we look at the last column of the table, we see at a glance that the variations of the value of silage are very great. The average value of these fifteen samples is $2.17. The value of No. 29 reaches $2.78, while that of No. 21 falls to $1.22: a difference of 140 %. I attribute the inferior value of Nos. 24, 21, 31, and 23, to the system pursued in sowing the seed, and especially to the insufficient distance between the rows. In narrow rows, the stalks do not get enough air and light; they gorge themselves with water, and cannot form their seed—frequently not even their ears. They have to be left standing until late in the season to become ripe enough for the desired purpose, and then the woody fibre, the least digestible part of the whole, becomes developed to the prejudice of the other compounds. I find that Nos. 24, 26, 31, 32, were sown in rows 18 to 24 inches apart; whereas, Nos. 25, 28, 29, 30, were in rows 30 to 36 inches apart. No. 21 was, apparently, sown broadcast.

I am not yet in a position to recommend one variety of corn more than another. Western corn has generally given satisfactory result. No. 29 of these analyses is a sample in this kind of maize that has yielded nearly 20 tons an *arpent*.

I do not pretend to draw strictly accurate conclusions from this first enquiry, but I think it will be found to be always advantageous to the farmer to sow silage-corn in rows at least 30 inches apart. A superior quality, if not a greater yield, of silage will be obtained at 36 inches apart.

I see, in the report of one of the experiment stations of the United-States, the analyses of 47 samples of silage-corn. These analyses, calculated on the basis I have adopted, would give an average value of $2.47 a ton. There is, then, a notable difference between this average and that I have assigned to our silage, and this difference it becomes our duty to diminish. I think we can reach an average of $2.25 to $2.30; and I believe the best way to set about it is to sow at 36 inches between the rows.

RESULT OF THE ANALYSIS OF 15 SAMPLES OF INDIAN CORN.

	Water.	Albuminoids.	Fat.	Nitrogen-free extract.	Woody fibre.	Ash.	Comparative value of a ton.
	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	$ c.
Nos. 21	88.88	0.56	0.34	4.92	4.35	0.93	1.22
22	85.99	1.41	0.64	6.89	4.05	1.03	1.92
23	83.47	2.26	1.21	7.62	4 40	1.09	2.67
24	84.14	1.23	0.82	8.05	4.69	1.07	2 09
25	81.95	1.36	1.22	7.98	6.07	1.61	2.34
26	82.88	0.92	0.91	8.81	4 97	1.51	2.10
27	80.94	1.42	0 34	8 26	6.74	2.30	2.14
28	77.68	1.70	0.84	11.00	7.00	1.77	2.78
29	80.11	2.09	1.31	8.97	6.32	1.21	2.92
30	82.18	1.27	0.86	8.07	6 06	1.57	2.23
31	84.04	0.88	1.95	6.24	5.28	1 41	1 95
32	87.15	1.14	0.83	4.38	5 58	0 91	1 74
33	87.16	0.98	0.57	5.21	5.04	1.04	1.60
34	79.62	1.89	0.94	8.79	7 51	1.26	2.72
35	83.93	1.37	0.67	7.46	5.45	1.13	2.08
Average.	83 24	1.37	0 93	7.51	5.57	1.32	$2.17

C. P. CHOQUETTE, PTRE,
Director of the Experiment-Station, P. Q.
St-Hyacinthe, 1st May 1890.

Prices of sheep.—The value of good small Down-sheep is very great in England just now. Eight stone (65lbs.) wethers are worth $14.00, as they stand, against $12.50 last year, and Lincolns have risen wonderfully in value, a twelve stone wether of that breed being worth $18.24, against $15.36 last year, a rise of about 3 cents a pound. A. R. J. F.

April 28th 1890.

ARTHUR R. JENNER FUST, ESQ.

Dear Sir,—I noticed a passage in the last issue of the *Journal of Agriculture*, page 60, which says that "in the county of Soulanges there is no Clyde Stallion," signed Mi-

(1) Can this be correctly named? A. R. J. F.

(2) Thanks very much, M. Choquette. This is what I have been trying to prove, experimentally, for many years. JENNER FUST.

chael A. Could you oblige me with his name in full, as I should like to correspond with him with a view to sending a stallion thereby so doing you will confer on yours, very sincerely,

ANDREW SCOTT,
St. Laurent, Montréal.

Perhaps, Mr. Michal A., whoever he may be, will kindly answer the above. I cannot. A. R. J. F.

St. Hilaire, April 27th 1890.

My dear Sir,—In your April No. Agricultural Journal talking of hunting and barbed wire, you say that "anything once brought to perfection by art and skill, the knell of its doom may soon be expected to toll!" Therefore, logically, barbed wire itself is doomed (for which, thank God) as it is supposed to be perfection in the fence line, it is certainly perfection in the art of barbarity. Do you think that seed already in the ground can do any good? I think not, and as yet have not sown any. Yours truly, A. G. CAMPBELL.

