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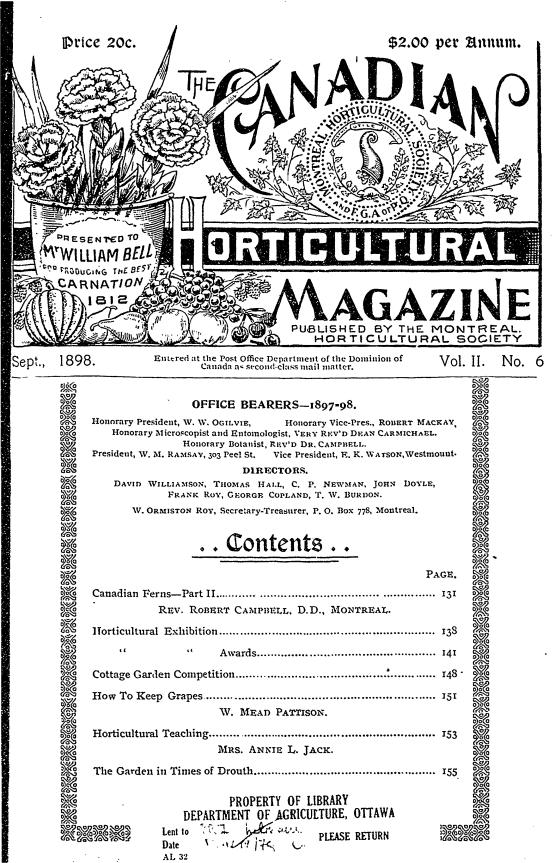
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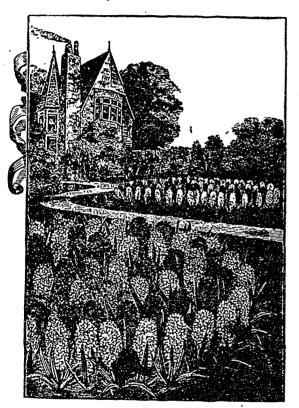
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THE CANADIAN

HORTICULTURAL MAGAZINE,

Vol. II.	September, 1898.	No. 6

CANADIAN FERNS.

BY REV. ROBERT CAMPBELL, D.D., MONTREAL.

PART II.-OSMUNDA.

The genus OSMUNDA, which is classified in botanical text-books next to the Botrychium genus, described in a former paper, bears a resemblance to that fern family in the form of its fruit. The sori are on pinnules by themselves, and the sporanges are globose in shape. The sterile leaves are beautifully marked by free veins running to the margins of the pinnules, and these veins are often forked. Like the orchid Calypso, this family of ferns is called after a mythical personage, the God Thor of the North, designated by the name Osmunder. The Osmundas are among the noblest ferns.

1. OSMUNDA REGALIS (L.).—Royal Fern. The folk-hame of this plant gives embodiment to the popular estimate of it, as the King of Ferns. It bears itself royally among the Fern tribe; and, with the exception of the bracken and common Polypody, it is the most widely diffused of the whole Fern family, being found in Asia, Africa and South America, as well as in Europe and North America. In England, Scotland, Wales and Ireland, it grows, however, for the most part, only in the western counties. It is entirely absent from several of the counties of Great Britain and Ireland. In my tramps over England, Scotland and Wales, in 1890, I ran across only a single specimen of it, and that was in Glenlyon, Perthshire. These ferns are so rarely met with and so highly esteemed by collectors, in many parts of Britain, that enthusiasts will sometimes journey hundreds of miles in the hope of finding one; while here



(1) Osmunda Regalis (L.) ROYAL FERN.



(2) Osmunda Cinnamomea (L.) CINNAMON FERN.

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in Canada we have whole forests of them, and within a mile or two of Montreal they can be gathered in thousands.

There is considerable variety in the sterile pinnules of this fern, according to the age and size of the fronds. It will be noticed, for instance, that the lower pinnules of the fertile frond, in our illustration, are narrower than those of the sterile frond along side it. The pinnules in both specimens are seen to be nearly entire in their margins; but not unfrequently the pinnules are variously toothed and auricled. I make this remark, lest inexperienced collectors should be puzzled when they fall in with specimens not corresponding entirely with any illustration or outline of this plant they may have examined. The plants' also vary greatly in size, according to their age and the situation in which they are found, in damp rich soil reaching a height sometimes of ten feet. while in drier localities they do not exceed two or three feet.

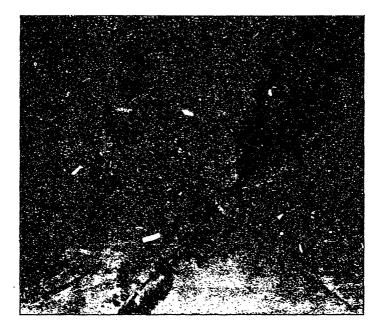
2. OSMUNDA CINNAMOMEA (L.) - Cinnamon Fern. This species of Osmunda obtains its name from the colour of its fertile fronds when mature. There is usually only a single fertile frond growing up in the centre of a clump of sterile fronds, and one has to search for it before finding it, since it is shorter and slenderer than the large heavy green fronds around it. These clumps are conspicuous in wet woods with a clay soil, and among alder bushes. Though the sterile fronds are somewhat coarse when fully grown, they are very showy, and add much to the wealth of verdure in situations not otherwise very interesting or attractive.

The reddish-brown fertile fronds are well worthy of minute study. The stipes when young are covered with a rusty wool, but this disappears with the plant's growth, except a small tuft at the base of each pinna, which becomes of a lighter colour. The spore^S of the bipianate fertile fronds are at first green, but after they have been discharged, the sporanges acquire the cinnamon colour, from which the fern gets its popular name.

3. OSMUNDA CINNAMOMEA FRONDOSA (A. GRAY.)—Leafy Cinnamon Fern. This is a variety of the Cinnamon Fern which is very abundant in the Province of Quebec, although Gray spoke of



(3) Osmunda Cinnamomea Frondosa. LEAFY CINNAMON FERN.



(4) Osmunda Claytoniana (L.) CLAYTON'S FERN.

it as "a rare occasional state." It is to the full as frequently found in many districts, as the typical Cinnamon Fern. This particular form of the Cinnamon Fern is very common along fences in the County of Charlevoix, and also in the neighbourhood of Sherbrooke, as well as in the vicinity of Montreal. The fruiting fronds are sterile below, and fertile above, as in the specimen here used for illustration; but sometimes they are fertile in the middle, and sterile at both ends. Several fronds of this variety are sometimes found in the same clump, in that respect also differing from the typical Cinnamon Fern.

