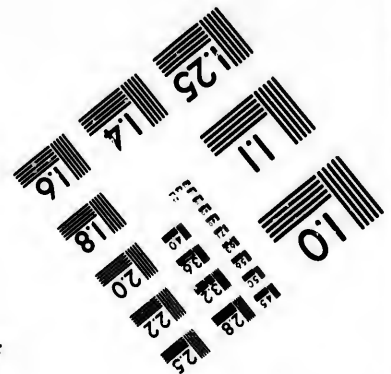
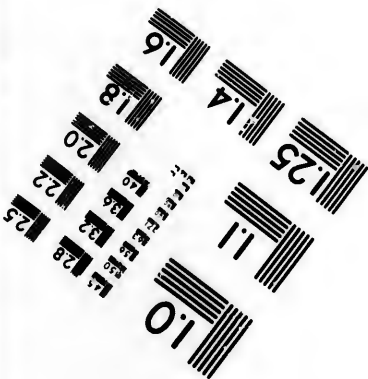
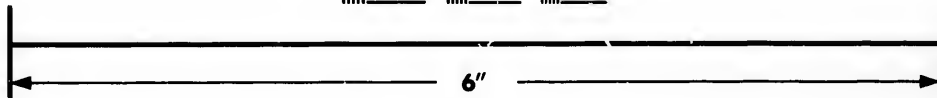
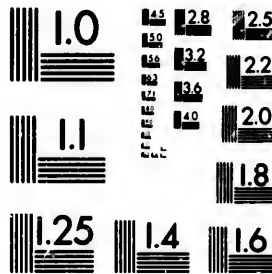


**IMAGE EVALUATION
TEST TARGET (MT-3)**



**Photographic
Sciences
Corporation**

23 WEST MAIN STREET
WEDSTER, N.Y. 14580
(716) 872-1503

28
32
36
20
22
25

**CIHM/ICMH
Microfiche
Series.**

**CIHM/ICMH
Collection de
microfiches.**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

10

© 1982

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion
along interior margin/
La reliure serrée peut causer de l'ombre ou de la
distortion le long de la marge intérieure
- Blank leaves added during restoration may
appear within the text. Whenever possible, these
have been omitted from filming/
Il se peut que certaines pages blanches ajoutées
lors d'une restauration apparaissent dans le texte,
mais, lorsque cela était possible, ces pages n'ont
pas été filmées.
- Additional comments:/
Commentaires supplémentaires:

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Includes supplementary material/
Comprend du matériel supplémentaire
- Only edition available/
Seule édition disponible
- Pages wholly or partially obscured by errata
slips, tissues, etc., have been refilmed to
ensure the best possible image/
Les pages totalement ou partiellement
obscurcies par un feuillet d'errata, une pelure,
etc., ont été filmées à nouveau de façon à
obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
					✓						

The copy filmed here has been reproduced thanks to the generosity of:

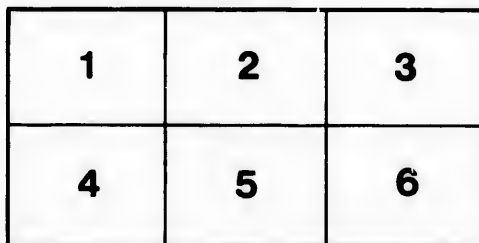
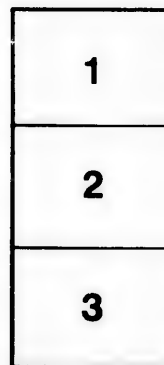
Library,
Geological Survey of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol \rightarrow (meaning "CONTINUED"), or the symbol ∇ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

Bibliothèque,
Commission Géologique du Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole \rightarrow signifie "A SUIVRE", le symbole ∇ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

