

Vascular Plants of Williamson County

Euphorbia bicolor – SNOW-ON-THE-PRAIRIE [Euphorbiaceae]

Euphorbia bicolor Engelm. & A. Gray, SNOW-ON-THE-PRAIRIE. Annual, taprooted, not rosetted, 1-stemmed at base, principal axis erect to suberect, at or above midplant forked usually forming a set of 3 spreading, subequal primary branches (strictly 1-stemmed with terminal inflorescence), the primary branches to 240 mm long and usually 3-forked at top producing secondary branches and those potentially successive forks, branches decreasing upward, ca. 3-forked (2-forked) at top with terminal inflorescences on each shoot, 40–110 cm tall; monoecious; shoots with only ascending to spreading cauline leaves, the leaves overlapping 2–3 nodes, axes light yellow-green and foliage dull green and not glaucous, the uppermost leaves and bracts bi-colored with blade trimmed with conspicuous white margin, leaves and young stems suedelike, conspicuously and densely villous and short-villous with white hairs to 3 mm long leaning upward; latex white, copious. **Stems:** ± low-ridged, to 10 mm diameter, with several inconspicuous ridges descending from each leaf, aging cylindric, tough, greenish aging tannish and greenish or with reddish blotches on old stems, leaf scars short and horizontal on short-projecting base, reddish and 3-veined, internodes with spreading long hairs and shorter hairs arching upward, the lowermost stem of large individuals with patches of pale tannish brown periderm. **Leaves:** helically alternate (on young plants the lowest nodes opposite and subopposite), simple, short-petiolate to sessile, with stipules; stipules 2, attached at node, narrowly conic, 0.6–0.8 mm long, yellow-green withering and drying dark from tip-downward, concealed by villous hairs; petiole to 1 mm long and ca. 1 mm across, tannish white, mostly short-villous + some longer hairs; blade narrowly obovate or elliptic to ovate or broadly lanceolate, in range $< 23\text{--}82 \times < 7\text{--}31$ mm, broadly tapered to tapered (long-tapered) at base, entire, broadly acute with short point at tip, pinnately veined with whitish midrib raised on upper surface and lateral veins often inconspicuous, with spreading long hairs and hairs strongly curved upward along margins. **Inflorescence:** cyathium of unisexual flowers (= involucre with staminate flowers and 1 pistillate flower), on a flowering branch initially forming unisexual cyathia with only staminate flowers, after several weeks forming some bisexual cyathia having staminate flowers + 1 pistillate flower, thereafter forming a greater percentage of bisexual cyathia and densely packed with bractlets and staminate flowers, appearing flowerlike with either 4 or 5 nectar-producing glands at top each gland having a radiating white, petal-like appendage, “perianth” (= appendages) 5–8 mm across, the bracts of involucre fused most of length, having the tops 1.5–2 mm long, green to midpoint fringed with white, fingerlike above midpoint, short-hairy on both surfaces, the glands alternate with bracts (or 1 gland absent), raised, each stalked cyathium subtended by a leaflike bract, cyathium densely packed with bractlets and highly modified staminate flowers, staminate cyathium having 40–70 staminate, stamenlike flowers produced as 4–5 ascending clusters, bisexual cyathium having 30–50 staminate flowers produced on 4 ascending clusters and 1 pistillate flower stalked in center, densely villous and short-villous; reproductive branch not flat-topped, on top of canopy on 2-forked branch, the earliest cyathium terminal (often staminate), branchlets on branch often 2, with a terminal cyathium often staminate and axillary cyathia developing downward (mixed staminate and bisexual); branchlets in fruit consisting of many white and green bracts (bicolored); at the lowest fork with a pair of subequal divergent axes + 1 solitary, stalked staminate cyathium in center lacking a bract having a stalk to 15 mm long, axis of branches to 100 mm long,