4. OSMUNDA CLAYTON, NA (L.)-Clayton's Fern. Michaux called this Fern Osmunda interrupta, from its characteristic feature, of having a few of the opposite pinnules in the middle of the frond fertile, and in consequence small and short compared with the sterile pinnules above and below. It is popularly called the "Water Fern," as it often occurs on springy ground. It is a noble Fern, expanding from the slight form which it presents in spring until it reaches, as it sometimes does, a height of six feet, and a width of nearly one foot. The sterile part of the frond is at first of a pale green, but in autumn it becomes of a very dark green shade. During the early development of the fronds, to give them protection probably from rapid changes of temperature or from the attacks of insects, they are covered with light-brown wool, which disappears with the advancing season. The fertile pinnæ, as in the Osmunda Cinnamomea, are at first of a brownish-green hue, but when they reach maturity they turn to a deep brown colour. They also shrink very much in size after discharging their spores, and at length become detached from the rachis, leaving a bare interval in the frond, justifying the folk-name "Interrupted Fern." Along with the Osmunda Regalis, the Osmunda Claytoniana is one of the glories of our moist Canadian woods.

ROBERT CAMPBELL.

To be Continued.

OPENING OF HORTICULTURAL EXHIBITION.

[From Montreal Gazette, August 26th.]

A more unfortunate date than yesterday, from a meteorological point of view, could scarcely have been selected for the opening of a flower show. The weather was such as to neither tempt visitors nor elate the organizers of the exhibition.

It was a pity, for a fine collection of plants and cut blooms had been got together by the Horticultural Society for its annual exhibition.

But the rain came down unceasingly, it dripped through the tent in which the exhibits were staged, and sometimes it did more than drip—it poured; rendering everything and everybody generally uncomfortable, besides considerably delaying the getting into place of the several entries. The result was that the show was not opened until late in the afternoon, and then the attendance was practically nil.

In the evening, when the formal opening took place by the Mayor, the weather had vastly improved, and the attendance was correspondingly encouraging, quite a number of well-known citizens finding their way to the corner of Drummond and St. Catherine streets, where the show is being held, and where it will be continued to-day and to-morrow.

An exhibition by the Horticultural Society is synonymous with what is good and beautiful in the way of a floral display, and this year the same maintains. Collections of flowering and foliage plants occupy a large portion of the ground space, and potted plants of various kinds, including school children's exhibits, fill up the remainder, whilst on a stand running around the sides of the tent are arranged the cut blooms, fruit, vegetables, etc.

As a whole, the exhibits are in good shape. The collections of

flowering and foliage plants are a well arranged lot, and are in the pink of condition. The crotons are an exceptionally fine lot, whilst the ferns in the several classes have an abundance of excellent foliage.

The double and single zonal geraniums make a fine display, and the gloxinias are a very good collection. A large exhibit of geraniums by Mr. W. C. Hall, of Outremont, is one of the features of the show. Of palms, there is a nice selection, and of selaginellas half a dozen good specimens are shown. French cannas are one of the showy attractions of the exhibition, and the hydrangeas, in blossom, make up in size what is lacking in point of numbers, whilst of coleus, there is a large and beautiful collection.

In the collections of cut blooms, from out of doors, some are arranged with much taste, whilst in others compact masses of colour predominate over artistic display. Among the sweet peas some splendid spikes are to be found, and the asters are a good lot There is a fair collection of dianthus, and the pansies are a commendable display. Phlox Drummondi is, as usual, good, and the petunias are worthy of inspection, whilst among the zinnias are some well formed blooms.

The fruits make a very fair show, the largest collection, of course, being apples, of which some very fine specimens are shown. The exhibition of plums is the finest ever seen in this section of the Dominion.

In the vegetable class, the most notable exhibits are those of onions, potatoes and collections of vegetables, the last named being well displayed.

In the amateur classes the coleus are a most creditable lot, and of rubber plants there are some fine specimens, whilst of rustic stands of plants there are some very commendable exhibits.

As regards cut blooms, there are two or three good collections of annuals and perennials. There are a few good spikes of glodioli; and of single petunias, some good blooms are on exhibition; whilst of sweet peas there are some splendid specimens.

To add to the pleasure of viewing a good show, the Victoria

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Rifles' Band, under the direction of Mr. Quivron, discourses musical selections at frequent intervals, and a calcium light fountain sends its multi-coloured spray upwards, the changing tints as they are thrown upon the water and reflected upon the deep foliage of the exhibits, changing now to emerald green, now to orange and then merging into rose pink, forcibly reminding the spectator of that beautiful aerial phenomenon, the aurora borealis.

It was about 8.30, when the Mayor, accompanied by ex-Mayor R. Wilson-Smith; the president of the society, Mr. W. M. Ramsay; the honorary vice-president, Mr. Robert Mackay; the vice president, Mr. E. K. Watson; directors, Mr. D. Williamson, Mr. T. W, Burdon and Mr. Geo. Copland, and other members of the society, formally declared the show open!

After being introduced by Mr. Robert Mackay, the Mayor congratulated the society on the excellence of the exhibits that it had got together, and expressed the hope that the public would patronize so worthy an exhibition, which showed that we could produce almost anything that could be grown under the sun. He touched on the success that had attended his own efforts in the way of growing plums and apples, at St. Agathe, and concluded by wishing the society every success.

Subsequently the idea of encouraging florticulture at railway stations, the same as is done in Britain, by offering prizes for the prettiest stations, was broached, and it is highly probable that next year the society will take the matter up and offer prizes for the best cultivated flower gardens attached to stations between Montreal and Toronto.

The judges in the several classes were:—Plants (open), Mr. George Copland, McGill Botanic Gardens; cut blooms (open), Mr. Walter Wilshire, Montreal; fruit, Rev. Robert Hamilton, Grenville, and Mr. Cecil Newman, Lachine; vegetables, Mr. McDuff-Lamb, Montreal; plants (amateur sections), and school children's plants, Mr. Jonathan Brown, Montreal; cut blooms (amateur sections), Mr. David Williamson, Montreal.

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AWARDS.

PLANTS (OPEN.)

Collection of Flowering and Foliage Plants, 50 square feet—A. Pinoteau, oity gardener, 1; George Buddo, gardener to Lord Strathcona and Mount Royal, 2; H. W. Mayer, gardener to John Moleon, Esq., 3. S. Ward, gardener to James Ross Esq. 4.