Reply. — All my small seeds such as onions, carrots, spinach, lettuce—cos and cabbage—beetroot, parsley, Windsor-beans and radishes were sown on the *22nd April*; potatoes-sprouted in the light—on the 23rd—up above ground on the 10th May—and pease—Bliss' American Wonder and Stratagem—on the same day. They are all looking well, colour good, and growing away merrily. Mr. Dawes' Gardener was advised to daday sowing his seeds, but he took my opinion on the subject, and is perfectly satisfied with the result obtained by following it. Therefore, my dear Campbell, I am sure that early sowing, *on properly prepared land*, is profitable. My neighbours, most of them, only sowed their gardens yesterday, May 26th. A. R. J. F.

CANADIAN WHEAT.

"It is worthy of note, and must be gratifying to Canadians, and especially to North-Westerners, to find that Canadian wheat is quoted in Mark Lane higher that any other wheat in the world. It is the only wheat that reaches 40s per quarter. The best Duluth, Australian, New Zealand and Dantzic wheat, which come next in order, fall two shillings short of Canadian, while the best Indian is five shillings below."

The Mail.

The above is hardly correct. Dantzic has been quoted at 39s a quarter for months, and the quantity of Canadian wheat on the Mark Lane Market cannot be large as the leading agricultural paper, the English agricultural Gazette, has quoted it *blank* for several months! English *Talavera* wheat is almost invariably the highest priced on the market.

A. R. J. F.

How to procure good forest trees for planting.

It is not easy to procure young forest trees, worth planting. The trees raised in the *nurseries* can generally be relied upon and they are sold at moderate prices, but, owning to distance, want of easy communications, delays in forwarding and delivering (which are often cause that the trees, when received, are unfit for planting) and to the cost, however moderate, it is very seldom that farmers have recourse to the nurseryman for the *forest trees* they intend planting (I do not allude, here, to *fruit trees*).

They generally go to the woods for them, often a distance of several miles. Those who have tried it know how hard it is to find such trees as they want, how much time and trouble it takes to dig them up, and how impossible it is, even with the greatest care, to avoid wounding and tearing off the roots. They know, too, how little satisfaction they have generally derived from all that work. Trees taken out of the forest and transplanted in the open, are placed at a great disadvantage; they fail so often that people get discouraged and many give up tree planting, as too difficult an undertaking.

Nothing is easier; in the proper season, with soil fit to grow the kind of tree you wish to plant, if the tree is *in good order*, with a little care you ought to succeed. But the trees you dig out of the woods are seldom in *good order*, and they cost you a high price in time, if not in money. If you wish for good trees, in great number, safe to grow, without trouble nor expense, procure them from a nursery, *but let that nursery be your own.*

Any farmer can start, in a corner of his garden a nursery of forest trees, by sowing the seeds of the trees he wishes to plant. With a little observation, it is easy to find out when the seed is ripe; for instance, towards the end of June, beginning of July, the seed of the *elm* and of the *soft maple* (acer rubrum) is ripe; by sowing it, at once, it will sprout and the little trees grow nearly one foot in height this summer.

The maple, oak, ash, birch, butternut &c. ripen their seed in autumn; better sow it at once than winter it in the house. Sow in straight rows, with a garden line, leaving a picket at each end, to guide you, when weeding. Sow, say half an inch deep, for the maple seed and for other kinds, in proportion to the size of the seed, two or three inches deep, for butternut and walnut. Thin after the first year, if needed, and transplant further on the little trees removed in thinning. After three or four years, more or less (the time will depend on the rate of growth of each kind of tree) plant your young trees where they are destined to stay. Choose a cloudy or rainy day in the spring, and, without leaving home, with no trouble, without breaking any roots, you will take up and plant at once, without allowing the roots time to dry, one hundred young trees, certain to grow, in less time than it would take you to go to the woods, and dig up ten trees, with a poor chance of their taking root and living.

These young trees will cost you nothing, your children will soon learn how to weed them and take care of them, especially if you set them the example. Our own children when quite young, took pleasure in sowing acorns and watching the growth of the young oaks, as they came up. By sowing, you can procure, with no expense, any number of young trees and re-wood, by degrees, all the land which is not fit for cultivation and ought to have been kept as woodland.

But, do not forget to *fence* carefully your nursery and your plantations, so as to keep out the cattle. No use planting trees without fences, the cattle will destroy everything.

In many cases nature will spare you the trouble of sowing where the ground is favorable, in July and August, along the ditches, the roads, the fences, on the moss on barren patches, wherever there is a little dampness, in the neighborhood of the *elms* and *soft maples*, you will find hundreds of young elms and maples, just sprung up from the seed fallen from those trees; plant them in your nursery: *try it this summer.* The seed of the elm is so minute and delicate that it is better to pick up those young seedlings than to attempt sowing the seed.

In the maple-groves, the ground is covered with a regular carpet of young maple seedlings. You can pull them up easily by hand, in the fall or early spring, when the ground is still damp, without breaking any of the small roots. Plant them, at once, in your nursery.

