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Chaenorhinum (Plantaginaceae)
Richard K. Rabeler and Craig C. Freeman
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X. CHAENORHINUM (de Candolle) Reichenach, Consp. Regn. Veg., 123. 1828 (as Chaenarrhinum) * Dwarf-snapdragon [Greek, *chaino*, to gape, and *rhis*, snout, alluding to open throat of corolla as compared to *Antirrhinum* and *Linaria*] I

Richard K. Rabeler

Craig C. Freeman

Linaria Miller sect. *Chaenorhinum* de Candolle in J. Lamarck and A. P. de Candolle, Fl. Franç. ed. 3, 6: 410. 1815

Herbs, annual [perennial]. **Stems** erect or ascending, glandular-pubescent or sometimes nearly glabrous. **Leaves** cauline, opposite proximally and alternate distally, not leathery; petiole present proximally, sometimes absent distally; blade margins entire. **Inflorescences** [terminal, racemes or] flowers axillary; bracts present. **Pedicels** present; bracteoles [present or] absent. **Flowers** bisexual; sepals 5, connate proximally, calyx bilaterally symmetric, urceolate-spreading, lobes narrowly oblanceolate to narrowly lanceolate; petals 5, corolla white to grayish or lilac [blue, pink, pale yellow], bilaterally symmetric, personate, cylindric, spurs present, abaxial lobes 3, adaxial lobes 2, abaxial lip forming an arched palate; stamens 4, adnate to corolla, didynamous, filaments glabrous, staminode 0 [1, minute]; ovary 2-locular, placentation axile; stigma capitate. **Capsules** asymmetric, dehiscence by irregular apical teeth forming 2 terminal pores. **Seeds** 40--60, blackish brown to brown [black, grayish], ovoid to ellipsoid, not winged. $x = 7$.

Species 23 (1 in the flora): introduced; Europe, sw Asia (Georgia, Turkmenistan), n Africa.

Contrary to usual practice, de Candolle did not double the "r" in his spelling of *Chaenorhinum*; the orthography was changed in later works, including de Candolle's own (including the 1829 reissue of the 1815 volume), as some authors thought it should be "corrected" (D. A. Sutton 1988).

Capsule shape, wall thickness, and dehiscence; seed surface ridging; and corolla lobe margins are features used in placing *Chaenorhinum* species into either three sections (D. A. Sutton 1988) or three genera (F. Speta 1980). In the latter scheme, *C. minus*, along with nine other species, is treated as *Microrrhinum* (Endlicher) Fourreau.

Chaenorhinum origanifolium (Linnaeus) Kosteletzky, a perennial species native to southern Europe, is sometimes grown in rock gardens.

SELECTED REFERENCES Arnold, R. M. 1982. Floral biology of *Chaenorhinum minus* (Scrophulariaceae) a self-compatible annual. Amer. Midl. Naturalist 108: 317--324. Widrlechner, M. P. 1983. Historical and phenological observations on the spread of *Chaenorhinum minus* across North America. Canad. J. Bot. 61: 179--187.

1. **Chaenorhinum minus** (Linnaeus) Lange in H. M. Willkomm and J. M. C. Lange, Prodr. Fl. Hispan. 2: 577. 1870 (as Chaenorhinum) * Lesser toadflax, chénorhinum mineur F I W

Antirrhinum minus Linnaeus, Sp. Pl. 2: 617. 1753

Subspecies 3 (1 in the flora): introduced; Europe, sw Asia.

1a. Chaenorhinum minus (Linnaeus) Lange subsp. **minus** F I W

Stems usually much-branched from or near base, sometimes unbranched in small plants, often zigzag, (4--8--28(--40) cm, glandular-pubescent or sometimes nearly glabrous. **Leaves** glandular-pubescent; blade oblanceolate to lanceolate, 5--15(--30) x 1--4(--5) mm, base tapered, apex obtuse to acute. **Pedicels** ascending, 5--20 mm. **Flowers:** calyx glandular-pubescent, lobes accrescent, abaxial ones 1.5--2.5 x 0.3--0.4 mm, adaxial ones 2.8--3.5 x 0.4--0.8 mm, herbaceous, margins entire, apex obtuse; corolla white to grayish or lilac and, usually, with 2 purple spots or stripes internally on palate, 8--11 mm (including 1--2.3 mm spur), sparsely glandular-pubescent externally, glandular-pubescent internally on abaxial surface, especially along ridges of palate and into throat, throat 2--3 mm wide, abaxial lobes spreading, adaxial lobes projecting; stamens included, anthers opposite, navicular, marginally coherent, anther sacs of longer pair of stamens 0.3--0.4 mm, anther sacs of shorter pair of stamens 0.1--0.2 mm, glabrous; ovary glandular-pubescent; style 1.5--2 mm, glandular-pubescent proximally. **Capsules** obovoid to ellipsoid, 4--5.4 x 2--3.6 mm, glandular-pubescent distally. **Seeds** 0.6--0.9 mm, prominently ribbed longitudinally. $2n = 14, 28$ (both Europe).

Flowering May--Oct. Gravelly railroad rights-of-way, road shoulders, urban areas, stream beds; 0--1600 m; introduced; Alta., B.C., Man., N.B., Nfld. and Labr. (Nfld.), N.W.T., N.S., Ont., P.E.I., Que., Sask.; Ala., Ark., Colo., Conn., Del., Ga., Idaho, Ill., Ind., Iowa, Kans., Ky., La., Maine, Md., Mass., Mich., Minn., Mo., Mont., Nebr., N.H., N.J., N.Y., N.C., N.Dak., Ohio, Okla., Oreg., Pa., R.I., Tenn., Tex., Vt., Va., Wash., W.Va., Wis.; Europe; sw Asia.

Subspecies *minus* is the only member of the species to have become widely established as a weed; the other two subspecies occur in Europe, one in Crete, the other in Turkey (D. A. Sutton 1988).

First collected in Camden, New Jersey (1874), and St. John, New Brunswick (1881), *Chaenorhinum minus* likely came to North America as a contaminant in ship ballast, with subsequent dispersal along railroad lines (M. P. Widrechner 1983). R. M. Arnold (1981, 1982) noted that self-compatibility, a short generation time, drought tolerance, and seed dispersal enhanced by passing trains, allowed *C. minus* to be a successful colonizer of railroad rights-of-way, where it was once common, but is now scarce because of herbicide use. Once established, populations can spread to other disturbed sites, such as roadsides and streambeds.