Three Adiantums, distinct varieties—W. J. Wilshire, gardener to R. B. Angus, Esq. 1; Geo. Buddo, 2; C. A. Smith, gardener to T. A. Dawes, Esq. Lachine, 3.

Six Begonias, foliage, distinct varieties--A. Pinoteau, 1.

Six Tuberous Begonias, single, distinct varieties-George Trussell, gardener to Mrs. J. H. R. Molson, 1.

Three Tuberous Begonias, double, distinct varieties-I. Rubenstein, 2.

Three Caladiums, distinct varieties-H. W. Mayer, 2.

Three Crotons, distinct varieties--W. J. Wilshire, 1.

Speimen Cycas—A. Pinoteau, 1; Jules Betrix, gardener to Andrew Allan, Esq. 2.

Three Dracenes, distinct varieties-W. J. Wilshire, 1; S. Ward, 2.

Three Ferns, distinct species, tree ferns excluded-W. J. Wilshire, 1; George Buddo, 2.

Specimen Tree Fern-George Buddo, 1. W. J. Wilshire, 2.

Three Fuchsias, distinct varieties, in bloom-George Trussell, 1.

Three single Zonal Geraniums, distinct varieties, in bloom-W. C. Hall,

Outremont, 1; R. W. Whiting, gardener to H. S. Mussen, Esq.2.

Three double Zonal Geraniums, distinct varieties, in bloom-W. C. Hall, 1; Geo. 'Trussell, 2.

Six Gloxinias, distinct varieties, in bloom-Geo. Buddo, l. I. Rubenstein,

2.

Specimen Ficus Elastica--R. W. Whiting, 1; W. J. Wiishire, 2.

Hanging basket of Plants-W. C. Hall, 1; A. Pinoteau, 2.

Three Orchids in bloom-W. J. Wilshire, 1; George Buddo, 2.

Three Palms, disinct varieties-W. J. Wilshire, 1; C. A. Smith, 2.

Three Palms, distinct varieties, in pots not larger than six inches—C. A. Smith, :; A. Pinoteau, 2.

Specimen Palm-S. Ward, 1; A. Pinoteau, 2.

Vase of Plants-A, Pinoteau, 1.

Six Plants for table decoration, distinct varieties, size of pots not to exceed six inches— W. J. Wilshire, 1; C. A. Smith, 2; H. W. Mayer, 3; George Buddo, 4.

Selaginellas, six pans, distinct varieties-H. W. Mayer 1.

Three stove or greenhouse Foliage Plants, distinct varieties, not otherwise included in prize list, palms and ferns excluded—W. J. Wilshire, 1; H. W. Mayer, 2.

Three French Cannas, distinct varieties -George Trussell, 1; H. W. Mayer, 2.

Two Hydrangeas, in bloom-Geo. Trussell, 1; S. Ward, 2.

Three Coleus, distinct varieties, size of pots not to exceed eight inches-C. A. Smith, 1; R. W. Whiting, 2.

Collection of Cacti and Succulents, not more than one plant of any one variety—A. Pinoteau, 1.

CUT BLOOM (OPEN.)

Collection of Cut Bloom, grown out of doors, to be exhibited in form of a circle limited to five feet in diameter—Geo. Trussell, 1; C. A. Smith, 2; W. Alcock, gardener to Hugh McLennan, Esq. 3.

Collection of Sweet Peas, three spikes of each, named, Mrs. Edgar Johnson. Lennoxville, 1; J. S. Harkom, Melbourne, 2.

Asters, twelve blooms, distinct varieties—Geo. Pascoe, gardener to Robert Reford, Esq. 1, Robert Reid, Outremont, 2.

Double Dahlias, six distinct varieties—C. A. Smith, 1; Mrs. Edgar Johnson, 2.

Single dahlias, six distinct varieties-C. A. Smith, 1; W. Alcock, 2.

Dianthus, collection of eighteen blooms—A. Pinoteau, 1;Robert Reid, 2. Gladioli, nine spikes, distinct varieties—A. Pinoteau, 2.

Pansies, twelve distinct varieties-Robt. Reid, 1; Geo. Trussell, 2.

Single Petunias, twelve blooms, distinct varieties—George Trussell, 1; A. Pinoteau, 2.

Double Petunias, twelve blooms, distinct varieties—Geo. Trussell, 1; I. Rubenstein, 2.

Phlox Drummondi, collection of twelve varieties, one bunch each-Mrs. Edgar Johnson, 1; C. A. Smith, 2.

Zinnias, twelve blooms, distinct varieties—C. A. Smith, 1; Geo. Trussell, 2.

Verbenas, twelve distinct varieties-Mrs. Edgar Johnson, 1; Geo. Trussell, 2.

Bouquet or bunch of Cut Flowers-A. Pinoteau, 1; C. A. Smith 2.

Basket of Cut Flowers, basket not to exceed twelve inches in diameter-C. A. Smith, 1; Geo. Trussell, 2.

Vase or epergne of Cut Flowers---H. W. Mayer, 1; C. A. Smith, 2.

Vase of Marguerite Carnations-A. Pinoteau, 1; W. C. Hall, 2.

Vase of outdoor grown Cut Flowers-W. Alcock, 1; R. W. Whiting, 2.

Vase of Poppies-R. W. Whiting, 1; Geo. Jeffrey, Petite Côte, 2.

Vase of Liliums-Robert Reid, 1; R. W. Whiting, 2.

Vase of Wild Flowers-Robert Jack, Chateauguay Basin, 1; Geo. Trussell, 2.

Vase of Sweet Peas-J. S. Harkom, 1; Mrs. Egar Johnson, 2; C. A. Smith, 3.

FRUIT (OPEN.)

Apples, collection of fifteen varieties, five specimens of each, grown in the province of Quebec—R. W. Shepherd, Como, 1; Geo. B. Edwards, Covey Hill, 2; Malcolm Smith, Lachute, 3.

New seedling Apple, one variety (never exhibited before in Montreal) five specimens-Geo. B. Edwards, 1; Arch, Knight, Cataraqui, Ont. 2.

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Twelve varieties Apples, three summer, three fall, three early winter, three late winter, five of each, named—Geo. B. Edwards, 1; Arch. Knight, 2; R. W. Shepherd, 3.

Six varieties Apples (five of each named,) for commercial purposes—M. Smith, 1; R. W. Shepherd, 2.

Fameuse Apples, five specimens-A. Knight, 1; Geo. B. Edwards, 2.

St. Lawrence Apples, five specimens-M. Smith, 1; Jas. Coupland, Shefford Mountain. 2.

