

*Berula* Besser & W. D. J. Koch

***Berula erecta*** (Hudson) Cov., CUTLEAF WATER PARSNIP. Aquatic perennial herb, emergent, colonial, stolon-forming, fibrous-rooted, rosetted, erect, 80–140 cm tall; shoots individually biennial with large, ascending basal leaves and spreading cauline leaves, glabrous, mildly carrot-scented (*Daucus*); stolons submersed, thin, reddish; adventitious roots at basal nodes. **Stems:** ± cylindric, to 12 mm diameter, ascending but sometimes partially submersed, finely striped green and pale green; internodes hollow. **Leaves:** helically alternate, odd-1-pinnately compound with sessile leaflets, leaflets to 25 with lateral leaflets opposite-paired and widely spaced along rachis, long-petiolate, without stipules; petiole of basal and lower cauline leaves channeled, 150–500 mm long, of cauline leaves gradually reduced, green, expanded at stem and sheathing stem ca. 2/3, petiole and rachis hollow; blade of basal leaves with terminal leaflet typically deeply 2–3-lobed, blades of lateral leaflets mostly unlobed, ovate-triangular to broadly lanceolate, 25–80 × 15–45 mm, somewhat oblique rounded to broadly tapered or truncate at base, serrate on margins, ± acute at tip, pinnately veined with midrib raised on lower surface; blades of upper cauline leaves similar to lower cauline leaves but shorter and having < 7 pairs of lateral leaflets, the terminal leaflet to 2-lobed, < 50 mm long, blades of lateral leaflets lanceolate to oblong, < 50 mm long. **Inflorescence:** compound umbel, terminal or opposite leaf, low-hemispheric, to 65 mm across, many-flowered, with 15–20+ hemispheric umbellets, umbellets typically 10–15 mm across, 15–30-flowered, bracteate, glabrous; peduncle < 50 mm long, hollow; **involucre** of bracts subtending primary rays 8–10, appearing whorled, bracts essentially free, unequal, linear-lanceolate to narrowly elliptic or strap-shaped, 6–30 mm long, parallel-veined, occasionally 1 bract = diminutive 3-foliolate leaf; primary rays unequal, cylindric, mostly 10–35 mm long but the central ones much shorter, faintly striped; involucre of bractlets subtending pedicels 4–8, ± whorled, unequal, resembling bracts, 1–12 mm long; pedicel 1–2.5 mm long increasing somewhat in fruit, with a constriction beneath ovary. **Flower:** bisexual, radial, 2–2.5 mm across; **sepals** 5, erect, wide with minute tip, < 0.2 mm long, persistent; **petals** 5, spreading, ± equal, broadly ovate to roundish in outline, ± 1 × 0.6–0.9 mm + an incurved acuminate tip, white or with green, with midridge on upper (inner) surface; **stamens** 5, free, spreading, to 1.7 mm long; filaments ± 1.5 mm long, off-white; anthers dorsifixed, strongly dithecal, broadly heart-shaped, 0.4–0.5 × 0.4 mm, white, longitudinally dehiscent; pollen off-white or pale yellow; **pistil** 1; ovary inferior, distinctly 2-lobed with discoid or conic, nectar-producing platform (stylopodium, stylar tissue) on top, urn-shaped to ± rectangular compressed side-to-side, ca. 1 mm long, often purplish above midpoint with 10 green stripes, glabrous, 2-chambered, each chamber with 1 ovule; styles 2, ascending, 0.5–1 mm long, stigmas terminal, minute. **Fruit:** schizocarp, of 2 dry, 1-seeded mericarps, intact fruit elliptic to nearly round in outline compressed side-to-side, 1.5–2 mm long, unevenly and obscurely ribbed; outer wall corky containing numerous oil tubes. Late June–mid-September.

Native. Stolon-forming perennial herb found occasionally along or in creek beds or at waterfalls. In vegetative condition. *Berula erecta* has distinctive, ascending, pinnately compound leaves that smell like carrot (*Daucus*), and cannot be confused with anything else in range. The ability to identify basal leaves is valuable because in some years only

vegetative materials may appear, so that the plant resembles a biennial, although it normally perennates via stolons while also starting new plants from mericarps. Its small white flowers are unremarkable. Because this plant grows around water, it is not uncommon for the fruits to be covered with fungus mycelium.

B. A. Prigge & A. C. Gibson