

Vascular Plants of Williamson County

Lupinus texensis – TEXAS BLUEBONNET, TEXAS LUPINE [Fabaceae]

Lupinus texensis Hooker, TEXAS BLUEBONNET, TEXAS LUPINE. Annual, taprooted, rosetted, 1(–several)-stemmed at base, with ascending branches from principal shoot, erect, in range to 40 cm tall; shoots with basal leaves and cauline leaves, foliage some velveteen, having short to long soft hairs, lacking glandular hairs. **Stems:** broadly ridged with 2 lines 180° apart, to 5 mm diameter, ridge descending from each leaf, tough, green, with upward-curved long and short hairs (not truly strigose). **Leaves:** helically alternate, palmately 1-compound with 5–6 leaflets, long-petiolate, with stipules; stipules 2, attached to base of petiole, ascending to suberect, narrowly triangular-linear to linear, 7–11(–15) × 0.5–1.2 mm, 1-veined off-center, villous with hairs to 2 mm long especially at tip; petiole lacking pulvinus at base, shallowly channeled to midpoint and cylindric above midpoint, to 85 mm long, with upward-arched long and short hairs; petiolules = pulvinus, to 1.2 mm long, light green, hairy; blades of leaflets subequal, oblanceolate to obovate, 25–35 × 3.5–13 mm, ± folded upward from midrib, tapered at base, entire, obtuse to rounded at tip, pinnately veined but only midrib distinct, upper surface glabrous to sparsely pilose, lower surface villous with upward-pointing hairs to 1.2 mm long. **Inflorescence:** raceme, terminal on primary shoots, to 250 mm long, 20+-flowered, flowers alternate, bracteate, short-tomentose; peduncle erect, cylindric, 15–45 mm long increasing 2× in fruit, hollow; rachis slightly angled with projecting bractlet bases; bractlet subtending pedicel, cupped-ovate to cupped-lanceolate to cupped-ovate, 2.5–4 mm long, somewhat papery, green (colorless), soft-hairy on lower surface, abscising from persistent base, base becoming part of swollen pedicel in developing fruit; pedicel initially spreading in fruit ascending, cylindric, 4.5–7.5 mm long increasing 2× in fruit, short-tomentose to tomentose. **Flower:** bisexual, bilateral, pealike (papilionaceous), < 5–10 mm across; sweetly fragrant; **nectary** nectar-producing receptacle below ovary, diffuse, ± circular region between base of filaments and pistil; **calyx** 2-lipped, 3-lobed, 4–5 mm long, green or with purple or violet (white-flowered forms), short-strigose to strigose; tube bell-shaped, 1.5–2.5 × 2 mm; upper lip appressed to banner, 2-lobed to midpoint with 90° sinus, lobes deltate; lower lip 1-lobed with 3 teeth at tip, keeled and canoelike with raised midvein, 4.5–6 mm long, mostly purple or violet, middle tooth the largest; with 2 appendages next to principal sinuses, appendages triangular, 0.7–2 mm long, purplish or violet, hairy; **petals** 5; banner roundish (when flattened), 9–14 mm, lacking claw, initially folded over wings in bud but at anthesis oriented vertical with margins reflexed backward, short-notched at tip, having a pair of longitudinal ridges along midfurrow (± keeled), dark blue to violet-blue at margins (white in white-flowered form; horticultural forms with red) grading to white (pale blue) in center, spotted with orange-brown dots and dashes; wings 2, fused on outer margin on lower edge from claw completely across end to top side (hiding keel), clawed, claws linear, ca. 1.5 mm long, white or greenish at base, limbs ovate rounded at tip, 9.5–10 × 4–7.5 mm (claw not included), dark blue or violet-blue to paler approaching base (white in white-flowered forms; horticultural selections with red), veins visible, ± lobed at base but not locked with keel, basal lobe textured and dimpled, outer surfaces glabrous or with several weak short hairs; keel of 2 petals fused on lower edge from tip ca. 3/4 nearly to claw, clawed, 8.5–11.5 mm long, claws linear, 1.5–2.5 mm long, white, limbs crescent-shaped, 7–9 × ± 3 mm,

white or blushed pale purple at base to deep violet approaching to tip, glabrous on upper margins; **stamens** 10, monadelphous (10 filaments fused into column), fused to base of banner; filament column compressed side-to-side, ± 6 mm long, whitish and pale green, filament free portions alternatively long and short, $2.8\text{--}4.5 \times 0.2\text{--}0.25$ mm long (long stamens) and $1.7\text{--}2.5 \times 0.25$ (short stamens), white aging pale green; anthers basifixed, dithecal, $0.35\text{--}0.4$ mm long (long stamens) and $2.1\text{--}2.3$ mm long (short stamens), yellow-orange, longitudinally dehiscent first with anthers of short stamens while in bud; pollen yellow-orange, copious, sticky; **pistil** 1, $8.5\text{--}10$ mm long, sessile; ovary superior, oblong-fusiform, ca. $3 \times 0.7\text{--}0.8$ mm, green, pubescent with ascending hairs along lower edge, 1-chambered having to 7 ovules attached to upper side; style curved beyond filament column, whitish and pale green on curve, glabrous except with a ring of minute hairs just below stigma; stigma terminal, ca. 1.5 mm above anthers, colorless, minutely papillate. **Fruit:** pod (legume), sessile, spreading to ascending, dehiscent by 2 valves separating lengthwise and twisting, typically 3–6-seeded, oblong bulging at seeds, $35\text{--}47 \times 7\text{--}9$ mm, long-hairy and velveteen; with persistent style curved upward. **Seed:** square to roundish in outline compressed side-to-side, $3.8\text{--}4.8 \times 3.3\text{--}4.6 \times 2$ mm, dull background cream-colored to orangish mottled with black and gray or orangish dots (color mosaic highly variable within population), with hard seed coat; hilum indented next to a corner.

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