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THE SEASON AND THE CROPS.

May was this year a cold wet month throughout, and the first half of June was little better. But the third and fourth weeks of June completely dried up the soil, the weather became excessively warm, and the hot winds had blown up the fires in the woods and enveloped a large portion of the Province in smoke. On 29th and 30th a heavy fall of rain completely changed the face of nature.

The season was not a favorable one for spring work. OATS, BARLEY, POTATOES and other spring crops are consequently unusually late; but they are making rapid progress. WINTER WHEAT has done remarkably well with us, although in Upper Canada and the Western States much of it has been winter-killed. POTATOES were not so extensively planted this season as usual, on account of the bad weather at planting time; but wherever they were put in early they are doing very well. The excessively hot dry weather retarded the sowing of TURNIPS, but the ground is now in good order for the seed.

The HAY CROP gave great promise during

the cool wet weather, but as usually happens, the June drought has told upon it. Everything depended upon a speedy shower of rain. Clover being deep-rooted, held its own for some time, but the other hay-grasses were already giving indications of checked growth, when the copious rains of the last two days of June gave a smiling aspect of fertility and beauty to the whole country.

We have not as yet much information from the Fruit Districts. But so far as we have observed the APPLE ORCHARDS are remarkably well set with fruit. Cherries are likewise fruiting nicely. At the beginning of June there was great promise of strawberries; the wild strawberries in some places had leaves and flowers as large as the British Queen. But the drought has told fearfully upon them. The fruit is as yet small and inferior. Currants and Gooseberries are fruiting abundantly. In some places the gooseberries suffer from caterpillars, in others from mildew. From what we have observed of mildew, it seems probable that copious waterings at the root with pure water, will remedy the evil. It is in warm dry situations and in dry seasons that mildew seems to be worst. GARDEN VEGETABLES are doing well; cabbages and cauliflowers, where not already out should be planted ere we lose our present rains.

STATE OF THE CROPS.

Pictou, 22nd June 1866.

DEAR SIR,—I was from home and did not receive your note of 18th inst., regarding the state of the crops, until to-day.

I have within the last two weeks travelled over a very considerable part of this county and conversed with a good many farmers. They all agree that the weather has been uncommonly backward and unfavourable for farming operations; that during the whole spring, one cold rain storm after another, has kept the ground in such a wet state, that it was almost impossible to work either plough or harrow, until the season had got so far advanced that it will doubtless require favourable weather to give the crops a fair chance of progressing.

Potatoes in most places are above the ground and look healthy; hay and grain look short for the time of year.

However the warm weather of the last week, has produced a favourable change in the general appearance of the whole crop.

W. H. HARRIS.

LETTER FROM KING'S COUNTY.

Canard, June 23, 1866.

DEAR SIR,—In answer to your enquiry relative to the state of the crops in this county, I beg to say that I am not in possession of much information beyond my own district, and cannot state with certainty the condition and prospects of the crops of the county generally.

Grass started this year much earlier than it did last; and the damp cool weather heretofore has been rather favorable for both hay and pastures on rich and highly cultivated ground, but the continued cold, and now the drought, is pinching the pastures as well as the meadows, especially the late ones. Just at present the prospect of a good hay crop is rather slim. The weather is quite warm enough but rain is required.

Diked marshes look well, much better than usual at this season of the year.

The quantity of grain sown is larger than heretofore, especially oats, which are looking very well. Winter rye is already headed and looks very promising. More wheat would have been sown if seed could have been obtained, especially any variety more free from the midge than that cultivated amongst us.

The usual quantity of land is planted with potatoes, and those planted early on sandy loams are looking very well. The wet season prevented many farmers whose soil is naturally wet and clayey, from getting in this crop as early as usual; but the present warm weather will bring them along with great rapidity.

It would seem that the American "notion" of 25 cents gold duty does not deter the Nova Scotia farmers from cultivating this valuable esculent, as prices rule nearly as high as under the Reciprocity Act.

Corn looks sickly and feeble in consequence of cold weather.

It is almost impossible at this time to speak with much certainty about the crops, as much depends upon season rains just now.

There is a fair prospect of fruit. Apples are fairly set. Cherries, plums and pears, and the smaller fruits, are about as usual, as far as I can learn.

The curculio is at work destroying the plums, and many persons are complaining that their fruit is almost wholly destroyed,—while in other localities they are partially exempt.

Less injury has been done to the apple crop by the caterpillar this year than heretofore, owing to more diligence in its cultivation.

I am, Sir,

Your obdt. servant.

C. C. II.

'TIS FORTY-SEVEN YEARS SINCE.

A CHAPTER IN THE AGRICULTURAL HISTORY OF CUMBERLAND.

It is refreshing to see now and again an effort made to raise the character and increase the efficiency of our agricultural societies. As regards Cumberland County this is attempted in the Amherst Gazette by bringing under the notice of the Cumberland farmers some details of the working of the Cumberland Agricultural Society that was established during

the winter 1818-19. The editor observes: "We have had placed in our hands a document issued by the Cumberland Agricultural Society and dated the 13th day of January, 1816.

"The author of those celebrated letters on Agriculture, signed "Agricola," had that year offered six silver medals as incentives to Agriculturists, and the Committee of the Cumberland Society met at Amherst on the above date, to use their influence to induce some of the members of the Society to compete for the medals, and, if possible, secure at least one of the medals for Cumberland.

"While in session, the President called the attention of the Committee to a letter which appeared in the Halifax Free Press purporting to have been written in Cumberland, and signed "A Farmer," slandering the Society and its originators, calling it a "sham society," a "mock society," and using other offensive expressions.—The Committee, in an indignant manner and explicit terms, repelled the charges made against the Society, and published the paper we refer to in defence, in which they give a list of subscriptions for that year, to show that the Society was not only a reality but that it was generally and liberally supported.

"Five shillings was the admission fee and ten shillings the annual subscription; the amounts above fifteen shillings are donations. We have added all together for convenience:—

"LIST OF SUBSCRIBERS.