It is very difficult to collect pine and spruce seed. Early in the spring, when the ground is still soft and spongy, in the pastures, near where those trees grow, you will see a number of young pines and spruces that you can pull up very easily; plant them at once. For that kind of tree, you must shelter them from the sun, until they are well rooted.

Whenever the ground of a garden has been dug up and worked in the fall, if there are any maple or ash growing in the neighborhood, it will be noticed than the ground, in the spring is more or less covered with maple and ash seedlings, grown from the seeds fallen from those trees. It takes very little time to pull up and replant hundreds of them, and scarcely any of them will fail; of course, they must not be pulled up too roughly or it may damage the delicate roots; if the ground is too hard, use a trowel. As much as practicable, they ought to be pulled up when they have only got their two first leaves which are easily known by their peculiar shape long and narrow, from one inch and a half to two inches long and about a quarter of an inch wide.

For several years past I have been seeking the cheapest and, at the same time, most effective mode of restoring the woods, where they have been completely destroyed; many of our old settlements are completely denuded of trees, and I can recommend this simple mode as the best, from my personal experience. Let those who suffer, for the want of fuel, of timber for building, of trees for shelter and ornament and those who would look to have a sugar maple grove at their door, let them start their own nurseries, this very summer; it will entail no expenditure of money, take but very little time and repay them bountifully. It will be a pleasure, for me, to give any further information, and advice to all those who may apply for it. W. G. JOLY DE LOTBINIÈRE.

Leclercville P. Q. 1 May 1890.

We keep all stock off our clovers. These are the conditions under which available nitrogen accumulates the most rapidly. This is a vastly cheaper way for us to get it than to pay 17 cents a pound for it in a fertilizer. Again, we never allow the clover to grow but one season, after the one that it grew in the wheat stubble. It has then made the greatest growth of roots it will ever have. It then goes under the potatoes, not in the fall, but when the ground is dry enough to crumble in the spring, and not before. I believe in keeping something growing on the land as nearly all the time as possible. That is the most natural and safe way. We cut part of the first crop of clover for our hay, carefully saving all manure (to return) on cement floors and in a covered barn yard. I am inclined to think the wisest plan for my farm is to let all the rest go back to the soil directly. But still we have some years cut the clover, taken the seed out and returned the haulm evenly over the field. Very likely a dollar in the hand has hidden two that could have been picked up within a year. This is a very common failing with us farmers. The man who pastures his young clover off closely holds the present dollar so near his eye that it hides five or ten in the future.

Let no man think that he can sow clover on a young timothy and wheat sod, pasture, trample and abuse it generally and get anything like such good results out of its growing as the writer has. One must study all through to give it the best possible chance, if he wants it to pay his checks every time. During the cold mornings in December, when the ground was frozen so we could get on, we drew out manure and carefully spread it on the poorest portions of our wheat, as shown by the fall growth. Each load will probably bring a dollar in the wheat, put on such spots, but that isn't the main point. It will insure a rank growth of clover on these poorer portions of the field, and that means an absence of poor spots in the future. When the manure, gave out we drew out straw and spread thinly over the wheat. It seems to help the growth of clover almost as much as manure.

I do not wish to advise any one in regard to farming without stock. Many have written me on the subject. I am and have been doing what was best for me. There are probably thousands of others who might so arrange as to do better by keeping no stock. Each one should study this matter out for himself. From 35 acres of land we live well and lay up money growing potatoes and wheat. Should we attempt to farm it as we did 15 or 20 years ago, raising cattle and feeding them winters, we should have to shut down tremendously on our living expenses or run behind. Times have greatly changed. We were quick to change accordingly. Should circumstances make it advisable to change back to stock keeping, the same careful treatment would be given the clover and all stock would be kept off. T. B. TERRY. (1)

Summit County, O., March 10

THE SILVER GREY DORKING.

No doubt the Dorking is one of the oldest of our domestic fowls, if not the oldest. There are no definite records to show when it was first bred in this country, or whence it came, except in the latter case the supposition that it came to us by the Romans, who evidently possessed a fowl with somewhat similar characteristics. On this point Moubray says:

"Is undoubtedly a breed of great antiquity, having been noticed and described in the first century of the Christian era by Columella and Pliny; and there seems fair grounds for supposing that these birds were introduced into this country by the Romans, among whom they had attained at that early period, some celebrity, and were much esteemed; with us but few fowls can boast such high and long continued reputation as the Dorkings. It has been suggested that Shakespeare was acquainted with the superior qualities of these fowls, and that he alluded to them in his Henry IV., when he makes Justice Shallow, of Glos'ter, order 'a couple of short-legged hens' for his guest's repast. The chief distinctive mark or characteristic of the breed is the presence of a fifth, or supernumerary toe, springing behind, a little above the foot, and below the spur. It has been sought by various writers to deprive Dorking of the honor of being the original and principal rearing place of this justly celebrated variety; and it is asserted that the true Dorking fowls are raised at Horsham, Cuckfield, and other places in the Weald of Surrey(2); and that the ancient and superior white fowls from Dorking are a degenerated race compared with the "improved" "Sussex breed."

