

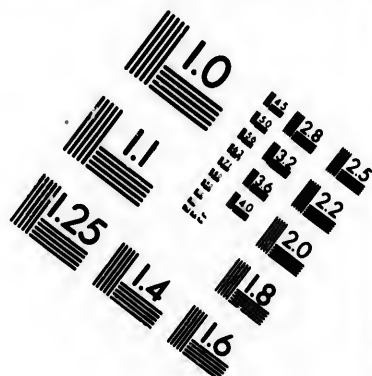
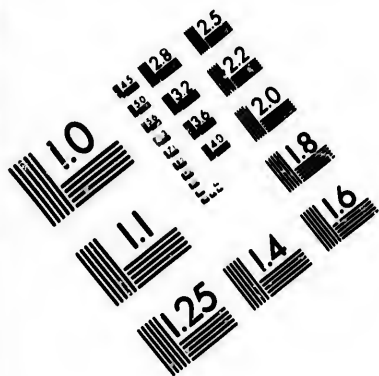
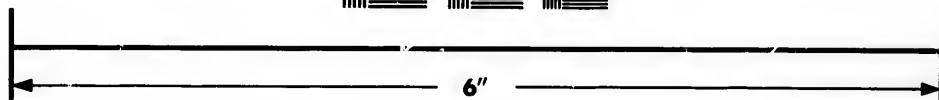
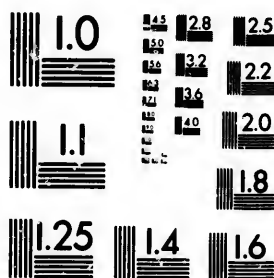


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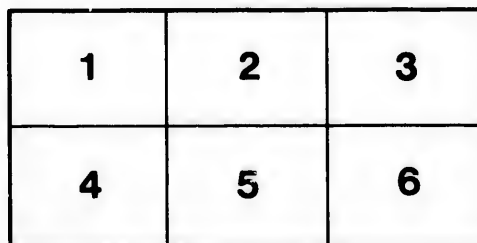
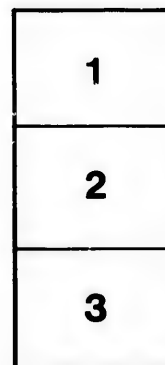
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CONTRIBUTIONS TO CANADIAN BOTANY.

BY

JAMES M. MACOUN,

Assist. Naturalist, Geol. Survey of Canada.

XIII

Reprinted from THE OTTAWA NATURALIST for October, 1899, Vol. XIII.

CONTRIBUTIONS TO CANADIAN BOTANY.

By JAMES M. MACOUN, ASSIST. NATURALIST, GEOL. SURVEY
OF CANADA.

XIII.

ANEMONE RIPARIA, Fernald, Rhodora, vol. 1, p. 51.

This species recently described by Mr. Fernald is represented in our herbarium by a single specimen collected in 1882 at Madeleine River, Gaspé, Que., and in 1899 at Woodstock, N.B., by Prof. John Macoun. Mr. Fernald gives as additional Canadian stations Restigouche Co., N.B. (*Forster*), and Roberval, Lake St. John, Que.

RANUNCULUS ABORTIVUS, L. var. EUCYCLUS, Fernald, Rhodora, vol. 1, p. 52.

Stems more slender than in the type; the branches slender and flexuous; leaves very thin and lucid; the basal generally of two sorts, some orbicular with a narrow or closed sinus, others reniform as in typical *R. abortivus*; flowers, achenes and receptacles as in the species but smaller.

Mr. Fernald records this plant from Lake St. John and Tadousac, Que., but it is not represented among our herbarium specimens of *R. abortivus*. It should be looked for by Canadian collectors.

ISOPYRUM BITERNATUM, T. & G.

