

Carduus pycnocephalus L. subsp. *pycnocephalus*, ITALIAN THISTLE. Annual, spinescent, taprooted, rosetted, 1-stemmed at base, with ascending branches regularly from canopy developing toward the base or only in canopy, erect, in range 15–150 cm tall; shoots sparsely to densely cobwebby-woolly, sometimes also \pm pilose, spiny on margins of leaves and stem wings, the sharp-pointed spines < 5 mm long, straw-colored or beige aging whitish. **Stems:** angular, to 10 mm diameter at base, low-ridged and conspicuously spiny-winged with leaflike tissue (= decurrent leaf bases), surface with alternating fibrous ridges and strips of photosynthetic tissue, having cobwebby hairs parallel with axis, sometimes pilose on lower stem + ascending colorless hairs (septate); hollow; wings 3–5 per internode, acutely lobed to dentate or wavy on margin, inrolled under (revolute) or not, bearing hard spines terminating principal veins, upper wing surface glossy beneath sparse wool, lower surface densely cobwebby-woolly. **Leaves:** helically alternate, shallowly to deeply pinnately lobed with spinose margins, winged-petiolate (basal leaves) and sessile (cauline leaves), without stipules; petiole flattened, to 110 mm long, with irregular fringe of blade tissue; blade oblanceolate (basal and lower cauline leaves) and elliptic to ovate or lanceolate (upper cauline leaves), $25\text{--}250 \times 10\text{--}130$ mm decreasing upward and grading into bracts, with $2\text{--}8 \pm$ paired principal lobes (sometimes basal lobes resembling stipules), flattish to \pm 3-dimensional, if 3-dimensional produced from an arching midrib and a slight twist at base of lateral lobes (lower leaves) or a bend at base of lateral lobes and sublobes (upper leaves) forming an alternating pattern of upward-pointing long lobes and shorter, downward-pointing sublobes, lateral lobes of basal leaves broadly triangular to ovate often with sublobes, of upper cauline leaves narrowly acute with a prominent sublobe at base of leading edge, spinose-dentate on margins with spines terminating principal veins at tips of lobes and sublobes, pinnately veined with white to greenish principal veins strongly raised on lower surface, upper surface dark green, sparsely cobwebby-pubescent becoming \pm glabrescent, lower surface cobwebby-woolly and \pm pilose along principal veins. **Inflorescence:** heads, in terminal and axillary, spikelike or racemelike clusters of 1–5 heads, overall the canopy = an open cymelike array with leaflike bracts, head discoid, to 12.5 mm across (= spreading phyllaries), with 18–40 flowers, when first open tuftlike and scarcely visible above involucre but surpassed by pappus, bracteate, spinescent, cobwebby-woolly; bract subtending inflorescence = upper cauline leaf; axes spiny-winged like stems, grayish, densely cobwebby-woolly; bract subtending cluster leaflike, lanceolate, with spinose margins; bract subtending head lanceolate, $<$ involucre, commonly unlobed and spine-tipped and with spinose margins; **involucre** urn-shaped, $14.5\text{--}22 \times 6\text{--}7$ mm, with spreading, bristle-tipped phyllaries, becoming bell-shaped and to 15 mm wide in fruit, phyllaries ca. 50, in 6–7 series, lanceolate to linear, $5\text{--}20 \times 1\text{--}3.3$ mm, increasing outer to inner, the widest at midseries; outer phyllaries lanceolate, stiff, green but greenish white below midpoint, hardened (indurate), cobwebby-woolly on outer surface, papillate beneath wool, cobwebby-ciliate on margins, glabrous on inner surface, above midpoint long-acuminate to needlelike (aristate), scabrous and minutely toothed on margins, minutely scabrous on outer surface, 3-veined with raised midvein continuing as bristle tip; inner phyllaries linear-lanceolate to narrowly elliptic or elliptic-linear, with a green, generally woolly center and colorless to light purple membranous margins; receptacle convex, with bractlets (paleae), palea scales linear-triangular to linear, flattened, 4–11 mm long, white. **Flower:** bisexual, radial, ca. 1 mm across; **calyx (pappus)** of 100–170 minutely barbed

capillary bristles, 9–15 mm long, whitish; **corolla** 5-lobed; tube narrowly cylindrical, (5–)7–8 mm long, whitish to pale lavender; throat narrowly bell-shaped, 2–2.5(–3) mm long, 0.8–1 mm wide at orifice, light lavender to light purple, sometimes bent; lobes erect, equal, linear, 4–5.3 × 0.4–0.6 mm, dark lavender to orchid or purple; **stamens** 5, fuse to base of corolla throat; filaments 2.5–3 mm long, whitish, villous; anthers fused into cylinder surrounding style, basifixed, dithecal, 4–5 mm long, dark lavender to orchid, tailed at base, with narrowly acute sterile appendage at tip, longitudinally dehiscent; pollen whitish to pale lavender; **pistil** 1; ovary inferior, compressed-obovoid, 1.5–3.5 × 0.8–1.2 mm, white, glabrous, 1-chambered with 1 ovule; style exerted 2 mm, colored like filaments, slightly bulbous at base (apparently not producing nectar), 2-branched, with a ring of short hairs subtending branches, the branches appressed, stigmatic, 1–1.2 mm long. **Fruits:** cypselae, ± compressed-obovoid, 3.8–4.2 × 1.6–2 mm, yellow ochre with reddish brown dots, smooth, finely and obscurely 20-veined, straight or curved at base, shallowly rimmed at top, glabrous; pappus of many tawny capillary bristles (10–)12–15 mm long, easily deciduous in a ring. Early February–late June.

Naturalized. Spinescent annual weed widespread in disturbed habitats, especially open fields and roadsides, in full sun to shade, but also now occurring along trails in various plant communities, where efforts are sometimes made to control its spread. *Carduus pycnocephalus* can vary greatly in plant size, and depauperate individuals can be unbranched and have only a single head, and more study is required to determine whether *C. tenuiflorus* Curtis, which has more heads per cluster, deserves to be recognized and included in the flora, because individuals studied to date differ only to a small degree from the broad variability expressed by *C. pycnocephalus*..

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