

Vascular Plants of Williamson County

Lithospermum incisum – NARROWLEAF PUCCOON [Boraginaceae]

Lithospermum incisum Lehm., NARROWLEAF PUCCOON. Perennial herb, taprooted, 1–several(–many)-stemmed at base, with ascending branches, in range to 28 cm tall; shoots with only cauline leaves, leaves overlapping, conspicuously hirsute, the stiff hairs with blisterlike bases (pustulate). **Stems:** cylindrical, to 3 mm diameter, internodes to 10 mm long, with 2 faint decurrent ridges from leaf. **Leaves:** helically alternate, entire and sessile, without stipules; petiole indistinct from blade (lower leaves); blade oblong or oblanceolate-linear to linear or linear-oblong, < 25–110 × 3–11 mm, entire or when water-stressed somewhat inrolled to lower side, acute and callous at tip, 1-veined with midrib sunken on upper surface and raised on lower surface. **Inflorescence:** leafy, unexpanded cyme, terminal, initially with showy open (chasmogamous) flowers in early spring and several weeks later with small closed (cleistogamous) flowers, bracteate, hirsute; bract and bractlet subtending flower leaflike, < 30 mm long; pedicel to 2.5 mm long, densely hirsute. **Chasmogamous flower:** structurally bisexual, radial, 14–20 mm across; homostylous; **calyx** 5-lobed, green, hirsute on exposed surfaces; tube cup-shaped, < 0.5 mm long; lobes ascending, unequal, 3 long, 1 somewhat shorter, 1 ca. 3 mm shorter, linear, ca. 5–8.5 mm long on each flower, 1-veined; **corolla** 5-lobed, trumpet-shaped (salverform); tube-lower throat cylindrical, 23–38 × 2–2.5 mm, slightly wider around ovary, whitish at base to pale greenish yellow at stamens, exposed surfaces ± hirsute with ascending hairs; upper throat wide-flaring, 4–5 mm long, bright yellow, with some hairs on lower surface; appendages opposite lobes at orifice, shallowly 2-lobed or not, ca. 0.5 × 0.8 mm, dark yellow, glandular and short-papillate; lobes widely spreading, obovate and wavy on margins, 4–6.5 mm long, light yellow, overlapping at base, coarsely fringed on margins, variously curved and folded, upper surface short-papillate; **stamens** 5, fused to tube below spreading bright yellow throat at somewhat different heights on lower throat of corolla (3–5.5 mm below corolla appendages); filaments < 0.4 mm long, white; anthers initially positioned below level of stigma, dorsifixed, dithecal, 1.7–2.1 mm long, pale yellow, longitudinally dehiscent; pollen pale yellow; **nectary disc** surrounding base of ovary, ca. 0.2 mm long, light green, nectar-producing; **pistil** 1; ovary superior, deeply 4-lobed, lobes obtuse-ovoid, ca. 0.6 mm long, light green, glabrous, each lobe with 1 ovule; style arising from center of ovary lobes, straight and slender, ± 20(–25) mm long, white, glabrous, compressed approaching stigma lobes; stigma lobes 2, spheroid, exerted at least 1 mm when tube still elongating becoming included as tube > pistil. **Cleistogamous flower:** bisexual, radial, ca. 2 mm across; homostylous; **calyx** 5-lobed, green, hirsute on exposed surfaces; tube cup-shaped, < 0.5 mm long; lobes unequal, 3 long, 1–2 shorter, linear, ca. 5–8 mm long, 1-veined; **corolla** 5-lobed, 5 mm long; tube ca. 2 mm diameter and whitish around ovary, throat cylindrical, ca. 1.5 mm diameter, and ± yellow above ovary, hirsute above midpoint; corolla lobes touching (not spreading), < 0.5 mm long; **stamens** 5, attached to top of corolla tube, ca. 2 mm long; filaments short, white; anthers above level of stigma, dorsifixed, dithecal, ca. 1 mm long, pale yellow, longitudinally dehiscent; pollen pale yellow; **nectary disc** surrounding base of ovary not functional; **pistil** 1, 2 mm long, included and never exposed to pollinators; ovary superior, deeply 4-lobed, lobes obtuse-ovoid, ca. 0.6 mm long, light green, glabrous, each lobe with 1 ovule; style arising from

center of ovary lobes, straight and slender, ca. 2 mm long, white, glabrous; stigma spheroid, white. **Fruits:** nutlets, of chasmogamous flower (2–)3–4, of cleistogamous flower 1(–4), ovoid, 3.5–4 × 2–2.2 mm, glossy pale green drying whitish, broadly attached above nectary, with ridgelike edge on inner side, obtuse at tip, having widely spaced, deep pits; of chasmogamous flower persistent gynobasic style 20–25 mm long, of cleistogamous flower persistent gynobasic style ca. 2 mm long = midpoint of nutlet; persistent calyx with lobes 5–8.5 mm long, surfaces hirsute.

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