tails
du
odifier
une
image

rata
o

elure,
à

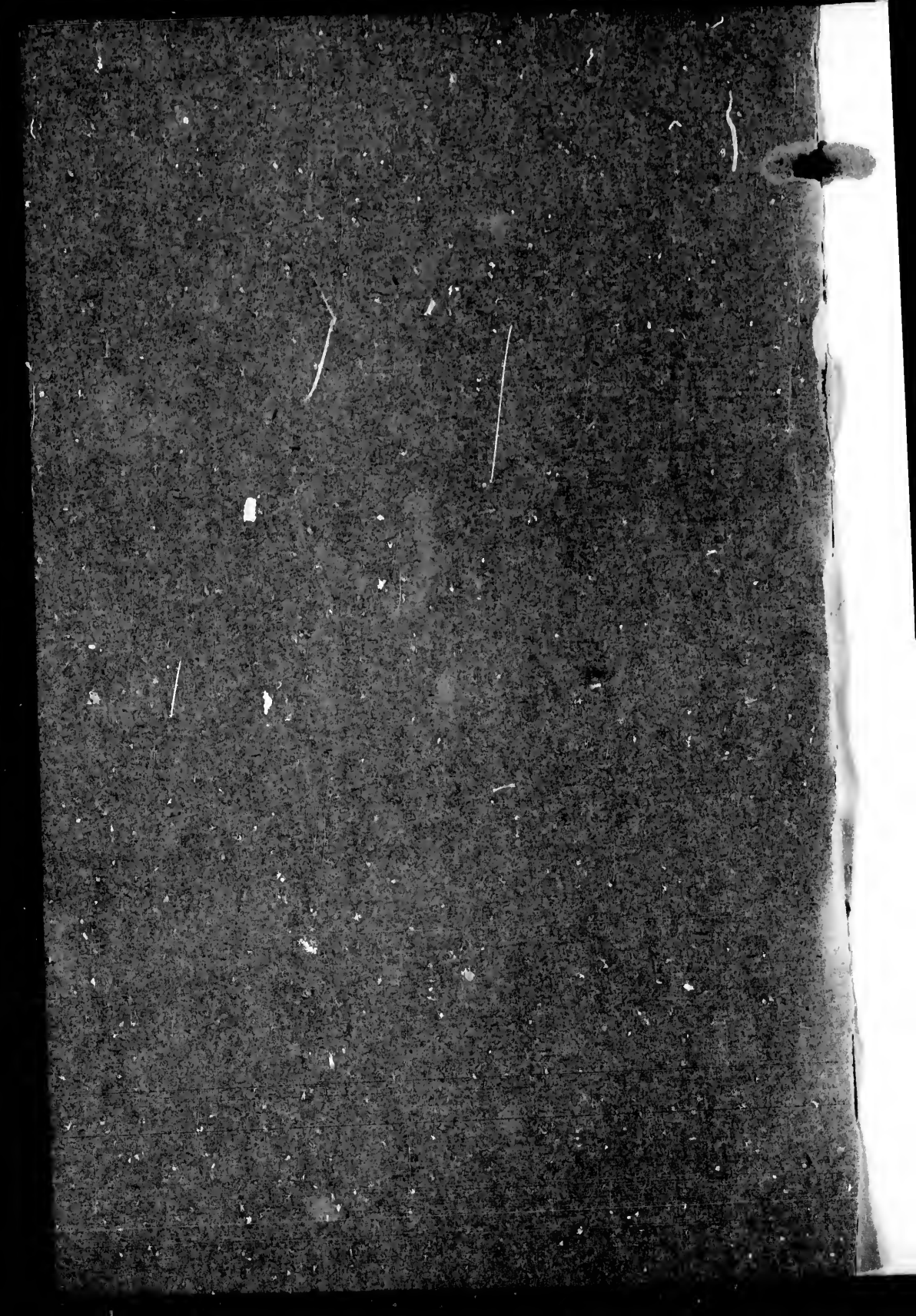
Reprinted from THE OTTAWA NATURALIST, Vol. XV, No. 3, pp. 71-79.
June, 1901, Ottawa, Canada.

CONTRIBUTIONS TO CANADIAN BOTANY.

XIV

BY

JAMES M. MACOUN.



CONTRIBUTIONS TO CANADIAN BOTANY.¹

By JAMES M. MACOUN, Assistant Naturalist, Geological Survey of Canada.

XIV.

THALICTRUM CONFINE, Fernald, Rhodora, vol. II, p. 232.

Rootstock 2 to 4 cm. long, bearing 10 to 12 strong roots: stem slender, 3 to 6 dm. high, puberulent, pale-green, often finely mottled with purple, leafy to the summit: the four or five leaves glandular-pruinose, glaucous beneath, the lower, including the short petiole 3 to 4 cm. long; leaflets sub-orbicular broadly obovate or flabellate, coarsely toothed, 0.75 to 1 cm. long, the terminal on slender petiolules, the lateral short-petiolulate or sessile: flowers diœcious, greenish or purplish, the panicles 1 to 2 dm. high, with ascending branches: sepals greenish, oblong-lanceolate, caducous: carpels 6 to 10, glandular-pruinose; stigmatose style lance-subulate, 3 to 5 mm. long; achenes ovate-lanceolate, excluding the persistent style, 4 to 5 mm. long, 2 to 3 mm. thick, plump, subterete, scarcely compressed or ancipital with 8 simple or slightly branched strong ribs, the alternate ones strongest; seed linear-lanceolate, hardly filling the cell.

