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Nothochelone (Plantaginaceae)

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X. NOTHOCHELONE (A. Gray) Straw, Brittonia 18: 85. 1966 * Woodland
beardtongue [Greek *notho-*, spurious, and generic name *Chelone*] E

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Chelone Linnaeus subg. *Nothochelone* A. Gray in A. Gray et al., Syn. Fl. N. Amer. 2: 259.
1878

Herbs, perennial; caudex unbranched, woody. **Stems** arching or reclining, glabrous to puberulent. **Leaves** cauline, opposite, not leathery; petiole absent or present; blade margins subentire to serrate or dentate. **Inflorescences** axillary to terminal, cymes; bracts present. **Pedicels** present; bracteoles present. **Flowers** bisexual; sepals 5, connate proximally, divided nearly to base, calyx radially symmetric, campanulate, lobes ovate to lanceolate; petals 5, corolla pink, pinkish to bluish purple or maroon-red, often paler ventrally, bilaterally symmetric, bilabiate, spurs absent, abaxial lobes 3, adaxial lobes 2; stamens 4, adnate to corolla, didynamous, filaments puberulent distally to hirsute proximally, staminode 1, straplike; ovary 2-locular, placentation axile; stigma capitate. **Capsules** symmetric, dehiscence septicidal. **Seeds** +/- 50, tan to brown, flat, winged. $x = 15$.

Species 1: w North America.

Nothochelone is a member of tribe Cheloneae, which in North America includes *Chelone*, *Chionophila*, *Collinsia*, *Keckiella*, *Penstemon*, and *Tonella*. These genera share a cymose inflorescence, the presence of a staminode, simple trichomes, and stems that contain pith (A. D. Wolfe et al. 2002). In phylogenetic analyses using molecular (Wolfe et al.) and morphological (A. D. Nelson 1995) data, *N. nemorosa* occurs in a clade with species of *Chelone*. *Nothochelone* has a more branched cyme with relatively small bracteoles, a ventrally ridged corolla, circular pollen amb (grain shape from polar view) shape, reticulate pollen exine sculpting pattern, and asymmetrical seed wing, whereas *Chelone* has a reduced cyme with relatively large bracteoles, dorsally ridged corolla, triangular pollen amb shape, rugulate-reticulate pollen exine sculpting pattern, and a circumalate (surrounded by a wing) seed (Nelson). Both genera have hypogynous disc nectaries (Wolfe et al.). *Chionophila* shares a clade with sister genera *Chelone* and *Nothochelone*. *Chionophila* has a reduced cyme without bracts, no ridges on the corolla, a circular pollen amb shape, reticulate pollen sculpting pattern, seeds with wings, and an epistaminal nectary.

1. *Nothochelone nemorosa* (Douglas ex Lindley) Straw, Brittonia 18: 85. 1966 E F

Chelone nemorosa Douglas ex Lindley, Bot. Reg. 14: plate 1211. 1828; *Penstemon nemorosus* (Douglas ex Lindley) Trautvetter

Stems clustered from woody caudex base, 22--120 cm. **Leaves:** petiole 0--2(--5) cm; blade ovate to lanceolate or elliptic, (18--)40--140 x (4--)15--40 mm, venation pinnate, base cuneate to rounded, margins with (0--)1--5(--7) teeth per 10 mm, apex acute to acuminate, surface glabrous to puberulent-pubescent mostly along veins. **Cymes** 3--38 cm; bracteoles lanceolate, 3--10 x 1--2 mm. **Pedicels** 3--27 mm. **Flowers:** calyx lobes (1--)3--13 x 1--3(--4) mm, margins entire; corolla externally glandular pubescent, internally glabrous except at base, throat dilated, tube (14--)17--23 x 8--11 mm, abaxial lip (3--)4--10 x 1--5 mm, adaxial lip keeled, shorter than abaxial lip, 2.4--5 mm; anthers divaricate, 1.3--4 x 1--2(--4) mm, densely lanate; adaxial filaments 12--20 mm; staminode as long as stamens, included, 7--15 mm, coarsely bearded for entire length, hairs tan to orange; ovary glabrous, septum complete, locules equal, subtended by nectariferous disc; style terete, 15--28 mm, glabrous. **Capsules** ovoid, 9--15 x 5--9 mm. **Seeds** with a dark center, 2--4 x 0.5--1.1 mm, including wings. $2n = 30$.

Flowering Jun--Aug. Cliffs, rocky places, and trails in moist, humid, conifer and mixed evergreen forests; 0--2700(--3100) m; B.C.; Calif., Oreg., Wash.

Nothochelone nemorosa has often been included in *Chelone* or *Penstemon*, but studies of anatomy (R. M. Straw 1966; A. D. Nelson 1995) and molecular variation (A. D. Wolfe et al. 1997, 2002) support its separation as a monotypic genus.