

- Inst. Catholic Univ. Amer. Washington, 1 F.: 89. fig. 9. 1948.
6. Fernald, M. L. A new *Carex* from Newfoundland. *Rhodora*, 17: 158-159. 1915.
  7. Fernald, M. L. Persistence of plants in unglaciated areas of boreal America. *Mem. Gray Herb.* II: 252 (map 16). 1925.
  8. Fernald, M. L. *Gray's Manual*, 8th ed., 352. fig. 673. 1950.
  9. Fernald, M. L., and Weatherby, C. A. Some new plants from the Gaspé Peninsula. *Rhodora*, 33: 231-240. 1931.
  10. Holm, Theo. Remarks on the structure and affinities of some of Dewey's *Carices*: *Carex petricosa*. *Amer. Journ. Sci.* IV. 26: 488-491. fig. 21-24. 1908.
  11. Holm, Theo. Notes on *Carex Franklinii* Boott, and *C. spectabilis* Dew. *Amer. Journ. Sci.*, 49: 195-200. fig. 1-4. 1920.
  12. Kükenthal, Georg. *Cyperaceae-Caricoideae* *Das Pflanzenreich*, 4 (20): 542: 570, 1909.
  13. Mackenzie, K. K. *Carex*, in *North American Flora*, 18 (5): 310-313. 1935.
  14. Mackenzie, K. K. *North American Cariceae*, 2: tab. 362, 370. 1940.
  15. Porsild, A. E. Materials for a flora of the continental Northwest Territories of Canada. *Sargentia*, 4: 19-20. 1943.

## NOTES ON THE FLORA OF CHESTERFIELD INLET, KEEWATIN DISTRICT, N.W.T.<sup>1, 2</sup>

D. B. O. SAVILE and J. A. CALDER

ONE OF THE AUTHORS (D.B.O.S.) spent the summer of 1950 at Chesterfield Inlet (63°21'N 90° 42'W), Keewatin District, on the northwest coast of Hudson Bay, engaged in botanical work under the auspices of the Defence Research Board, Canada Department of National Defence. Polunin (1940) notes that a number of botanists have collected at Chesterfield, and lists a total of nearly 160 species, varieties, forms, presumptive hybrids, etc., from the locality.

The purpose of this paper is to present a number of additions to the flora recorded for this station and to discuss the status of a few plants already noted from it. All collections listed below were made within about 8 miles of the settlement, and nearly all within about 4 miles. No mention will be made of plants that have clearly been recorded from Chesterfield by Polunin under names other than those applied to the present collections, but a few will be included for which there is an element of doubt.

Discounting plants possibly reported under other names, and including entities described as new, the present report adds 20 species, varieties or forms to the known flora of Chesterfield Inlet; 13 of these are unrecorded in Polunin's district 10; and 9 are not reported by Polunin from the Canadian eastern arctic as defined by him.

Numbers cited without name are those of D.B.O. Savile and C. T. Watts. All specimens are in the herbarium of the Division of Botany

and Plant Pathology, Science Service, Canada Department of Agriculture, Ottawa.

### *Festuca brachyphylla* Schultes f. *flavida* Polunin

This yellow form, reported by Polunin only from Lake Harbour and Sugluk, was mixed with the typical purple form in one colony (1550).

### *Calamagrostis lapponica* (Wahl.) Hartm.

Plants from Chesterfield (1582) exactly match a specimen from Frobisher Bay (*Calder* 2155) identified by Père Louis-Marie as *C. lapponica* var.? Dr. W. G. Dore notes that both these collections differ from Scandinavian specimens of *C. lapponica* in having culms smooth or, at most, puberulent with minute ascending-appressed hairs on and just below the lowest node of the panicle, rather than scabrous; and in having shorter callus hairs. This is possibly the plant reported by Polunin under *C. deschampsii* Trin.

### *Eriophorum brachyantherum* Trautv.

A few plants were found in three locations (1229, 1325, 1347) in habitats varying from bog to moist slope. Not recorded by Polunin, but this Division has specimens from Coral Harbour (Cody), Ross Bay (Cody) and Repulse Bay (Bruggemann).

### *Eriophorum russeolum* Fries var. *leucothrix* (Blomgr.) Hultén

This plant proved to be moderately common (1109, 1277, 1437). It has probably passed as *E. chamissonis* C. A. Meyer f. *albidum* (Nylander) Fern. and, as such, may have been collected at Chesterfield.