James S. Morse, Esq., President,	£12	8	4
Mr. Stephen Oxley, Vice-President,	6	11	8
Cha. Baker, Esq., Judge Com. Pleas,	2	15	0
Henry Purdy, Esq., do.	2	15	0
George Oxley, Esq., do.	1	18	4
Edw. Baker, Esq., mem. Com. J. P.,	0	15	0
Charles H. Chandler, Esq., Sheriff,	0	15	0
Richard Blair, Esq.,	0	15	0
G. Purdy, Esq., mem. of Com. J. P.,	1	5	0
William Freeman, Esq., J. P.,	2	15	0
D. M'Farlane, Esq., m. of Com. J. P.,	0	15	0
Wm. Baker, Esq., Treasurer, J. P.,	2	5	0
John Black, Esq., J. P.,	0	15	0
William White, Esq., J. P.,	3	5	0
Elijah Purdy, Esq., Secretary,	1	5	0
Mr. Samuel Freeman, mem. of Com.,	5	15	0
Thomas Chapman,	2	15	0
Robert M. G. Dickey,	5	15	0
Joseph Oxley, member of Com.,	1	18	4
Joseph Morse,	1	18	4
Charles Baker, jr.,	2	5	0
John Morse,	1	18	4
John Watkins,	2	0	0
Asa Fillmore,	1	18	4
Andrew Foshner,	1	18	4
Lewis K. Purdy,	2	3	0
William Harrison,	1	18	4
John Smith,	1	15	0
Capt. Bougois,	1	15	0
Thomas Lusby,	1	15	0
John Fillmore,	1	15	0
Joshua Chandler,	1	10	0
Richard Black,	1	6	8
John Oxley,	1	5	0
John W. Oxley,	1	5	0
Thomas Logan,	1	6	8
Robert Reed,	1	5	9

Henry Atkinson,	1	5	0
William Dickey,	1	5	0
Hans Baker,	1	5	0
Mathew Donkin,	1	5	0
William Ackles,	1	5	0
John Bent,	1	3	0
Hugh Taylor,	1	0	0
Jonathan Davison,	0	15	0
Thomas Dunkin,	0	15	0
Joshua Brundie,	0	15	0
Thomas S. Black,	0	15	0
William Tindall,	0	15	0
Isaac Bliss,	0	15	0
Samuel Purdy,	0	15	0
Samuel Holsted,	0	15	0
Samuel Williams,	0	15	0
Robert Scott, jnr.,	0	15	0
Andrew N Stevens,	0	15	0
George Revell,	0	15	0
James Page,	0	15	0
Lemuel Bent,	0	15	0
William W. Bent,	0	15	0
Smith Holsted,	0	15	0

Total, £111 7 8

"On comparing the above list with the present one dollar subscriptions, it does not seem to indicate progress in our farming community; instead of advancing the past half century, it looks very like retrograding.

"A combination of farmers can accomplish easily what it would be difficult for one to do, both as regards gaining practical information, how to realize the largest and most profitable crops at the smallest expense, as well as importing and raising superior stock, and the best seeds. Hence the necessity and advantage of farmers forming themselves into Agricultural Societies to accomplish by united effort, what would otherwise be impossible; but it must be remembered that such Societies are powerless unless adequately supported,—that effort is indispensable to their success. It would, no doubt, be for the future interest of many of the farmers in this County to follow the example set them nearly fifty years ago, and pay into the Agricultural Societies now organized, donations of twenty and fifty dollars a-year for a few years, and give the Societies the means to accomplish the object for which they were formed. Although the Legislative grant is liberal compared with the sums subscribed, the purchase of one good animal would exhaust the treasury of any of the Agricultural Societies in the County.—We trust the several Societies will be more liberally supported this year, and that the Agricultural Shows to be held the coming Autumn may be creditable to the farming interests of this County."

The above remarks apply very well not to Cumberland County alone, but to every County in the United Province of Nova Scotia and Cape Breton. There are only two Societies in the whole province whose annual subscription for members exceeds one dollar, viz., the Windsor Society, and the Western Halifax Society,

and even these Societies raise but an insignificant sum as compared with the subscription list of the Cumberland Society forty-seven years since.

RULES FOR PLOUGHING MATCH.

The following rules for a Canadian Ploughing Match we reprint for the guidance of Societies that may be arranging similar matches this season:—

1. Each ploughman competing must be a member of the Association, and will not be required to pay any additional fee.

2. The match will take place on commencing at 11 a.m.

3. The fields selected for the match are on the farm of _____, and, if required, on the farm of _____, at _____.

4. The quantity of ground to be ploughed by each man will be about *one-third* of an acre, and will consist of two crown ridges and two open furrows equal in all to two lands 7 yards each in width.

5. Each ploughman will be required to drive his horses.

6. No person will be allowed to assist the ploughman except in setting his poles. Ploughmen will not be allowed to touch their furrows with their hands.

7. The ploughing shall not be less than 6 inches deep, no false cutting will be allowed. Each ploughman may, subject so the above restriction, choose the dimensions of his own furrow slice, but must cut to an angle of not more than 90 degrees, and set to an angle of 45 degrees. Any ploughman cutting to a less angle must set to half the angle he cuts.

8. Each ploughman shall draw his number, and the lot having a corresponding number shall be the one on which he shall plough.

9. The ploughman shall stake off his lands, after drawing his number, and shall be allowed an assistant to set and remove his stakes. Any ploughman receiving further assistance shall forfeit all claims to a prize.

10. On proceeding to open his land, each ploughman shall commence at the stake corresponding to his number, and shall back his own furrow; he shall then open the centre and finish the white land on the right side before commencing on the left.

11. Ploughing shall be commenced after the time-keeper shall have given the signal. The time allowed for the performance of the work shall be at the rate of an acre in twelve hours.

12. Each competitor on completing his work, shall place his stake with his number on it, on the centre of his land; he shall then at once remove his team and plough from the ground and report to the time-keeper.

13. Should two or more competitors be considered equal in merit, the preference

shall be given to the person finishing in the shortest time; and in order to aid the Judges in the performance of their duty, the timekeeper shall furnish to them a list of the numbers of the various lots, with a statement of the time occupied in ploughing each lot.

14. All the land ploughed shall be judged.

15. No person will be allowed to interfere with the ploughman while at work.

16. The decision of the judges shall in all cases be final, if in accordance with the rules. The Board of Agriculture will only interfere in cases where appeals set forth that the judges have not given their decisions in accordance with the rules.

17. Boys under 18 years shall only be admitted to compete in the Boys' Class.

18. Persons intending to compete at the ploughing match shall make their entries on or before the 9th day of September.

The Judges are requested to attend promptly at the Secretary's office on the Exhibition grounds, at 9 a.m. on the day of ploughing.

