

Heterotheca Cass. GOLDENASTER

Heterotheca grandiflora Nutt., TELEGRAPH WEED, SILK-GRASS GOLDENASTER. Annual, long-lived, taprooted, rosetted, 1–several-stemmed at base, typically unbranched and straight (especially when tall) only branched in canopy, ± erect, in range 30–200 cm tall; shoots with cauline leaves and clustered leaves on unexpanded axillary shoots, 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 sometimes aging reddish, strongly medicinal-aromatic. **Stems:** fine-ridged, to 15 mm diameter, with 5 ridges descending from each leaf and the lateral veins sometimes rose-colored. **Leaves:** helically alternate, simple, petiolate (lower leaves) and sessile and clasping (most cauline leaves), without stipules; petiole 27–50(–70) mm long, flaring with triangular to semicircular base; blade of petiolate leaves ovate to broadly elliptic or obovate, 15–60(–90) × 14–35(–40) mm and rounded to broadly tapered at base, of sessile leaves fiddle-shaped (pandurate) or oblanceolate to oblong or lanceolate, 20–75(–90) × 5–35(–40) mm and earlike and clasping at base, serrate above midpoint on margins with teeth not in plane of blade, acute to obtuse at tip, pinnately veined with midrib raised on upper surface and principal veins raised on lower surface, dull, ± hispid-pilose to sericeous especially along veins and overall densely short capitate-glandular. **Inflorescence:** heads, in terminal, ± flat-topped, paniclelike arrays, array highly branched with many heads, head radiate, 9–19 mm across, of 25–33 ray flowers and 20–40 disc flowers, bracteate, sparsely hispid-pilose and densely glandular-hairy; bract subtending peduncle leaflike, lanceolate to triangular or linear, 13–30 × 2–11 mm, clasping at base, entire or with teeth near tip and commonly wavy on margins, acute at tip; peduncle slender, to 70 mm long, with 1–7 bracts along peduncle, bract narrowly awl-shaped to linear or narrowly oblanceolate, 4.5–13 × 0.7–2 mm; **involucre** bell-shaped, 6–8 × 5.3–6.5 mm, phyllaries many in 4–6 series, linear-lanceolate, outer phyllaries ± 2.5 mm long grading to inner phyllaries to 6 mm long, outer phyllaries green but often purplish red above midpoint, acute to acuminate at tip, inner phyllaries green with red-purple at tip, sticky-glandular, the glandular heads aging yellowish; receptacle flat, without bractlets (paleae), whitish, pitted with crownlike projection surrounding each ovary to 1 mm long. **Ray flower:** pistillate, bilateral, ± 1.3 mm across; **calyx (pappus)** ± absent, = a vestigial, narrow ring; **corolla** 2-lobed to 2-toothed, with ascending hairs on tube and lower limb; tube cylindrical, 3–3.5 × 0.3–0.4 mm, yellowish or whitish; limb oblong, 5–6 × 1.2–1.5 mm, golden to vivid yellow, typically finely 3-veined; **stamens** absent; **pistil** 1; ovary inferior, obovoid, 1.5–2 mm long, 3-ridged and 3-faced, colorless with greenish ridges, with ascending, minute white hairs; style exerted, 3.7–4.5 mm long, golden yellow, 2-branched, the branches stigmatic, erect, slender, 1–1.3 mm long. **Disc flower:** bisexual, radial, ± 0.6 mm across; **calyx (pappus)** of an outer whorl of to 30 scales and ± 2 inner whorls of many capillary bristles, the scales mostly 0.3–0.6 mm long, translucent-white, irregularly cut on large scales, the bristles unequal, 3.5–5.5 mm long, translucent-white, barbed; **corolla** 5-lobed, 4–5.2 mm long; tube cylindrical, ± 2.5 mm long, pale yellow to pale greenish yellow, glabrous; throat cylindrical and expanding very slightly above, 1.5–2 mm long, bright yellow, sparsely hairy near tube; lobes acute, ± 0.8 mm long, golden yellow; **stamens** 5, fused to corolla at base of throat, slightly exerted; filaments ca. 0.7 mm long; anthers fused into cylinder

surrounding style, ca. 2 mm long, yellow, longitudinally dehiscent; pollen light yellow; **pistil** 1; ovary inferior, compressed-obovoid, \pm 2 mm long, with 2 ribs, sericeous; style exserted, 5–7 mm long, golden yellow, 2-branched, the branches stigmatic, erect, slender, ca. 1 mm long, 1 face flat and glabrous, other face and margins papillate-hairy. **Fruits:** cypselae, in a tawny, spheric array of capillary bristles 16–20 mm across, dimorphic; cypselae of ray flowers lacking pappus, obovoid, $2.5\text{--}3.2 \times 1$ mm, pale brown, unequally 3-angled and 3-ribbed, with minute, ascending and appressed hairs, rimmed at tip; cypselae of disc flowers compressed-obovoid, $3\text{--}4.8 \times 0.9\text{--}1.5$ mm, light brown, sericeous, the pappus of two types, the outer whorl of < 30 slender scales, mostly to 0.5 mm long, the inner pappus of 55–67 capillary bristles, unequal, 3.5–5.5 mm long. January–December.

Native. A long-lived annual common throughout the range, occurring especially along roadsides and disturbances, so appearing like a weed. *Heterotheca grandiflora* has a flowering peak during dry summer months, but individuals can be found in bloom any week of the year. The common name telegraph weed aptly describes the erect, unbranched main shoot with dense foliage hiding the stem, and as the plants dry out, the long hairs covering the plant become stiff (hispid) and scratchy. *Heterotheca* has very short pappus scale surrounding many capillary bristles.

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