

COMMELINACEAE SPIDERWORT FAMILY

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Annual or perennial herbs, glabrous to sparsely pubescent. LEAVES alternate, distichous or spirally arranged, the sheaths closed, the blade simple, the margins entire. INFLORESCENCES terminal or terminal and axillary cymes subtended by bracts or enclosed in spathes. FLOWERS perfect and staminate, actinomorphic or zygomorphic; sepals 3, usually subequal, distinct or connate; petals 3, deliquescent, distinct, equal or unequal; stamens 6, all fertile or some staminodial, the filaments glabrous or bearded, the anthers with longitudinal dehiscence; ovary superior, 2-3 locular, 1-several ovulate, the ovules 1-seriate, the style simple, usually slender, the stigma simple or rarely slightly 3-lobed. FRUITS capsules, loculicidal. SEEDS 1-several, the hilum dot-like or linear. —41 genera, ca. 650 spp., mostly tropical and subtropical. Faden, R. F. 2000. Commelinaceae. Pp. 170-197 in N. R. Morin (ed.), *Flora of North America*. vol. 22. Oxford University Press, New York.

- 1. Inflorescence enclosed in a spathe; flowers zygomorphic; fertile stamens 3, the filaments glabrous *Commelina*
- 1' Inflorescence not enclosed in a spathe, but subtended by 2 foliose bracts; flowers actinomorphic; fertile stamens 6, the filaments bearded below *Tradescantia*

Commelina Plumier ex L. Dayflower

Annual or perennial herbs, the roots thin or tuberous. STEMS prostrate to erect. LEAVES lanceolate to linear lanceolate. INFLORESCENCES terminal and leaf-opposed, composed of 1-2 cymes enclosed in spathes, the upper cyme lacking or producing 1 staminate flower, the lower cyme several flowered; spathes with margins free or fused basally, often filled with mucilaginous liquid. FLOWERS perfect or staminate, zygomorphic; sepals free or lower 2 connate; petals free, the upper 2 usually blue (occasionally lilac or lavender), clawed, the lower petal often smaller and different in color from the upper 2; stamens 6, the upper 3 staminodial, the sterile anthers commonly 4-6 lobed, the lower 3 stamens fertile, the medial different in form and size from the others; ovules 1-2 per locule. FRUITS 2-valved, 3-locular on ours. SEEDS 1-5, testa rugose or smooth, tan to brown, hilum linear. —Ca. 170 species: almost cosmopolitan, mainly tropical (for Jan and Kaspar Commelijn).

- 1. Spathe margins free to the base; petals blue, subequal *C. dianthifolia*
- 1' Spathe margins fused at the base; upper 2 petals large, blue, the lower 1 smaller and white ..
..... *C. erecta*

Commelina dianthifolia Delile (*Dianthus*-like leaves). —Perennial, with tuberous roots. STEMS erect to ascending, unbranched to sparsely branched. LEAVES: sheaths with purple veins, blade linear-lanceolate, 4-15 cm long, 0.4-1 cm wide, glabrous to puberulous, the margin

scabrous, the apex acuminate. INFLORESCENCES of solitary spathes, peduncles 1.5-9.5 cm long, spathes 2.5-8 cm long, 0.7-1.7 cm wide, the margins free, scabrous, the surface green, often suffused and/or striped with purple, glabrous to puberulous, the apex acuminate; upper cyme usually 1-flowered. FLOWERS perfect or staminate; pedicels puberulous; petals dark blue, the lower ones ±not clawed; staminodes 3, yellow, cruciform. FRUITS 5-6 mm long, apiculate. SEEDS 5, brown, 2-2.5 mm long, 1.5-2 mm wide, rugose, pitted. —Open grassy meadows in ponderosa pine, oak and pinyon-juniper forest on granitic substrate; all cos. except La Paz, Maricopa, Mohave, Yuma; 1200–2900 m (4000–9500 ft.); Jul–Sep; se UT, s CO, w and c NM to e TX; n Mex. Our plants mostly belong to var. *longispatha* (Torrey) Brashier (spathe abruptly narrowed below the middle), but var. *dianthifolia* (spathes gradually tapered) also occurs.