KEROSENE OIL AS A REMEDY AGAINST INSECTS.

The slightest drop of sweet oil put upon the back of a hornet, beetle, bee or similar thing, causes its instant destruction. We are told the breathing pores are closed by the oil, and life is literally smothered out. Greasy water is always a favorite mode with us of destroying insects. How few are there who would not "give anything" as they say to know how to keep away the cabbage fly from their seed beds, yet about a tablespoonful of coal oil put into a common garden water-pot of water, sprinkled over the seed bed, when the little jumping beetle is noticed as having appeared, will instantly destroy the whole brood. Coal oil kills scale insects. There is no reason why it should not be in as general use as tobacco for killing aphides, &c. Any oil is as good as coal oil. Keep the water in the pot stirred when used, so that a portion of the oil gets out as the water runs. Abridged from the *Gardener's Monthly*. [Care should be taken not to apply too much coal oil to any plant.—We knew a case some years ago in Canada of its being applied by a lady to a favorite apple tree, of large size, robust and healthy. The oil most effectually killed all the vermin and the tree likewise.—*Ed.*]

WINE PLANTS.—An enterprising firm in Pennsylvania have been doing a brisk trade in "wine plants" at \$40 per hundred; said wine plants, it appears, being bits of rhubarb roots.

SEWAGE IRRIGATION.

All expedients for disposal of town sewage otherwise than by application to land seem to us on some grounds or another objectionable. Cesspits in town corrupt the air and corrupt well-water; they are incompatible with public health and should be abolished. Sewerage has therefore become a necessity for any large community. The difficulty is to deal with the volume of sewage thus concentrated, so as not to cause a nuisance either in the atmosphere or in rivers.—Disinfectants and filtration have been tried in many forms, but without success. As applied to sewage, disinfectants do not disinfect, and filter beds do not filter.—Both attempts have been costly failures. The Local Board of Health at Croydon at one time were spending large sums annually on chemical and mechanical experiments to no purpose but to expose themselves to lawsuits; they then commenced the process of sewage irrigation.

In order fully to ascertain the effects upon health of sewage irrigation, we have visited the principal places at which that process is carried on, viz., Croydon, Norwood, Worthing, Carlisle, Edinburgh. We also held open public inquiries at Worthing, Croydon, and Norwood.

At Worthing we found the sewage works, which have now been in operation for more than a year, unobjectionable. Not a single case of sickness was attributed to the irrigation. With regard to Croydon, the inhabitants of that town generally cannot suffer from their irrigation fields, the sewage farm at Beddington being at a distance of about three miles from the town. At the public inquiry all the witnesses, medical gentlemen and others, were agreed that the irrigation works were not injurious to health. As to the irrigation works at Norwood, no complaints have been made by the persons representing that district upon the local Board of health at Croydon, and the general rate of mortality in Norwood is low. Some dissatisfaction however, is felt by one or two proprietors and occupants of house property in the immediate neighbourhood of the works; and Dr. Cresswell, one of the local practitioners, stated that the question had occurred to him as one worthy of investigation whether certain peculiar cases of illness, resembling ague, which he met with in the district, might not have been caused by miasma from the irrigated fields. The works are inconveniently near to the outskirts of the town, and may exercise a depreciatory influence on the value of adjoining houses; but, on the whole, we are satisfied that no ground exists for serious apprehension of miasma from fields irrigated with sewage.

If sewage irrigation had really bred a

special class of diseases, it would hardly have been tolerated for two centuries on so vast a scale near Edinburgh.

It is necessary not to mistake instances of abuse for defects in the system of sewage irrigation. Sewage, if fresh, and in the open air, is scarcely perceptible to the smell. If sewage be pent up in sewers and discharged on the land in a state of active putrescence; or if, as took place once at Norwood, the depositing tank is allowed to get out of order; or if, as at Edinburgh, the carriers are so rudely constructed and so neglected as to become reservoirs of stagnant sewage deposit, unpleasant, if not mischievous, consequences must be expected; but these are cases of abuse, preventible by common care.

Sewage water, if passed over a sufficient area of Grass land, passes off bright, tasteless, and without smell. At Croydon, ever since the town was sewered (about the year 1852), the sewage of about 17,000 of the inhabitants has been discharged into the River Wandle, a clear trout stream which breaks out from the chalk above the town, and flows, as ornamental water, through residential properties. For fouling this stream the Local Board of Health, so long as they resorted to chemicals to purify their sewage, were exposed to continual litigation. They then commenced the irrigation process upon land at Beddington, and discharged the effluent water from their irrigated fields into the Wandle. Mr. Gurney, finding a dearth of water at his mills, applied to the Local Board for leave to bring the effluent water from the sewaged fields into the Wandle at a point above his mills, and having obtained leave, formed at his own expense a conduit of considerable length, whereby the effluent water is now conducted through his grounds by the side of his carriage drive into the river as it flows through his estate. It appears from the evidence both of Mr. Gurney and of his agent, Mr. Reynolds, who resides upon the estate, close to the onfall at Beddington, that there is still occasional cause to complain of the condition of the effluent water, as it sometimes comes off the land either turbid or so imperfectly cleansed from sewage that it pollutes both the River Wandle and the atmosphere in the vicinity. These evils, so far as they exist, we are satisfied admit of explanation. When the water is turbid (as distinct from being foul from sewage), the cause probably is, as suggested by Mr. Gurney, that cattle sent in to graze upon the irrigated fields (a very large number in proportion to the acreage) have trodden the surface and fouled it with their dung. When the effluent water flows off, carrying both to sight and smell unmistakable signs of sewage, it has not been applied to a sufficient area of land. The smell has been found most

objectionable on Sunday evenings, probably because the men on those days have neglected to do the amount of work necessary to effect a proper distribution of the sewage. Mr. Reynolds expressly states that the grievance is only occasional; that at other times the water comes down as pure to look at as he could desire—as pure as the river water; that he has no fault to find with sewage irrigation if properly managed; that, on the contrary, he believes it to be a great principle, and thinks it a pity that it should be called in question through the neglect of those who conduct the works. If at any time Mr. Gurney finds the effluent water objectionable, he has only to close his conduit and keep the water out. This hitherto he has not done.