<sup>1</sup> Contribution No. 1119 from the Division of Botany and Plant Pathology, Science Service, Department of Agriculture, Ottawa, Canada.

<sup>2</sup> Received for publication August 16, 1951.



**Carex rotundata** Wahl.

Duman (1941, p. 65) has recorded *C. membranacea* Hook. from Chesterfield on the basis of a number of collections made by Father A. Dutilly and himself. Their No. 1751, a sheet of which we have at hand, should be referred to the above species, and as such is new to the Canadian eastern arctic as defined by Polunin.

**Luzula groenlandica** Böcher var. **fuscoatra** Böcher

Recently described (Böcher, 1950) from West Greenland, this species has been sparingly collected from the Canadian eastern arctic, including Chesterfield, generally as *L. sudetica* (Willd.) DC. Böcher indicates that little is known of the ecology of var. *fuscoatra*. It may, therefore, be noted that one collection (1399) was made on a muddy gravel flat beside a brackish pond, and a second (1454) on moist, but apparently fresh, grassland.

**Salix brachycarpa** Nutt. var. **sansonii** Ball

A single small collection (1207) was made on rocky ground; det. Carleton R. Ball. Not reported by Polunin from the eastern arctic.

**Salix fullertonensis** Schn.

This species has been collected several times at Chesterfield; but, as Mr. Ball has remarked on the unusual height (up to 12 in.) of some of our collections, some explanation is desirable. When growing on gravel beaches, which are generally swept bare of snow, *S. fullertonensis* is usually completely prostrate, probably as a result of snow abrasion; but it often grows in pockets of the bedrock near the coast, in which situations the snow cover is usually adequate, and it is then about 6-12 in. high. Even in prostrate plants no indication of adventitious roots on the twigs was noted. This species, like others in sect. *Glaucæ*, is probably erect when conditions permit.

**Salix fuscescens** Anderss. var. **reducta** Ball (*S. arbutifolia* Pall. fide Hultén)

Single plants or small colonies were found at four stations (913, 1230, 1359, 1419). It was determined by Carleton R. Ball who remarks that it "was supposed to be confined to Alaska and adjacent Yukon but here are four collections from Chesterfield Inlet, and Father Lepage of Rimouski has just sent one collection from near Fort George in Ungava, on the east side of Hudson Bay. Strange that it escaped collectors so long."

**Salix myrtillofolia** Anderss. var. **brachypoda** Fern.

Two small colonies (1090, 1102) were found at the edge of the settlement and a third (1212) about 4 miles inland. Mr. Ball states "never have I seen it so prostrate and depauperate." Raup (1943) shows the typical variety as occurring north to Churchill, but these specimens seem to constitute a great range extension for var. *brachypoda*.

**Salix richardsonii** Hook.

Polunin reports this species from Chesterfield, but it may be of interest to note that the one shrub found within several miles of the settlement (912, 1178, 1533) was hermaphroditic, every catkin having a scattering of stamens among the pistils.

**Arenaria rubella** (Wahl.) Sm.

Reported, in Polunin's district 10, only from Eskimo Point; but a large colony occurs on a gravel beach adjoining the settlement at Chesterfield (1100), and four small colonies were located at distances up to 3 miles (966, 982, 1148, 1429).

**Arenaria uliginosa** Schleich.

A single colony (1387) was found on a muddy flat near a brackish pond. Not reported by Polunin from district 10. It is possible that it was overlooked elsewhere at Chesterfield owing to its similarity in habit to *Sagina intermedia* Fenzl. See, however, under *Gentiana tenella*.

**Stellaria laeta** Rich. (*S. longipes* sensu Polunin p.p.)

Occasional, three small colonies being found (1145, 1224, 1453). See under next species.

**Stellaria monantha** Hultén var. **monantha**

Abundant. This is presumably, at least in large part, the plant reported by Polunin from Chesterfield as *S. longipes*, but *S. laeta* may also have been collected there under this name.