It has also been claimed that the Dorking does not owe its origination to Surrey or Sussex at all, but comes to us from the north of England, for in Wingfield and Johnson's Poultry Book, published early in the fifties, we find it stated that "some writers have even ventured to assert that the native place of the Dorking is among the Cumberland Hills. It is certain that in that region is a race of fowls, five-toed, and bearing other points of resemblance to the Dorking. These are known in Cumberland as the Jew breed;" but it appears to be called still further north, 'the silver pheasant kind,' and at Edimburg, "the old Scotch breed." In the same work a quotation is made from the Gardener's Chronicle of 1848, which says:

"This Jew kind is said to be very ancient in Cumberland; and it is still very usual for the Lancashire men to carry off any fine birds of this race which they see among the mountain cottagers. However, it would be a vain attempt to trace the origin of a breed which was accurately described 2,000 years ago by a Roman writer; and, as Roman stations abound in Cumberland, it is quite possible that a poultry-fancying *Prætor*, 1,500 years since, might send or carry in the same year the first couple of Dorking fowls to the banks of the

(1) Read M. Bousquet's article—p. 79, May number of Journal—and then consider if we can afford to sacrifice the second cut, even, of clover. Ensile it, if the weather is catching. A. R. J. F.

(2) The *Weald* (cf. German, *Wald*) is all heavy clay land. Horsham and Cuckfield are in Sussex, not Surrey. Dorking is in the latter county. A. R. J. F.

Thames, and to the old camp at Ambleside or Castle Hill near Keswick."

Both the colored and the Silver Gray Dorkings have undoubtedly sprung from the old grey variety, the colored being brought to their present form by a cross made by Mr. John Douglas, while the Silver Greys have been produced by careful selection of the light-colored and soundest silver-plumaged birds. That being so, the claim that the Silver Greys are the purer Dorking cannot be denied. It is certainly a very handsome fowl, having that square box shape which is so characteristic of the Dorking race, and in good specimens the plumage is rich in color. It is thought that as a rule the Silver Grey does not attain the same size as the colored, but I have often seen birds of one variety just as large as the other, and there can be no doubt as to the capacity for fattening of these fowls. It is often said that the Dorking is not a hardy fowl. This is, however, misleading. The Dorking cannot certainly be kept on any soil, nor in any place, and damp, cold ground(1) is fatal to it. But the fact that it is so largely bred in the north of Scotland, away in the extreme north of Ireland among the Cumberland hills, and in numberless places which are cold and exposed, shows that it is a hardy fowl in all respects save one—that it is unable to withstand damp, clay soils. No matter how cold the place may be, so long as it is dry and free from clay; it will do well, at least that is the experience in this country. It is a fair layer, as good as are any of the Dorking family, makes a capital sitter and an attentive "biddy," and, of course, is one of the finest fowls that can be found on the table. This is partially due to the readiness with which it will fatten, for without this quality it would be impossible to ripen the flesh as is now done. The flesh is exquisitely white, and very delicate in its texture. In fact, it is very difficult to imagine a finer fowl on the table than the Dorking, and it is equal to nearly all the best French varieties, though I am inclined to think that the La Bresse and La Flesche sometimes surpass it, though they would never do so if the same system of fattening was adopted here as in the districts of France where these two varieties of fowl are so largely bred. Nowadays there are vast multitudes of fowls sold in London as Surrey or Sussex, which have simply been fattened in those counties, but were never bred there and have not a trace of Dorking blood in their vein. But the system of fattening is so excellent that they make fair birds, though of course, not to be compared with the splendid fat Dorkings which the best poulterers supply.

The advice which must be tendered to those who think of keeping Dorkings is that they should first consider whether the place they have is suitable, for unless this the case, they are better left alone. Then second, the demands of the market or the needs of the poultry-keeper must be regarded. If the demand is for table fowls nothing could be better, provided that anything like a fair price can be obtained for them, as it would not pay to breed Dorkings to sell at three shillings a couple. If eggs are chiefly in demand, Dorkings would be of no use, as they are only moderate layers. The egg is large in size, and very fine in flavor, the shell being pure white. As a proof of the value of this variety of the Dorking it may be mentioned that it is growing rapidly in favor in France, where it is highly esteemed for its economic qualities. The other varieties of the Dorking are scarcely to be met with across the English channel.

The following are the points of color in Silver-Grey Dorkings:

COCK.—Head, silvery white; hackle pure silvery white, as free from stripes as possible; comb, face, carlobes and wattles, bright coral red; beak, horn or white; eye, orange; breast, thighs and underparts, black; Back, shoulder coverts, saddle and wing bow, pure silvery white; coverts, greenish black; primaries black, edged with white. secondaries, part of outer web forming "wing bay," white; remainder of feathers forming wing butt, black; tail greenish, glossy black; legs, feet and toe nails, white.