Sewage irrigation requires to be undertaken and conducted with strict attention; the site must not be too near to dwellings; adjoining wells should be watched, and if the soil be very porous, disused; the sewage must be applied fresh, and over a sufficient area of land. If these conditions are observed, irrigation will be found to be the mode of dealing with sewage which results in the largest amount of good to the land and the smallest amount of harm to flowing water.

There may be difficulty in some cases in finding land available for sewage irrigation, but, with the exception of lands liable to be flooded, there seems to be no soil that will not serve the purpose. Between the light and blowing sands of Edinburgh and the stiff clay of South Norwood are included all the mechanical differences of soil which can be met with in this country, but at both extremes we find the application of sewage attended with success. In some respects, indeed, a heavy clay is even more suitable than lighter soils; from its very nature it is more productive of healthy vegetation, and from its well-known chemical properties, it is more effective in the purification of sewage.

The same land will serve the purpose of sewage irrigation continuously. The process to the soil is one not of exhaustion, but of constant renovation. Part of the Craigentimny meadows has been continuously irrigated for two centuries.—Sewage can be purged any height and carried any distance. Its conveyance, therefore, to a given point is merely a matter of cost. There is no real difficulty in dealing with sewage, whether the volume be, as at Norwood, a few gallons per head, or, as we are informed that it is at Croydon, from two to four times as great as the water supply of that town.* On a clay soil (or wherever pumping is necessary) it is desirable to restrict the

* The supply of water at Croydon is about 30 gallons for each person per day. Subsoil water and rain bring this volume occasionally up to 150 gallons per head of the population.

dilution. On a gravelly porous soil, on the contrary, as shown by Mr. Marriage, it is an advantage that the sewage should be largely diluted, since it is then much more readily distributed over the surface.

If a farm be large enough, there is no time when some portion of the land may not be capable of receiving the sewage. The process of irrigation may go on day and night, in the wet and drought, in summer and in winter. At Croydon, where advantage is taken of gravitation, the sewage (though varying in volume at different hours) does run upon the land unremittently, "continuous as time itself." This is a matter of first importance, regard being had to the necessity that sewage, as soon as produced, should be removed from the town and be applied whilst fresh.

The powers which towns now possess for the purposes of applying their sewage to land are contained in—

Public Health Act, 1848, 11 & 12 Vict. c. 63, ss. 45, 46, 84.

Local Government Act, 1858, 21 & 22 Vict. c. 98, ss. 30, 68-75.

Local Government amendment Act, 1861, 24 & 25 Vict. c. 61, ss. 4-7.

Sewage Utilisation Act, 1865, 28 & 29 Vict. c. 75.

Land Improvement Act, 1864, 27 & 28 Vict. c. 114.

At present there is no power of taking land for sewage irrigation except by agreement. If, however, the application to land of town-sewage be no longer optional, it will be necessary that towns should be furnished with adequate powers to take land compulsorily for irrigation; the exercise of such powers might be made subject to proper restrictions to prevent abuse.

The cost to a town of sewage irrigation depends upon the balance of expenditure and profit. This must vary in different places.

In the selection of a site for irrigation, due regard should be had to economical considerations. The cost of conveying the sewage depends partly upon the distance, but still more upon the height to which it is to be pumped, the volume to be pumped, and the price of coal. Laying main pipes an additional length of a mile or two through open country involves an outlay, the interest of which may be trifling as compared with the annual expense of pumping. Unless, therefore, there is much difference in the price of land, it would be cheaper to let the sewage flow by its own gravity a distance down the valley than to pump it to an adjoining upland. But saving in the first cost of land may be more than a set-off against the expense of additional piping and of pumping even to a considerable height. If all the land in the immediate neighbourhood of a town is building land, and none is to be had except for an inordinate price, the circumstance need create no difficulty; it will only be necessary to go further for a site where land is to be

had at a lower value. The Croydon Local Board of Health, as would appear from the evidence of their chairman and their engineer, are prepared, in the event of their being refused a renewal (on reasonable terms) of their present lease of Beddington Farm, to pump their sewage to an elevation of 150 feet, so as to command land at a distance.

It is not necessary that the cost of preparing the land for sewage irrigation should be great. The carriers and distributing branches, whether made as open trenches or of earthenware or cast-iron piping, need not be costly. Whether the liquid is pumped or flows to its destination, its distribution over the land should always be effected by gravity.

"Filtration," in the sense in which the term is used of filtering water for domestic uses, is not applicable to sewage.—Town sewage cannot be filtered through an ordinary sand-filter, either by the downward or upward process; nor is it necessary in any case to attempt this form of filtration for sewage. Mechanical deposition and separation of grit and flocculent matter are alone required, and these operations can best be performed in open canal-like tanks.

Fields irrigated with sewage can be used for horses and milch cows to graze upon, and will fatten cattle and sheep.—But there are practical objections to such use. Cattle grazing in a sewage field tread the surface and foul it with their dung, and are apt also to tread down the banks of the sewage-carriers, and thereby to foul the effluent water. Dung, so applied, is not required for manure by the owner of a sewage farm. Sewaged-fields will yield wholesome hay; but in this uncertain climate there would be great difficulty in making hay from crops of grass so heavy. Where irrigation is carried on upon a large scale, if the crops are to be converted into hay, probably some artificial process of hay-making will be required.

The most profitable course is, we believe, to sow Italian Rye grass, and to sell the crop fresh cut as food for horses and cows. A field will in the year produce four or five crops, each of extraordinary weight. How often the grass should be resown depends upon a balance of considerations. Crops from the same seed annually deteriorate; on the other hand, to break up the soil involves temporary suspension of crops, additional labour, and other expenses. At Norwood, where sewage operations commenced only a year ago, the tenant has already over part of the farm had crops of 50 tons per acre, and expects in the ensuing year to obtain about 50 tons per acre uniformly over the whole. At Edinburgh the strips of irrigated land are let yearly at public roup, and fetch from 20*l.* to 40*l.* per Scotch acre. At

Croydon the meadows are equally productive. At Worthing part of the sewage from a population of about 3000 persons was applied last year (1865) to 25 acres of land. The value received for the produce was 645*l.*, or about 25*l.* 16*s.* per acre. The expenses incurred were 229*l.*, viz., for labour, 164*l.*; for sundries, 65*l.*; total, 229*l.*, or at the rate of 9*l.* 3*s.* per acre; leaving a balance of 16*l.* 13*s.* per acre for rent and interest on outlay.