Though collected before in S. W. Ontario any records of this species are of interest to botanists. Mr. Leroy J. Boughner writes of specimens sent to the Geological Survey department: "This little plant was first collected by me during an expedition of the Simcoe High School Scientific Society on May 21st, 1897. It grew sparsely in a cool spot near Lynn Valley, a few miles east of Simcoe. It is supposed to have been introduced from Ohio by railways."

HESPERIS MATRONALIS, L.

A garden escape near Victoria, Vancouver Island. (*A. J. Pineo.*) Not recorded west of Ontario *

*The Geological limits given in these contributions refer to Canada only.

LESQUERELLA OCCIDENTALIS, Wat.

Dry slopes Osoyoos Valley, B.C., 1898. (*C. de B. Green.*)
New to Canada.

VIOLA SUBCORDATA, Greene, Pittonia, vol. 111, page 316.

Open or partly open land, Esquimaux, Vancouver Island, 6th June, 1896. Herb. No. 18,708. (*J. R. Anderson.*) A beautiful species nearly related to *V. Howellii*. Known only from the above locality.

VIOLA SUBVESTITA, Greene.

On the cliff below Governor's Bay, Ottawa, Ont., 1899. (*J. M. Macoun.*)

VIOLA SAGITTATA, Ait.

We have no true *V. sagittata* in Canada, at least none of the specimens in our herbarium are referable to that species. All specimens so named are either *V. ovata*, Nutt, or *V. dentata*, Pursh. which may, however, yet prove to be one species.

V. OVATA, Nutt.

V. sagittata, Macoun, Cat. Can. Plants, vol. 1, p. 63 in part.

Our herbarium specimens are from dry fields east of Belleville, Ont. (*John Macoun.*) Near Hamilton, Ont. (*J. M. Dickson.*) Strathroy and woods about London, Ont. (*J. Dearness.*)

V. DENTATA, Pursh.

V. sagittata, Macoun, Cat. Can. Plants, vol. 1, p. 63, in part and vol. 1, p. 492.

Prince Edward Island. (*L. W. Watson.*) Point Pleasant, N. S. (*John Macoun.*) London, Ont. (*Dr. Millman.*) Komoka, Ont. and London, Ont. (*J. Dearness.*) Port Flamboro, Ont. (*J. M. Dickson.*) Though kept separate here it is more than probable that *V. ovata* and *V. dentata* are forms of the same species.

VIOLA SEPTENTRIONALIS, Greene, Pittonia, vol. 111, p. 334, and
Ott. Nat., vol. x11, p. 183.

Billings' Bush, S. E. of Billings' Bridge, Ottawa, Ont., 1898.
Type locality. Herb. No. 18,561. (*J. M. Macoun.*) St. Catherines, Ont. (*W. C. McCulla.*)

VIOLA MACOUNII, Greene, *Pittonia*, vol. 111, p. 335 and *Ott. Nat.* vol. xii, p. 184.

On dry limestone shingle, growing among grass in the shade of cedars, between Rockliffe Road and Governor's Bay, Ottawa, Ont. Type locality. Herb. No. 18,746. (*J. M. Macoun.*) The specimens collected by Prof. Macoun, near Hull, and referred to this species in *Ottawa Naturalist*, represent a new species not yet described.

VIOLA VENUSTULA, Greene, *Pittonia*, vol. 111, p. 335, and *Ott. Nat.* vol. xii, p. 184.

In the wet meadows between the Rockliffe Road and Governor's Bay, Ottawa, Ont. Type locality. Herb. No. 18,565. (*J. M. Macoun.*)

VIOLA CUCULLATA, Ait.

A common violet throughout Eastern Canada. The only species of this group of general distribution.

VIOLA DICKSONII, Greene, *Pittonia*, vol. iv, p. 65.