**Ranunculus hyperboreus** Rottb.

This species was so variable in leaf form at Chesterfield Inlet that a detailed study was made of it. Chesterfield is the type locality of the plant described by Polunin as var. *turquetilianus*. It soon became clear that plants on rock or sand with little enrichment were always assignable to the typical form, whereas those fringing rich, stagnant muck pools were generally var. *turquetilianus*. In



intermediate habitats, notably a fertile, slightly brackish sand flat with appreciable leaching, remarkable intergradations occurred between the typical form, var. *turquetilianus*, and the form described below. The same correlation between habitat and leaf form is suggested by specimens from Coral Harbour and Fort Chimo. It thus appears that the variation is ecological rather than genetic. In view of the complete intergradation that may occur within a few yards the following recombination is proposed:

***Ranunculus hyperboreus* Rottb. f. *turquetilianus*** (Polunin) Savile & Calder stat. n. (*Ranunculus hyperboreus* Rottb. var. *turquetilianus* Polunin l. c. p. 211).

A much scarcer, but fully as striking, variant was seen in which the leaves were never truly lobed, but were broadly ellipsoid and either entire or with a shallow notch near the apex on one or both sides. It is proposed to call this plant:

***Ranunculus hyperboreus* Rottb. f. *integrescens*** Savile & Calder f. n. Differt foliis ab integris ovatisque tridentatis. At edge of muck pool, 8 mi. south of Chesterfield Inlet, Keewatin, 16 Aug. 1950, D.B.O. Savile (1464) and C. T. Watts (TYPE). One other collection has been seen that clearly belongs to this form, W. J. Cody (1547), Coral Harbour, Southampton I.

The following Chesterfield collections are assignable to f. *turquetilianus*: 1329, from a pool near the Mission that may have been the source of Monsignor Turquetil's specimen, agreeing well with Polunin's description and illustration; 1198, from 3 mi. southwest, in which the narrowness and toothing of the lobes is even more extreme; and 1187, tending slightly toward the typical form. One specimen from Coral Harbour (Cody 1236) is also much closer to f. *turquetilianus* than to the typical form.

Chesterfield collections belonging to the typical form are: 1030, 1176, 1337, and 1407. Three collections from the brackish sand flat mentioned above are: 1017 and 1189, intermediate between the typical form and f. *turquetilianus*; and 1566, with almost equal tendencies to the typical form, f. *turquetilianus* and f. *integrescens*. One specimen from Coral Harbour (Cody 1545) and one from Fort Chimo, Que., (Calder 2141) are intermediate between the typical form and f. *turquetilianus*.

***Ranunculus pallasii* Schlecht.**

Dense colonies, 10 by 30 ft. and 30 ft. diameter, were found in ponds about  $\frac{3}{4}$  of a mile apart (1349, 1438, 1545). The free water in August varied from  $\frac{1}{2}$  to 8 in. in the colonies, below which was a tangle of moss and debris up to 12 in. deep in which the plants were rooted. Flowering and fruiting plants were abundant.

Polunin reports *R. pallasii* from Lake Harbour, Baffin I.; Fort Harrison and Mosquito Bay, Que.; and Okak, Labrador. The Division also has specimens from Frobisher Bay, Baffin I., Fort George, Que., and Eskimo Point, Keewatin. The National Museum of Canada has specimens from Cape Henrietta Maria and Lake River, James Bay, Ont., in addition to a number from the Mackenzie District coast. Hultén (1944) cites specimens from the Mackenzie coast and Churchill, Man., in addition to various Alaska records. All North American records appear to be coastal or virtually so, but the species occurs far inland in Siberia. Where plants in one of the colonies at Chesterfield intermingled with *Colpodium fulvum* (Trin.) Griseb. they bore aecia of a rust. Heteroecious grass rusts do not generally persist north of about tree-line; and it is thought that rust spores, blown in from the south in 1949, established telia on the *Colpodium* plants, which in turn infected the *Ranunculus* in 1950 but too late for re-infection of the grass to occur. If, as is quite probable, the rust is a form specialized to these two hosts, the inference is that *Ranunculus pallasii* must be relatively abundant, in association with *Colpodium fulvum*, in parts of the virtually unexplored country to the southwest.

***Cochlearia officinalis* L. var. *oblongifolia* (DC.) Gelert**

Two collections (959, 1122) are assignable to this variety and one (1248) to var. *groenlandica* (L.) Gelert. The latter is reported from Chesterfield, but the former only from Rankin Inlet in district 10.

***Draba alpina* L. var. *alpina***

A single colony was found on a gravel beach northeast of the settlement. Reported in district 10 only from Whale Point and Marble I.

