

## Vascular Plants of Williamson County

### *Heterotheca subaxillaris* – BROADLEAF CAMPHORWEED [Asteraceae]

*Heterotheca subaxillaris* (Lam.) Britt. & Rusby (includes subsp. *latifolia* Gandhi & Thomas), BROADLEAF CAMPHORWEED. Annual (biennial herb), taprooted, not rosetted, (1–)several-stemmed at base, on robust plants branches radiating from base often  $\pm$  procumbent, canopy with ascending lateral branches along principal axis formed at each node (lacking unexpanded axillary shoots), in range 20–80 cm tall; gynomonocious; shoots with basal leaves and many cauline leaves, basal leaves absent at flowering, foliage initially soft-hairy aging hispid (hirsute) and stalked glandular hairs, lower plant densely hispid-pilose and moderately glandular-hairy, upper plant less hispid-pilose and more densely glandular (especially inflorescence), glandular hairs short-stalked, the heads colorless, strongly medicinal-aromatic somewhat camphor-smelling when handled. **Stems:** fine-ridged, to 16 mm diameter, with 3 ridges descending from each leaf, old, lower portion woody and sometimes 1+ ridges purple-red, nonglandular hairs  $\pm$   $\perp$  stem. **Leaves:** helically alternate, simple, appearing petiolate (lower leaves) and sessile (most cauline leaves) and clasping (summer plants), without stipules; “petiole”  $\pm$  flat to midpoint and flared at base, to 10 mm long, whitish with narrow green margins (spring plants) or with conspicuous semicircular basal lobes (robust summer plants), upper side hirsute especially on margins, lower side hirsute and short-hirsute, heads on glandular hairs colorless; blade ovate to elliptic or oblanceolate, in range mostly (8–)15–93  $\times$  (2–)6–35 mm, tapered at base (spring plants) or with clasping basal lobes (summer plants), entire or with several widely spaced, low teeth with hard conic point on margins, acute at tip, pinnately veined with lateral veins slightly sunken on upper surface and principal veins raised on lower surface, nonglandular hairs longer on upper surface. **Inflorescence:** heads, of canopy in a leafy, cymelike array having axillary branchlets each terminating in a solitary head, array highly branched with many heads, head radiate, 9–25 mm across, of 15–30 pistillate ray flowers and 40–100+ bisexual disc flowers, disc to 8 mm across, bracteate, hispid-pilose and densely glandular-hairy; bract subtending peduncle leaflike and clasping, ovate, 10–23  $\times$  2–11 mm, cordate at clasping base, entire or with teeth near tip and commonly wavy on margins, acute at tip; peduncle slender, cylindric, 9–90  $\times$  1 mm, hirsute and glandular-hairy, hollow, with 1–7 bracts along peduncle, bracts diminutive leaflike, clasping and ovate; **involucre** bell-shaped to hemispheroid, in range 4–9 mm long, phyllaries 26–40+ in 4–6 series, exposed green tissue with scattered short hairs and abundant stalked glandular hairs, unequal increasing and grading from outer to inner, of the outermost series acuminate-triangular from 2  $\times$  0.4 mm, of intermediate series acute-linear oblong to 5  $\times$  0.7 mm with narrow membranous margins, of the innermost series oblong-oblanceolate with wider membranous margins to 6  $\times$  1 mm, short-ciliate on margins approaching tip and with a tuft of longer hairs at tip, often tips of phyllaries purple-red, heads of glandular hairs sometimes aging reddish; receptacle flat, without bractlets (paleae), whitish, pitted with crownlike projection surrounding each ovary to 0.8 mm long, lacking hairs. **Ray flower:** pistillate, bilateral, to 2.4 mm across; **sepals (pappus)**  $\pm$  absent, = a green rim on top of ovary 0.2 mm long having minute nubs (vestigial pappus units); **corolla** unlobed and 3-toothed, with several short nonglandular hairs on upper tube and the lowermost limb, aging strong coiled under; tube cylindric-weakly 5-angled, 3–3.2  $\times$  0.4–0.45 mm, whitish from

base to pale yellow at top; limb oblong to oblong-ob lanceolate, 3–8.3 × 1.2–2.4 mm, golden yellow to vivid yellow, typically finely 3-veined on upper surface with a pair of sunken veins to tip and ridgelike on lower surface; **stamens** absent; **pistil** 1; ovary inferior, obovate in outline 3-sided with 3 distinct faces and 3 prominent edges (trigonous), ca. 1 mm long, faces colorless with 3 prominent greenish ribs, glabrous, 1-chambered with 1 ovule; **nectary disc** at top of ovary surrounding style (concealed beneath calyx rim), nectar not observed; style exerted 2+ mm, 3.7–5.5 mm long, white at base to from below midpoint yellowish to fork, 2-branched, the stigmatic branches erect, slender, 1–1.3 mm long. **Disc flower:** bisexual, radial, 1 mm across or peripheral flowers 1.5 mm across; **calyx (pappus)** outer set to 40 scales in 2 series and ± 2 inner whorls of 45–55 capillary bristles, the scales mostly 0.3–0.7 mm long, translucent-white, irregularly cut on large scales, the bristles unequal, 3–5.5 mm long, translucent-white, barbed, persistent; **corolla** 5-lobed, ± 5.5–6 mm long; tube cylindrical, ± 2 × 0.5 mm, whitish, glabrous; throat narrowly funnel-shaped, ± 3 mm long, light yellow, orifice ca. 0.8 mm diameter, on outer surface sparsely hairy near orifice; lobes spreading (peripheral flowers) and suberect, acute, 0.5–0.9 mm long, yellow, lacking hairs and papillae; **stamens** 5, fused to corolla at base of throat, only appendage tips exerted; filaments ca. 1.5–2 mm long, yellow; anthers fused into cylinder surrounding style, 2–2.3 mm long including triangular appendages at top, yellow, longitudinally dehiscent; pollen light yellow; **pistil** 1; ovary inferior, bi-convex obovoid compressed side-to-side, ± 1 mm long, typically 2-ribbed on edges, short-sericeous with straight hairs, 1-chambered with 1 ovule; **nectary disc** at top of ovary surrounding style (concealed beneath calyx rim), nectar not observed; style exerted 1.5–2 mm above anthers, 2-branched, white at base to light yellow exerted, ca. 7 mm long, yellow, the stigmatic branches suberect erect, lower portion slender, upper portion triangular and 1 mm long, 1 face flat and glabrous, other face and margins papillate-hairy. **Fruits:** cypselae (achenes), in a tawny, spheric array of capillary bristles ca 16 mm across, dimorphic, of disc flowers with two forms of pappus, both cypselae types with vestigial calyx ca. 0.2 mm long with minute bumps surrounding dried nectar disc; cypselae of ray flowers lacking pappus, 3-sided ovate, 2–2.3 ± 1 mm, pale brown, unequally 3-angled, glabrous; cypselae of disc flowers often infertile, compressed-obovoid, ca. 2.3 × 0.8–1 mm, pale brown with darker ribs, 2-ribbed (edges) with a dense cover of ascending, straight short hairs, pappus outer set to 40 scales in 2 series and ± 2 inner whorls of 45–55 capillary bristles, the ascending scales mostly 0.3–0.7 mm long, translucent-white, irregularly cut on large scales, the ascending bristles unequal, 3–5.5 mm long, tawny, barbed.

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