***Commelina erecta* L.** (upright). —Perennial, the roots fleshy, tufted. STEMS erect or ascending, freely branching. LEAVES: sessile or petiolate, linear, lanceolate to lanceolate-ovate, 2.5-17 cm long, 0.3-3 cm wide, the apex acuminate, rarely acute. INFLORESCENCE of solitary or clustered spathes; peduncles 0.5-1 cm; spathes 1-2.5(-4) cm long, 0.7-1.5(-2.5) cm wide, the margins fused at the base, glabrous except for fused edge, the surface green usually variously pubescent, the apex acute to acuminate; upper cyme lacking. FLOWERS perfect and staminate, 1.5-4 cm wide; upper petals blue (rarely lavender or white), the lower petal minute, white; staminodes and medial stamen anther entirely yellow. FRUITS 3.5-4.5 mm long, 3–5 mm wide, 1 locule warty, indehiscent and 2 locules smooth, dehiscent. SEEDS 3, brown, with soft, whitish tissue at both ends or in a band, 2.4-3.5 mm long, 2.3-2.8 mm wide, nearly smooth. $2n = 60$ (*Commelina crispa* Woot.) —Grasslands to meadows in mesquite woodlands to pine forest on granitic and limestone substrate: Cochise, Graham, Pima, Santa Cruz cos.; 1150–2300 m (3800–7600 ft); Jul–Nov; AZ and CO, e to MO, MD, FL; Mex.

***Tradescantia* L.** Spiderwort, Spider lily.

Perennial, glabrous to hispidulous, the roots fibrous or tuberous. STEMS prostrate or erect, simple to branched. LEAVES lanceolate to linear-lanceolate. INFLORESCENCES terminal or terminal and axillary, composed of pairs of sessile cymes, each cyme subtended by a foliose bract. FLOWERS perfect, actinomorphic; sepals free, subequal; petals distinct, equal, usually elliptic to ovate (rarely clawed); stamens equal, all fertile, the filaments bearded or sometimes glabrous; ovary 3-locular, the ovules (1-)2 per locule. FRUITS 3-valved, 3-locular. SEEDS with hilum oblong to linear. —ca. 70 spp.; neotemperate and neotropical (for John Tradescant).

1. Stems and foliage completely glabrous; sepals pubescent or glabrous *T. occidentalis*
 1' Stems and foliage hispidulous; sepals pubescent *T. pinetorum*