***Saxifraga tricuspidata* Rottb. f. *ligulata* Savile & Calder. f. n. Differt a varietate typica petalis angustis ligulatisque, ca. 8.0 mm. long., ca. 1 mm. lat. Gravel beach, Chester-**



field Inlet, Keewatin, 29 July, 1950, D.B.O. Savile (1185) and C. T. Watts (TYPE). Unfortunately only a single clump of this form could be found despite a prolonged search. The petals are strikingly different from those of the typical species, and appear to be amply distinct from those of any entities already named.

**Potentilla hyparctica** Malte var. **hyparctica** f. **tardinix** (Polunin) Savile & Calder comb. n. (*Potentilla emarginata* Pursh f. *tardinix* Polunin l. c. p. 275).

As indicated by Fernald (1943), the name *P. emarginata* is invalid; the above transfer is accordingly necessary. This form was described from Cape Dorset, Baffin I. It was fully developed in some plants of one colony at Chesterfield (1074). Intermediates, normal plants and f. *tardinix* occurred close together in the same colony with absolutely no difference in exposure, soil or any other evident environmental factor. A few intermediate plants were seen in a second colony. The intermediate plants flowered sparsely, but those with the most extreme foliage modification were completely sterile. This form has the appearance of being due to infection by a virus, but will have to be maintained until proof can be secured. The presence of several potential insect vectors at Chesterfield, including three species of aphids, one cicadellid and one fulgorid, indicate such an explanation to be feasible.

**Potentilla palustris** (L.) Scop. var. **parvifolia** (Raf.) Fern. & Long

Polunin reports *P. palustris* from Burwell, River Kovik and Chesterfield, but states that it is "very rare, and no more than local and occasional in its three stations." It may, therefore, be noted that it was found in 1950 along nearly all creeks and was abundant, occasionally dominant, in the flood zone of most muddy or sandy ponds, both at the settlement and at distances up to 8 miles.

**Primula egaliksensis** Wormsk.

Reported by Polunin only from northern Quebec and from south of Eskimo Point. *P. egaliksensis* f. *egaliksensis* was found 8 mi. south of the settlement (1455), and f. *violacea* Fern. was common in two areas within 2 mi. of the settlement (1181, 1421).

**Armeria maritima** (Mill.) Willd.

This species is well known from Chesterfield. Almost all colonies in the area appear

to be typical *A. maritima* var. *labradorica* (Wallr.) Lawrence (*A. labradorica* Wallr.) (958, 1026, 1068, 1273), but a single small colony with noticeably flattened and broad leaves (1386) proved closer to var. *sibirica* (Turcz.) Lawrence. See discussion under *Gentiana tenella*.

**Gentiana tenella** Rottb.

Not recorded by Polunin from the Canadian eastern arctic. Determined by Mr. J. M. Gillett, who cites specimens at the Missouri Botanical Garden from Kotzebue, Alaska, and southern Greenland. Raymond (1950) has recently reported this species from Stony Point, Ungava Bay, Que., about 75 miles south of Polunin's limits. The Chesterfield colony (1391) consisted of seven very small plants 2-4 cm. high, largely without basal branches, on a muddy gravel flat near a brackish pool 2 mi. WNW of the settlement. This site is at the side of a valley that connects the settlement with the inlet and forms part of the winter trail between Chesterfield and Baker Lake. The fact that *Arenaria uliginosa*, *Epilobium davuricum*, *Armeria maritima* var. *sibirica* and the present species were found only on this site suggests that some, at least, of them may have been transported, in mud on a sled runner, from some point inland.

**Limosella aquatica** L.

This species, unreported by Polunin, was found at the bottom of a dried-up rock pool in the settlement (1404, 1507). The pool is one of two that harbour *Ranunculus flammula* L. var. *filiformis* (Michx.) Hooker, recorded by Polunin. It is possible that both have been introduced from further south. This record adds a third annual plant to the eastern arctic, those previously reported being *Koenigia islandica* L. and *Montia lamprosperma* Cham.

**Pinguicula villosa** L.

A single, scattered colony on hummocks in a marsh west of the settlement (1106). New to the eastern arctic.