After a consideration of the actual results, extending over a number of years and obtained at various places and under various conditions, we confidently endorse the third conclusion of the last Report of the Royal Commission to which we have already referred, that "When local circumstances are favourable and undue expenditure is avoided, towns may derive profit, more or less considerable, from applying their sewage in agriculture.—Under opposite circumstances there may not be a balance of profit; but even in such cases a rate in aid, required to cover any loss, need not be of large amount."

Upon many points connected with sewage farms it would be unwise to lay down any fixed rules, the proper course varying under different conditions of soil, climate, lie of the land, &c., or remaining yet undetermined. For instance, as to what is the most convenient disposition of the main carriers and distributing branches; what area of land suffices to purify a given quantity of sewage; how often and at what times relatively to the state of the crop such volume should be applied; the comparative effects of more and less diluted sewage; the comparative value of light soil and heavy soil under sewage irrigation; these and other like questions we prefer to leave to be settled by further experience. But we would suggest that in carrying out sewage irrigation the following points should be attended to:—

1. The irrigated fields should be at least one mile from the town, and if possible in the direction of north or east.
2. The extent should not be less than in the proportion of one acre to every 150 inhabitants whose sewage is to be applied.
3. The carriers should be so constructed as to retain as little residuum of the sewage as possible.
4. Care should be taken so to appropriate the land as to leave for each day a sufficient area available for irrigation.

The above remarks apply to the utilization of sewage of towns of a considerable size; but sewage irrigation on a smaller scale is practicable. *Report of the Commissioners appointed to Inquire into the Best Means of Preventing the Pollution of Rivers.*

PLASTER FOR MILDEW.—According to a correspondent of the Gardener's Monthly, plaster dusted on grape vines early in the morning arrests the mildew. Those who suffer from mildew on their gooseberries might try the same plan, and let us know if they succeed.

Communications.

THE DEVON BULL "BRUNO."

Minutie, May 31, 1866.

DEAR SIR,—The Agricultural Society of this place having procured the Devon bull "Bruno," a notice of which you will perceive in the catalogue of Mr. Anderson, now sent you, I have thought of asking you to publish in the *Journal* a statement that the Minutie and Barronsfield Agricultural Society had purchased this animal, and giving his pedigree in full. His first cost to us was \$100, and about \$20 expenses getting him here. He is throughout smaller than the bulls we have had heretofore, but is a beautiful animal of a pure red color, and our members, generally, are pleased with him.

We are making the attempt to get a pure breed of cattle, and I am in hopes our present selection will meet the wishes of our community. Yours, &c.,

G. SEAMAN.

DEVON BULL "BRUNO," (577) bred at Maplewood farm; calved March 1, 1862.

Sire, *Brigadier* (571); calved at Maplewood Farm, bred by Geo. Patterson, Esq. of Springfield, Maryland, out of *Galaxy*, a splendid cow and an extraordinary milker, also bred by Mr. Patterson, by imported *Herod* (214), her dam by imported *Eclipse* (191), her grandam by imported *Anchises* (140), and her great grandam bred by Mr. Patterson from stock of *Taurus* (320) and the heifers presented to Mr. Robert Patterson in 1817, by Mr. Coke, afterwards Earl of Leicester.

Grandsire, *Chatsworth* (591) imported in 1858 from the herd of Mr. Bloomfield, of Warham, Norfolk, England, by Mr. G. Patterson, who gave \$1000 for him there; and in a letter of Oct. 6, 1859, says: "I consider him the best bull I ever owned or saw."

Dam, *Brunette 2nd* (1825) bred by Messrs. H. B. & H. M. Hall, of East Burke, Vt., by Winchester, out of *Fanny*, (710) by Bloomfield (148.)

G. dam, *Brunette* (1824) by Red Rover (352.)

Gr. g. dam, *Strawberry* (1061) by Bloomfield (148.)

Gr. g. g. dam, *Strawberry*, by Bloomfield (148.)

Gr. gr. g. g. dam, *Strawberry*, by Exchange (197.)

Gr. gr. gr. g. g. dam, *Strawberry 1st*, (1062) by *Taurus* (320.)

Gr. gr. gr. gr. g. g. dam, *Old Strawberry*, one of the six Devon heifers the late Earl of Leicester gave to Mr. Robt. Patterson in 1817.

ESTABLISHMENT OF MONTHLY FRUIT SHOWS IN KING'S AND ANNAPOLIS.

FRUIT GROWERS' ASSOCIATION AND INTERNATIONAL SHOW SOCIETY.

Wolfville, June 2, 1866.

SIR.—I have to inform you that at the April Quarterly Meeting of this Association it was determined to hold exhibitions of Summer and Autumn fruits in July, August, and September of this year, in addition to the usual October exhibition; and also to have an exhibition of winter fruits at the quarterly meeting in April, 1867. The object of this arrangement is to encourage the cultivation and growth of the smaller and earlier fruits, as well as those which have hitherto received most attention, and to test the comparative merits of the different sorts of late-keeping apples as grown by different producers, and in the different parts of the province.

It was also determined that the premiums to be awarded at the exhibitions in July, August and September, should be in the form of "certificates of merit" of the first, second, and third class; and that the Medal of the Royal Horticultural Society of London granted to this Association in 1864, and still in possession of the council, be competed for by members of the Association as follows, viz:—

The person obtaining the largest number of first class certificates during the year shall be declared winner of the medal; and any person winning it three years, not necessarily consecutive, shall be declared owner of it. Two second class, or four third class certificates, to count as one of the first class; and the person gaining the second highest or third highest number of first class certificates to receive a *Diploma*, a handsome form of which is being prepared.

It was also determined that at the October exhibition nursery stock be included in the premium list, viz:—Apples, Pears, Plums, Peaches, Nectarines, Apricots, Cherries, Quinces, Grapes, Gooseberries, Currants, &c., and the various fruit seeds, as Apples, Pears, &c.

The council whose duty it is to carry out the views of the Association as to exhibitions, met this day to make arrangements for giving effect to the above scheme adopted by the quarterly meeting, and passed the following resolutions:

1.—That an exhibition of such fruits as may then be in season be held, in connection with the July quarterly meeting, at Temperance Hall, Wolfville, on the 11th of July, at 2 p.m.; and that premiums, at the discretion of the council, be then awarded for the best dish or dishes of last year's apples also, not less than half dozen of each kind.

