

Urtica L. NETTLE

Urtica dioica L. subsp. *holosericea* (Nutt.) Thorne, HOARY NETTLE. Perennial herb, robust, clonal, winter-dormant, rhizomatous, typically unbranched, erect, 120–400+ cm tall; monoecious; shoots with only cauline leaves, gray-green, velutinous and having needlelike stinging hairs 1–2 mm long with swollen bases, blades round-dotted = microscopic cystoliths (calcium sulfate deposits, formed in lithocysts). **Stems:** ± 4-sided with rounded edges and a shallow furrow between edges, to 15 mm diameter, green but aging reddish rose, tough (= strong stem fibers), densely velutinous and sparsely hispid with stinging hairs; hollow. **Leaves:** opposite decussate, simple, petiolate, with stipules; stipules 2, attached to stem, linear to narrowly triangular or lanceolate, 5–7 × 1–1.5 mm, entire or 1–2-toothed on margins, obtuse or acute at tip, often present next to inflorescences; petiole channeled, 15–55 mm long, velutinous and with stinging hairs; blade lanceolate to ovate, 40–130(–290) × 15–60(–175) mm, thin, rounded to cordate at base, coarsely serrate or sometimes dentate (lower leaves) on margins, acute to acuminate at tip, 3-veined, 5-veined, or 7-veined from base with principal veins slightly sunken on upper surface and conspicuously raised on lower surface, upper surface dark green, hairy with widely spaced needlelike hairs and short-velutinous, with round cystoliths (on surface and embedded in outer layer), lower surface grayish green, densely velutinous, with needlelike hairs on raised veins. **Inflorescences:** cymes in lax paniclelike arrays, axillary, each panicle unisexual, 2 panicles per axil (4 per node) with 1 on each side of an unexpanded axillary shoot, > petiole, (15–)30–100 mm long, with 0–2 lateral branches below midpoint, axis with stubby alternate branchlets (= cymes) 60–130 mm long (staminate) and 15–50 mm long (pistillate), cyme several–20+-flowered, bracteate (staminate), velutinous and with widely scattered stinging hairs; peduncle and rachis slender, low-ridged, with 0–several stinging hairs; bractlet subtending each outer pedicel of staminate flower, narrowly ovate to lanceolate, < 2 mm long, greenish, sparsely hairy, early-deciduous; pedicel (staminate flower) 1–2 mm long, whitish, with abscission constriction 0.3 mm below calyx, hairy, persistent; pistillate flower at anthesis sessile aging with short, colorless pedicel and forming abscission zone at base after fruit develops. **Staminate flower:** radial, distinctly 4-lobed in bud, bud ± 1.4 mm across with anthers visible through sepals; **sepals** 4, cupped-ovate, ± 1.3 mm long, greenish with membranous margins and tip, pairs with slightly different tips, with scattered hairs; **petals** absent; **stamens** 4, free; filaments 1.8–2.3 mm long, spring-loaded, incurved and sharply bent prior to anthesis, snapping up and outward at anthesis, aging spreading; anthers exerted, basifixed, dithecal, ± 0.8 mm long, slightly wider, yellowish white becoming colorless and empty immediately after suddenly discharging pollen, longitudinally dehiscent; pollen white; **pistil** rudimentary, sterile, ± cup-shaped, 0.3 mm long, colorless. **Pistillate flower:** bilateral, smaller than staminate flowers at anthesis, compressed side-to-side, sometimes with 1 or 2 stinging hairs; **sepals** 4, dimorphic, the outer 2 sepals narrowly lanceolate to oblanceolate, 0.5–0.7 × 0.2–0.3 mm, the inner 2 sepals ovate, 0.5–0.7 × 0.3–0.5 mm increasing 2× in fruit, green, densely hirsute but without stinging hairs; **petals** absent; **stamens** absent; **pistil** 1; ovary superior, lanceoloid, ± 0.3 mm long, green, 1-chambered with 1 ovule attached to base; style absent; stigma a headlike tuft of numerous, septate hairs to 0.4 mm long, colorless aging dark gray, persistent. **Fruit:** achene, ± ovate-

lenticular to ellipsoid-lenticular, $1-1.3 \times 0.6-0.8$ mm, tan to olive brown, acute to obtuse or rounded at base, acute at tip, smooth or slightly warty on surface, with \pm persistent style, enclosed by inner sepals; sepals $1.2-1.5 \times 0.7-1.2$ mm, brownish, \pm ridged on midrib. Early June–early November.

Native. A tall perennial herb growing in moist soil on margins of creeks and drainage channels throughout the range. *Urtica dioica* subsp. *holosericea* is nasty to handle due to the presence of painful stinging hairs; when touched, the tips break and become microhypodermic needles, injecting acetylcholine and histamine into the victim and thus producing the stinging sensation. Its tough stems have been retted for strong, long fibers, useful in making string, rope, and fishing nets. Although the specific epithet means dioecious, i.e., having separate staminate and pistillate plants, this subspecies has instead separate staminate and pistillate inflorescences on the same plant, typically at different nodes, with the longer, lax staminate inflorescences producing copious amounts of wind-borne pollen, and female flowers with high seed set. In bud, each anther is held in position by its sepal, causing the filament to become looped upward like a carriage whip. When the sepals begin to spread, the anthers suddenly spring upward when released from the locked position, thus “explosively” discharging the entire contents of the anther sacs.

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