

Juncus acutus L. subsp. *leopoldii* (Parl.) Snogerup, SOUTHWESTERN SPINY RUSH.

Perennial herb, evergreen, spinescent and with rigid, photosynthetic stems, rhizomatous, fibrous-rooted, many-stemmed at base, cespitose with shoots tufted into large hemispheric clump, 60–120 cm tall, to 100 cm wide; shoots with 2–5 bladeless basal leaves and sometimes also a closed sheath (cataphyll), dark green, glabrous; rhizomes diminutive, shallow, with descending adventitious roots. **Stems (culms):** elliptic in \times -section at base approaching cylindrical near tip, 3–4 mm diameter at swollen base (appearing 6–8 mm diameter including leaf sheaths) to 2–3 mm wide where exerted from leaf sheaths, with internodes congested at base, tough, rigid, finely striped with dark green veins and pale green, stomate-speckled strips; core white. **Leaves:** alternate tristichous, simple with sheath; sheath open, 20–110 mm long, with overlapping margins only at base, lacking keels, parallel-veined with scarious margins; blade cylindrical slightly compressed, 95–650 μ m long, 1.5–3 mm thick at base, with sharp, hard point at tip; prophyll membranous aging scarious and conspicuously 2-keeled, 20–30 mm long, acuminate with keels converging at tip. **Inflorescence:** panicle, terminal but appearing lateral, exerted from sheath of the lowest inflorescence bract, with suberect to ascending branches and branchlets 30–100(–300) mm long ($1/2$ – $2/3$ \times length of subtending bract), flowering while emerging from bract and becoming 20–40(–60) mm wide in fruit, branchlet terminating in 10–many clusters of 2–5(–6) flowers (glomes or glomerules), bracteate, glabrous; inflorescence bract appearing to be a continuation of stem with sharp tip, 80–150(–200) mm long, sheath (30–)50–70(–100) mm long, blade becoming cylindrical and spine-tipped, dark green; lower 4 branches subtended by bract + prophyll, upper branch and branchlet only subtended by bract (appearing with > 1 per axis because internodes of glomerule highly congested or with failure of axillary structure to develop), the lowest prophyll 32–37 mm long reduced upward to 10 mm long, 2-keeled (becoming winged at base), acuminate at tip, bract subtending branch or branchlet reduced upward, the uppermost bract of glomerule ovate to triangular, 2.5 – 7×1.2 – 2.7 mm, with green axis and membranous margins and tip, clasping at base, acuminate to tail-like at tip. **Flower:** bisexual, radial, ca. 1.5 mm across but concealed within inflorescence; **sepals** 3, erect, acuminate-triangular, 2.4 – 3×0.8 – 1 mm, green aging brown, thickly keeled at base of 1–2 sepals and convex on others, 1-veined, membranous and expanded on margins above midpoint but generally not to tip, with point at tip (mucronate) 0.2–0.3 mm long either extending above membranous margin or from between 2 membranous short lobes, persistent; **petals** 3, narrowly ovate but 2-lobed at tip, 2.5 – 3×1 – 1.5 mm, membranous on margin above midpoint, persistent; **stamens** 6, free, included; filaments acuminate and flat, 0.7–1 mm long, 0.5–0.6 mm wide at base, light green; anthers basifixed, dithecal, oblong to lanceolate and flattened, 0.9 – 1.6×0.6 mm, red (yellow), longitudinally dehiscent; pollen light yellow; **pistil** 1; ovary superior, spheric to ovoid, 1–1.5 mm long, greenish, 6-lobed, 1-chambered (pseudo-3-chambered) with many ovules on placenta intruding from wall; style 3-branched, basal portion 0.6–1.3 mm long, the stigmatic branches 1.5–2.5 mm long, aging reddish. **Fruit:** capsule, loculicidal, 3-valved, dehiscent from top downward, many-seeded, ovoid or obovoid to nearly spheroid, in range 3.5 – 4.3×2.7 – 3.5 mm (excluding style base), \pm rounded to acute at tip but with persistent style base 0.2–0.6 mm long, grooved at junction of valves, glossy dark reddish brown on exposed top, greenish brown on sides where covered by perianth. **Seed:** obliquely ovoid, 0.6 – 1.1×0.4 – 0.65 mm, orangish brown,

with 3–5 concave to convex faces, generally angled between faces, with seed coat commonly the thickest along 1 lateral edge and at one or both ends, sometimes having tail (appendage) to 0.3 mm long, weakly striped. Summer.

Native. Hemispheric evergreen perennial growing along coastline at Leo Carillo State Beach just above the beach and high tide at freshwater spring, and on the margins of salt marsh at Point Mugu. *Juncus acutus* subsp. *leopoldii* is a very easily recognized rush, being a large pincushion form with skin-piercing points on its inflorescence bracts. Any time of the year inflorescences can be observed on old parts of the plant, and one can therefore always find the glossy dark reddish brown fruits. Finding flowers is problematic, because the flowers open while the inflorescence is just emerging, so that it is difficult to determine exactly when pollination occurs, because by the time one observes the inflorescence, fruits are already forming.

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