

Soleirolia soleirolii (Req.) Dandy. Perennial herb, fibrous-rooted, often several-stemmed from each rooted junction, mat-forming, creeping to decumbent, 2–10 cm tall; monoecious; shoots 2-dimensional (plagiotropic), easily wilted when water-stressed, sparsely soft-hairy and lacking stinging hairs; adventitious roots at nodes, forming on old stems in contact with soil. **Stems:** cylindric, to 0.7 mm diameter, translucent pale green, soft-puberulent. **Leaves:** helically alternate, simple, petiolate, without stipules; petiole scarcely channeled, 0.5–1.5 mm long, sparsely short-hairy; blade asymmetric, oval or broadly oblong to roundish, $1-6 \times < 1-5$ mm, thin, distinctly oblique and rounded at base, entire and short-strigose on margins, rounded at tip, pinnately veined with venation close to 1 margin (opposite stem) and having principal veins raised on lower surface, sparsely pilose, lower surface sometimes with inconspicuous, minute hairs. **Inflorescence:** flowers solitary (= 1-flowered cymes), unisexual, axillary, flowers pistillate at lower nodes and staminate above, bracteate (pistillate); pedicel ca. 0.6 mm long (staminate flower), colorless, or subsessile (pistillate flower); **involucre** subtending flower of 3 fused bractlets and bracteoles, ± 0.8 mm long, tube 0.25–3 mm long, cup-shaped with short hooked bristles (of staminate flower), bell-shaped with hooked bristles forming on 3 keels (of pistillate flower), lobes lanceolate, green, sparsely pilose (staminate). **Staminate flower:** radial, distinctly 4-lobed in bud, ± 2 mm across before stamens elastically unfold, ± 3 mm wide after stamens unfolded, abscising from pedicel after pollen released; **calyx** 4-lobed from midpoint, ca. 1.5 mm long, membranous, colorless to midpoint and reddish above; tube cup-shaped, with 4 vertical lines of long hairs to sinuses (separating anthers in bud); lobes ovate, cupped around anthers, with darker midstripe, sparsely hairy; **petals** absent; **stamens** 4, free, opposite calyx lobes, incurved with filaments bent in half (inflexed); filaments springing loose and spreading hours after anthesis, ± 1.7 mm long, translucent, with horizontal ridges on inner side; anthers exerted, dorsifixed, dithecal, 0.6×0.7 mm, pale yellowish white, longitudinally and inwardly dehiscent; pollen pale yellowish white; **pistil** rudimentary, sterile, 4-sided, ca. 0.4×0.2 mm, green on darker green receptacle mound. **Pistillate flower:** radial, ± 0.8 mm across; **calyx** 4-lobed, ovate, 0.5–0.6 mm long, membranous, reddish above midpoint, glabrous; lobes acuminate, short; **petals** absent; **stamens** absent; **pistil** 1, 1 mm long; ovary superior, ovoid, ca. 0.4 mm long, 1-chambered with 1 ovule attached to base; style absent; stigma at anthesis radiate papillate-hairy, colorless, the hairs to 0.4 mm long. **Fruit:** achene, without a stalk, ovoid, $0.8-0.9 \times 0.6$ mm, glossy brown, hard, wrapped in scarious calyx; enclosed in involucre, when inrolled (involute) 1 mm long and wide with shriveled acuminate lobes, the 3 keels winglike, reddish purple aging corky, wings with minutely hooked bristles to 0.35 mm long. Early April–summer.

Waif. Annual used in cultivation as a ground cover but once collected on the moist margin of upper Franklin Canyon Reservoir. *Soleirolia*, a plant described originally from Corsica and formerly treated as the genus *Helxine*, is a creeping herb that can only persist in shade and where it never dries out, so only at permanent springs would you expect to find it now in range. The small leaves of baby's tear are conspicuously asymmetric; in the axil may occur either a tiny, nonshowy pistillate flower or the showier but still tiny staminate flower. The staminate flower has the typical elastic release mechanism of the stamens. Its fruit is an achene, which is enclosed within a winged involucre of 3 fused bracteoles (bractlets) with projecting, corky keels (wings) bearing minutely hooked bristles.
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