Duchess Apples, five specimens-A. Knight, 1. Geo. B. Edwards 2.

Wealthy Apples five specimens-Mrs. James Ainslie, Outremont, 1; James McGuire, gardener to J. Molson, Esq. 2.

Winter St. Lawrence Apples, as described in M. H. S. report, five specimens-R. W. Shepherd, 1, R. Newman, 2.

Alexander Apples, five specimens—James McGuire, 1; Geo. B. Edwards, 2.

Golden Russet Apples, five specimens—A. Knight, 1; James Coupland: 2. Montreal Strawberry Apples, five specimens—G. B. Edwards, 1; A.

Aubertin, Cote St. Paul, 2. Yellow Transparent Apples, five specimens—R. W. Shepherd, 1; George Buddo, 2.

McIntosh Red Apples, five specimens-R. W. Shepherd, 1; Mrs. James Ainslie, 2.

'Switzer Apples, five specimens—Mrs. James Ainslie, 1; R. W. Shepherd, 2.

Crab Apples, five varieties, ten of each, named—R. W. Shepherd, 1; G. B. Edwards, 2.

Pears, three varieties, five of cach, named, James McGuire, 1; John Eddy, gordener to Mrs. Redpath, 2.

Pears, Flemish Beauty, five specimens-G. Buddo, 1; Mrs James Ainslie, 2.

Pears, any other variety, five specimens-G. Buddo, 1; John Eddy, 2.

Plums, three varieties, ten specimens of each—Mrs. James Ainslie; 1; Geo. Trusssell, 2.

Plate of Plums, one variety only, ten specimens—R. W. Whiting, 1; Mrs. James Ainslie, 2.

Best and most tastefully arranged Basket of Fruit for dessert, size of basket to be not less than one foot, and not to exceed two feet in any part— Mrs. James Ainslie, 1; Robert Jack, 2.

Best and most tastefully arranged Basket of Out-Door-Grown Fruits, size of basket to be not less than one foot, and not to exceed two feet in any part --Mrs. James Ainslie, 1; Robt. Jack, 2.

Out-door Grapes, six varieties, named, two bunches of each-Robert Jack, 1; W. M. Pattison, Clarenceville, 2.

Outdoor Grapes, three varieties, named, two bunches of each-Robert Jack, 1; W. M. Pattison, 2.

Outdoor Grapes, two varieties, white, one bunch of each--W. M. Pattison, 1; Robert Jack, 2.

Outdoor Grapes, two varieties, black, one bunch of each—W. M. Pattison 1; Robert Jack, 2.

Outdoor Grapes, two varieties, red, one bunch of each-W. M. Pattison, 1; Robert Jack, 2.

Outdoor Grapes, heaviest single bunch, any variety—W. M. Pattison, 1. Outdoor Grapes, heaviest single bunch, black—W. M. Pattison 1; Robert Jack. 2.

Outdoor Grapes, heaviest single bunch, red-Robert Jack, 1; W. M-Pattison, 2.

Outdoor Grapes, heaviest single bunch, white—W. M. Pattison, 1; Robert Jack, 2.

Grapes grown under glass, three varieties, one bunch of each-W.J. Wilshire, 1; James McGuire, 2.

Grapes grown under glass, two varieties, white—W. J. Wilshire, 1; James McGuire, 2.

Grapes grown under glass, two bunches, black Hamburg-W. J. Wilshire, 1; R. W. Whiting, 2.

Grapes grown under glass, best bunch any variety -W. J. Wilshire, l; James McGuire, 2.

Nectarines, three varieties, five of each -John Eddy, 1.

Peaches, six varieties, three of each-John Eddy, 1.

Peaches, best plate-John Eddy, 1.

Musk Melon-Maurice Radley, Outremont, 1; Geo. Jeffrey, 2; Ignace Morand, College Notre Dame, Cote des Neiges, 3.

VEGETABLES (OPEN)

Jerusalem Artichokes, best plate—Ignace Morand, 1; C. A. Smith, 2. Six Blood Turnip Beets, for table—Richard Newman, 1; Mrs. James Ainslie, 2.

Six Blood Beets, long, for table—C. A. Smith, 1; Richard Newman, 2. Kidney Beans, yellow podded, best plate—C. A. Smith, 1: Thos. Westlake, sr., gardener to Mr. Dawes, 2.

Kidney Beans, green podded, best plate-Thos. Westlake, sr., 1; George Trussell, 2.

Borecole (kale), two stalks—C. A. Smith, 1; Frère Louis Morand, St. Laurent College, St. Laurent, 2.

Brussels Sprouts, two stalks-C. A. Smith, 1; Thos. Hall, 2.

Winter Cabbage, two heads-Thomas Hall, 1; Louis Morand, 2.

Red Cabbage, two heads-Richard Newman, 1; Louis Morand, 2.

Savoy Cabbage, two heads-Thos. Hall, 1; Maurice Radley, 2.

Carrots, half long, bunch of six—John Nesbitt, Petite Côte, 1; Iguace Morand, 2.

Cauliflower, three heads—Maurice Radley, 1; George Jeffrey, 2. Cauliflower, best head—Maurice Radley, 1; Ignace Morand, 2 Cucumbers, best two—Thos. Westlake, sr., 1; Mrs. James Ainslie, 2. White Celery, six heads—Thos. Hall, 1; Maurice Radley, 2. Red Celery, six heads—Maurice Radley, 1; Ignace Morand, 2. Yellow Celery, six heads—Ignace Morand, 1; C. A. Smith, 2.

Sweet Corn, six ears, one variety, named, fit for table use-C. A. Smith,

1; Louis Morand, 2.

Collection of Sweet Corn, three varieties, three of each named-George Trussell, 1.

Three purple Egg Plants-I. Rubenstein, 1; George Trussell, 2.

Three white Egg Plants-Richard Newman, 1; George Trussell, 2.

Bunch of six Leeks-Thomas Westlake, sr., 1; Ignace Morand, 2.

Six varieties of Onions, five of each-Iguace Morand, 1; Maurice Radley,

One variety red Onions, twenty specimens-Robert Jack, 1; Ignace Morand, 2.

One variety yellow Onions, twenty specimens-C. A. Smith, 1; Maurice Radley, 2.

One variety white Onions, twenty specimens—Ignace Morand, 1; C. A. Smith, 2.

Six Parsnips, for table-Richard Newman, 1; Thomas Westlake, 2.

Collection of Peppers, six varieties, six of each—Geo. Trussell, 1; Ignace Morand, 2.

Collection of Potatoes, six varieties, six of each—Mrs. James Ainslie 1; Richard Newman, 2.