Thickets, Hemlock Lake, near Ottawa, Ont., in flower, Aug. 8th, 1894. Herb No. 2,956.² (*John Macoun.*) Also collected in Maine.

THALICTRUM OCCIDENTALE, Gray.

T. dioicum purpurascens, Can. Rec. Sci., 1894, p. 77.

Rootstock slender, elongated: stem glabrous, 1 m. or less high, leafy to the summit, the three to six leaves glaucous beneath, smooth or minutely glandular, the lower including the long petiole 0.5 to 3 dm. long, those of the inflorescence often simple; leaflets thin, reniform or obovate, with coarse rounded lobes, the terminal on slender petiolules, the others

¹ Published by permission of the Director of the Geological Survey of Canada.

² These numbers are those under which specimens have been distributed from the Herbarium of the Geological Survey of Canada.

short-petiolulate or sub-sessile: flowers diœcious or polygamo-diœcious, greenish or purplish, the panicles 1.5 to 3 dm. high, with ascending branches: sepals oblong: carpels glabrous or minutely glandular-pruinose; achene excluding the persistent style 6 or 7 mm. long, 2 or 3 mm. wide, compressed, strongly ancipital, with three strong or somewhat branching ribs on each side: filaments yellowish, greenish, or purplish, elongated, slightly clavellate; anthers linear, mucronate.

Represented in the herbarium of the Geological Survey of Canada by many sheets from the west and by specimens collected at Eel River, N.B., by Robert Chalmers, and on the St. John River above Woodstock, N.B., by John Macoun. Mr. Fernald has examined specimens collected by Mr. G. U. Hay at South Tobique Lakes and St. John, N.B., and by Bourgeau near Lake Winnipeg.

RANUNCULUS PALLASII, Schlecht.

Mosquito Bay, Lat. 60° 42', east coast of Hudson Bay. Aug. 18th, 1898. Herb. No. 23,003. (*A. P. Low.*) Not recorded from Eastern America.

BERBERIS BREVIPES, Greene, *Ott. Nat.*, vol. xv, p. 42.

Crow's Nest Pass, Rocky Mts., 1897. Herb. No. 18,080. (*John Macoun.*)

SARRACENIA PURPUREA, L. var. **HETEROPHYLLA**, Torr.

In bogs, Madawaska River, Algonquin Park, Ont. 1900. (*John Macoun.*) Only Canadian specimens in herbarium of Geological Survey.

DENTARIA GEMINATA, Wats.

Koksita, Vancouver Island. (*R. H. Jameson.*) New to Vancouver Island.

VIOLA MISTASSINICA, Greene, *Pittonia*, vol. iv, p. 6.

Lake Mistassini, Que. 1885. (*J. M. Macoun.*) Richmond Gulf, Hudson Bay. (*Wm. Spreadborough.*) West branch of Hamilton River, Labrador. (*A. P. Low.*) Banff, Rocky Mountains. (*N. B. Sanson.*) Cassiar Trail, west of Dease

Lake, B.C. Lat. $58^{\circ} 30'$. (*Dr. G. M. Dawson.*) The western specimens differ slightly from those from the east, but seem referable here. This plant is readily distinguished from *V. blanda*, *V. renifolia*, and *V. amana* by its "stout scaly-looking and elongated root-stock and by its notably toothed foliage, the leaves in all the others being crenate, the proper teeth never salient but on the contrary almost obsolete." The lowest petal is not only purple-veined but the purple colour is diffused over the whole petal.

VIOLA WATSONI, Greene, Pittonia, vol. IV, p. 5.

Boggy meadow near Charlottetown, P.E.I. 1898. (*Lawrence W. Watson.*)

VIOLA CYCLOPHYLLA, Greene, Pittonia, vol. IV, p. 7.

Yellow Head Pass, Rocky Mountains, July 13th, 1898. Herb. No. 19,298. The type. (*W. Spreulborough.*)

STELLARIA SUBVESTITA, Greene, Ott. Nat., vol. XV, p. 42.