HEN.—Eye, beak, comb, face, wattles, legs, feet and toe nails, same as in the cock; head, silvery white, with slight grey marking; hackle, silvery white, clearly striped with black; breast, rich robin red or salmon red, shading off to grey on lower parts; back, shoulder coverts, saddle, wing bow and wing coverts, bright silvery grey, with minute pencilling of darker grey on each feather; the shafts of the feathers white; primaries, grey or black; secondaries, grey; tail, grey of a darker shade than body; quill feathers black. (1)

H—.England. STEPHEN BEALE

(1) The Weald is damp and cold enough in all conscience!
A. R. J. F.

NEW-YORK FARMERS' INSTITUTES.

AT LYONS—NITROGEN ON THE FARM.

Prof. G. C. CALDWELL of Cornell University spoke on this important topic, to the following effect:

The nitrogen question will always be important. Nitrogen is the constituent of the food of plants that is most easily lost by careless handling of manure, and costs most to replace when lost. The air is full of it, and it forms a necessary constituent of every animal body, in the albuminoids of which that body is so largely composed. The animal cannot make the smallest particle of an albuminoid out of its elements; the whole animal kingdom must go to the vegetable kingdom for these albuminoids. Most careful and trustworthy investigations have shown that agricultural plants cannot use the free, uncombined nitrogen of the air for the nitrogen of the albuminoids that they make; they require for their satisfactory growth, nitrogen in some form of chemical combination, such as nitrate of soda or sulphate of ammonia, or perhaps animal waste, all of which contain nitrogen in chemical combination.

Great quantities of nitrogen are carried off our farms every year in the produce sold, nearly all going to waste in vaults or sewers of towns and cities. It is estimated that the river Rhine, in Europe, carries enough nitrogen to the sea every 24 hours, in the form of chemical compounds, to make 220 tons of saltpetre, 400 lbs. of which would be a liberal dressing per acre as a fertilizer; and other rivers carry like quantities, in proportion to their size. Is nature doing anything to repair this loss, or must we buy back all this nitrogen in expensive nitrate of soda, at a cost of $50 or $60 a ton?

We find in every acre of fair soil at least 3,000 lbs. of nitrogen, and in some good soils as much as 30,000 or 35,000 lbs. Crops require less than a hundred pounds each year per acre; but of this large quantity which nature supplies for us, nearly all is what may be called tough nitrogen food—very hard to assimilate. Some crops can thrive on this food, but others cannot; clover, lucern and lupine are crops of the first kind, and wheat, rye and barley are of the second. This is not because clover does not need much nitrogen; it needs more than wheat does. But besides getting hold of enough of this tough nitrogen food for a good crop of itself, if the clover sod is plowed in at the right time it leaves so much tender nitrogen food in the soil, such as the wheat crop requires, that to grow clover is a good preparation for wheat, even if two good crops of hay are carried to the barn to feed stock and make manure for some other field. The clover is thus a feeder of the wheat crop.

Given, then, a good supply of even this tough nitrogen food

(1) I prefer the *coloured* Dorking as being the hardier bird.
A. R. J. F.

in the soil, such supply may be made very valuable to the farmer, since with the aid of clover he can get good crops of fodder and of grain out of the soil. Nature, moreover, seems to provide ways for increasing this stock of tough nitrogen food from the free nitrogen of the air. Berthollet, a very eminent French chemist; claims to have proved by many experiments that a porous, loamy soil, not too wet, and having a good supply of potash in it, may, if well stirred, take up per acre and year from 500 to 700 lbs. of nitrogen from the air. If that is confirmed as true, the farmer may be able, by pro per management, to make this property of soils very useful.

Besides this it has been proved by many experiments by German investigations, that lupine and peas will grow in sand and produce albuminoids without any nitrogen at all in the sand to start with, if only a little water extract of a good soil be poured over this sand and afterwards only pure water, there being only a trace of nitrogen in the small quantity of soil water used, the nitrogen for the albuminoids produced must have been divided from the air, but how is not yet explained. Probably it was first taken up by microscopic plants of a low order in the soil, and from these by the lupine or pea. (1) Oats and buckwheat treated in the same way grew only as long as the nitrogen lasted in the seed planted, showing that plants of this charactar could not get nitrogen in this way from the air. Clover has not thus been experimented with, but no doubt it would behave has did the lupine and pea, and so may be used in another way as a crop feeder not only to feed wheat by converting a sufficient quantity of tough nitrogen food in the soil into tender or easily assimilable nitrogen food to make a good crop, but also by taking up in some way a large additional quantity of nitrogen from the air.

Prof. Caldwell concluded with practical advice when to cut clover to get the most good out of it. He said it should be harvested when at its best for hay, and be turned under when at its best to make the most fertilizing material, and this is when the roots are all alive and green. Letting clover die out was a great loss of fertility.

Milk Fever or Apoplexy after Calving.

