

## Vascular Plants of Burnet County

*Grindelia squarrosa* var. *nuda* – RAYLESS GUMWEED, CURLYTOP GUMWEED [Asteraceae]

*Grindelia squarrosa* (Pursh) Dunal var. *nuda* (A. W. Wood) A. Gray (syn. *Grindelia nuda*, *G. aphanactis*), RAYLESS GUMWEED, CURLYTOP GUMWEED. Biennial to short-lived shrub, taprooted, not rosetted, 1-stemmed at base or at flowering with to 4 principal branches, with ascending, often leafless branches below flowering canopy, erect to ascending, in range 35–150 cm tall; shoots with petiolate basal leaves and mostly sessile cauline leaves, basal leaves absent at flowering, foliage on plant not resinous, strongly aromatic when handled or crushed, vegetative shoots glabrous and conspicuously gland-dotted. **Stems:** angled with 2–3 fine ridges descending from each leaf, light green aging straw-colored to brownish, internodes 5–15 mm long (longer on lower axes), glabrous to glabrate (along ridges), gland-dotted; lower stems woody, on perennial individuals woody stems to 25 mm diameter, periderm fibrous, brown and gray. **Leaves:** helically alternate, simple and sessile, without stipules; blade in outline oblong or oblong-obovate to ovate or oval, leaves at flowering 10–45+ × 4–18+ mm, subcordate to somewhat clasping at base, regularly serrate-crenate with teeth obtuse with resin gland at top, margin base-to-tip teeth 4–7 per cm, (15+ teeth per margin), roundish to obtuse at tip, pinnately veined, with an elaborate network of minor veins, resin glands abundant, slightly sunken, at minor vein junctions. **Inflorescence:** heads, in range terminal and solitary on ascending, leafy branchlet, head radiate, mostly 15–30 mm across (involucre), lacking ray flowers and having 150–200+ bisexual disc flowers, bracteate, glabrous; peduncle (leafy branchlet) 60+ mm long, glabrous, gland-dotted, subtending head having several green, tentaclelike bracts transitional to involucre, bract 11–13 × 0.5–0.7 mm, in nature initially not sticky (becoming conspicuously resinous when harvested and stressed); **involucre** hemispheroid, conspicuously gland-dotted and at some point having resin on surface, with 100+ helically alternate phyllaries in 5–8+ series, free portions initially straight to slightly curved, spreading to ascending, tentaclelike, fleshy and ± cylindrical with resin gland at obtuse tip, in graded series from ca. 10–13 mm long decreasing incrementally inward, of one inner series with free portion < 2 mm long and the innermost series lacking a free portion, lower portion cupped in a graded series from < 2 × < 1 mm increasing to narrowly wedged-shaped and 2-lobed, 7 × 2.5–3 mm lacking an upper portion, the innermost series appressed to flowers having phyllaries with lobes flat, triangular, and 1–2 mm long; receptacle nearly flat (scarcely convex), 12–15 across, lacking bractlets (paleae), pitted and crownlike surrounding each disc ovary tightly nested by crown, crown to 0.7 mm tall with acute teeth on margins, white, glabrous. **Ray flower:** absent. **Disc flower:** somewhat radial, 2 mm across; **calyx (pappus)** of 2 opposite, smooth, capillary “bristles,” formed on ledges of ovary radially oriented from center of head, 4–6 mm long and < corolla, whitish, flattish on 1 side, with upward-pointing barbs on margins, easily detached; **corolla** 5-lobed, of peripheral flowers ca. 6 mm long increasing to 7.5 mm long for central flowers; tube cylindrical, 2–2.3 × 0.45–0.5 mm, white; throat narrowly funnel-shaped, to 2 mm diameter, colorless; lobes erect to suberect, triangular, ca. 0.7 mm long, yellow; **stamens** 5, attached at top of corolla tube, anthers at anthesis included becoming exerted with anthers ± fully exposed; filaments becoming threadlike and elongating to 7 mm long (= corolla length), colorless at base to bright yellow or aging orange-yellow; anthers basifixed, dithecal, 2.5–3

mm long including appendage, bright yellow to golden yellow, longitudinally dehiscent; pollen bright yellow to orange-yellow; **pistil** 1; ovary inferior, shield-shaped  $\pm$  4-sided somewhat compressed side-to-side, ca.  $1.0 \times 0.85$  mm, white, glabrous, 1-chambered with 1 ovule; **nectary disc** surrounding base of style, ca. 0.4 mm long, colorless; style 2-branched, elongating to 9 mm long and exserted, initially concealed by anthers then exposed after anthers dehisce (exserted 2–3 mm), translucent at base changed to bright yellow at fork later branches orange-yellow, the branches 1.5–2 mm long, stigmatic and conspicuously papillate-hairy from midpoint. **Fruits:** cypselae (achenes) monomorphic (disc flowers),  $\pm$  shield-shaped in outline and often with 4 principal faces (rhombate in  $\times$ -section) or compressed side-to-side, in range  $2.5\text{--}4.3 \times 1.6\text{--}2.6$  mm, straw-colored to tan, maturing with 1 or more faces parallel-ribbed, with rim higher at positions of the 2 pappus “bristles”; pappus easily dislodged, bristle having a flat side, 4–6 mm long, white, inconspicuously barbed along edges.

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