Common in the Rocky Mountains on both sides of the Bow River Pass.

STELLARIA MEDIA, Cyrillo.

Attention is again drawn here to Mr. Theo. Holm's paper on "Allies of *Stellaria media*" in the last number of THE OTTAWA NATURALIST. These plants should be carefully studied everywhere in Canada. Among our herbarium specimens labelled *S. media*, *S. neglecta* was found from Victoria, Vancouver Island; Burrard Inlet, B.C., Killarney, Man.; Sable Island, N.S.

RADIOLA LISOIDES, Gmel.

Along a ditch near the old fortifications at Louisburg, Cape Breton Island, N.S. 1898. Herb. No. 20,232. (*John Macoun.*) New to Canada. Probably introduced by the French.

SPIRÆA SALICIFOLIA, L.

The reading of Mr. Wiegand's note on *S. salicifolia* in *Rhodora* for May, 1900, suggested an examination of the

sheets in the herbarium of the Geological Survey of Canada. This examination has forced me to the conclusion that we have no true *S. salicifolia* in Canada. There are, however, three or four well defined varieties or species of which the most abundant in the east is *S. salicifolia*, var. *latifolia*, Ait., common from Nova Scotia to Lake Superior but not found in the Northwest Territories. The form most nearly approaching *S. salicifolia* is var. *lanceolata*, Ait., represented in our herbarium by specimens from Newfoundland west to Prince Albert on the North Saskatchewan. Though the herbarium material is ample no attempt will be made at present to characterize the other forms as like some other genera of the *Rosaceae*, *Spiraea* must be studied in the field. The part of the plant which can most easily be made into a herbarium specimen is not always that most necessary for the proper determination of the species.

* AGRIMONIA HIRSCUTA, Bicknell.

A. Eupatoria, Macoun, Cat. Can. Plants, vol. 1, p. 142 in part.

Truemanville, N.S. (*H. Trueman*.) Billings' Bridge, Ottawa, Ont.; Pt. Edward, St. Clair River, Ont. (*J. M. Macoun*.) Belleville, Ont.; Wooler, Northumberland Co., Ont. (*John Macoun*.) Edmonton, Ont. (*Jas. White*.)

AGRIMONIA BRITTONIANA, Bicknell.

Boylston, N.S. (*Dr. C. A. Hamilton*.) Big Intervale, Cape Breton Island, N.S.; Flat Rock Portage, Nipigon River, Ont.; Killarney, Man. (*John Macoun*.) The western specimens in the herbarium of the Geological Survey include several species.

MYRIOPHYLLUM ALTERNIFLORUM, D.C.

Golden Lake, Renfrew Co., Ont. (*John Macoun*.) The western limit of this seldom collected species.¹

TRIOSTEUM AURANTIACUM, Bicknell, Torrey, vol. 1, p. 26.

Rich soil on the rocky bank of the Nation River at

¹ The geographical limits given in these papers refer to Canada only.

Casselman, Ont. (*J. M. Macoun.*) *T. perfoliatum* is represented in the herbarium of the Geological Survey by specimens from Belleville and Churchville, Ont.

EUPATORIUM BOREALE, Greene, Rhodora, vol. III, p. 83.

Stout, erect, 2 feet high or more, glabrous except as to the inflorescence: leaves ample, very thin, dark-green, feather-veined, the veins not light coloured, 3 or 4 inches long, often 3 inches broad towards the base, broadly subcordate-ovate, abruptly acuminate, coarsely and evenly serrate, the serratures 20 to 25 on each side, some of the larger with a secondary tooth; petioles $\frac{3}{4}$ to $1\frac{1}{2}$ inches long, somewhat ascending; cymes terminal, but with one pair from the axils of the uppermost leaves: peduncles and pedicels rather densely pubescent, but involucre glabrous, their bracts thin, only obscurely striate; tips of the corolla-teeth somewhat hairy: achenes dark-brown, sharply thin-angled, the angles of those of the outer series remarkably setose-hispidulous, the surface glabrous.

Represented in our herbarium by specimens from Bass River, Kent Co., N.B., collected by Prof. J. Fowler. Most of what has been taken to be *E. ageratoides* in Eastern Canada is probably this species.

SOLIDAGO PRUINOSA, Greene, Pittonia, vol. IV, p. 70.

