

Vascular Plants of Williamson County

Solidago gigantea – GIANT GOLDENROD, LATE GOLDENROD [Asteraceae]

Solidago gigantea Aiton (if recognized, var. *serotina* (Aiton) Cronq.; this population likely hexaploid), GIANT GOLDENROD, LATE GOLDENROD. Perennial herb, clonal, rhizomatous, fibrous-rooted, in range 1-stemmed from rhizome tips, commonly unbranched below canopy or branching when canopy damaged, ascending to reclined (lodged by raging water), in range to 250+ cm long; shoots lacking basal leaves at flowering and with many cauline leaves, all lower leaves absent at flowering, principal cauline leaves > internodes, longest at or below midplant, nodes mostly lacking emerging axillary shoots (not fastigate or fasciculate), glabrous to glabrate, lacking glandular hairs on vegetative plant, not resinous; creeping rhizomes horizontal, often 200+ mm long, 3–5 mm diameter, forming nodal adventitious roots, upright rhizome to 15 mm diameter. **Stems:** initially weakly ridged aging cylindrical, to 13 mm diameter, with 3 ridges descending from each leaf, tough and woody, glabrous or sparsely short-strigose with upward-pointing hairs, stems light green but where exposed to sun often purple-red, leaf bases raised, the lowermost stems with vertical splits forming tannish periderm. **Leaves:** helically alternate, simple, subsessile to sessile, without stipules; petiole indistinct from blade; blade narrowly lanceolate to linear-elliptic or lanceolate-elliptic or lanceolate, lower leaves in range to 160 × 15(–20) mm decreasing gradually upward to lanceolate and < 40 × 7 mm approaching inflorescence, long-tapered at base, entire and stiffly short-ciliate but especially on cauline leaves below midplant minutely low-serrate with pointed teeth < 1 mm long on margins, the teeth 2–4/10 mm and below a short U-shaped sinus, acuminate to acute with short point at tip, in range ± 1-veined mostly with a pair of weakly defined lateral veins above base, midvein raised on lower surface (if 3-veined, all raised), surfaces totally glabrous or glabrate with scattered, delicate, inconspicuous appressed short hairs, with a conspicuous minor vein network. **Inflorescence:** heads, in terminal, leafy, paniclelike array to 200 mm long, principal axis having divergent spreading to recurved primary branches to 100 mm long decreasing upward, each primary branch bearing alternate secondary branchlets each with 1–several heads in a cymelike cluster, array at maturity with 50+ heads, head radiate, ca. 7 mm across, in range of 10–24 pistillate ray flowers in several series (each subtended by a phyllary) and having ascending to spreading corolla limbs and 7–13 bisexual disc flowers, bracteate; axis of panicle and primary branches conspicuously short-hairy and with minute stalked glandular hairs, principal axis stemlike, somewhat ridged, light green, in range moderately short-hairy; bract subtending primary branch leaflike, lanceolate, < 40 mm long decreasing upward; bract subtending secondary branchlets at the lowest node to 15 × 2.5 mm decreasing upward to < 4 mm long, green, 1-veined; bract subtending peduncle < branch bract, fringed and with minute stalked glandular hairs at tip; peduncle 1–5 mm long, short-hairy and with minute stalked glandular hairs, at top with ca. 5 triangular bracts grading to involucre, lanceolate, 1–1.5 mm long; **involucre** in range broadly bell-shaped, 4–4.5 × 2.7–3.2 mm, of ca. 25 unequal phyllaries in 3–4 series, outermost phyllaries triangular, ca. 1 × 0.3 mm increasing upward to oblong or lanceolate-oblong to oblanceolate-oblong, to 4.3 × 0.7 mm, light yellowish green with narrow margins short-ciliate and having inconspicuous short-stalked glandular hairs approaching tip, acute to obtuse often with minute fringe at tip. **Ray flower:** bilateral, ca. 1 mm across (pappus); **calyx (pappus)** of ca. 30 capillary bristles in 2 tight series fused at base as a short ring,

often crumbled, in range 2.2–2.8 mm long, white, spreading in fruit and persistent; **corolla** minutely 1–2-notched forming minute teeth (rarely 2-lobed), to 5 mm long, lacking hairs; tube cylindric, to 2×0.1 –0.15 mm, colorless to yellowish; limb ascending to spreading, oblanceolate to oblong, mostly 1.8 – 3×0.4 –0.75 mm, yellow, faintly parallel-veined, when lobed limb wider and the sinus to midpoint; **stamens** absent; **pistil** 1, 4.5–5 mm long; ovary inferior, top-shaped, ca. 0.8×0.3 mm, whitish, 10-ribbed with ascending short hairs along ribs, 1-chambered with 1 ovule; style exserted, ± 4 mm long, light yellow, 2-branched, the branches ascending, ca. 0.8 mm long. **Disc flower:** radial, 1–1.5 mm across (corolla); **calyx (pappus)** of ca. 30 capillary bristles in 2 tight series fused at base as a short ring, mostly straight, in range 2.5–3.1 mm long (often > corolla throat), white, spreading in fruit and persistent; **corolla** 5-lobed, 3.5–3.8 mm long, lacking hairs; tube + narrowly funnel-shaped throat ca. 2.5 mm long with tube 1 mm long, pale yellowish, throat 0.6 mm across at orifice, having 5 raised yellow veins to sinuses; lobes ascending to spreading, blunt-triangular, in range 0.9 – 1.2×0.35 mm, yellow, 1-veined, often with minute body at tip; **stamens** 5, attached at top of corolla tube; filaments 1.2–1.5 mm long, whitish; anthers fused into cylinder surrounding style, basifixed, dithecal, 1.4–1.6 mm long including nearly colorless appendages, yellow, longitudinally dehiscent; pollen light yellow; **pistil** 1, at pollination within anthers after with stigmatic branches exserted; ovary inferior, top-shaped, ca. 0.8×0.3 mm, whitish, 10-ribbed with ascending short hairs along ribs, 1-chambered with 1 ovule; style 2-branched, the stigmatic branches ascending, ca. 0.8 mm long. **Fruits:** cypselae (achenes), in range aborted (apparently clone self-incompatible), narrowly obconic, 1.3–1.7 mm long, ca. 10-ribbed and ribs with ascending short hairs; pappus of ca. 30 spreading, whitish capillary bristles 2.2–3.1 mm long.

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