2.—That a similar exhibition be held

in the Temperance Hall, Canard, on the 22nd day of August, at 2 p.m.

3.—That a similar exhibition be held at the Sessions House, Bridgetown, on the 19th day of September, at 2 p.m.; and the council recommend that the July quarterly meeting adjourn to that time.

At the April meeting the proprietors of the Drill shed in Somerset invited the Association to hold the October exhibition in that building, offering the same free of charge; and the question will be decided at the July meeting.

By order,
J. R. HEA, Secretary.

Miscellaneous.

ACADIAN BOTANY.

PART I.

ROSA LUCIDA, EHRHART. DWARF-WILD ROSE.—NATURAL ORDER: ROSACEÆ.

A low shrub, stems seldom more than two feet high, arising from long creeping underground rhizomes; shoots prickly, prickles slender, more or less setaceous or bristly, unequal, nearly straight, leaves pinnate, of from 5 to 9 leaflets, which are elliptical, serrate, the upper surface glabrous and shining; stipules broad. Peduncles one to three flowered, and (together with the calyx) bristly and glandular.—Fruit (calyx tube) depressed-globular, bright red and smooth when ripe, ripens in autumn, persistent. Flowers in June and July.

Rosa lucida, Ehrhart, Persoon's Synopsis Plantarum, vol. ii. p. 48. A. Gray, Manual, 2 ed. p. 122. Torrey and Gray, vol. i. p. 458. Hooker's Flora Boreali-Americana, vol. i. p. 199. *Rosa nitida* Willdenow. *Rosa parviflora*, Ehrhart, Willdenow, Lindley, Hooker, Torrey, &c.

This shrub is widely distributed throughout British America, being common in Upper Canada, and equally abundant in the Maritime Provinces. In Nova Scotia, *Rosa lucida* is our common wild rose or briar, and forms a troublesome weed in stony meadows. Cattle and sheep browse on the young shoots. On sunny days in winter when the ground is covered with snow, squirrels may be seen eating the fleshy fruit (calyx) rejecting the seed-like achenes. On exposed hill sides this is a low-growing species, but in the woods and in bushy places its stems elongate and become more robust, sometimes attaining a height of four or five feet.

CLEMATIS VIRGINIANA, LINNÆUS. AMERICAN VIRGIN'S BOWER. NATURAL ORDER: RANUNCULACEÆ.

A climber, with slender flexuous, woody stems; leaves opposite (compound), each composed of three leaflets, which are

more or less ovate, cordate at the base, acute at the tips, and on the margins incisely toothed or lobed; petioles (leaf stalks) twisted as tendrils for support. Peduncles axillary; flowers in corymbose panicles, often polygamous or diœious, fragrant; carpels with long plumose or feathery tails, forming a conspicuous and attractive object during our autumn walks in the woods. Flowers in July or August. *Clematis Virginiana*, Linnæus. Persoon's Synopsis Plantarum, vol. ii. p. 77. Torrey and Gray's N. American Flora, vol. i. p. 8. Hooker's Flora Boreali-Americana, vol. i. p. i. Gray's Manual, 2 ed. p. 4. *Clematis cordata*, Pursh.

The American Clematis or Virgin's Bower usually grows on the banks of streams or in moist spots in bushy places, climbing up the branches of trees, and arresting the attention of passers-by with its clusters of beautiful pure white and fragrant flowers in summer or its remarkable wreaths of feathery achenes in autumn. In distribution it extends from the Atlantic coast through Nova Scotia, New Brunswick and the Canadas to Niagara Falls, and westward even to Lake Winnipeg. It is not uncommon in the snake fences of Upper Canada, especially about Kingston C. W. It is plentiful in the woods around the new Rifle Range at Bedford, N. S. This plant was introduced to English gardens many years ago, where it is prized as an ornamental climber.

PYRUS AMERICANA, DECANOLLE.—AMERICAN MOUNTAIN ASH. NATURAL ORDER: ROSACEÆ.

A small slender tree; leaves pinnate, of from 13 to 15 leaflets, which are lanceolate, acuminate, serrate, smooth. Flowers white, in compound corymbed cymes, succeeded by large heavy clusters of berries, which are pomaceous in structure. Flowers in June.

Pyrus Americana, DeCandolle. Hooker's Flora Boreali-Americana, vol. i. p. 204. Torrey and Gray's N. American Flora, vol. i. p. 472. Gray's Manual, ed. 2, p. 125.

This tree is highly ornamental, especially when laden with its clusters of red berries. It is generally distributed throughout British America but chiefly towards the Atlantic sea board, extending through Nova Scotia, Lower Canada, New Brunswick, Newfoundland, Labrador, and probably Greenland. Some botanists regard the plant as merely a variety of the European *Pyrus aucuparia*, which is commonly cultivated in American gardens and pleasure grounds.—*Pyrus Americana* is common along the railway line between Halifax and Bedford, and in the woods on the banks of the Sackville River, and along the Beaver Bank Road.

LINNÆA BOREALIS, GRONOVIVS. LINNÆA OR TWIN-FLOWER. NATURAL ORDER: CAPRIFOLIACEÆ.

A small trailing evergreen, with slender wiry stems and opposite shortly petiolate leaves, which are roundish, with a few crenate notches on the margin. Peduncles erect, bearing two shortly-pedicellate flowers; corolla gamopetalous, campanulate, five-lobed, skin-coloured externally, more rosy and hairy within; stamens four, two rather shorter than the other two. Flowers in June.

Linnaea borealis, Gronovius. Linnæi Flora Lapponica, ed. Smith, p. 214. tab. 12 (native name *Windgræs*). Persoon's Synopsis, vol. i. p. 136. Hook Fl. B. Am. vol. i. p. 285. Torrey and Gray's N. American Flora, vol. ii. p. 3. Gray's Manual, 2 ed. p. 164. *Campanula serpyllifolia*, Bauhin; also *Nummularia norvegica* and *N. major* of old authors.