**Senecio congestus** (R. Br.) DC.

Two small colonies were seen on the mainland near the settlement (1184, 1567), and the overwintered stems were abundant on Fairway I. early in the season. Reported, under *S. palustris*, from Whale Point and Depot I. by Polunin.



## REFERENCES

- Böcher, T. W. 1950. Contributions to the flora and plant geography of West Greenland II. The *Carex capitata*, the *Luzula multiflora*, and the *Torularia humilis*-complexes. Meddelelser om Grønland Bd. 147, Nr. 7:1-39.
- Duman, M.G. 1941. The genus *Carex* in Eastern Arctic Canada. The Catholic University of America. Biol. Ser. 36. Washington, D.C.
- Fernald, M. L. 1943. Two later homonyms. *Rhodora* 45: 111-112.
- Hultén, E. 1944. Flora of Alaska and Yukon. IV. Lund. C.W.K. Gleerup.
- Polunin, N. 1940. Botany of the Canadian Eastern Arctic. Part I. Nat. Mus. of Can. Bull. 92.
- Raup, H. M. 1943. The willows of the Hudson Bay Region and the Labrador Peninsula. *Sargentia* 4:1-135.
- Raymond, M. 1950. Esquisse phytogéographique du Québec. Mém. Jard. Bot. Montreal 5:147 pp.

TWO PREDATORS AS PREY<sup>1</sup>

B. HOCKING

*Department of Entomology, University of Alberta*

WHILE collecting biting flies in northern Manitoba, two rather unusual instances of predatory insects falling prey to other predators were encountered. In both instances, attention was drawn to the event by the violence of the struggle taking place close to the ground, in rather short grass.

The earlier and more interesting instance was at Wabowden on August 6, when a female dragon-fly, *Sympetrum*, probably *rubicundulum* Say, had been captured and was finally overcome by a worker of *Vespula maculata* (L.). The specimens were taken with a net and transferred to a killing tube, by which time the dragon-fly had already lost its head and one wing but was still struggling violently. The wasp apparently did not use its sting, relying on the mandibles as an offensive weapon.

The second instance was at Mafeking on August 11, when a worker of *Vespula vulgaris* (L.) was captured on the wing by a female asilid, *Promachus bastardii* Macq. The wasp was a rather small specimen and although struggling violently when taken in the net, was completely immobilised by the time it was transferred to the killing tube. That wasps fall victim to asilids has long been known (Aaron 1894, Cockerell 1894) but the list of species is probably far from complete, and the rapidity of action of the asilid poison, although also previously reported (Whitfield 1925) is of perennial interest.

Other more normal prey taken by representatives of these groups were also observed during the summer: workers of *Vespula norvegica* var. *albida* (Sladen) were often seen to capture *Chrysops nigripes* Zett. and other species of *Chrysops* on the wing at Churchill, Manitoba, July 28 to August 1. The wasp would alight, rapidly trim off the legs and wings of the deer-fly, and then take off again with the dressed carcass, presumably returning to the nest. This species was also observed to capture black flies (Simuliidae) on the wing. Richards (1951) has recently reported the South American vespid *Polybia occidentalis* (Oliv.) collecting simuliids off cows.

I am indebted to Messrs. C. D. F. Miller and J. F. McAlpine, Division of Entomology, Ottawa, Canada, for confirmation of the species mentioned.

## LITERATURE CITED

- Aaron, S. F. (1894). The bold robber fly. Ent. News, 5:110-112.
- Cockerell, T. D. A. (1894). On the habits of some Asilidae. Ent. News 5: 173-174.
- Whitfield, F. G. S. (1925). The relation between the feeding habits and structure of the mouthparts in the Asilidae. Proc. Zool. Soc. Lond. pp. 599-638.
- Richards, O. W. and M. J. Richards (1951). Observations on the social wasps of S. America. Trans. R. ent. Soc. Lond. 102: 1-170.

<sup>1</sup> Received for publication December 6, 1951.





Savile, D. B. O. and Calder, James A. 1952. "Notes on the flora of Chesterfield Inlet, Keewatin District, N.W.T." *The Canadian field-naturalist* 66(4), 103–107.  
<https://doi.org/10.5962/p.341419>.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/89102>

**DOI:** <https://doi.org/10.5962/p.341419>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/341419>

**Holding Institution**

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

**Sponsored by**

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

**Copyright & Reuse**

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Ottawa Field-Naturalists' Club

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.