

4-1940

## Noteworthy Plants From The Duluth Area

Olga Lakela

*Duluth State Teachers College*

Follow this and additional works at: <https://digitalcommons.morris.umn.edu/jmas>



Part of the [Plant Sciences Commons](#)

---

### Recommended Citation

Lakela, O. (1940). Noteworthy Plants From The Duluth Area. *Journal of the Minnesota Academy of Science*, Vol. 8 No. 1, 24-28.

Retrieved from <https://digitalcommons.morris.umn.edu/jmas/vol8/iss1/7>

This Article is brought to you for free and open access by the Journals at University of Minnesota Morris Digital Well. It has been accepted for inclusion in Journal of the Minnesota Academy of Science by an authorized editor of University of Minnesota Morris Digital Well. For more information, please contact [skulann@morris.umn.edu](mailto:skulann@morris.umn.edu).

In summarizing, the following points may be noted: (1) average values of the dissolved substances in the lakes studied show that the Superior, Chippewa and Prairie regions presented three distinct physical limnological situations, (2) though some of the phytoplankton species were generally distributed many exhibited preferences and were restricted regionally, (3) the zooplankton also showed cosmopolitan species as well as many that were decidedly restricted, (4) the total phytoplankton population was correlated with the dissolved substances in the water and although such may be the case for the zooplankton the two groups of the plankton did not react to that set of factors similarly.

1 1 1

## NOTEWORTHY PLANTS FROM THE DULUTH AREA

OLGA LAKELA

*Duluth State Teachers College*

The plant life in the Duluth area is surprisingly rich in floristic novelties. Intensive collecting and field study during the last four years revealed several species hitherto unreported from the state.<sup>1</sup> Moreover, it added factual knowledge pertinent to distribution and floristic composition of plant communities.

In the Duluth area the assemblage of introduced European species is striking and apparently in harmony with the social development of the community which has served from the time of the early pioneers as a gateway to the northwest by linking the railway with the seaway. In addition, infiltrations of floral elements from the east, south and west, as manifested by inclusions of coastal plain as well as western species, increase the complexity of plant populations.

The abundance of luxuriantly growing European species is probably the result of duplication of their original environment in the Lake Superior region, the long periods of dormancy under a protective covering of snow, and the abundant rainfall and cool summers. A few are mentioned here because of their preponderance and weedy character. On the exposed hills the most successfully acclimated species is *Ranunculus acris* L. Somewhat less abundant but plentiful are *Carum Carvi* L. and *Chrysanthemum Leucanthemum* L.

Previously several species of European origin have been reported by the author as new records for the state. The following adventives, *Anthemis tinctoria* L. and *Valeriana officinalis* L. are tending to become established along boulevards and rocky woods in the eastern section of the city. They seem to have escaped from gar-

<sup>1</sup> Lakela, Olga. 1938. *Rhodora* 40. 279-280.

dens.<sup>2</sup> They are reported as adventives on the Atlantic coast from New Jersey to Maine. More common is *Stellaria aquatica* (L.) Scop. growing in rocky stream beds and in moist woods throughout the area.

The finding of an unusual grass is no longer a common experience. The southeast-facing slope of Hunters Hill north of Woodland Avenue is the only known station of *Poa Chaixii* Vill. in America. This broad-leaved June grass was first discovered in the summer of 1937. It is thoroughly established, growing in dense colonies over a considerable area of the hillside, in a transition forest among many native and naturalized species characteristic of this region. This grass has a wide European distribution. With it grows *Luzula nemorosa* (Poll.) E. Mey, another plant of European origin, reported locally from New York.

*Hieracium Pilosella* L., collection No. 2673, was first discovered in the summer of 1939 on a mossy terrace of a pond in Forest Hill Cemetery. To secure adequate flowering and fruiting specimens, the few plants in the single colony were protected from the lawn-mower. In two summers the plants developing stolons spread over a plot of ground of more than a two meter-square, forming a mat so dense as to exclude all other species. The plant is reported locally from New York to Michigan.

On the same terrace in moist moss grows *Sagina procumbens* L. a native species of a wide distribution in the coastal plain states including Alabama. The plant is also found in northern Europe.

Two adventives are tending to become established on Minnesota Point. *Artemisia Stelleriana* Bess., an eastern Asiatic plant, seems to be poorly adapted to the bayside sand. Many plants have died; others are weak and fail to flower. Better adapted is *Iris Pseudacorus* L., obviously migrating across Superior Bay from the Wisconsin side where it is established in larger colonies. These plants may have escaped from cultivation. They are naturalized in New England states, the former especially on sea-beaches.