The *Linnaea borealis* is one of the prettiest wild flowers of our Nova Scotian woods. It grows on shaded banks and in mossy swamps, and especially around old stumps, which it festoons with its neat trailing shoots and delicate nodding flowers. About Halifax it is especially abundant: in the woods around the North West Arm, on the banks of the Sackville River at Lucyfield, and in many other localities it is common. This is the "little northern plant, long overlooked, depressed, abject, flowering early," which Linnæus, the great Swedish naturalist, selected to transmit his own name to posterity, and it was accordingly named *Linnaea* by his friend Dr. J. F. Gronovius. It is not rare in Scandinavia and other countries of Northern Europe, where it was first discovered; it grows also in Scotland in several remote localities, having been first found in 1795 by Prof. James Beattie, jun., at Inglismaldie. In England it is known at only one place (in Northumberland) where it was found by Miss Emma Trevelyan. It is in North America, and especially in the British possessions that this plant is most abundant and most beautiful. Besides being common in Nova Scotia, it is general throughout Upper and Lower Canada, New Brunswick, Newfoundland, Labrador, on the mountain ranges of the Atlantic States, the Rocky Mountains, in the Aleutian Islands and at Kotzebue sound. The American plant is usually rather more robust and more hairy than the European one. In Nova Scotia the *Linnaea* flowers more profusely than anywhere else where I have seen it growing.

(To be Continued.) G. L.

APRIL CHERRIES.—The first cherries of the season, May Dukes, appeared in the San Francisco market this year on 29th April, and were sold for \$1.75 per lb. The market lists of April contain gooseberries and strawberries.

ON SOME AMERICAN OAKS, BEECH, AND CHESTNUT.

On looking over the recent volume of DeCandolle's Prodrômus, treating of the Cupuliferae, I think the learned author is mistaken in several matters relating to some American trees; and as I gather from an expression in one of your notes, that American trees interest many of your readers, I take the opportunity to point out the errors in question.

Quercus heterophylla, *Mc.*, is classed as a variety of *Q. aquatica*, *Walt.*; but its proper alliance is with *Q. Phellos*, *L.*—Dried specimens of *heterophylla* have, by reason of their polymorphism, a strong resemblance to *Q. aquatica*, but the living plants show clear distinctions. In reference to *Q. aquatica*, his "propter folia perennia" deserves more weight than it receives. The leaves of the *heterophylla* fall at once with *Q. Phellos*; but in this latitude the leaves of *Q. aquatica* stay on green till near Christmas—Of course this alone would be no specific distinction, but it is one of many. No person seeing them growing within a few miles of each other, but would decide at once the affinity was with *Q. Phellos*. DeCandolle says of *Q. heterophylla*, "Unica arbor olim in fundo Bartrami prope Philadelphiam;" but of late years it has been found by Dr. Joseph Leidy, Edward Tatnal, and other eminent botanists, in New Jersey and other places, and by myself in Delaware. But the most satisfactory proof of all is that of two seedlings from the original tree (the old tree being many years dead); one is a perfect *Phellos*, the other (now in the garden of the Marshall family—Humphrey Marshall, the author of the first work on American trees—"Arbutum Americanum"), a true *Q. heterophylla*.

Quercus Lecana, *Nutt.*, is retained as a good species. I have not been able to get living specimens, but the prevailing impression is that this also is but a variety of *Q. Phellos* or *Q. imbricaria*, which two often run pretty near each other.

Quercus tinctoria, *Bartram*, is reduced to a variety of *Q. coccinea*, *Wagh.*—Many of the characters given by authors as marking each kind, are certainly common to both; but there are some which permanently distinguish them not often noticed. The scales of the cup in *Q. tinctoria* are free at the apex, giving the cupule a burry appearance. In *Q. coccinea* the scales are closely appressed, and the cup has a smooth, polished, mahogany appearance. The colour of the flesh of the nut of *Q. tinctoria* is of a deep orange colour; in the *Q. coccinea* it is white, or very faintly tinged with yellow. These are constant specific differences. Practically, the trees cannot well be confounded. The bark of the Scarlet Oak is clear and smooth, resembling, often exactly, *Q.*

rubra. That of *Q. tinctoria* is extremely rugose, often more so than any American Oak; the timber, too, is very distinct.

Referring to *Fagus*, *M. DeCandolle* retains *F. ferruginea*, *Ait.*, distinct from *F. sylvatica*, *L.*, rather, as it would seem, in deference to the views of the late Dr. Bromfield: for when he comes to Castanea, where the relative differences between the European and American forms are precisely the same, he reduces *C. americana* to a variety of *C. vulgaris*, *Lam.*

You did me the honour, several years ago, to reprint from the Proceedings of the Academy of Natural Sciences a paper on the relative differences between allied species of American and European trees (see vol. for 1862, p. 666). These distinctions are particularly well marked in the cases of the Chestnuts and Beeches. The relative differences, as there pointed out, are so strongly marked, and so constant, that I am sure, when understood, no American tree, so far as at present known, will be classed otherwise than as having a distinct organisation of its own. The singular uniformity of these differences is surprising. Having described how the American species of *Fagus* differs from its ally of Europe, the same characters exactly describe the differences between the Planes, Lindens, Oaks, Ashes, Beeches, and all other genera that have representatives on either side of the Atlantic. When one understands this difference in one case—say, for instance, between *Fagus ferruginea* and *Fagus sylvatica*, he can tell at once the American from the European allied species, in all cases, where he has had before no experience, even though the name and order of the plants should be quite unknown to him.—*T. M., Germantown, near Philadelphia, in Gardeners' Chronicle.*

MR. JARDINE.—We have to notice with regret the death of Mr. Robert Jardine, of St. John, New Brunswick, who not only occupied a high position in public affairs in that province, but was favorably known far beyond it as an agriculturist and horticulturist. He had a fine herd of pure Ayrshire cattle; and his orchard house was the most successful one we have seen on this continent. The *Colonist* observes: "We learn with regret of the sudden and unexpected death on Saturday night last, of Robert Jardine, Esq., formerly Chief Commissioner of the E. & N. A. Railway, who for the last three years has been partially disabled by an attack of paralysis. Mr. Jardine was an active and successful merchant, a leading promoter of public improvements, and a good citizen. His loss will be deeply felt by the business community and by a large circle of friends."