Collection of Potatoes, three varieties, six of each—Mrs. James Ainslie, 1; Thomas Scott, jr., Outremont, 2.

Collection of Pot Herbs, one bunch of each—Thomas Hall, 1; Louis Morand, 2.

Bunch of six winter Radishes-Louis Morand, 1.

Bunch of twelve summer Radishes-Ignace Morand, 1; Thos. Hall, 2.

Six heads Cabbage Lettuce-Thos. Hall, 1; Lichard Newman, 2.

Six heads Curly Lettuce-Thos. Hall, 1.

2.

Pot of Parsley-Samuel Cornes, 1; W. Alcock, 2.

Twelve roots Salsify-Maurice Radley, 1; Thos. Westlake, sr., 2.

Three varieties Tomatoes, six specimens of each—Thos. Westlake, sr., 1; F. G. Gnaedinger, Kensington, 2.

Red Tomatoes, five specimens, one variety—F. G. Gnaedinger, 1; G. Buddo, 2.

Yellow Tomatoes, five specimens, one variety-C. A. Smith, 1; Ignace Morand, 2.

Six white Turnips, for table-Ignace Morand, 1; Thos. Scott, jr., 2.

Six yellow Turnips, for table-George Jeffrey, 1; Ignace Morand, 2.

Two specimens Vegetable Marrow-Maurice Radley, 1; R. W. Whiting, 2.

Two specimens Hubbard Squash-Ignace Morand, 1; Maurice Radley 2.

Best collection Vegetables named, displayed on a space not less than 36 feet area—Thomas Hall, 1 ; Ignace Morand, 2.

AMATEURS CLASS

PLANTS.

Three Plants, distinct varieties, in bloom—I. Rubenstein, 1; F. G. Gnaedinger, 2; Mrs. Dion, 3.

Specimen Plant, in bloom—Thos. W. Burdon, 1; A. Rubenstein, 2. Pot of Mignonette—George Jeffrey, 1; Mrs. J. Scott, 2. Pot of Abutilon-H. Cornell, 1; Mrs. Dion, 2.

Pot of Hydrangea-I. Rubenstein, 1.

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Pot of Balsam-S. Cornes, 1; Mrs. Dion, 2.

Pot of Aster-S. Cornes, 1; I. Rubenstein, 2.

Pot of Begonia rex-I. Rubenstein, 1; Mrs. Dion, 2,

Pot of Heliotrope - F. H. Whitworth, 1; George Jeffrey, 2.

Pot of Petnnia-I. Rubenstein, 1: Geo. Jeffrey, 2.

Pot of French canna-I. Rubenstein, 1; S. Cornes, 2.

Pot of Stock-Mrs. Dion, 1; I. Rubenstein, 2.

Pot of Fuchsia -I. Rubenstein, 1; H. Robinson, 2.

Pot of Geranium--I. Rubenstein, 1; Geo. Jeffrey, 2.

Pot of Tuberous Begonia—I. Rubenstein, 1; Thomas Grimsdale, Outremont, 2.

Three Foliage Plants. distinct varieties—I. Ruhenstein, 1; A. Ruhenstein, 2; Thomas W. Burdon, 3.

Specimen Foliage Plant - I. Rubenstein, 1; A. Rubenstein, 2.

Pot of Coleus-H. Cornell, 1; H. Robinson, 2; I. Rubenstein and Geo-Jeffrey, highly commended.

Pot of Fern-I. Rubenstein, 1; A. Rubenstein. 2.

Pot of Ivy-1 Rubenstein, 1; Thomas W. Burdon, 2.

Pot of Palm-H. Cornell, 1; I. Rubenstein, 2.

Rubber Plant-Mrs. Dion, 1. H. Cornell, 2.

Window box with growing Plants-I. Rubenstein, 1; Mrs. Dion, 2; A. Rubenstein, 3.

Rustic stand of Plants-I. Rubenstein, 1; F. G. Gnaedinger, 2.

CUT BLOOM. BOUQUETS, ETC.

Collection of Annuals only, eighteen varieties—Mrs. Edgar Johnson, 1; F. G. Gnaedinger and Thomas Grimsdale, special 2.

Collection of Perennials and Biennials only, eighteen varieties-Rober Reid, 1; I. Rubenstein, 2.

Collection of Asters, eighteen blooms-Robert Reid, 1: Mrs. Edgar Johnson, 2.

Double Dahlias, six blooms, distinct varieties-F. G. Gnaedinger, 2.

Single Dahlias, six blooms, distinct varieties -- Robert Reid, 1: I. Rubenstein, 2.

Six spikes Gladioli, distinct varieties-Robert Reid, 1; I. Rubenstein, 2.

Pansies, twelve blooms, distinct varieties—Robert Reid, I; I. Rubenstein, 2.

Dianthus, twelve blooms, distinct varieties—Robert Reid, 1; Mrs. Edgar Johnson, 2.

Stocks, six spikes-Mrs. Edgar Johnson, 1: I. Rubenstein, 2.

Verbenas, twelve blooms-F. G. Gnaedinger, 1; H. Cornell, 2.

Hanging Basket-I. Rubenstein, 1; Mrs. J. Scott, Montreal Annex, 2

Double Petunias, six blooms, distinct varieties-S. Cornes, 1; I. Rubenstein, 2.

Single Petunias, twelve blooms, distinct varieties—I. Rubenstein, 1; Mrs. Edgar Johnson, 2

Phlox Drummondi, twelve varieties, one bunch of each-Mrs. Edgar Johnson, 1; H. Cornell, 2.

Zinnias, twelve blooms. distinct varieties-Robert Reid, 1; Mrs. Edgar Johnson, 2.

Bouquet or bunch of Flowers-Thomas Grimsdale, 1; Mrs. Dion, 2.

Basket of Cut Flowers (basket not to exceed twelve inches in diameter) --Thos. Grimsdale, 1; Mrs. Dion, 2.

Vase or epergne of cut flowers—Thomas Grimsdale, 1; Mrs. Edgar Johnson, 2.

Vase of Sweet Peas-Mrs. Edgar Johnson, 1; Walter F. Denman, Outremont, 2.

Vase of Poppies-Geo. Jeffrey, 1; Robt. Reid, 2.

FRUIT AND VEGETABLES.

Three varieties dessert Apples, five of each—Thomas Grimsdale, 1. Mrs. George Wells, Outremont, 2.

Best plate Apples, one variety, five specimens—Robert Keid, 1; Mrs. Geo. Wells. 2.