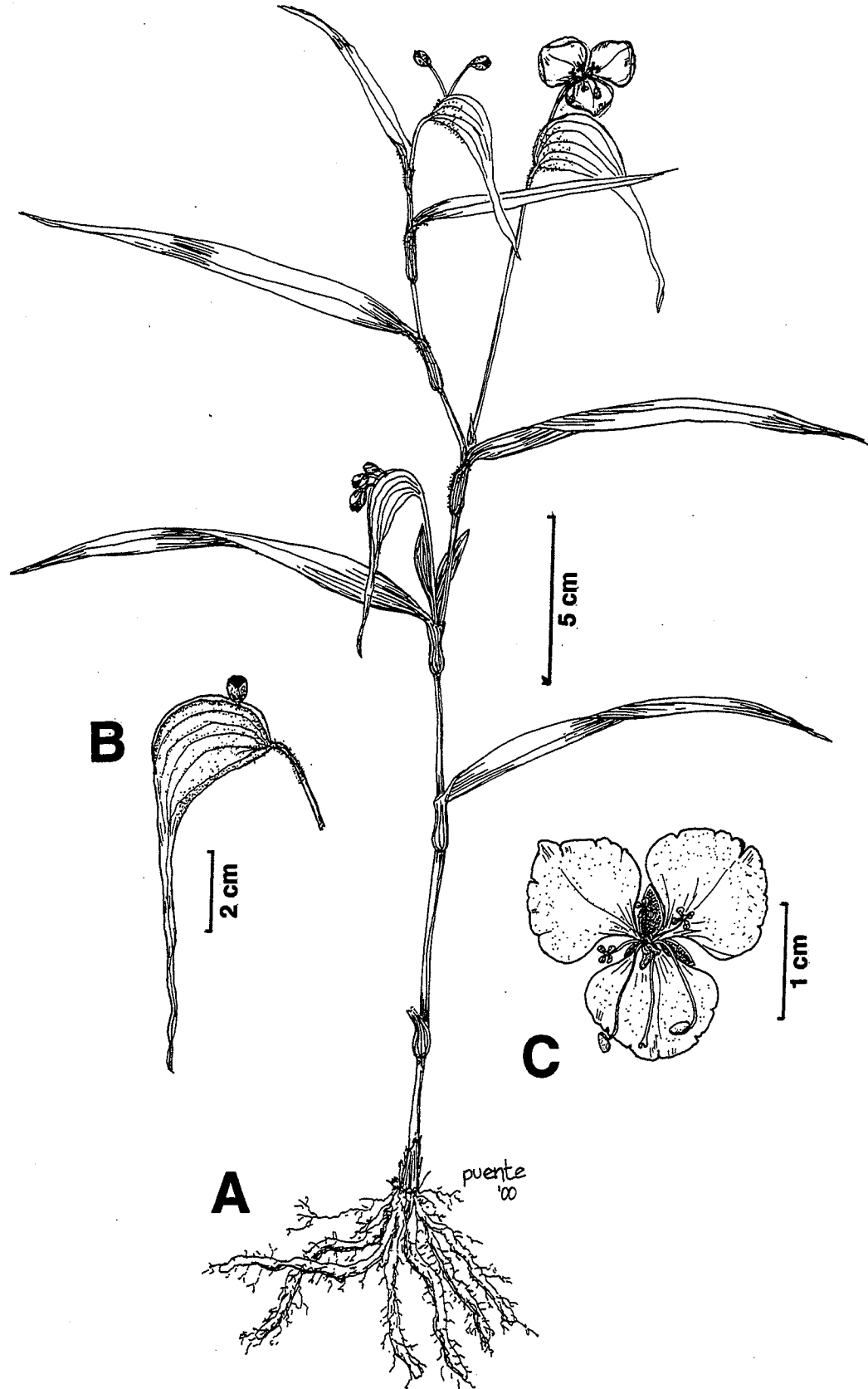
***Tradescantia occidentalis* (Britton) Smyth** (western). —Perennial, glabrous, glaucous, the roots fibrous. STEMS prostrate to erect, 5-95 cm, freely branching. LEAVES sessile, 6-55 cm long, 0.3-1.5 cm wide, glabrous, the apex acuminate. INFLORESCENCES terminal and often axillary, the bracts foliose. FLOWERS: pedicels 0.8-3 cm long, glandular-puberulent to glabrous; sepals 4-10 mm long, glandular-puberulent to glabrous; petals bright blue to rose or magenta, broadly ovate, 0.5-1.5 cm long. FRUITS 4-7 mm long. SEEDS 2-4 mm. —Riparian habitats, rocky hillsides in grasslands, chaparral, oak and pine-oak forest to ponderosa pine on granitic and limestone substrate; AZ, UT, n to ND, e to TX, LA; n Mex. —2 vars. in AZ; these commonly not clearly distinguishable.

1. Sepals and pedicels glandular-puberulent, rarely nearly glabrous var. *occidentalis*
 1' Sepals and pedicels completely glabrous var. *scopulorum*