AGRICULTURE IN THE TOWNSHIP OF PARRSBORO'.—The Mill Village correspondent of the *Amherst Gazette*, in describing the village of Advocate, and the life and activity evinced in the various avocations of its people, remarks: "Though the shipping interest forms the chief industrial pursuit of the people, the agricultural department is not altogether neglected. The farmers have, notwithstanding the unpropitious state of the weather, accomplished much in the way of putting seed into the ground; but it must be acknowledged, that skill is sadly lacking here in regard to the treatment of the soil. The work of draining the land and manufacturing manure is considered quite unprofitable."

FAILURE OF THE WESTERN WHEAT CROP.—A correspondent of the N. York Agricultural Society's Journal writes from Lima, Indiana, that it is the opinion of the people in that section that there will not be one-quarter of a crop of wheat between Lake Erie and Lake Michigan, including Southern Michigan and Northern Indiana, a distance of fifty or sixty miles north and south. Many were ploughing up their wheat ground and sowing spring wheat and oats. Clover is equally as much killed out as the wheat.

A WEEDY NOTION.—The Gardener's Monthly has discovered that a patch of egg plants "left weedy for a long time" gave an "earlier, larger, and finer crop every way," than those particularly cared for. This is a happy idea for the gardener. "Whose days are all spent in yawning and slumber, while his garden bears daisies and weeds without number."

DECIE'S BERKSHIRES.—We observed passing through the city the other day some beautiful specimens of young Berkshire pigs, from the farm of H. E. Decie, Esq., Annapolis. They were on their way to Cape Breton, to H. Davenport, Esq., Sydney; John McLellan, Esq., Baddeck; and R. M. Donald, Esq., Lingan. They looked well and comfortable, and we hope they have reached their respective destinations in as good condition.

HEAVY FLEECE.—At the sheep shearing on Dr. Lawson's farm this season, one fleece was found to weigh of clean wool as taken from the sheep 17½ lb, and when washed 13½ lb. It was obtained from a Leicester ram, one of those imported by the Board of agriculture from Canada last year. As the present average weight of a fleece in Halifax county is about 3 lb, it may readily be imagined how much advantage will accrue to the country by the introduction of this valuable breed.

THE CROPS IN P. E. ISLAND.—The Prince Edward Island papers state that the vegetation is progressing slowly in the island. Grain has been re-sown and potatoes re-planted, in consequence of having rotted in the ground.

POLISH BARLEY.—Sandford Fleming, Esq., C.E., has presented to the Board of Agriculture, a few bushels of the new Polish Barley, which has been so successfully grown within the last year or two in Canada. We hope to give a fuller account of this fine barley next month.

THE DOG PEST.—The Rinderpest has not yet appeared in the United States or in Nova Scotia, but the Dog Pest is in full cry. In the monthly report of the Department of Agriculture at Washington, for April, just received, it is stated, in reference to certain tabulated statistics of the number of sheep killed and wounded by dogs in Ohio and other States, that the dogs destroy and injure nearly a million dollars' worth of sheep annually.—The number of dogs in Ohio is estimated at 1,647,880. A tax of one dollar per head, it is stated, would fully meet the damages done by them; and "surely when legislation is demanded for the protection of wool and woolens, a tax so just should not be denied by congress."

THE STRAWBERRY SEASON.—The editor of the *Wolf-He Acadian* has been presented with a box of ripe strawberries, gathered on the 12th June, on the premises of J. W. Barss, Esq., of that village, —*Abstainer*.

We had a few wild strawberries in Sackville on the 16th. The wild strawberries promise remarkably well this season, and so do most other wild fruits.

WEATHER AND CROPS IN CANADA.—June is usually a hot and dry month in Canada, but this season the first half of it has been cold and wet, as in Nova Scotia. A Quebec despatch of the 12th to the *Colonist*, states that there is at last some little improvement in the appearance of the country around Quebec. The recent warm weather has done some service, and the fields which were bare and black a week ago are now covered with verdure. We have letters from the Upper Province much to the same effect, only the crops are of course more advanced.

PICTOU COUNTY.—After a protracted continuance of cold weather, the summer at last appears to have set in. The change will be heartily welcomed by the farmers, whose operations have been greatly retarded by the wetness of the season. In some parts of the country it was found impossible to put the seed into the ground, and, in some cases, the grain sown perished in the soil from cold and wet.—*Pictou Standard*.

MORRIL MORGAN HORSE "BLACK-BIRD."—The Black Morgan Stud Horse "Blackbird," imported last autumn by James Page, Esq., and others, from the State of Vermont, is announced to stand for service at Amherst during the present season. He is described as 16 hands high, and descended from the celebrated "Morril" Morgan. Stephen Doyle, Groom, at Coffey's Hotel, Amherst.

DR. GREVILLE.—We regret to notice the death of Robert Kaye Greville, LL.D. which took place at Edinburgh on 4th June. He was the most distinguished of Scottish Cryptogamic Botanists, and was as well known by his works of benevolence as by his labours in science.

FOR SALE.—A thorough bred Bull. Pedigree, cross between Short Horn and Ayrshire. Four years old next month. Perfectly quiet in every respect.

For further particulars apply to Newport Agricultural Society. If not disposed of by private bargain will be sold in Halifax when imported stock from Canada is sold.

WANTED.—A Hay Mowing Machine in good order, and one or more good Horse Rakes.

FOR SALE.—A Shearling Ram of the improved Long Woolled Leicester Breed, one of those imported last year from Canada.—He is a fine healthy animal and quite hardy, having been wintered in an open barn with a large flock, without extra feed. Price \$40. Also a few Leicester Lambs from the Imported Rams.

TO CORRESPONDENTS.

Literary Communications are to be addressed to Dr. Lawson, Secretary of the Board of Agriculture, Dalhousie College, Halifax. All lists of subscribers and remittances of subscriptions are to be sent to Messrs. A. & W. McKinlay, Publishers, Granville Street, Halifax.

ADVERTISEMENTS.

DONKEYS!

WANTED to purchase *Two Donkeys*, good for Side-saddle use. Address "D," care of Secretary of the Board of Agriculture, stating price, &c.
May 20th, 1866.

STOCK FOR SALE!

PRIZE BOAR SWEEPSTAKES, price \$40
Two Year Old SOW in pig 40
One Shearling RAM 30
Fifteen RAM LAMBS, each 15
16 EWE LAMBS, each 15

Agricultural Societies in Cape Breton can have them delivered on board steamer for Sydney Bar by paying expenses.

H. E. DECIE, Ann. Co.

May 15, 1866.

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