Outdoor Grapes, five varieties, one bunch of each—W. F. Denman, 1; Mrs. Dion, 2.

Bunch of Outdoor Grapes. any variety-Mrs. Dion, 1; I- Rubenstein, 2. Pears, plate of five specimens, one variety-Mrs. Geo. Wells, 1 Mrs.

Dion, 2.

Plate of Blackberries-Thos. Grimsdale, 1.

Sweet Corn, six ears, one variety--F. G. Gnaedinger, 1; Geo. Jeffrey, 2. Potatoes, plate of six specimens, one variety-W. H. Russell, 1; W. F. Denman, 2.

Tomatoes, plate of six specimens, named, one variety—H. Robinson, 1; F. G. Gnadinger, 2.

Three varieties Onions, five of each-I. Rubenstein, 1; W. F. Denman, 2

Bunch of six Carrots-Geo. Jeffrey, 1; F. G. Gnaedinger, 2.

Bunch of six Beets, W. F. Denman, 1; Mrs. J. Scott, 2.

Three heads Celery-Mrs. Dion, 1. I. Rubenstein, 2.

Bunch of six Parsnips-F. G. Gnaedinger, 1; Geo. Jeffrey, 2.

Three Cabbage Lettuce-Mrs. Dion, 1; Geo. Jeffrey, 2.

Three Curly Lettuce-W. F. Denman, 1; Mrs. Dion, 2.

Plate of Beans-F. G. Gnaedinger, 1; H. Robinson. 2.

Specimen Cauliflower-Mrs. Dion, 1; W. H. Russell, 2.

Twenty-five pods Green Peas-W. H. Russell, 1; A. Rubenstein, 2.

TROPHIES.

The Five special Trophies, offered to the winners of the largest number of points in the several classes were awarded as follows :---

Class A.—Plants (open) W. J. Wilshire.

Class B .- Cut Bloom, (open) C. A. Smith.

Class C .- Fruit, (open) W. Mead Pattison Clarenceville, Que.

Class D.—Vegetables, (open) Ignace Morand, College Notre Dame, Cote des Neiges.

Class E.—Plants and Cut Bloom, (Amateur)—I. Rubenstein, 461 St. Urban street.

COTTAGE GARDEN COMPETITION.

Suburban Cottage, Gurden Competition :- E K. Watson, Westmount, . 1; Mrs. J. Magor, Lachine, 2.

City Garden.—A. Leclaire, 290 University St., 1; J. Marsh, 4 Amherst Park, 2; E. M. Lovelace, Elm Ave, 3.

SPECIAL PRIZES.

Collection of Russian Apples-Rev. Robert Hamilton, Grenville Que., special first.

Collection of Seedling Plums—James Ainslie, Outremont, special first. Rubber Plant—Mrs. Frank Redpath, special first.

Crotons, Caladiums, Adiantums, Anthuriums and Collection of Rare Foliage Plants—Frank Roy, Mount Royal Cemetery, special firsts.

Orchid—I Rubenstein, special first.

Adiantum Farleyense-S. Ward, special first.

Fruiting Fig-Arthur, St Luke St., special first.

JUVENILE DEPARTMENT.

Aberdeen School.

Fuchsias-Harry J. de Jersey, 1; Grace Woodward, 2.

Geraniums-Murray de Jersey, 1 Robt. Watkins, 2.

Carnations, Daisy Watkins, 1: Gertrude Newton, 2.

Petunias-Hartley Burrow, 1; May de Jersey, 2.

Dianthus-Grace Beal, 2.

Antirrhinum-Mary Beal, 1.

Neirembergia—Dora Chipchase, 2.

Ann Street School.

Fuchsias-George Roberts, 2.

Geraniums--D. Glenny, 1; Eva Hill, 2.

Carnations-Wm. Bennet, 1; Norman Rolston, 2.

Petunias-Emily Bracken, 1; Lewis Brown, 2.

Dianthus-Lyman Brown, 1; Hattie Bloomberg, 2.

Antirrhinum—Arthur Mell, 1; Margery Green, 2.

Berthelet School.

Fuchsias.-Amelia Thomas, 1.

Geraniums.--Wm. Armour, 1; Stanley Thomas, 2. Carnations -- Lizzie Withell, 1; Thos. Chennell, 2. Dianthus.-- Fred Johnson, 2.

Britannia School.

Petunias-Robert Anderson, 1; Eva Rolston, 2. Dianthus-Grace Scott, 1; Edith Vivian, 2. Antirrhinum-James Norris, 1; Gordou Rolston, 2.

Hochelaga School.

Carnations—Hannah Waldron. 1; John Phillips, 2. Petunias–John Mays, 1; Sarah Trudeau, 2. Dianthus—Etta Jowett, 1; Ida Waldron, 2. Antirrhinum—Annie Lemm, 1; Maggie Clews, 2. Neirembergia—Fred. Mays 1; Charlott Lemm, 2. Coleus (special)—Sarah Trudeau, 1.

Dufferin School.

Fuchsias.—E. Walker, 1; S. Rost, 2. Geraniums.—A. Gordon, 1; R. Aird, 2. Carnations.—O. Kerr, 1; J. Harris, 2. Petunias.--T. Haiman, 1; C. Hight, 2, Dianthus.—B. Willock, 1; C. Burnett, 2. Antirrhinums.--Rose Miller, 1.

High School.

Geraniums.—Walter Gurd, 1. Petunias.—Louise Raphael, 1. Antirrhinums.—Arthur Shorey, 2.

Lansdowne School.

Fuchsias-Jas. Caffay, 2.

Geraniums—Elsie Moodie, 1; Fred. McCarthy, 2. Carnations—Joseph Smith, 1. Mary Bell, 2. Petunias—Donald McMillan, 1; Maggie Ross, 2. Dianthus—William Eva, 1; Maggie Bell, 2.-Antirrhinum—Alice McCarthy, 1; Laura Smith, 2. Neirembergia—Wm. Rutledge, 1; P. d'Albenas, 2.

Lorne School.

Fuchsias.—Frank Schuanfer, 1; Emma Candlish, 2. Geraniums.—Jno. Campbell, 1; Otilie Schuanfer, 2. Carnations.—Margaret Robertson, 1; Harry Brighton, 2. Petunias.—Alfred Brighton, 1; Maud Candlish, 2. Dianthus.—Stanley Ion, 1; Clifford Ion, 2. Antirrhinums.—Percy Guthiel, 1; George Waller, 2.

Mount Royal.