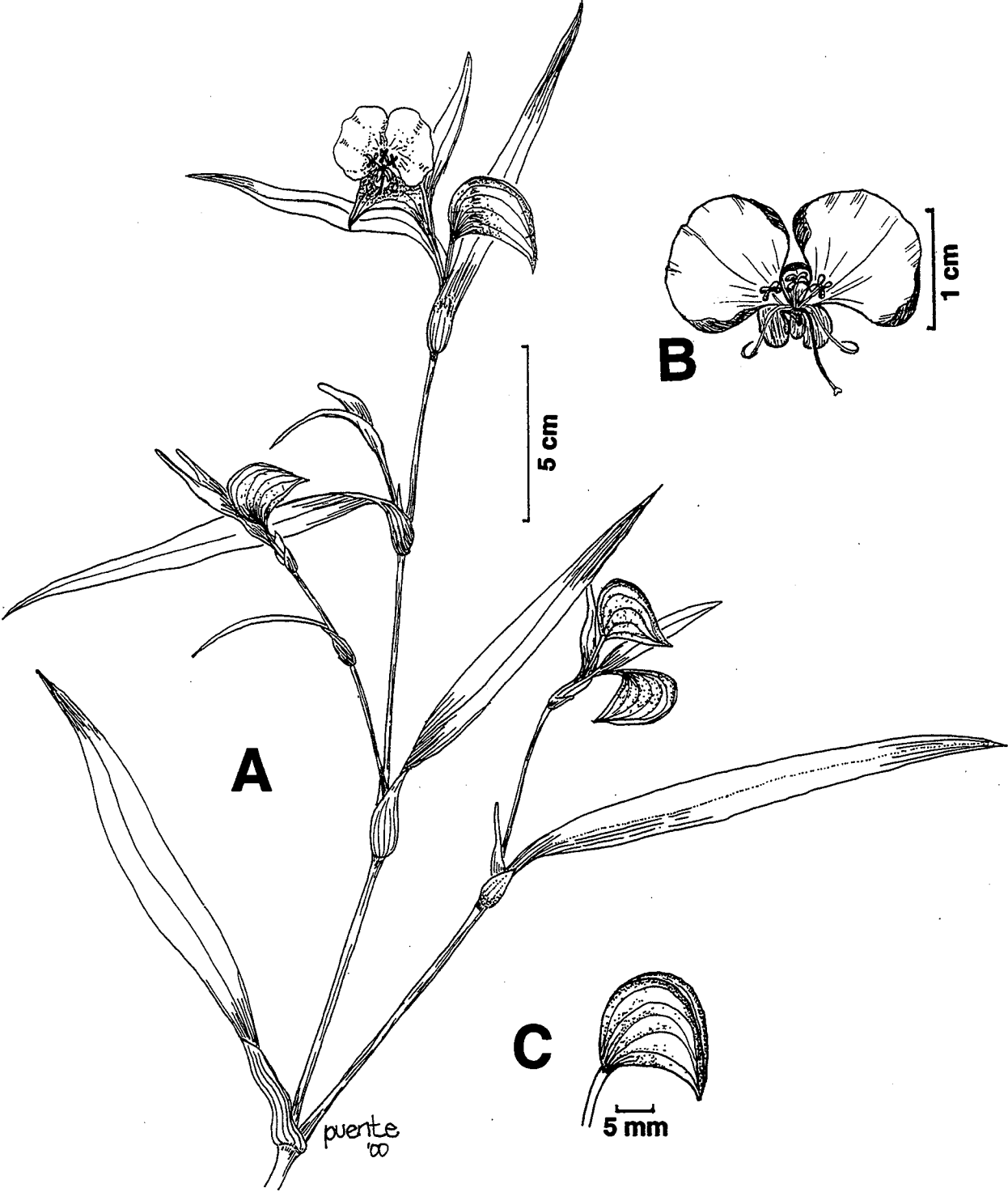
Var. **occidentalis** —LEAVES: blades 5-30(-55) cm long, 0.6-0.9(-1.3) cm wide. FLOWERS: pedicels 0.8-2.7 cm long, glandular puberulent, rarely nearly glabrous; sepals 4-11 mm long, 3.5-4 mm wide, glandular puberulent; petals 10-12.7 mm long, 10-12 mm wide, bright blue to rose. $2n = 12, 24$. —Riparian habitats and washes, chaparral to oak-pine and pine forests: Coconino, Gila, Graham, Maricopa, Navajo, Pinal, Yavapai cos.; 1050-2200 m (3400-7200 ft); May-Sep; Mantitoba, MT, MN s to LA, AZ; n Mex.

Var. **scopulorum** (Rose) E.S. Anderson & Woodson (of rocky areas). —LEAVES: blades 5-50 cm long, 0.4-0.9 cm wide. FLOWERS: pedicels 1-2.5 cm long, glabrous; sepals 5-8.5(-10) mm long, 2.5-4.4 mm wide, glabrous; petals 7-14 mm long, 8-13 mm wide, bright blue. —Riparian habitats, mesquite and oak woodlands to pine-oak forests; Gila, Graham, Pima, Pinal cos.; 800-1900 m (2600-6300 ft); Feb-Jun; AZ, NM; n Mex.

