

Celastraceae (Bittersweet Family) Traits, Key, & Comparison Chart

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Genus Traits of *Parnassia* (grass-of-Parnassus)

[*Parnassia* is the only genus of the Celastraceae Family in NL]

- Herbaceous plants with basal rosettes of petiolate leaves and 0 or 1 sessile cauline leaf; stems and leaves are glabrous (without hairs).
- Flowers solitary, terminal on erect stems, bisexual, and 5-merous.
- Flowers have 5 green sepals, 5 white petals with prominent veins, 5 stamens (maturing sequentially), and a single pistil.
- Five staminodia (modified sterile stamens; *singular*: staminodium) are situated opposite the petals and alternate with the fertile stamens. Each staminodium has 3–27 slender segments that terminate in a spherical yellow gland.
- The pistil has an ovoid, superior ovary, ivory white or green, which has 4 carpels but only 1 locule (interior chamber); stigmas are 4 and sessile; styles are lacking.
- The fruit is an ovoid capsule, pale bronze-coloured or green, which dehisces (splits) into 4 valves.
- All *Parnassia* species in NL occur on wet, calcareous substates, such as fens, wet meadows, or limestone barrens, gravels, and shores. *Parnassia kotzebuei* is also found in alpine meadows, ravines, or snowbeds over limestone substrates.
- The most important traits that differentiate *Parnassia* species in our area are:
 - the presence, shape, and position of a cauline leaf,
 - the number of segments in the staminodia, and
 - the number of veins in the petals.

Key to *Parnassia* species in Newfoundland and Labrador

- 1a. Plants <1–2.8 dm (usually <1.5 dm) tall, scapose, lacking a cauline leaf; basal leaves with petioles usually less than 1 cm long; petals with 3 veins; staminodia have 3–5 gland-tipped segments. *Parnassia kotzebuei* (Kotzebue's grass-of-Parnassus)
- 1b. Plants <1–6.0 dm tall, usually with a sessile cauline leaf near or below the middle of the stem; basal leaves with petioles to 17 cm long; petals with 5–13 veins; staminodia have 3–27 gland-tipped segments. **2**
 - 2a. Plants 1–6 dm tall; the cauline leaf is situated near the basal leaves or sometimes absent; leaf blades 2–7 cm long; petals have 5–12 prominent green veins; staminodia are divided nearly to the base into 3 segments.
..... *Parnassia glauca* (fen grass-of-Parnassus)
 - 2b. Plants <1–3.5 dm tall; the cauline leaf is situated near or below the middle of the stem; leaf blades 0.6–4 cm long; petals have 5–13 greyish veins; staminodia have 5–27 segments. **3**
- 3a. Petioles 2–10 cm long; cauline leaf cordate, clasping the stem, the apex acute and curved backward; sepals 4–11 mm long; petals 8–17 mm long, with 5–9 veins; staminodia 5–9 mm long, with 9–27 segments. *Parnassia palustris* (marsh grass-of-Parnassus)
- 3b. Petioles to 2 cm long; cauline leaf oblanceolate, ascending, blunt at the apex; sepals 3–6 mm long; petals 3.5–10 mm long, with 5–13 veins; staminodia 3.5–5 mm long, usually with 5–7 (rarely 9) segments. *Parnassia parviflora* (small-flower grass-of-Parnassus)

***Parnassia* (Celastraceae) Comparison Chart**

<i>Parnassia</i> Species:	<i>P. glauca</i>	<i>P. palustris</i>	<i>P. parviflora</i>	<i>P. kotzebuei</i>
	fen grass-of-Parnassus	marsh grass-of-Parnassus	small-flower grass-of-Parnassus	Kotzebue's grass-of-Parnassus
Size	1–6 dm tall	0.8–3.5 dm tall	0.6–3.5 dm tall	0.2–2.8 dm tall (seldom >1.5 dm)
Basal Leaves	petioles 1.5–17 cm long ; blades ovate to cordate, 2–7 cm long × 1–5 cm wide	petioles 2–10 cm long; blades ovate to cordate 0.6–4 cm long × 0.4–3 cm wide	petioles 0.4–2 cm long; blades ovate to oblong, 0.6–3.5 cm long × 0.5–2.5 cm wide	petioles 0.2–1 cm long ; blades ovate to deltate, 0.4–3 cm long × 0.4–2.5 cm wide
Cauline Leaf	ovate, acute at the apex; near the basal leaves, or absent	cordate, acute and curved backward at the apex ; usually in the lower half of the stem	oblanceolate, blunt at the apex, ascending ; near the middle or lower half of the stem	usually absent ; if present, below the middle
Sepals	2.5–5 mm long	4–11 mm long	3–6 mm long	1.5–8 mm long
Petals	lanceolate to ovate, 9–18 mm long × 6–10 mm wide, with 5–12 green veins	ovate to obovate, 8–17 mm long × 5–12 mm wide, with 5–9 veins	ovate to obovate, 3.5–10 mm long × 4–6 mm wide, with 5–13 veins	ovate, 3–7 mm long × 2–3 mm wide; usually with 3 veins
Staminodia	4–7 mm long; divided nearly to the base into 3 gland-tipped segments	5–9 mm long; divided above into 9–27 gland-tipped segments , narrowed at the base	3.5–5 mm long; divided above into 5–7 (rarely 9) gland-tipped segments	1.3–2 mm long, divided above into 3–5 gland-tipped segments
Range	w/nwNfld.	w/nwNfld., N to nLab.	sw/w/nwNfld., N to nLab	w/nwNfld, N to seLab., disj. in nLab.

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