Having read many articles and communications from time to time in your valuable paper in reference to milk fever, apoplexy, or, as some call it, drop after calving, I beg to offer a few remarks in reference thereto.

Some years since I had the care of a small herd of well-bred Alderney cows of various ages, and unfortunately, lost three or four with this much-dreaded disease. A post-mortem examination was made upon each animal previous to burial. We found the stomachs were packed full of food, more or less of a dry, constipating nature, and the honeycomb stomach in each case was dry and inflamed.

I founded my own conclusions therefrom, which I have held since, and still believe in, namely, overfeeding, especially on dry food. Since I have adopted the careful-feeding system before and after calving, I have had only one case of apoplexy, and that could be clearly traced to the same cause, only by accident or mistake; this one was a very choice cow. She had been separated and prepared for calving in the usual way, but the day she calved being very cold, I thought she would be more comfortable in the cow-house where she usually stood. I therefore directed the cowman to hurdle off the space of two cows and put her in, which was carefully done; she appeared in good health at the time. She was let loose with her calf, and seemed very comfortable. I gave orders that no hay or dry food should be given her on any account, not even the smallest quantity. The cowman intended carrying out my instructions; but as there was a passage in front of the cows from which they were usually fed, the cowman inadvertently placed a truss of hay in the passage in front of the newly-calved cow, intending to feed the other cows the last thing at night; but being within her reach she speedily and greedily devoured it, and in two days she died, her death resulting, as I think, entirely from the truss of hay put within her reach.

My plan is to keep each cow short of food for a few days previous to calving, and let the food be of a soft relaxing nature; directly before or after the cow has calved give 1 lb. of salts and 1 lb. of treacle in 3 pints of thin gruel, give slowly, and if the cow shows signs of coughing immediately loose her head. As soon as the calf is born sprinkle a handful of salt over it, taking care that it does not come in contact with the calf's eyes. The salt induces the cow to dry the calf quicker and better. That done, give the cow a pail of warm water; tie her up; suckle the calf; keep her tied until she has cleansed. Remove the cleansing, then loose the cow with her calf; give nothing to eat for six or eight hours after calving, then provide a nice soft mash of well-scalded bran and linseed; continue the mashes for three days, three times a day, after which give a little hay chaff, mixed with the mashes; bring on to regular diet gradually; give chilled water at least the first week if in winter. Leave the calf with the cow three days, then remove; whilst the calf remains with the cow take no milk from her unless the calf is weak. As her stock gets full, then milk a little frequently, but by no means milk her dry till after the third day. If the cow is at all tender about her stock (1) bathe with hot water, add a little salt, and afterwards rub the stock with lard. Keep the temperature of the house as even as possible, and see that the place is kept as quiet as you conveniently can. By all means keep away dogs and children the first few days. Whilst the cow is loose with her calf, care should be taken that she does not eat much of her bed. As a safeguard against that I, generally use old thatch, taking care to have it dry. If these few items are attended to carefully, the losses through milk fever will be almost nil.

Heifers will sometimes require milking a few days or a week before calving, which prevents much trouble afterwards. By no means milk them dry. I have seen heifers in great pain some time before calving that they could scarcely stand, and after being partly milked and bathed with hot water, and their stocks rubbed with lard, they have shown signs of comfort and appreciation.

J. L. P.

(1) The experiments above mentioned are now *thoroughly explained* and admitted by scientific experimenters in France and in England. They show that pure burned sand will grow leguminous plants, including clover, without any nitrogen whatever outside of what the atmosphere can supply provided all the mineral elements needed be amply given in a soluble form and provided that a handful or more of rich garden soil (in a solid or liquid form is unmaterial) be added to supply the plants with *bacteria seed*. These living organisations, it has been shown, elaborate in their life functions the free atmospheric nitrogen and thus supply the growing plants with the needed nitrogenous elements of food indispensable to their growth. The "*tough nitrogen*" theory and that "of microscopic plants of a low order" of Doctor Caldwell will no doubt greatly benefit by the bacteria helping nitrification In the mean time Professor Ville of France will rejoice at the fact that science will at last admit the truth of his experiments, by which for the last twenty years he got leguminous plants, including clover, to grow out of burned sand enriched as above.

ED. A. BARNARD.

ABOUT BARLEY CULTURE.

From The Witness.

Director Saunders, of the Central Experimental Farm, has issued a bulletin containing hints on barley-growing, doubtless with a view of aiding farmers in making a fair trial of that

(1) *Stock* is English for *udder*.