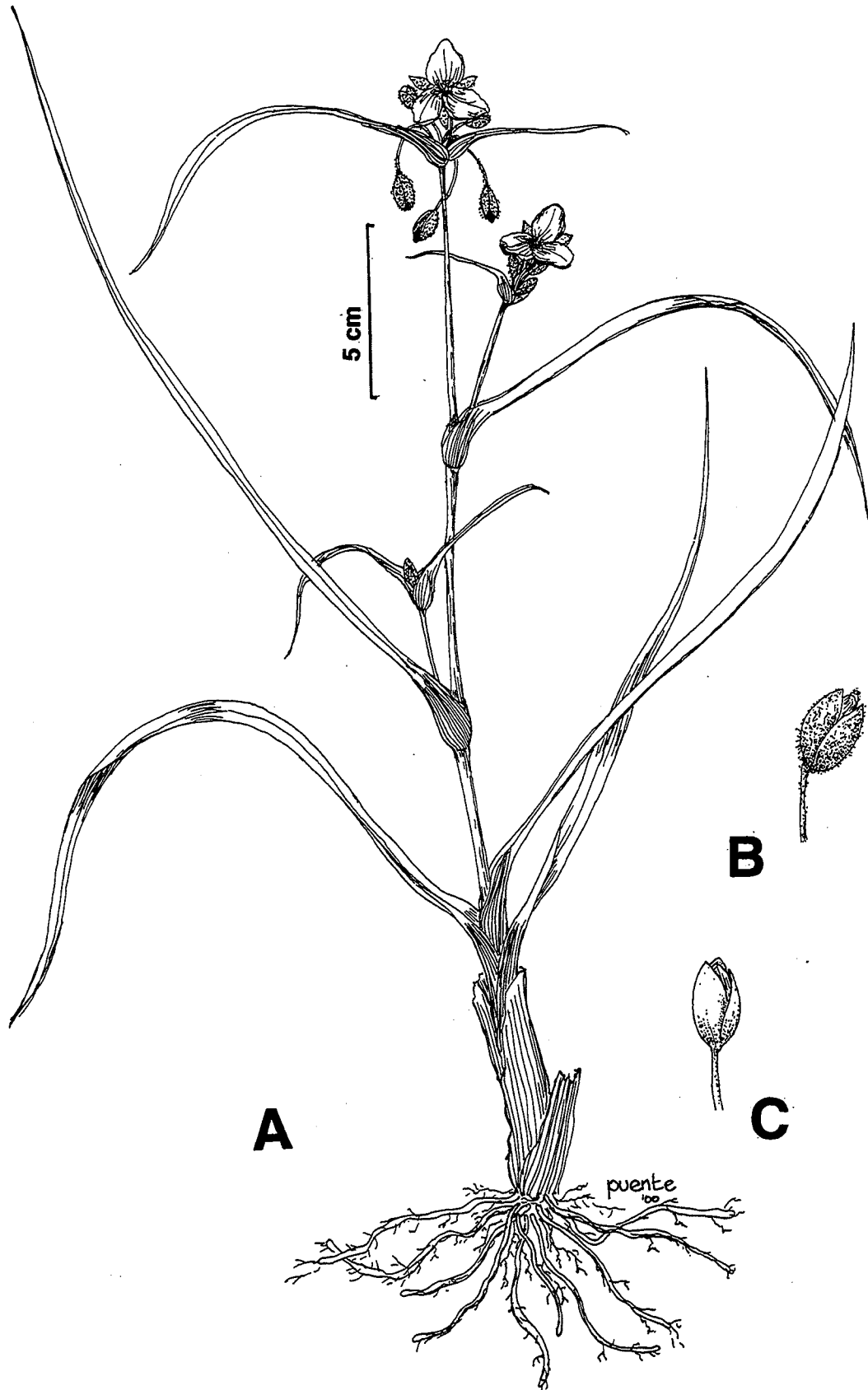
Tradescantia pinetorum Greene (of pines). —Perennial, scabridulous to scattered pubescent, the trichomes short, appressed; roots fibrous with occasional tubers. STEMS erect to ascending, sparsely branched, 10-40 cm. LEAVES linear-lanceolate, 1.5-13 cm long, 0.2-0.8 cm wide, the sheath membranaceous, glabrous. INFLORESCENCES terminal, solitary or frequently with 1-3 axillary inflorescences from upper nodes; bracts foliose, 2-6 cm long. FLOWERS: pedicels 0.5-1.3 cm long, glandular-puberulent; sepals frequently suffused with red, glaucous, 0.4-0.6 mm long, glandular-puberulous; petals bright blue to rose and purple, 0.9-1.2 cm long. FRUITS 3-4 mm long. SEEDS 1.5-2 mm long. —Grasslands, chaparral and grassy meadows in ponderosa pine forest, on granitic to limestone substrate; mesas and rocky hillsides; all cos. except Greenlee, La Paz, Maricopa, Mohave, Pinal, Santa Cruz, Yuma; 1500-2750 m (5000-9000 ft); Aug-Nov; NM; Chih., Dgo. and Son., Mex.