initially densely sericeous-villous, along each principal branch having a bract subtending each branchlet and peduncle; bract subtending peduncle to cyathium leaflike with stipules, bract blades linear or strap-shaped to oblanceolate-linear or narrowly lanceolate-linear, to 40×5 – 10.5 mm, having wide white margins and green center and whitish midvein, densely soft-hairy and papillate-hairy along margins, not glaucous; peduncle of staminate cyathium at anthesis mostly to 2.5 mm long increasing to 5 mm long, of other cyathia shorter, densely soft-hairy; initial staminate cyathium 6–7 mm across and radial having 5 glands, thereafter staminate cyathia and bisexual cyathia not strictly radial with 4–5 glands with widely spreading white appendages; **involucre** bell-shaped, the large ones shallowly lobed and somewhat 5-sided, 4.5 – 5×4 mm, green, smaller cyathia to 4×3.5 mm, at top having 4–5 handlike lobes to 0.8 mm long fringed whitish, outer surface short-villous to villous (appressed), inner surface with short-pilose hairs above midpoint; glands equal to subequal on each cyathium, elliptic \pm flat or with dimple along long axis, 0.6 – 1×0.8 – 1.8 mm aging larger, cream-colored to greenish (dimple), nectar-producing, glabrous on upper side and pubescent on lower surface (\pm short-strigose), petal-like appendages widely spreading, oblate to broadly obovate (2-lobed), $(1.2$) 1.5 – $2 \times (< 2)$ – 2.6 – 3.8 mm increasing in fruit, the largest 3.5×6 mm, white, margin initially sometimes cupped upward and slightly wavy or scalloped, with ca. 11 radiating veins, upper surface glabrous, lower surface with scattered arching short hairs; bractlet subtending each staminate pedicel, the principal bractlet 3.5–5 mm long, greenish at base to white at tip, thicker lower axis compressed with other bractlets with short hairs at least above midpoint, tips of bractlets visible on surface of old cyathium; pistillate flower = a pistil on a pedicel-like stalk (gynophore), at anthesis gynophore erect and ca. 3 – 5×0.8 mm, pale green, and soft-hairy, then exserted and ascending or widely spreading to bent. **Staminate flower:** reduced to 1 stamen; axis 4.5–5 mm long (pedicel + filament), pedicel short hairy, filament portion 0.5–0.8 mm long defined by abscission constriction, white with bulging cells, in each cluster elongating successively and exserted, with 6–14 anthers commonly exserted above cyathium; anthers conspicuously dithecal, sacs free, each sac spheric to ellipsoid, 0.65–0.8 mm long, pale greenish yellow, sparsely puberulent, longitudinally dehiscent along top; pollen yellowish. **Pistillate flower:** reduced to 1 pistil; **pistil** 1; ovary superior, ovoid 3-lobed and 3-sided, ca. 2 – 2.5×1.4 – 2.5 mm + densely white-hirsute hiding green surface, lobes rounded, 3-chambered, each chamber with 1 ovule attached to center; styles 3, ascending-spreading to arching above midpoint, fleshy, to 2.5 mm long, pale green at base mostly white, 2-branched at or somewhat below midpoint, short-hairy on outer sides, the branches fingerlike and stigmatic on upper side. **Fruit:** schizocarp (capsule), 1–3-seeded, conspicuously lobed (= containing mature seed), 6 – 7×6 – 9 mm, with persistent, suberect stigmas, elastically dehiscent into segments each 1-seeded, conspicuously villous, after dehiscent with persistent, valve wall thick, central axis (columella) 3-sided and ca. 5 mm long having 3 wings; ascending on gynophore from cyathium or spreading with gynophore bent at right angle from top of cyathium, gynophore cylindrical, 9 – 11.5×1.5 mm, green, short-villous to strigose with upward-pointing hairs. **Seed:** not arillate (without a caruncle at attachment), ovoid, mostly 3.8 – 5×3.2 – 3.8 mm, in immature fruit pale yellow-green maturing dark brown and finely textured, with a line on 1 face from hilum near the top to seed base.

A. C. Gibson