Fuchsias—Rebecca Holstein, 1. Geraniums—James Kneen, J; Raymond McCarthy, 2. Carnations—Alice Vandette, 1; Maggie Davey, 2. Petunias—James Lamb, 1; Mildred Ward, 2. Dianthus—A. Ramsperger, 1; Chs. Cook, 2. Anthirrhinum—Ralph McCarthy, 1; Arthur Hawkins, 2. Neirembergia—Stella Flawn, 1.

Riverside School.

Geraniums-Carrie Taylor, 1. -Carnations-Clara Kellar, 1; Mary Lewis, 2.

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Petunias—Fred. Cousins, 1. Dianthus--George Taylor, 1; Mary Stanley, 2. Antirrhinum—Lizzie Cousins, 1; Alfred Stanley, 2. Royal Arthur School.

Fuchsias. -519, 2. Geraniums. - Crawford Dixon, 2. Carnations. - Maud Loynachan, 1; Ethel Durey, 2. Petunias. -516, 1; 515, 2. Dianthus. -552, 1; 642, 2. Antirrhinums. -526, 1; 510, 2. Neirembergia. -512, 2.

Senior School.

Geraniums.--Mary Silvester, 1; Anne McDowell, 2.

Westmount Academy.

Fuchsias—Mabel Robertson, 1; Minnie Engelke, 2. Carnations- Muriel Mount, 1; Ethel Mount, 2. Petunias—Rita Tees, 1; Grace Bolt, 2. Dianthus—Sidney Fraser, 1; Ruth Mount, 2. Antirchinum—Oleghorn, 1; Muriel Tees, 2.

McGill Model School.

Fuchsias-J. Bennett, 1; H. Young, 2. Geraniums-B. Fowler, 1; A. Woodruff, 2, Carnations-W. Murphy, 1; M. Pendletou, 2. Petunias, O. Clark, 1; M. McIntosh, 2. Dianthus-W. Smith, 1; E. Macklin, 2. Antirrhinum-S. Hastie, 1; F. Robins, 2.



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HOW TO KEEP GRAPES.

In seasons of abundance, like the present, the question is often asked: "How can I keep grapes?" Much has been written on this subject, and different methods to attain this object have been recommended and adopted during the past few years with varying success. When grapes are intended for keeping, care should be taken that all cracked or bruised berries are removed, with long pointed scissors, made for the purpose, for if such are left they will mould, rot and destroy others. One obstacle to guard against is the weight of the fruit, as stored in baskets or boxes. The grapes continually settle, exclude the air, and finally mould. The question is how can we obviate this in packing? Two methods have been found successful in the grape-growing region of Central New York. Ten-pound baskets are used, a layer of dry oats or sawdust is placed in the bottom, and then a layer of grapes, then a layer of oats or sawdust, and so on till the basket is full. Bran should never be used in packing fruit, as it heats. The objection to this method is that the grapes cannot be readily looked over during the winter, and mouldy or rotten ones removed. My own experience has been, that for all practical purposes, the ordinary cotton wadding in sheets is the most satisfactory packing, cut into pieces, to cover the layers in shallow grape or peach baskets with wire handles, which allow of their either being piled on tables or hung on nails to the beams in the fruit cellar. Line the sides and bottom of the basket, place a layer of grapes, then a layer of wadding, and so on four or five layers at most. With proper precaution and attention the best keepers will remain in good condition till May or June, though somewhat wilted at the last.

Unripe, poor and watery grapes will not keep under any condition. In gathering grapes a dry day is preferable, and great care in handling is necessary. A bruised grape, like a bruised apple, is sure in time to decay, and affect others in proximity. Hence, in a basket of grapes as we buy them in market from the south and west, 152 CANADIAN HORTICULTURAL MAGAZINE

from long carriage and solid packing, many bunches are more or less bruised and require all injured berries cut out before packing. Grapes should not be packed away till the excess of moisture in the stem has dried off. This can be accomplished in fine weather in a few hours by placing them in single layers in baskets or on tables.

The most important requirement after packing is to keep the grapes in a continued low, dry and even temperature, in very cold weather, as near freezing point as consistent with safety. This requires some watchfulness, as in the fall we often have some warm days, requiring their removal to the fruit cellar for a time. It is preferable to store the baskets on a verandah or in an airy out. building till hard frost, even; if they have to be covered with a blanket at night. When permanently removed to the fruit cellar it should be kept as near the freezing point as possible during the entire winter, to attain that object and ensure dryness. Raise the windows during the day rather than the night. As to varieties to select for keeping, the rather thick skinned ones are the best, like Salem, and others of Roger's hybrids. The Vergennes, originated in Vermont, is the best keeper of all, though it rarely finds its way out of the home garden, as it is essentially a keeping grape, whereas Roger's hybrids, Concord and Deleware are plentiful on our markets. The Duchess, a rather small white grape, is a good keeper, but efforts to keep extra early varieties like Champion and Hartford, do not pay for the trouble. In a trial of some forty selected varieties in the winter of 1883-84. for an article written for the American Agriculturist, I found Concord, Worden and Deleware to keep in fair condition till December. Duchess, several of Rogers' hybrids, and a black wine and table grape given the name of "Pattison" at the Experimental Farm at Ottawa, till January : and Vergennes, Salem, Wilder, Horbert, Rogers' No. 30, El Dorado, Guertner, Mary and Owaso through February. These grapes were packed with paper between the layers, but since the adoption of wadding, I have kept most of these till June, at which season it is not possible to keep the cellar in proper temperature and dryness. If a system of cold storage could be adopted for our fruit cellars, better results could be attained. In warm weather close cellars induce dampness and mould in our fruit.

USE OF GRAPES AS FOOD.

The highest medical authorities claim that the grape is a potent remedy for the prevailing derangements having their origin through the alimentary system. On the continent of Europe, in the worldfamed "grape cures" for dyspepsia and its sequel, consumption' the diet during the season consists almost exclusively of ripe grapes The patients stroll about the vineyards and make their meals as appetite dictates. During the balance of the year the diet is composed chiefly of fruit with course ground cereals. With the per mission of any medical man, who may be present, I will venture to give, without charge, a prescription for indigestion and want of appetite, namely, make an occasional breakfast or supper entirely of grapes or other fruit-nothing else, neither coffee nor tea. I have endeavored to show how we may enjoy the grape nearly the entire year, and contend that if the apple is recognized as the "king of fruit," the grape, the autocrat of the garden, is entitled to be called the queen .- W. Mead Pattison.



HORTICULTURAL TEACHING.

