

Vascular Plants of Williamson County
Lobelia cardinalis – CARDINAL-FLOWER [Campanulaceae]

Lobelia cardinalis L., CARDINAL-FLOWER. Perennial herb, rhizomatous, 1-stemmed or several-stemmed at base, decumbent to ascending, in range to 85 cm long; shoots with abundant cauline leaves, nearly glabrous; latex cloudy-milky. **Stems:** to 10-ridged aging cylindrical on lower stem, to 8 mm diameter, with 2 ridges descending from each leaf, yellowish green, sparsely short-hairy aging with few visible hairs. **Leaves:** helically alternate, simple, sessile or essentially so (petiole not well defined), without stipules; petiole if accepted hemicylindric, < 5 mm long, mostly with narrow blade wings, short-hairy on upper side (also on adjacent base of blade); blade oblanceolate to elliptic of linear-lanceolate (approaching inflorescence), in range 40–135 × 7–25 mm, tapered at base, lower-serrate nearly base-to-tip to remotely toothed but often 1–3 remote teeth between serrate teeth, acute at tip, pinnately veined with principal veins somewhat sunken or not sunken on upper surface and raised on lower surface, mostly glabrous. **Inflorescence:** leafy raceme, terminal, in range 20–60+-flowered, closely spaced at tip (ca. 2 mm apart) but internodes 2× in fruit, with flowers inverted by twisting 180° near pedicel base, bracteate; bractlet subtending pedicel leaflike, linear-lanceolate and sessile, the lowest 45 × 7 mm decreasing upward to linear and ca. 7 × 0.5 mm; rachis ridged, with 2 ridges descending from each bractlet, 1 ridge from pedicel somewhat winglike; pedicel cylindrical, at anthesis 5–7.5 mm long with twist near base increasing 2× and straight in fruit, densely puberulent or short-hairy approaching base, at base with a pair of bracteoles somewhat awl-shaped 1.5–2 mm long. **Flower:** bisexual, bilateral, ca. 15 mm across, in range 25–30+ mm long; hypanthium loosely fused to ovary wall, irregularly hemispheroid covering lower 2/3 of ovary, at anthesis 2.5 × 5 mm enlarging to 5 × 7.5 mm in fruit, green, glabrous and inconspicuously veiny, low-crownlike around wide portion of ovary; **sepals** 5, suberect from crownlike rim of hypanthium, flared at base and long-acuminate above, at anthesis 8–9 × 1 mm, green or reddish approaching tip, with several short hairs, increasing to 12–15 × 2 mm in fruit, 1-veined; **corolla** “2-lipped,” 5-lobed; “tube” = a cylindrical sheet free base-to-top, flared 4.5–5 mm diameter at base, irregularly ribbed, to 21 mm long, pale rose-red, outer surface and margins puberulent, inner surface short-hairy especially along veins; “upper lip” (inverted) actually a pair of lobes at end of sheet continuous with margins of sheet (= laterals of 3-lobed lip); limb in range light strawberry to scarlet with darker midline, strap-shaped to oblanceolate ascending and arching backward, mostly 8–10 × 1.5 mm; 3-lobed lip, throatlike floor ca. 3 mm long having a pair of mounds (indentions on lower surface), limb fan-shaped and flattened, ca. 15 mm wide, having a central lobe and diverging lateral lobes, the lobes elliptic-oblong to narrowly obovate, mostly 8–10 × 3–4 mm; **stamens** 5, totally fused around free portion of pistil; filament column flared at base and 3-sided above ovary, 16–23 mm long, ca. 2 mm wide at midpoint, pale rose-red, puberulent, partially filled with thin nectar; anthers column, 3.5–4 mm long and curved above midpoint toward 3-lobed lip, outer surface gray-green to bluish gray, with short hairs above midpoint on curved surface, minutely papillate at top, longitudinally and inwardly dehiscent on inner side; pollen in large mass surrounding top of pistil, light yellow; **pistil** 1, = flower, exerted within staminal column (androecium); ovary hemi-inferior, ovoid, at anthesis ca. 5.5 × 5.5 mm having 1/3 above hypanthium, upper portion angled conic, light

green, with whitish **nectary disc** a rim skirting top of ovary; style straight, cylindric, pale green aging reddish within anther column, having a subterminal dense ring of white hairs defining stigma lobes, the hairs 0.6–0.7 mm long and partially exposed; stigma lobes 2, included within anthers later slightly exerted, lip-shaped, papillate on margins, light rose. **Fruit:** capsule, loculicidal, lower portion hidden by hypanthium (separable from fruit wall) and upper portion covered by persistent, papery corolla, dehiscent at tip by 2 valves from tip to level of hypanthium, many-seeded, ovoid, ca. 9 × 6 mm but pinched somewhat side-to-side above midpoint, with beak (persistent lower style); capsule also somewhat concealed by persistent, ascending sepals arising from crownlike hypanthium. **Seed:** irregular sausage-shaped (oblong), in range 0.6–0.7 × 0.3 mm, yellowish brown, having shallow pits and wrinkles from collapsed cells.

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