A. R. J. F.

variety of this grain which the Dominion Government has been importing in the hope that it may be found profitable to raise it in this country. Heretofore, two-rowed barley, the kind most in demand in the English market, has not been found a remunerative crop in Canada, and it is believed by many that our soil and seasons are not suited to it. Of course, any soil difficulty that may exist in this case can be removed by proper culture, but, if, as alleged, our summers are too short, hot and dry to allow this grain fully to mature, it is not likely that the experiments which are being made will prove successful. Climatic difficulties cannot be removed. We must adjust our farm practice to them, and it may be that we shall have to content ourselves with such varieties of barley as long experience has shown to be adapted to our circumstances, as fixed by the natural laws prevalent in the land we live in. (1)

The desire to raise this two-rowed barley arises out of its high price in the English market, as the one kind most preferred for malting purposes. This desire has been intensified by the prospect of a virtually prohibitory duty on Canadian barley being imposed by the U. S. Government. It is said, in some quarters, that even the best barley is not likely to be in such demand as it has been, owing to the fact that brewers have found a way of putting the required "snap," or what ever it may be that consumers love, into the beer without the use of malt. If this be so, it will result in less barley being used for beer, and more for animal food. It will take its place besides other grains, and be rated in price according to its nutritive value. It has been used less for feeding purposes than it would have been but for its relative cost, and if it comes to be rated in the market simply at its food value, it will be used more both by man and beast, in the way intended by nature. Barley bread has been, from ancient times, highly esteemed for human food. It is the favorite grain for horses in Oriental countries, and the Arabs have a proverb that the rider whose horse is fed on barley will not be caught. It makes excellent pig and chicken feed. The manure made from its use is rich in plant food.

Whatever the result of the two-rowed barley experiments, and quite irrespective of the use of this grain in beer making, the probability is that it will continue to be, as it has been during past ages, one of the standard crops of the world. It is, therefore, desirable that it should be grown according to the best rules of intelligent husbandry. Director Saunders no doubt does well to call attention to the English practice in barley-growing, and there is one important respect in which it differs from that which prevails here. In Great Britain, it is usually considered that the land to be sown to this grain should be prepared beforehand by manuring some preceding crop, barley being treated as the main crop to be benefited by the manure applied. In this country, barley is too often treated as a secondary crop, (2) and is put in after wheat has had the first opportunity to appropriate to itself what it is able to absorb of the plant food supplied, and universal experience proves that wheat is quite able to dispose of the lion's share of it. Artificial fertilizers, too, are largely used in the Old Country, such as 200 or 300 pounds of superphosphate with from 50 to 100 pounds of nitrate of soda per acre, put on before seeding.(3) Such appliances are hardly ever thought of in this country.

A moist soil is desirable to start the plant early. When the land is too light and dry, germination is delayed and valuable time lost in the first stages of growth. Hence a sandy soil is not good for barley. (1) Nor is a heavy, stiff clay to be chosen for this crop. A light, rich, friable loam, with a foot deep of land well stocked with plant food, is the best seedbed for this grain. It is also very necessary to the best results that the land be free from weeds, which do as much harm to growing barley by the exclusion of light and air as they do by abstracting nourishment from the soil. Early sowing is advised, at the rate of two bushels to the acre, to be drilled in. The more evenly barley can be sown the better, as an even growth prevents excessive tillering on the one hand, and irregularity in ripening on the other.

Too much stress cannot be laid on the use of good, plump, clean seed. (2) This bulletin states that it has been proved by experiments that selected, extra heavy seed, has produced three times the weight of actual growth, in the first fifteen days after sowing, than was obtained from light, inferior seed. It is important, especially in localities where drought is apt to prevail, that this early growth should be encouraged as much as possible. Barley should be allowed to ripen thoroughly before harvesting, for thus only can the best quality of grain (3) be secured. Some advocate early cutting in order to secure a brighter color in the grain, but this is undoubtedly a mistake. Full maturity is necessary to secure the highest quality in barley. Great care is needed in threshing this grain, so as not to break the kernels, which are very brittle. When any large proportion of the kernels are broken, the value of the grain is greatly reduced for all purposes, and especially for seed. (4) After threshing, precaution must be taken to keep barley thoroughly aerated by piling it in small heaps or storing it in bins of very moderate dimensions. Before marketing, the grain must be very carefully cleaned by means of the fanning-mill.

LINDENBANK.

Market Garden Farming.

BRASSICAS.

As the term "Brassica," though derived from the old Celtic name *bresic*, meaning cabbage, comprises the many forms known also as cauliflowers, broccoli, Savoys, Brussels sprouts, &c., it may be convenient to refer to them under this well-understood heading, in so far as seed sowing is concerned, then treat of them, in the matter of after culture, separately. This is the more necessary, from the fact that large growers make a point of sowing the main crop seeds of all at, or about, the same date. Large market garden growers, besides, treat these plants in a far more rational way than do gardeners and numerous growers in a small way. The former have fully mastered the fact that the whole are perfectly hardy native plants, capable of growth and progress, along with the very earliest seedling weeds, in the earliest spring months, being quite indifferent about weather, provided good seed beds, in sufficiently dry workable state, can be prepared and sowings made, even during the first weeks in the month of March. If we contrast this fact with the practice followed in much more sheltered gardens, where such seeds are rarely sown until the

(1) The Messrs. Dawes have sown some acres of the imported seed this season. A. R. J. F.

