

Vascular Plants of Williamson County

Gaillardia pulchella – INDIAN BLANKET, FIREWHEEL [Asteraceae]

Gaillardia pulchella Foug., INDIAN BLANKET, FIREWHEEL. Annual, taprooted, not rosetted, 1-stemmed at base, unbranched or typically with ascending or spreading lateral branches at midplant, in range 6–75 cm tall; shoots with only cauline leaves, stems and foliage short-hairy with appressed to arching upward. **Stems:** 5-ridged, to 4 mm diameter, 3-ridged from leaf, tough. **Leaves:** helically alternate, simple, petiolate (leaves of primary shoot) and subsessile to sessile and somewhat clasping, without stipules; petiole slender, flattened top-to-bottom, to 15 mm long; blade lanceolate or ovate to elliptic or oblong, 12–70(–85+) × 4–13(–17) mm, broadly tapered to tapered or slightly lobed at base, entire (with several low teeth), acute at tip, pinnately veined with midrib raised on both surfaces.

Inflorescence: head, solitary, terminal with head oriented horizontally on long peduncle, 1–3 heads per shoot, head radiate, 18–50 mm across, of (3–)5–13 neuter ray flowers (lacking stamens and style) and (6–)15–many bisexual disc flowers, disc 4–17 mm across, bracteate; peduncle 8-ridged, 43–130+ × 1 mm, green, short-hairy sometimes with basal cell reddish, hollow, often with 1–2 leaflike bracts along axis, lacking bracts at top (calyculus); **involucre** somewhat saucer-shaped to platelike (not evident) with spreading and reflexed phyllaries ⊥ lower portion, to 29 mm across, phyllaries (5–)8–28+ in (1–)2–4 series, indented at base, phyllaries fused < 1 mm, lower portion tightly appressed and obovate slightly cupped upward, mostly 3–4.2 × 1.5–2.8 mm, of outer phyllaries short and wider than inner phyllaries, greenish with colorless or red-purple margins, glabrous, lower surface sometimes with colorless, sessile glandular hairs, upper portion acuminate lanceolate-linear to narrowly triangular, (4–)8–14 × 1–2 mm decreasing upward, green, conspicuously ciliate with ascending jointed nonglandular hairs to midblade and appressed hairs (strigose-ciliate) above midblade, upper surface glabrous or with short, upward-arching hairs, lower surface with some jointed hairs including some long hairs along midvein, surfaces dotted with colorless heads of glandular hairs; receptacle domed, ovary surrounded by 4–6 ascending, needlelike hairs (setae), mostly 1.5–4.5 mm long, white, many setae minutely 2-forked at tip. **Ray flower:** bilateral, 4–11 mm across; **calyx (pappus)** scales 7–8 in 2 series, spreading, scale with bristlelike tip (aristate) to 5.5 mm long, scarious portion ± ovate, 1.5–2 × 0.7–1.3 mm, acute to short-notched at top, with only midvein, the midvein raised and minutely scabrous on back (lower) surface, the bristle 2–3 mm long; **corolla** (2–)3-lobed, 2-colored or 3-colored (variable with rare individuals lacking genetic ability to produce red pigment (yellow form) and others no yellow pigment); tube flattened top-to-bottom, thick and ± solid, (0.6–)2–2.5 mm long, white (yellow form) or scarlet above midpoint; limb fan-shaped, 6–20 mm long, with triangular lobes to 6.5 × 2.2–3.5 mm, typically scarlet or orange-red at base to scarlet above midpoint (white in yellow form), above and lobes typically light to brown yellow, veins (7)9 at base, red (darker than background), the central veins forked below sinuses, having 4 veins entering each lobe but only 3 converging (subterminal) to 1 vein into point at obtuse tip, upper surface glabrous and with principal veins sunken, lower surface with beadlike short hairs and scattered, short-stalked glandular hairs; **stamens** absent; **pistil** 1, presumed sterile; ovary inferior, narrowly edge-shaped, 2.5 × 0.8 mm, green, 1-chambered; **nectary disc** at top of ovary, short mound on vestigial style, white, producing thin nectar; style

absent. **Disc flower:** radial, (1.5–)3–4 mm across, (6–)8.5–9 mm long; **calyx (pappus)** scales (6–)7–9(–11) in 2–3 series, ascending to suberect, scale with bristlelike tip (aristate) 5.5–7 mm long, scariosus portion ovate or obovate (oblanceolate), (1–)1.5–2.5 × 0.7–1.3 mm, acute to short-notched at tip, with only midvein, the midvein raised and minutely scabrous on back (lower) surface, the bristle to 4.5 mm long (rarely short or absent); **corolla** 5-lobed; tube cylindric, ca. 1.3 × 0.4–0.5 mm, 5-veined, light yellow-green, glabrous; throat narrowly bell-shaped conspicuously wider than tube, ca. 5 × 1.7 mm, colorless panels with 5 light yellow-green, raised veins to sinuses, gland-dotted with scattered short-stalked glandular hairs; lobes triangular, ca. 2 × 1 mm + extended hairs, bright yellow (not in heads lacking yellow) aging scarlet, with beaded hairs; **stamens** 5, attached at top of corolla tube; filament slender, 1.4–1.9 mm long, light yellow-orange; anthers fused into cylinder surrounding style, basifixed, dithecal, ca. 4 mm long including acuminate-lanceolate appendages 1.5 mm long, reddish to yellow-orange with glossy burgundy (reddish) appendages, longitudinally dehiscent; pollen light orange; **pistil** 1; ovary inferior, obovoid, 1 mm long, white, mostly with 4 raised veins above midpoint, 1-chambered with 1 ovule; **nectary disc** surrounding base of style, 0.2 mm long, orangish; style to 7 mm long, yellowish or pale yellow at base to pale orange above, 2-branched at midpoint, the stigmatic branches exerted, widely spreading, crimson (very pale yellowish in yellow form). **Fruits:** cypselae (achenes), somewhat dimorphic, pappus firmly attached, of scariosus scale with colorless, terminal bristle (aristate) scabrous having upward-pointing teeth, attached at fruit base with many ascending, stiff, straight hairs covering walls, the hairs (1–)1.5–2.5 mm long; of ray flower club-shaped somewhat 3-sided to compressed side-to-side, 3–3.5 × 1.3–1.5 mm, dark brown, the hairs < fruit so upper fruit wall fully exposed, of ray flower scales 7–8 in 2 series, spreading to widely spreading, scale to 5.5 mm long, scariosus portion ± ovate, 1.5–2 × 0.7–1.3 mm, acute to short-notched at top, with only midvein, the midvein raised and minutely scabrous on back (lower) surface, the bristle 2–3 mm long; of disc flower inversely pyramidal mostly 4-sided, 1.5–2 × 1.1–1.5 mm, brown or light tan and pale brown mottled with black, the hairs mostly obscuring fruit wall, at top with short, wavy rim outside pappus, of disc flowers scales (6–)7–9(–11) in 2–3 series, ascending to suberect, scale 5.5–7 mm long, scariosus portion ovate or obovate (oblanceolate), (1–)1.5–2.5 × 0.7–1.3 mm, acute to short-notched at tip, with only midvein, the midvein raised and minutely scabrous on back (lower) surface, the bristle to 4.5 mm long (rarely short or absent); on receptacle fruit surrounded by 4–6 ascending, needlelike hairs, 3–4 mm long, white aging cream-colored.

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