V. cuspidata, *Ottawa Naturalist*, vol. xii, p. 185.

Allied to *V. cuspidata*, but the herbage light-green, the pubescence more sparse and hispidulous, the petaliferous flowers on nearly terete peduncles about equalling the leaves and hibracteolate near the base; sepals lanceolate, either naked or ciliate; corolla about $\frac{3}{4}$ inch long, of a fine lavender-blue, the paired petals, especially the two uppermost, obovate-rhomboidal, the laterals white at base and strongly bearded with indistinctly clavellate hairs, the keel-petal shorter and narrower than the others, more or less conduplicate or convolute especially at the apex, white at base and purple-veined above the white; summer foliage less broad in proportion to its length than in *V. cuspidata* and more apt to be cucullate; apetalous flowers on short but nearly or altogether hypogeous peduncles.

A very common violet in the vicinity of Ottawa and probably abundant throughout Ontario, Mr. J. M. Dickson having collected it at Hamilton and Mr. Wm. Scott at Niagara-on-the-Lake, Queenston, Cartwright and Toronto. Dr. Greene in *Pittonia*, vol. iv, p.

66, has explained fully the unfortunate circumstances which resulted in the publication of this plant as *V. cuspidata* in my "Notes on Some Ottawa Violets," in the Ottawa Naturalist for January, 1899. I at that time hesitated to publish even six new violets from the *cucullata* aggregate, and though aware that Dr. Greene's description of *V. cuspidata* did not answer well for our plant it seemed preferable to include it in that species rather than describe another species. Ample material collected this year shows that we have in the vicinity of Ottawa at least four additional species of violets in this group, two of which have recently been described by Dr. Greene and are included in this paper.

VIOLA POPULIFOLIA. Greene, Pittonia, vol. III, p. 337, and Ott. Nat., vol. XI, p. 186.

Port Flamboro, Ont. (*J. M. Dickson*.)

VIOLA ELEGANTULA, Greene, Pittonia, vol. IV, p. 66.

Acaulescent and low, the whole plant at the time of petaliferous flowering barely three inches high and the peduncles far exceeding the leaves; rounded and cordate-reniform leaves pale green and slightly succulent, about $\frac{3}{4}$ inch wide, short-petioled and the petioles erect, the margin lightly crenate and all parts wholly glabrous; peduncles obscurely angled, bibracteolate above the middle, the bractlets subulate; sepals lance-linear, obtusish; corolla rather more than half an inch in length, not as broad as long; petals all similar in size and outline, oblong-obovate, obtuse or retuse, light-blue, the lower three with conspicuous violet veins on a white ground at base, the laterals bearing a low and thin tuft of short strongly clavate hairs, or some of them shortened to mere papillæ; two upper petals naked, in full expansion deflected and concealing the calyx; style elongated; late apetalous flowers small, aerial on short horizontal or recurved peduncles.

In depressions in sandy fields at Eastman's Springs, Ont., and east of Beaver Meadow Lake, near Hull, Que., 1899. (*J. M. Macoun*.)

VIOLA VAGULA, Greene, *Pittonia*, vol. IV, p. 67.

Larger than the last, with dark green glabrous rather notably fleshy herbage : leaves at time of petaliferous flowering, about an inch in diameter, somewhat deltoid-cordate, the length equalling or surpassing the breadth, the margin lightly crenate: peduncles surpassing the leaves, obscurely angled or semiterete, bibracteolate in about the middle, the rather obtuse bractlets with a few obscure glandular teeth : sepals oblong, obtuse : corolla nearly an inch in diameter, the breadth commonly greater than the length ; petals deep violet, at base darkly venulose on a white ground, all obovate-spatulate, obtuse or notched, the odd one especially broad and often obcordate, the pair next to it bearing each a dense tuft of rather long and slender not in the least clavellate hairs ; style not prolonged beyond the anthers : apetalous summer flowers aerial, but their peduncles short and more or less horizontal ; their capsules short and thick, not dotted.

Throughout the whole extent of the Beaver Meadow, W. of Hull, Que., 1899. (*J. M. Macoun.*) A very beautiful species intermediate between *V. cucullata* and *V. venustula*.