(2) The best samples of malting barley in England are grown, on *moderately* good soils, after roots fed off by sheep. But on very rich, highly farmed land wheat is taken after roots, and barley follows the wheat. In Hampshire, on the chalk, two root-crops follow one another, then wheat, and then barley. A. R. J. F.

(3) Nitrate of soda is, I may say, never applied before sowing, but invariably on the young *braird*, and generally, at two applications. A. R. J. F.

(1) The Norfolk barley-soils are almost pure sand. So much so, that even sheep do not always consolidate them sufficiently, and I have seen young horned-stock hurdled on the lighter parts to give additional firmness. A. R. J. F.

(2) Essex and Hertfordshire farmers sell their own barley to the Saffron Walden, Ware, and other maltsters, and buy their seed from the fens—not by any means *plump* though of course *clean* seed. A. R. J. F.

(3) For malting, that is; for feeding, cut before it is dead ripe. A. R. J. F.

(4) And for malting, as the broken grains won't grow, but turn mouldy on the floor, and the beer won't keep. A. R. F. J.

first fine weather in April, an explanation is found why field crops are generally earlier and better than most of those grown in enclosed gardens. The earlier seeds germinate, and young plants form, so much greater and better progress is registered during the most felicitous weather, comprising the showery spring months.

Seed beds are prepared, therefore, as soon after the advent of the month of March as can conveniently be done. (1)

Exposed sites, comprising free workable soils, are well ploughed, harrowed, slightly rolled, and again roughed over, preparatory for reception of the seeds. The site is set out in the customary "lands," with nicely-elevated centres, falling away to divisional furrows, the whole surface being equally levelled, so that no inch of space be lost. Then, at once sowing, hardy greens, sprouting broccoli, Savoys, Brussels sprouts, curled kale, winter broccoli, and autumn giant cauliflower are all sown broadcast in the necessary quantities, more of the two former being generally committed to the ground than of the others. Seeds of autumn giant cauliflower, being somewhat less hardy than the rest, are generally sown somewhat more thickly.

Successional sowings, such as are so emphatically advised in connection with garden culture, are dispensed with, and with no small reason. Such young seedlings cannot be secured too early and with too robust a base; and, considering how thickly the young plants grow together, this desirable end is obtained by simply drawing the strongest plants from each seed-bed first, for present planting, leaving the lesser ones to grow, which they do with great vigour when allowed more space, and so form the requisite stuff for all necessary successional transplantings. The seeds quickly germinate, and the young plants make rapid progress in all but exceptionally cold, inclement weather, forming the rough leaves and in duplicate, even when thus exposed to seasonable cold winds,&c., and in such manner as would surprise all not versed in their peculiar powers of endurance. When the young seedlings have formed a pair of rough leaves or more, these seed-beds are carefully hoed. Short handle hoes are generally used, though narrow bladed, long-handled hoes may be applied in dexterous hands, when weeds are not too abundant. Experienced "hands" do this work with remarkable promptitude, and without injury to the seeding crop, though those not accustomed to the work rarely make equally rapid and safe progress. It is important, therefore, to choose the best workman and, as far as possible, utilise him permanently for such work.

I have already remarked, seed-beds are prepared and seeds sown at once. This is far more important than may appear without further explanation, as it has much to do with the future cleanness of the seed-beds. If the beds are prepared, then allowed to lie a week or two before the seeds are sown, time is given for numerous weed seeds lying in the ground, and now brought near the surface, to prepare for germinating, and probably to germinate, by which means they will obtain a start beyond the seedlings of the legitimate crop, choke them up, and become so advanced or large by the time hoeing is possible as to increase the work of clearing a hundred-fold. Whereas, by sowing the necessary seeds for crop immediately the ground is prepared, the latter seeds, having been kept dry previously will "move" the quickest, and have a start on alien weed plants, so that they become large enough for hoeing between before the weeds have too great ascendancy. It is highly important, moreover, to choose dry weather for such hoeings, whenever practicable. The subsequent treatment of the various crops must be given in my next paper.

Eng. Ag. Gazette. WILLIAM EARLEY.

(1) Of course we must postpone our work in accordance with the climate. A. R. J. F.

NON-OFFICIAL PART.

Conservatism vs. The Rage for Novelties.

The Seed Annual for 1890, issued by D. M. Ferry & Co., of Detroit, Michigan, has reached our table. Its cover this year is especially artistic and attractive, and its contents as usual, interesting and instructive. Ferry's seeds are thoroughly reliable, and always come true. The directions given in the Annual for the cultivation of both flowers and vegetables are so full and explicit that no one can fail of success who uses their seeds and follows the instructions.

D. M. Ferry & Co. are very conservative, both in offering new sorts and in their claims for them when offered; but they take pains to inform themselves as to the true character of all new varieties, so if some much lauded novelties are not found in the Annual, the probability is they have tested them and found them of no value.

A request sent to the firm at Detroit, Michigan will bring you a copy of the Seed Annual for 1890 by return mail.