Erect, 3 feet high or more, very leafy up to the dense short, pyramidal panicle of short, spreading or slightly recurved abruptly ending and obtuse racemes of rather large heads: leaves ascending, 2 inches long, elliptic-lanceolate, acute or acuminate, slightly but evenly serrate from near the base to near the apex, distinctly 3 nerved and canescent or almost hoary on both faces with a dense, rather soft puberulence or pubescence: pedicels and branches of the inflorescence almost tomentulose: bracts of the more than middle-sized involucre in about 3 series, the short outer ones subulate-linear, the inner long ones also visibly narrowed from base to apex but obtusish; flowers apparently light yellow.

Moose Jaw, Assa., Aug. 13th, 1895. Herb. Nos 10,892, 10,893 and 10,894. (*John Macoun.*)

EUCEPHALUS MACCOUNII, Greene, Pittonia, vol. iv, p. 70.

Along fences, Sea's Farm, near Victoria, Vancouver Island. Herb. No. 447. (*John Macoun.*) Distributed as *Aster radulinus*.

CENTAUREA SCABIOSA, L.

Along the Canadian Pacific Railway at Snellgrove, Ont. (*Jas. White.*) New to Canada and known from only one other locality in America. Determined by Dr. Robinson.

SENECIO OVINUS, Greene, Pittonia, vol. iv, p. 110.

S. resedifolius, Macoun, Cat. Can. Plants, vol. 1, p. 267 in part.

Mountain slopes, western summit of North Kootanie Pass, Rocky Mts., 1883. (*Dr. G. M. Dawson.*) High slopes of Sheep Mountain, Waterton Lake, Rocky Mts. Herb. No. 11,619. (*John Macoun.*) Described from the Sheep Mountain specimens.

VACCINIUM NIGRUM, Britt.

V. corymbosum, var. *pallidum*, Macoun, Cat. Can. Plants, vol. 1, p. 291.

Point Pleasant, N.S.; Englishtown, Cape Breton Island, N.S.; common in the vicinity of Ottawa, Ont., and at Niagara, Ont. (*John Macoun.*)

LYSIMACHIA VULGARIS, L.

Well established on Toronto Island, Ont. (*W. Scott.*) Only Canadian record.

STEIRONEMA LANCEOLATUM, Gray; Macoun Cat. Can. Plants, vol. 1, p. 313.

Recorded from Ontario, but such specimens as we have seen so named are *S. quadriflorum*, Hitchc.

ACERATES LONGIFOLIA, Ell.

Dry sandy soil, southwest of Sandwich, Ont., 1893. (*Alex. Wherry.*) Our only Canadian specimens. The specimens referred here, Macoun, Cat. Can. Plants, vol. 1, p. 563, are *A. viridiflora* var. *lanccolata*, Gr.

ASCLEPIAS PULCHRA, Ehrh.

In Mahone River bed at New Germany, N.S., and at entrance of West River into New Germany Lake, N.S., July 1891. Herb. No. 23,581. (*Dr. C. A. Hamilton.*) New to Canada.

ERYTHREA CENTAURIUM, Pers.

Very abundant on the old land near the main lighthouse station, Sable Island, N.S. 1899. (*John Macoun.*) Our only Canadian specimens.

LITHOSPERMUM LATIFOLIUM, Mx.

Lorette Falls, near Quebec, Que. 1895. (*Mrs. Brodic.*) Not before recorded except from Ontario.

HELIOTROPICUM CURASSAVICUM, L.

Saline soil, McLeod, Alta. Herb. No. 23,971. (*John Macoun.*) Western limit.

CONVOLVULUS ARVENSIS, L.

Open prairies, Morris, Man. (*John Macoun.*) Not recorded from Manitoba.

PHYSALIS IXOCARPA, Brot.

Roadsides near the hotel, Golden Lake, Renfrew Co., Ont. (*John Macoun.*) New to Canada.

HYOSCYAMUS NIGER, L.

Old railway ground, Banff, Alberta. 1900. (*V. B. Sanson.*) Not before recorded from the west.

BUCHINERA AMERICANA, L.

Port Frank, Ont., Sept. 8th, 1891. (*J. Dearness.*) Only Canadian record.

GERARDIA PAUPERCUA, Britt.

In marshy places near the main station, Sable Island, N.S. 1899. Herb. No. 22,578. (*John Macoun.*) Not recorded east of Quebec.

LIPPIA LANCEOLATA, Mx.