When I meet intelligent people who confess with almost a pride that they do not know anything about plants, that they cannot recall the name of a tree or flower, unless it be a maple or a rose, I am tempted to ask "Why not learn?" for it seems as neglectful as not to know the name of articles of food—that everyone is supposed to understand. It ought to be a subject of interest, when plants were found to note their habits, and merits or demerits, and time of blossoming. Simply to look at and admire, is no more than if it was of paper or of wax, and only knowledge can bring into our enjoyment the fullness of appreciation.

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The children of our schools who learn many "ologies," for which they will have no use, should be taught the importance of Nature's work, and the treatment of Nature's gifts. It is not enough that "all their Botany is Latin names," they should be taught the plants indigenous to their own country first, and afterwards the flora of the world, by primary and graded text books as in other studies. When agri— and horti— cultures are recognized in our schools as one of the necessary sciences, intelligent young men will think it worth while to make it a profession, and the work of cultivating the fruit, flowers and grains of the earth will, if that day should ever come, be considered equal to the work of selling the goods made, after the wool, silk, flax and cotton has been manufactured.

Our Horticultural Societies are doing their best to interest the children in growing plants. It is a noble work that will have its reward in its influence on the youthful mind; but there is not the encouragement that should be given, because the work of growing these plants is not so popular as that of embroidery or playing the violin or piano. It is the status of the labor that must be elevated, and the intelligence it requires be better recognized.

This can only be done by the teaching of the schools, and the precept and example of the home. The Montreal Horticultural Society is doing a good work in stimulating the children by their prizes for growing plants, and when teachers take an interest in them it is helpful to the children to a much greater extent. But the requisite knowledge of the plant, as a plant, is but little studied, and yet it is of more real value than the dimensions of Kamschatka, or the items impressed on the brain of some of the phrases of ancient history. Elevate this science of horticulture and it will become both interesting and useful in every-day life.

ANNIE L, JACK.

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THE GARDEN IN TIMES OF DROUTH.

W. H. Jenkins, writing on how to conserve moisture in the soil in dry weather, in the *Country Gentleman*, says: In growing farm crops on an extensive plan, the earth mulch made by constant cultivation may be the best means of conserving moisture; but for the gardener who practices an intensive system. and who plants so closely that large quantities of water are required, the moisture that can be conserved by an earth mulch is not sufficient for the needs of the plants. I have had closely-planted celery wilt to the ground during a drouth in August, although an earth mulch was kept around it.

During times of drouth one's attention is called to the difference in soils, as to their absorbing and retaining moisture; how gravelly soils rapidly lose their moisture when exposed to hot sunshine; how a well-drained loam full of humus absorbs and retains water like a sponge, and under the right treatment conserves a constant supply of moisture for the use of the plant.

Water is the vehicle that makes soluble and conveys the plant food in the soil through the structure of the plant; hence the plant cannot make a large growth without an adequate supply of water. Few people realize the large quantity of water needed on a hot, dry day to supply the loss from evaporation and transpiration. An ordinary plant leaf contains 10,000 pores to the square inch. and through these pores the plant is constantly transpiring in hot days of sunshine. In a closely-planted field, the water pumped up from the soil through the roots of the plant is two to four pints per square foot in 24 hours, or from 50 to 100 tons per acre. This is in addition to that which the soil loses by evaporation and percolation; hence we see the need of conserving all the moisture the soil gets from natural sources, as rain, capillary attraction and the atmosphere, and supplementing it by irrigation when circumstances permit.

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My experience with irrigation has taught me the value of mulching the surface of the ground not shaded by the plants. I am now irrigating celery planted in alternate rows one and two feet apart. The plants are large enough to shade the surface of the ground in the narrow spaces, and the wide spaces are mulched with manure. A revolving sprinkler moved to go over the field once a week, keeps the ground sufficiently moist even in a time of drouth, while another plat not mulched needs to be sprinkled every day. Ι do not advise placing a mulch around plants until they are half grown or more, as it interferes with cultivation, but a mulch around plants that need extra water to make a large growth during the hot season, saves moisture by preventing evaporation, and saves cultivation by keeping down the weeds. For the gardener who uses stable manure to fertilize his soil, I think it a good plan to apply a part of the manure as a mulch around plants, for he gets this use of it before it is incorporated in the soil to furnish plant food.

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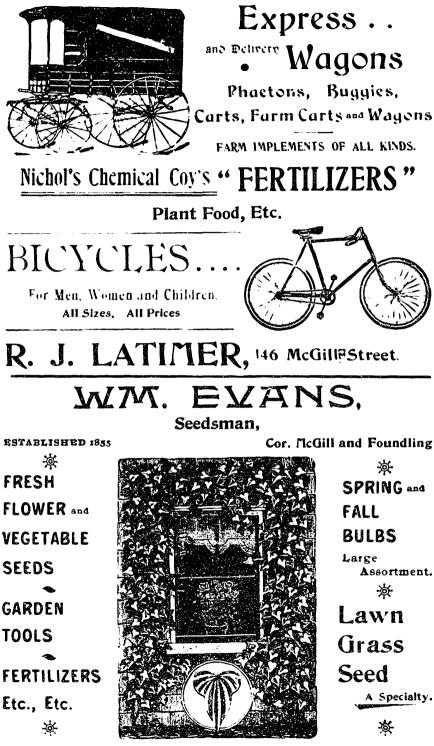
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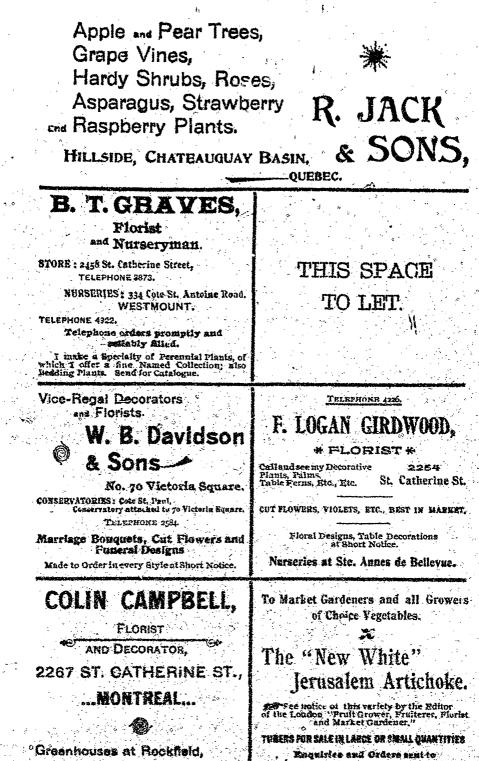
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