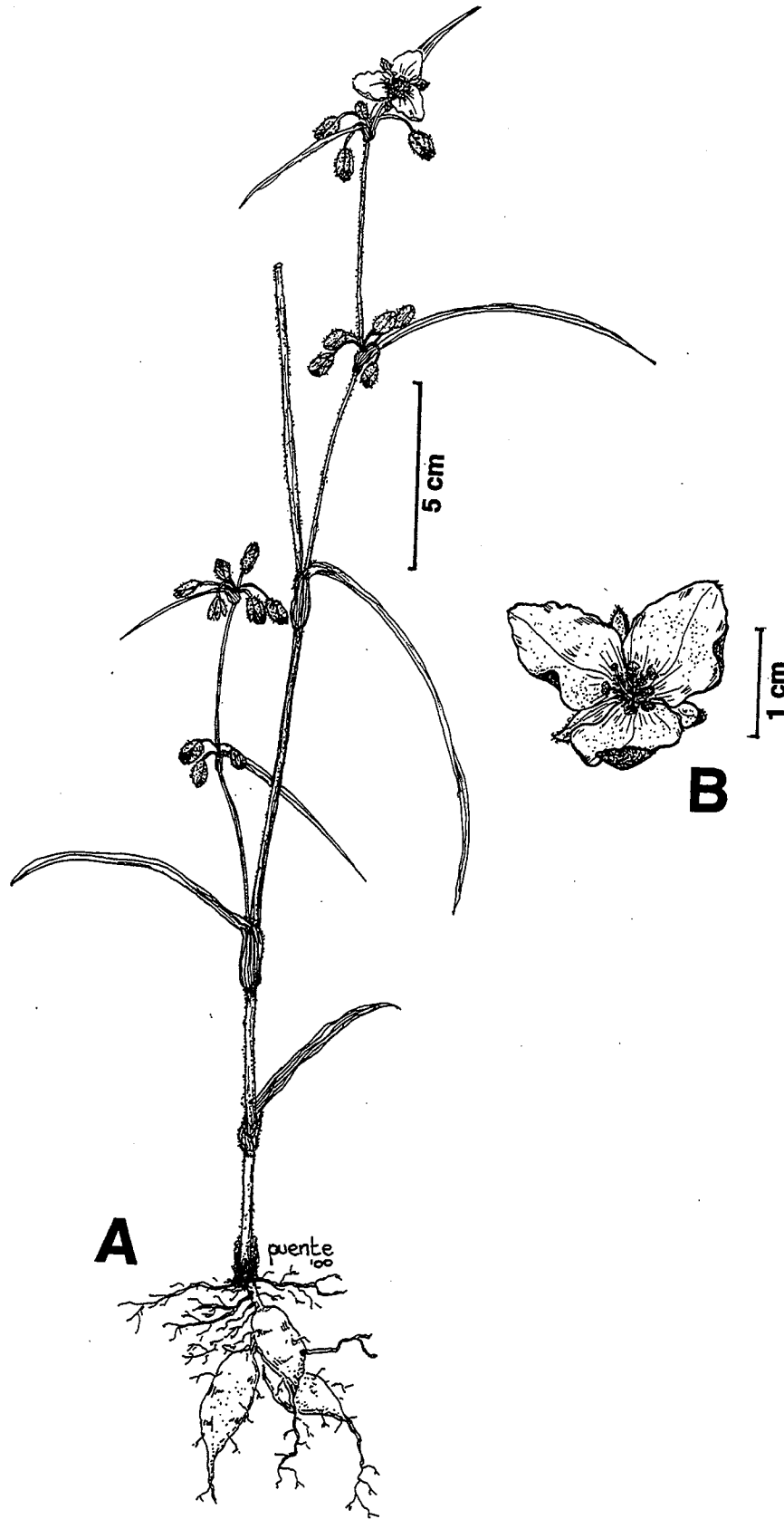
Commelinaceae. Fig. 1. *Commelina dianthifolia* (Piversack 133, ASU). A. Habit, B. Detail of bract with margin free at the base, C. Flower.