For the following species the ranges of distribution are extended to the Duluth area. *Ranunculus repens* L., collection No. 3125, grows on a grassy terrace of a residence near the State Teachers College campus. There is one previous collection from Winona. *Sedum Telephium* L., occasional along boulevards in Lester Park district, is reported from Rock County, the southwest corner of the state. *Erucastrum gallicum* (Willd.) O. E. Schulz, appeared in pioneer vegetation of a filled-in area on Minnesota Point. Prior to discovery of the Duluth specimens there appear to be two records from the northwestern part of the state; one from Moorhead, the other from Thief River Falls.

Certain coastal plain species form a distinctive element in the flora of Minnesota Point. Physiographically, the seven-mile sandbar

<sup>2</sup> Lakela, Olga, 1939. *Rhodora* 41. 78-79.

south of Duluth is the only sandy beach of Lake Superior within the state. It lies in line with the inland migration route of coastal plain species along the Great Lakes. The various existing habitats are mere remnants of the original area. The northern half of the Point is settled. The original bayshore has been modified by sand-fills made by dredging the navigation channel. The exposed sediment is subject to erosion and deposition by waves and winds which profoundly affect the habitats and the plant populations. Still some five hundred species including the ferns and flowering plants populate the area. Undoubtedly many have become extinct before the recent study was made.

The beach vegetation on the Lake Superior side of the Point is dominated by two coastal plain species, namely *Ammophila breviligulata* Fernald and *Lathyrus japonicus* var. *glaber* Fernald. It is the only station of *Ammophila* in the state. Higher on the sand ridge occur colonies of *Hudsonia tomentosa* Nutt, var. *intermedia* Peck. *Polygonella articulata* (L.) Meisn. is more or less diffused throughout the treeless sand ridge at the south end.

On the marshy shores and sand-fills on the Superior Bay *Juncus balticus* Willd. var. *littoralis* Engelm. and its forma *dissitiflorus* Engelm. occur in large colonies. Although this species has a wide inland distribution, it is listed by Dr. D. C. Peattie<sup>3</sup> as a coastal plain plant. *Lycopodium inundatum* L. and *Agalinus parvpercula* (Gray) Britton var. *borealis* Pennel occur in small colonies along borders of wet sedge meadows. *Bidens discoidea* (T. & G.) Britton was prominent in the pioneer population of a developing plant community<sup>4</sup> on sand-fill during the first summer of its vegetational history. It was gradually eliminated from the community, disappearing wholly during the fourth year. There is one previous record for this species in the state. Dr. N. C. Fassett collected it from the Mississippi bottom lands near Winona in 1926.

In the pioneer phase of the same plant community occurred *Bidens connata* Muhl. and its vars. *pinnata* and *fallax*. The *Bidens connata* group is locally restricted to northwestern Wisconsin and the adjacent regions of Minnesota. *B. connata* Muhl. var. *pinnata* is treated as an endemic to the region and was originally described from Hennepin County.<sup>5</sup>

In the pine forest on Minnesota Point in Sec. 19 grows a colony of *Deschampsia flexuosa* (L.) Trin. It is the only known station of this grass in the state.

The western element in the Duluth flora is represented by *Potentilla gracilis* Dougl. It is established on grassy hillsides in the Chester Park and Hunters Hill districts. *Polemonium occidentale* Greene is occasional on wooded slopes. It is a probable garden

<sup>3</sup> Peattie, D. C. 1922. The Atlantic Coastal Plain Element in the Flora of the Great Lakes. *Rhodora* 24. 57-70; 80-88.

<sup>4</sup> Lakela, Olga. 1939. *Ecology* 20. 544-552.

<sup>5</sup> McLaughlin, W. T. 1932. Atlantic Coastal Plain Plants in Sand Barrens of Northwestern Wisconsin. *Ec. Mon.* 2. 335-383.

escape. Several species belonging distinctly to prairie formation have become established on the barren hillsides. Among them may be mentioned *Orthocarpus luteus* Nutt., *Linum sulcatum* Riddell, and three species of *Potentilla*.

*Menziesia glabella* A. Gray, a western species reported from Minnesota Point by various authors, is to be excluded from the state flora. The plant was not found upon a thorough search of the area. At least one arctic inclusion is found in the vicinity of Duluth, *Rubus acaulis* Michx. It is fairly abundant in a *Picea-Larix* swamp about thirteen miles north of Duluth on highway No. 4. Previously it has been collected at Baudette. In the same swamp in *Sphagnum* occurs *Scirpus hudsonianus* (Mich.) Fernald, known only from few other stations in the state.