SUBULARIA AQUATICA, L.

In fresh water ponds, Attu Island, Aleutian Islands, Behring Sea, Aug. 29th, 1891. (*J. M. Macoun.*) Not before collected in that region.

STELLARIA AQUATICA, Scopoli.

Common at Chelsea, Que.

SPHERALCEA MUNROANA, Spach.

Dry clay " benches," Osoyoos Valley, B.C., 1898. (*C. de B. Green.*) New to Canada.

ACER RUBRUM, L.

Little Turtle River, Rainy Lake, Ont., long. 93° W. (*W. McInnis.*) The western limit for this species.

TRIFOLIUM INCARNATUM, L.

Cultivated for fodder and now becoming extensively naturalized in Ontario.

ARACALLUS CAMPESTRIS (DC.) var. JOHANNENSIS, Fernald, Rhodora, vol. 1, p. 88.

The Canadian stations given for this plant by Mr. Fernald are Isle d'Orleans below Quebec. (*Mrs. Shepard, Prof. Brunet.*) Mouth of Madawaska River, N.B. (*G. U. Hay, G. F. Matthew.*) Crevices of ledges, Aroostook Falls, N.B. (*M. L. Fernald.*) Rocky banks, Hero's Rapids, Restigouche River, N.B. (*G. U. Hay.*) Our only herbarium specimens were collected at Aroostook Falls, N.B., by Mr. G. U. Hay, in 1883 and at Woodstock N.B. by Prof. Macoun in 1890.

ARAGALLUS CAUDATUS, Greene, Pittonia, vol. iv, p. 69.

Moose Jaw, Assa., June 26th, 1896, Herb. No. 13,957.* (*John Macoun.*) A very beautiful and distinct species, not at all resembling the common *A. Richardsonii* of the prairies.

ARAGALLUS FOLIOLOSUS, Hook. Fl. Bor. Am., vol. 1., p. 146.
O. foliolosa, T. & G. Fl., p. 339.

In describing *O. foliolosa*, Hooker says: "*Capitula late ovata seu subglobosa, ratione plantae parva, floribus compactis, patentibus, inferioribus reflexis.*" How an acaulescent plant with compact heads—heads "far more compact" than *O. cærulea*—should ever have been referred to *O. deflexa* will probably never be fully explained; that it has no very close affinity with that species is evident. The error doubtless originated in confusing *O. foliolosa* with an *apparently* acaulescent form of *O. deflexa*, (Proc. Am. Ac. Arts & Sc., vol. xx, p. 4) the "*forma subacaulis*" to which Gray referred *O. foliolosa*. It is indeed probable that in describing *O. foliolosa*, Hooker had before him the flowers of that species and fruiting specimens of the sub-accaulescent form of *O. deflexa* which is not uncommon in the region traversed by Richardson and Drummond. Our specimens agree in every particular with his description of *O. foliolosa* until the fruit is reached, the "rather remote, deflexed" legumes, "an inch long" are those of *O. deflexa*, while "compact broadly ovate heads" could not refer to

* These numbers refer to the herbarium of the Geological Survey of Canada.

that species. These fruiting specimens of *O. deflexa* were also probably included in giving the range of *O. foliolosa*.

O. foliolosa is from 4 to 7 inches high, occasionally somewhat decumbent; legumes 3-5 lines long, clothed with black hairs, pendent, but when as in flower forming a compact head; otherwise as described by Hooker. From its habit and range it is evidently a high alpine and northern species.

Our herbarium specimens are from Northern Labrador, Herb. No. 18,668. (*A. P. Low.*) Rocky Mountains. (*John Macoun.*) Arctic North America (*Dr. Richardson.*)

These latter are young flowering specimens and were distributed from the British Museum as *O. foliolosa*.

CASSIA MARILANDICA, L.

