

Geranium rotundifolium L., ROUND-LEAVED GERANIUM. Annual, taprooted, rosetted, 1-stemmed at base, in canopy often with paired branches at nodes, decumbent to ascending and sometimes trailing, in range 10–40 cm tall, spreading plant to 80 cm long; shoots with basal leaves and cauline leaves, basal leaves absent at flowering, velveteen, with dense long and short pilose hairs throughout initially mostly glandular with colorless exudates from minute reddish heads, mildly and pleasantly aromatic. **Stems:** cylindric, to 5 mm diameter, swollen above each node, green to strawberry red to pinkish especially on swellings, around nodes, or on old internodes, internodes to 160 mm long. **Leaves:** helically alternate (basal leaves) and alternate or opposite (cauline leaves), palmately 5-lobed and 7-lobed 55–65%, long-petiolate, with stipules; stipules 2 (3 or 4 per node; if 3 then 1 pair fused across node), attached to petiole on flared base, narrowly ovate to triangular, (2–)4–7 mm long, rarely 2-toothed, crimson to reddish drying brown-papery, glossy and glabrous on upper surface, ciliate on margins, short-hairy on upper surface; petiole cylindric, 30–200 mm long, >> blade, nonglandular-hairy and glandular-hairy as on stem; blade roundish to somewhat flattened (oblate) in outline, (12–)30–75 × (15–)35–90 mm, typically length < width, lobes widely wedge-shaped with sinus to midblade and slightly deeper, each lobe into sublobes or 3–5 teeth rounded to obtuse with green callous, if 3-toothed lateral sinuses deeper than central sinus, palmately veined with principal veins sunken on upper surface and raised on lower surface, soft-hairy with mixed lengths of hairs, upper surface mostly pilose without glandular hairs, lower surface mostly glandular-hairy. **Inflorescence:** 2-flowered cyme, arising at node on side opposite cauline leaf with another axis continuing shoot, glandular-hairy, the hairs with minute red heads or later appearing short-pilose and pilose, with a dense layer of short nonglandular hairs; peduncle ascending, slender, to 20 mm long, green, densely glandular-hairy; bractlet subtending pedicel = 2 stipules (4 per node), narrow-triangular to acuminate, 1–3 mm long, pinkish aging red, ciliate, with short hairs on lower surface; pedicels of paired flowers at anthesis unequal, 7–14 mm long increasing to 16 mm long and becoming equal in fruit, short-pilose to pilose glandular hairs having minute reddish heads, pulvinus at base somewhat reddish. **Flower:** bisexual, radial, 6–8 mm across; **sepals** 5, overlapping in bud, ascending becoming erect, subequal, narrowly ovate to lanceolate or elliptic with short point (mucro) at tip, 5–6 mm long (including mucro) becoming slightly longer in fruit, outer sepals to 1.6 mm wide, inner sepals 1–1.2 mm wide, green with narrow membranous margins, 3-veined with veins converging below mucro, pilose-glandular aging without heads, acute with mucro 0.2–0.5 mm long with several stiff hairs on the tip; **petals** 5, ± equal, clawed, oblanceolate, 6–7.5 × 1–2.2 mm, at anthesis > sepals, claw to 2.5 mm long (short petals lacking claw), white (pale purple), limb white to pale purple at base to light purple above, rounded to truncate at tip (slightly notched), 3-veined above claw, glabrous or occasionally with a short hair on claw; **nectaries** 5, alternate with petals and fused to bases of adjacent fertile stamens, kidney-shaped, 0.3 mm long, pale green; **stamens** 10 in 2 whorls, free, whorls unequal becoming similar; filaments narrowly lanceolate at base and linear at tip, at maturity 4.7–5.2 mm long, translucent, flat, short-ciliate with ascending hairs; anthers dorsifixed, dithecal, ± 0.5 × 0.5 mm, yellowish and light violet with deep violet stripes, longitudinally and sideways dehiscent; pollen ivory to pale yellow; **pistil** 1, at anthesis 5–6.5 mm long; ovary superior, 5-lobed, ± 1.2 mm long, covering by dense cover of ascending white hairs, 5-chambered, each chamber with 1 ovule; style column 4–5.5 mm

long, evenly pilose glandular-hairy with hairs to 0.4 mm long, 5-branched, the branches ascending, 0.8–1 mm long, greenish tinged pinkish to dark rose, papillate-stigmatic on inner side. **Fruit:** schizocarp, of 5 dry, 1-seeded segments (mericarps), before breaking apart with 5 rounded fruit bodies somewhat hidden by calyx and having an erect, central, 5-sided style column, before splitting $15\text{--}17\text{--}(21) \times 1$ mm (= 5 fused styles covering receptacle tissue) including terminal slender segment tipped with 5 style branches (= upper style + stigmas) 3.5–4.5 mm long, mericarps abscising from each other and separately coiling upward with part of style column forming a spiral beak on a persistent, 5-sided center post (receptacle tissue) surrounded by the 5 suspended mericarps; fruit body pouchlike and \pm ovoid fully open on inner face, $2.5\text{--}3 \times 1.7\text{--}1.8$ mm, papery brown, short pilose-villous, base with minute callus bearing several stiff hairs ca. 1.5 mm long, readily dropping seed while still attached to column; beak flat, comma-shaped, 11–12 mm long, brown, forming planed coil of nearly 360° , with stiff, short, ascending hairs on original outer beak surface (inside of coil) and with straight fibers on inner surface. **Seed:** plump D-shaped, $1.8\text{--}2.5 \times 1.5\text{--}1.7$ mm, brownish, shallowly pitted by collapse of outer cell walls forming a low, netlike pattern (reticulate); hilum near end on edge. Late March–mid-May.

Naturalized. Annual found occasionally growing in moist soil in shade of trees, often there in large patches where somewhat protected from water stress. *Geranium rotundifolium* has soft-hairy leaves that are lobed about sixty percent to the petiole, and green organs are densely covered with straight hairs that initially are glandular but later lose the heads and thereby appear densely pilose and short-pilose. Our populations tend to have comparatively long petals for this species; the petals typically lack hairs on margins and are clawed.

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