*Adoxa Moschatellina* L., a species of northern range, appears to be centered in the state in two known regions, namely the southeastern section from Houston to Goodhue County where it extends to the adjacent parts of Iowa and Wisconsin, and the northeastern section from Jay Cooke Park through Fond du Lac, Duluth and the north shore of Lake Superior almost to the St. Louis and Lake County line. There are no collections from Lake County. According to Dr. F. K. Butters it has not been found in Cook County.

In Duluth the plant is known to occur in several localities associated with *Claytonia caroliniana* Michx., *C. virginica* L., *Dicentra Cucullaria* (L.) Bernh., *Sanguinaria canadensis* L., and many other early flowering species. It thrives best in the vernal aspect of *Tilia-Acer* association, flowering and fruiting abundantly. On steep rocky slopes the colonies are diffuse with only a few fruiting specimens. Beyond southern St. Louis County, the nearest known station for this plant lies at a 54-64 degrees north latitude in British Columbia. Westward it occurs in the Rocky Mountain region from west-central to southern Colorado and in Yellowstone region. It also occurs in northern Europe.

On the Great Palisade Head, sixty-five miles north of Duluth on Lake Superior, the author discovered in 1938 *Arnica chionopappa* Fernald. Although the plant is beyond the immediate environs of Duluth, it is mentioned here because of its interesting distribution in North America. The plant was originally described by Dr. M. L. Fernald from Quebec and New Brunswick. Dr. F. K. Butters collected the species in Cook County in 1932. The Palisade Head is the second known station of *Arnica* in Minnesota.

*Panicum philadelphicum* Bernh. occurs on shore of Lake Comstock about thirty-four miles north of Duluth on Highway No. 4. It appears to be locally restricted as to distribution. There is one previous collection in the state, from Montevideo area.

In this presentation of noteworthy plants extensions of ranges for the following species have been established: *Panicum philadelphicum* Bernh., *Scirpus hudsonianus* (Michx.) Fernald, *Ranunculus*

*repens* L., *Erucastrum gallicum* (Willd.) O. E. Schulz, *Sedum Telephium* L., *Rubus acaulis* Michx., *Bidens connata* Muhl. var. *fallax* (Warnst) Sherff, *B. connata* var. *pinnata* Wats., *B. discoidea* (T. & G.) Britton.

These species have been reported as new records for Minnesota including *Poa Chaixii* which is new to America<sup>o</sup>: *Ammophila breviligulata* Fernald, *Deschampsia flexuosa* (L.) Trin., *Poa Chaixii* Vill. *Luzula nemorosa* (Poll.) E. Mey., *Iris Pseudacorus* L., *Sagina procumbens* L., *Stellaria aquatica* (L.) Scop., *Potentilla gracilis* Dougl., *Polemonium occidentale* Greene, *Valeriana officinalis* L., *Anthemis tinctoria* L., *Artemisia Stelleriana* Bess., and *Hieracium Pilosella* L. (previously unreported record).

1 1 1

## LONGEVITY OF RED PINE SEED<sup>1</sup>

By EUGENE I. ROE

Lake States Forest Experiment Station

The length of life of tree seeds, besides being of interest from the botanical point of view, is of great practical importance to those who are engaged in growing stock for forest and ornamental planting. Many of the common species of forest trees being used in the extensive reforestation projects now underway in the United States bear seed at irregular and infrequent intervals. In order, therefore, to have a balanced production of nursery stock of such species, it is necessary to collect and store large amounts of seed during years of abundant crops to provide for the sowings required in the intervening years of scarcity. This is the case with red or Norway pine (*Pinus resinosa* Aiton), the most important of the species now commonly planted on public lands in Minnesota and the other Lake States. Due to the fact that heavy crops of red pine seed are borne on the average from three to five years apart, considerable quantities must be stored during this period to supply a large proportion of the hundreds of pounds which are sown annually in the Federal, State, and private nurseries of this region. Since red pine seed is worth from \$4.50 to \$6.00 per pound, it is, therefore, highly important that it be kept under conditions which will reduce losses in viability to a minimum. An investigation to determine just what storage conditions are best for seed of this species serves as the basis for this paper.

The study in question was begun in the early part of 1930 by C. G. Bates of the Lake States Forest Experiment Station, who had

<sup>o</sup> Lakela, Olga. 1938. *Rhodora* 40. 73.

<sup>1</sup> Paper presented before the Biological Section of the Minnesota Academy of Science, Minneapolis, Minn., April 20, 1940.