Two or three plants near the Thames River, east of Thamesville, Ont., 1892; on flats of Cornwall's Creek, Howard Township, Kent Co.; Aug. 15th, 1892, well established; around the mouth of a government ditch, Tilbury, Ont., 1894. (*J. Dearness.*) New to Canada and perhaps indigenous in S. W. Ontario.

LATHYRUS MARITIMUS, Bigel. var. ALEUTICUS, Greene.

A not rare variety on the Labrador coast and on both sides of Hudson Bay. Described from Alaska where, as on Hudson Bay, it is not mixed with, but in many localities takes the place of *L. maritimus*. The smaller size of the variety is not in my opinion due to habitat as *L. maritimus* of large size is found in equally exposed situations in the same latitudes.

DRYAS INTEGRIFOLIA, Vahl.

Summit of Moose Mt., Elbow River, Rocky Mts. Alt. 7,500 ft. Herb No. 20,001. (*John Macoun.*) Southern limit in Rocky Mountains.

ALCHEMILLA VULGARIS, L.

Metis, Que., 1897. (*Mrs. Brodie.*) Not recorded west of Nova Scotia.

ROSA PRATINCOLA, Greene, Pittonia, vol. IV, p. 13.

One of the commonest, if not the most common, roses on the Canadian prairies, extending from Manitoba west to the Rocky

Mountains and north to the Saskatchewan. There is no *R. Arkansasana* in Canada.

ROSA MACOUNII, Greene, Pittonia, vol. IV, p. 10.

R. Woodsii, Macoun, Cat. Can. Plants, vol. 1, p. 521 in part.

Moosejaw, Assa. Herb. No. 12,615, in flower June 17th, 1896; fruit, Herb. No. 10,532, Aug. 13th, 1895; White Mud River, Cypress Hills, Assa., Herb. No. 10,535; Cypress Lake, Assa., Herb. No. 10,534; Spur Creek, Milk River, Assa., Herb. No. 10,533; Canmore, Kananaskis and Banff, Rocky Mountains. (*John Macoun*.) Maligne River, Athabasca River, Alberta, Herb. No. 19,451. (*W. Spreadborough*.) Specimens from nearly all the above localities were named *R. Woodsii* by Crepin, but we have no *R. Woodsii* in Canada.

TOLMIEA MENZIESII, T. & G.

Dawson Harbor, Queen Charlotte Islands, B. C. (*Dr. C. F. Newcombe*.) Cowichan Lake, Vancouver Island. (*J. R. Anderson*.) Not before recorded from Vancouver Island.

HEUCHERA CYLINDRICA, Dougl.

Dawson Harbor, Queen Charlotte Islands, B. C. (*Dr. C. F. Newcombe*.) A new station.

HEUCHERA PARVIFOLIA, Nutt.

Open prairies, Crow's Nest Pass, Rocky Mts. Herb. No. 20,167. (*John Macoun*.) Western limit.

RIBES LEUCODERME, Heller, Bull. Torr. Bot. Club, vol. xxiv, p. 93.

Nearly all our specimens from Southern Alberta referred to *R. oxycanthoides* are this species.

DROSER A LONGIFOLIA, L.

D. Anglica, Huds.; Macoun, Cat. Can. Plants, vol. 1, pp. 165 & 529.

D. intermedia, var. *Americana*, Macoun, Cat. Can. Plants, vol. 1, pp. 166 & 529 in part; Contr. to Can. Bot. Pt. x, p. 273.

Throughout subarctic Canada. Our specimens are from east branch of Hamilton River, Labrador. Herb. No. 4998. (*A. P.*

Low.) Salt Lake, Anticosti, Que.; Lake Huron, Ont.; Porcupine Mts., Man.; Prince Albert, Sask.; Revelstoke, B. C.; Beaver Creek, Selkirk Mts., B. C.; Horne Lake, Vancouver Island. (*John Macoun.*) Tete Jaune Cache, headwaters of Fraser River, B. C. (*W. Spreadborough.*)

MEGARRHIZA OREGANA, Torr.