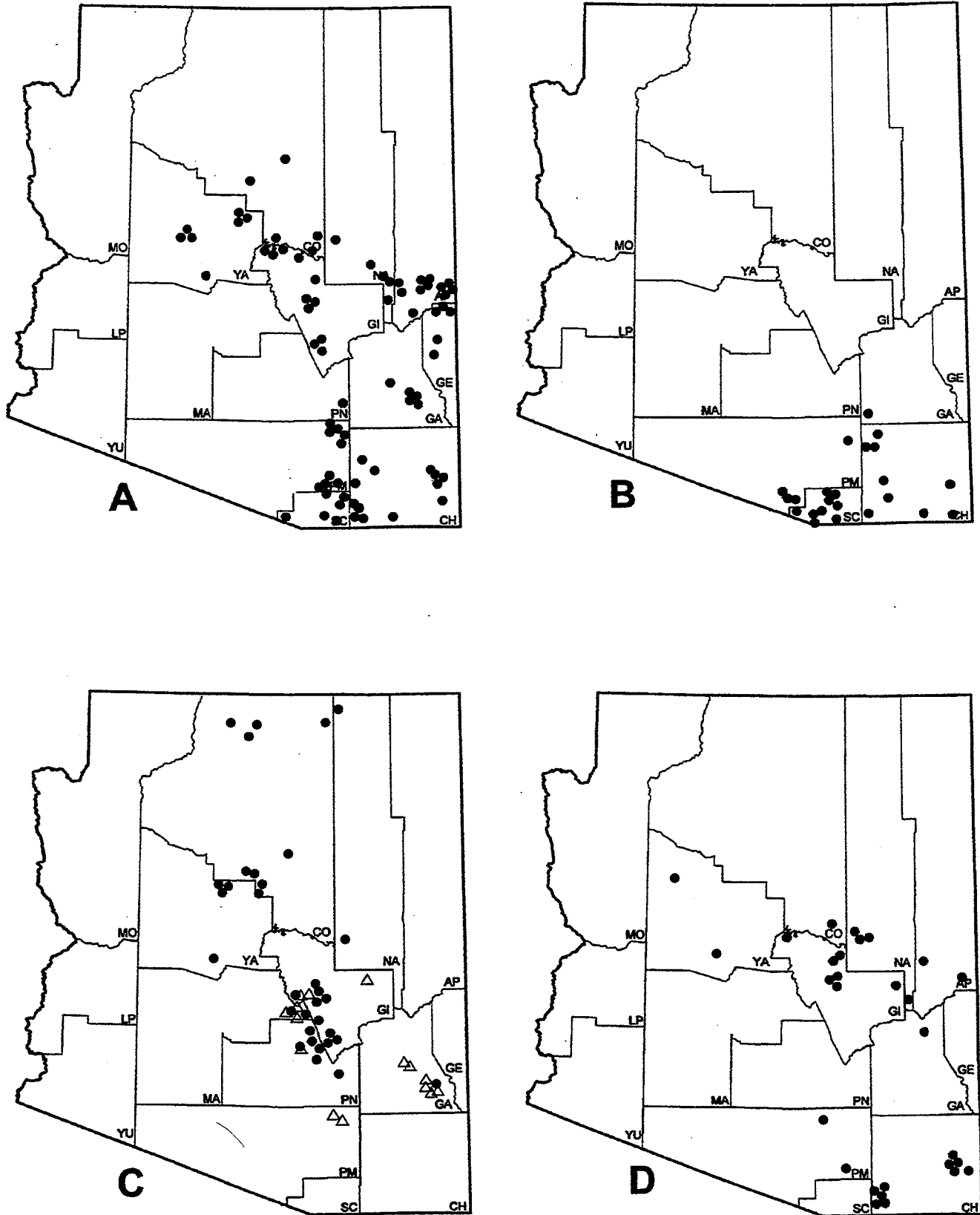
Commelinaceae. Fig. 2. *Commelina erecta* (Mittleman 321, ASU). A, Habit; B, Flower; C, Detail of bract with margin fused at the base.



Commelinaceae. Fig. 3. *Tradescantia occidentalis* (Phillips 78-582, ASU). A, Habit; B, Detail of pubescent sepals in var. *occidentalis*; C, Glabrous sepals in var. *scopulorum*.



Commelinaceae. Fig. 4. *Tradescantia pinetorum* (Stieve 66, ASU). A, Habit; B, Flower.



Commelinaceae. Fig. 5. Distribution of Commelinaceae. A, *Commelina dianthifolia*; B, *Commelina erecta*, C, *Tradescantia occidentalis*: var. *occidentalis* (circles), var. *scopulorum* (triangles); D, *Tradescantia pinetorum*.