Wet places, Leamington, Ont. 1892. Herb. No. 24,270. (*John Macoun.*) New to Canada.

- AMARANTUS BLITOIDES, Wats.
East of Brandon, Man.; Cardston, Alta. (*John Macoun.*)
: Not recorded west of Ontario.
- MONOLEPIS CHENOPODIOIDES, Moq.
Cypress Hills, Assa.; Kananaskis and Banff, Rocky Mts.
(*John Macoun.*) Western limit.
- CHENOPODIUM BOEHRYS, L.
Waste places, Spence's Bridge, B.C. (*John Macoun.*)
Not recorded west of Ontario.
- CHENOPODIUM LEPTOPHYLLUM, Nutt.
Sandy soil, Spence's Bridge, B.C.; Deer Park, Lower
Arrow Lake, B.C. (*John Macoun.*) Not recorded west of
Rocky Mountains.
- CHENOPODIUM LEPTOPHYLLUM, Nutt., var. SUBGLABRUM, Wats.
Sandy woodlands, Pt. Pelee, Essex Co., Ont. 1886. (*Dr.*
Burgess.) Neither the type nor variety recorded from On-
tario.
- CHENOPODIUM URBICUM, L.
Nanaimo and Victoria, Vancouver Island, B.C. 1893.
(*John Macoun.*) Not recorded west of Ontario.
- CHENOPODIUM RUBRUM, L.
On brackish flats near the main lighthouse station, Sable
Island, N.S. Very rare 1898. (*John Macoun.*)
- SALICORNIA HERBACEA, L.
Borders of saline ponds near Kamloops, B.C. 1890.
(*J. M. Macoun.*) Not recorded from British Columbia.
- SALICORNIA AMBIGUA, Mx.
Long Arm, Skidegate Inlet, Queen Charlotte Islands,
B.C. (*Dr. C. F. Newcombe.*) Northern limit.
- RUMEX PATIENTIA, L.
Not uncommon about houses and in fields, Boylston, N.S.
(*Dr. C. A. Hamilton.*) Not recorded east of Ontario.
- SCLERANTHUS ANNUUS, L.; Macoun, Cat. Can. Plants, vol. 1, pp.
80 and 499.
West of London, Ont., 1890; Komoka, Ont., July, 1892.
(*J. Dearness.*) Our only herbarium specimens.

[June

1901]

PODOSTEMON CERATOPHYLLUM, Mx.

On stones near the mouth of Eel River, 12 miles below Woodstock, N.B. Herb. No. 22,593, 1899; Petawawa River, Algonquin Park, Ont., 1900. (*John Macoun.*) Our only other specimens are from Hull, Que.

CYPRIPEDIUM GUTTATUM, Swartz.

Shore of Great Slave Lake, 1890. (*Dr. R. Bell.*) The single specimen brought home by Dr. Bell is the third from the Mackenzie Basin, the others having been collected by Richardson.

CYPRIPEDIUM PASSERINUM, Rich.

West shore of Great Bear Lake, Lat. 65° 30' to 66° 30'. 1900. (*J. M. Bell.*) Northern limit.

ZYGADENUS ELEGANS, Pursh.

West side of Great Bear Lake, Lat. 65° 30' to 66° 30'. 1900. (*J. M. Bell.*) Northern limit.

JUNCUS BULBOSUS, L.

In boggy places, east end of Sable Island, N.S. 1899. Herb. No. 22,623. (*John Macoun.*) Only Canadian specimens in herbarium of Geological Survey. Reported from Labrador.

STENOPHYLLUS CAPILLARIS, (L.) Britt.

Wet sandy fields, Sandwich, Ont. Herb. No. 25,334. (*John Macoun.*) New to Canada.

FIMBRISTYLIS AUTUMNALIS, R. & S.

Wet sandy fields, Sandwich, Ont. Herb. No. 25,333. (*John Macoun.*) New to Canada. Growing with *Stenophyllus capillaris*.

CAREX LEIOCARPA, C. A. Meyer; Macoun, Cat. Can. Plants, vol. II, p. 110.

Dawson Harbour, Skidegate Inlet, Queen Charlotte Islands, B.C. (*Dr. C. F. Newcombe.*) The second Canadian station.

CAREX CAPITATA, L.

Additional stations for this species are Northern Labrador. (*A. P. Low.*) Boggy places, Bragg's Creek, Elbow River, Rocky Mountains. Herb. No. 25,447. (*John Macoun.*)