Union Bay, Saanich, Vancouver Island, 14th July 1898. (*J. R. Anderson.*) New to Canada.

GALIUM MOLLUGO, L.

St. James' Cemetery, Toronto, Ont., 1897. (*W. Scott.*) Only Ontario station.

APLOPPAPPUS LYALLII, Gray.

Mt. Cheam, Lower Fraser, B. C., 1898. (*J. R. Anderson.*) Western limit.

SOLIDAGO PURSHII, Porter.

S. humilis, Macoun; Cat. Can. Plants, vol. 1, p. 213 in part.

Our only specimens of this species were collected in 1883, at South West Point, Anticosti, Que., by Prof. Macoun. All the other references under *S. humilis* in the Catalogue of Canadian Plants should probably go to *S. decumbens*, Greene.

ASTER ENGELMANNI, Gray.

Brazeau River, North Saskatchewan River, lat. 52° 40', 1898. (*W. Spreadborough.*) Northern limit.

ARNICA PARRYI, Gray.

Headwaters of Fraser River, Yellowhead Pass, Rocky Mountains, 1898. (*W. Spreadborough.*) Northern limit.

ARNICA TOMENTOSA.

Stems clustered, three inches to a span high, simple and generally monocephalus, radical leaves oblanceolate or spatulate, conspicuously 3-nerved, loosely villous or sometimes tomentose; cauline, lanceolate or linear-lanceolate, villous-tomentose: involucre

and peduncle woolly-tomentose ; rays, numerous, short : achenes hirsutulous ; pappus soft, white, barbellate.

Not rare on the eastern slopes of the Rocky Mountains, at high altitudes, between the International Boundary and Lat. 54°. Distributed from the Herbarium of the Geological Survey of Canada, under numbers 11,606, 14,708 and 19,635.

SENECIO ROBINSII, Oakes.

S. aureus. *L. var. lanceolatus*, Oakes ; Macoun, Cat. Can. Plants, vol. 1, p. 265.

A well defined species, easily separable from *S. aureus* and all its varieties. Rare on Cape Breton Island, N. S. The only specimens found by Prof. Macoun in 1898, were at Big Intervale, Margaree, and in woods at Baddeck.

VACCINIUM PENNSYLVANICUM, Lam. var. ANGUSTIFOLIUM, Gray.

Macoun, Cat. Can. Plants, vol. 1, p. 290.

Union Road, Prince Edward Island ; in bogs, Louisburg, Cape Breton Island. (*John Macoun*.) Recent explorations have shown this plant to be widely distributed in Labrador.

PTEROSPORA ANDROMEDA, Nutt.

A new locality for this widely distributed but seldom collected plant is Tête Jaune Cache, headwaters of Fraser River, Rocky Mountains. (*W. Spreadborough*.)

BARTONIA IODANDRA, Robinson.

Holyrood, Newfoundland. (*Robinson & Schrenk*.) Grand Lake, Newfoundland. (*A. Waghorne*.) These records in Botanical Gazette, vol. xxvi, p. 47. In a bog six miles from Half Way House, Cape Breton Island, N. S., Aug. 5th, 1898. Herb. No. 19,857. (*John Macoun*.)

VERBENA STRICTA, Vent.

Along the Grand Trunk Railway embankment at Stamford, Ont., 898. (*R. Cameron*.) St. David's, Ont., 1898. (*W. Scott*.) New to Canada.

VERBASCUM BLATTARIA, L.

Roadsides, Mira Bay, Cape Breton Island, N. S. (*John Macoun.*) Not recorded east of Ontario. These specimens are the subspecies *V. virgatum*, with very glandular shortly decurrent upper leaves, and pedicels shorter than the calyx.

PEDICULARIS CAPITATA, Adams.

