

*Nuttallanthus texanus* (Scheele) D. A. Sutton, TEXAS TOADFLAX, BLUE TOADFLAX.

Annual, taprooted, several-stemmed at base, decumbent with  $\pm$  erect inflorescences, in range 10–50 cm tall; shoots with only cauline leaves, mostly glabrous but portions of shoots sparsely glandular-hairy with short hairs. **Stems:** cylindrical, to 2 mm diameter, tough. **Leaves:** helically alternate but opposite (whorled) at the basal node of each shoot and on decurrent shoots, simple, sessile, without stipules; blade elliptic or linear to narrowly oblanceolate or oblanceolate,  $2.5\text{--}25 \times 1\text{--}2.2$  mm, tapered at base, entire and sometimes margins slightly inrolled under, acute to obtuse at tip, with only midrib visible and slightly raised on lower surface. **Inflorescence:** raceme, terminal, many-flowered, flowers alternate but often not strictly helical, closely arranged at tip by developing conspicuous internodes in fruit, bracteate, glabrate with scattered short glandular hairs; peduncle to 300 mm long; rachis straight; bractlet subtending pedicel cupped-lanceolate to cupped-oblanceolate,  $2.5\text{--}3.8 \times$  ca. 1 mm, green or tinged purplish with colorless membranous margins, persistent; pedicel 2.5–3 mm long or increasing slightly in fruit, purple with scattered glandular hairs, ascending, straight, and green in fruit. **Flower:** bisexual, bilateral, 6–7 mm across, spurred on lower side; **calyx** 5-lobed; tube cup-shaped,  $\pm 0.5$  mm long, green; lobes narrowly lanceolate, 1 lobe shorter than other lobes, ca. 3 mm long, green or tinged violet, with colorless margins, having some glandular hairs; **corolla** 2-lipped, 5-lobed, in range  $\pm 10$  mm long + backward-pointing spur; tube somewhat bell-shaped, ca. 2 mm long, white with patches of pale violet; spur arising  $\perp$  from lower side of tube at base, exerted between lower calyx lobes and curving forward or becoming straight at maturity, long-tapered, in range 4.5–6 mm long, light violet, rounded at tip, collecting nectar; throat closed by a palate on lower side, ca. 3.5 mm long, flat on lower side, violet with many darker parallel veins, lower side of throat internally with a beard of colorless hairs around and closing throat entrance; lips at bases bent  $90^\circ$  from throat, blue-violet with prominent, darker vein network; upper lip 2-lobed, ascending, ca. 3.5 mm long, margins parallel, generally with 9 principal veins, lobes ca.  $1.3 \times 1.5$  mm, rounded at tip; lower lip 3-lobed, somewhat descending, with lateral lobes spreading, lobes 3–3.5 mm long and wide, central axis of lip with trough between pair of broad ridges, the trough at base with continuation of beard from throat; **stamens** 4, lacking staminode, fused to base of corolla tube, the lower 2 stamens  $>$  upper 2 stamens; filaments of lower stamens attached to lower side of tube, curved and converging toward center and somewhat arching upward, 2.5–3 mm long and white, filaments of upper stamens attached to upper side of tube, crooked but curving outward,  $\pm 1.5$  mm long and pale violet, glabrous, filament bases enlarged and papillate; anthers dorsifixed, dithecal, 0.6 mm long, yellow, pair of long stamens remaining attached along inner edge, longitudinally dehiscent toward stigma; pollen orange-yellow; **nectary disc** beneath ovary, crownlike of 2 semicircular segments the same width as ovary, ca. 0.2 mm tall, green; **pistil** 1, 2–2.2 mm long; ovary superior,  $\pm$  broadly obovoid and shallowly 2-lobed above midpoint,  $1 \times 0.8$  mm, glossy green with faint veins, lacking hairs, 2-chambered, each chamber with many ovules; style straight and fleshy,  $\pm 1.1$  mm long, white below and violet above midpoint, not tapered, lacking hairs; stigma short 2-lobed, overall appearing capitate and compressed elliptic, white-papillate. **Fruit:** capsule, loculicidal, each chamber dehiscent by a slit at top, many-seeded, subspheroid shallowly 2-lobed at top, in range  $3\text{--}3.3 \times 2.2\text{--}2.4$  mm, tan, thin-walled, depressed at top with a pyramidal beak (style) 0.4–0.6 mm long, the beak pale violet

before drying. **Seed:** prismatic with 4–7 rounded angles,  $\pm 0.5$  mm long, brown, minutely bumpy (tuberculate). Mid-March–mid-May.

Native. Annual sometimes observed on recent burns of chaparral, most commonly at SMMNRA Cheeseboro-Palo Comado (SH). *Nuttallanthus texanus* formerly was treated as either *Linaria canadensis*, blue toadflax, that is a wideranging species of Europe and North America, as a variety of blue toadflax, or a distinct species of *Linaria* having bumpy (tuberculate) seeds. After Sutton, it is now regarded as belonging to a different genus, as well as a native in California. This is one of the comparatively few species in range having a spur on the perianth.

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