Moose Mountain, Elbow River, Rocky Mountains, alt. 7,000 ft., 1897. Herb. No. 19,916. (*John Macoun.*) Mountains near Lac Brulé, Athabasca River, Alta. Herb. No. 19,917, 1898. (*W. Spreadborough.*) Not before recorded from Rocky Mountains, or south of the Arctic Circle in Canada.

PLANTAGO ERIOPODA, Torr. var. CYLINDRICA,

Maligne River, Athabasca River, Alberta, July 6th, 1898. Herb. No. 20,073. (*W. Spreadborough.*) A span high, leaves and scape pubescent, spike $\frac{3}{4}$ -1 $\frac{1}{4}$ inch long, cylindrical. This is probably *P. lanceolata*, var. *B.*, Hook, Fl., vol. ii, p. 123, and very likely a good species.

MYRICA CAROLINENSIS, Mill,

M. cerifera, Macoun, Cat. Can. Plants, vol. 1, p. 435.

Common on Prince Edward Island, Cape Breton Island and in parts of Nova Scotia and New Brunswick. *M. cerifera* is not found north of Maryland, U. S.

LARIX LYALLI, Parlai.

Between Kootanie Lake and the St. Mary's River watershed, B. C., at altitudes between 6,500 to 7,000 feet, or a little more, 1898. (*Samuel S. Fowler.*) Western limit.

LILIUM COLUMBIANUM, Hanson.

Tete Jaune C  che, headwaters of Fraser River, Rocky Mountains. 1898. (*W. Spreadborough.*) Northern and eastern limit.

LYSICHITON KAMTSCHATCENSE, Schott.

Wet woods near Canoe River, western slope of Rocky Mountains in Lat. 53°. 1889. (*W. Spreadborough.*) Eastern and, in that part of Canada, northern limit.

SCRIPUS RUFUS, (Huds.) Schrad.

Marshes on summit of Smoky Mountain, Cape Breton Island, N. S., 1898. (*John Macoun*.) Not before recorded from Nova Scotia.

SCRIPUS SUBTERMINALIS, Torr.

In Fresh water Pond, North Ingonish, and summit of Smoky Mountain, Cape Breton Island, N. S., 1898. (*John Macoun*.) Not recorded from Nova Scotia.

CAREX COSTELLATA, Britt.

Edge of willow thickets near St. Catherines, Ont., 1898. (*W. C. McCalla*.) The only Canadian specimens we have seen.

CAREX CRAWEI, Dewey.

Damp meadows, Baddeck, (Herb. No. 20,810), and Smoky Mountain, (Herb. No. 20,811), Cape Creton Island, N. S., 1898. (*John Macoun*.) Not before recorded from Nova Scotia.

ERAGROSTIS CAPILLARIS, Nees.

A weed in a peach orchard, near St. Catherines, Ont., 1898. (*W. C. McCalla*.) New to Canada.

GLYCERIA VILLOIDEA, Fries.

Near Prince George's Sound, Hudson Strait, 1897. (*Dr. R. Bell*.) Very abundant on saline mud, St. Paul Island, Behring Sea. (*J. M. Macoun*.) Not before recorded except from Greenland.

ASPIDIUM OREOPTERIS, Swartz.

Shawnigan Lake, Vancouver Island, August, 1897. (*J. R. Anderson*.) One of our rarest ferns and not before collected on Vancouver Island.

ASPIDIUM ACULEATUM Swartz. Var. *SCOPULINUM*, D. C. Eaton.

Amongst rocks near the sea, Texada Island, Gulf of Georgia, B. C., Aug. 1897. (*J. R. Anderson*.) Not before found in Canada west of Province of Quebec, but collected in Washington, U. S.

WOODWARDIA RADICANS, Smith. Var. *AMERICANUM*, Hook.

Rich soil amongst hummocks, Texada Island, Gulf of Georgia, Aug. B. C. 1897. (*J. R. Anderson*.) New to Canada.

