

**SOLANACEAE PART FOUR:
PHYSALIS L. AND QUINCULA RAF.
GROUND CHERRY, TOMATILLO**

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Physalis and *Quincula* are two closely related genera and monotypic *Quincula* is sometimes united with *Physalis*. Because the forthcoming treatment of the Solanaceae for the Flora of North America will separate the genera we will follow that decision. In an earlier key to the genera of Arizona Solanaceae (Bates et al. 2009) these taxa were separated only by flower color. We can here improve on that separation with the following key.

1. Flowers erect, the corolla rotate, blue to purple, often with a white center; young growth with inflated globose hairs to ca. 0.1 mm long; seeds triangular with the distal edge crenate. *Quincula*
- 1' Flowers generally nodding, the corolla usually campanulate, or rotate in *P. acutifolia*, yellow to cream or nearly white, with or without central dark spots (urceolate and purplish in *P. solanaceus*); young growth with narrow linear hairs; seeds lenticular without teeth. *Physalis*

Known as “husk cherries” in English and “tomatillos” in Spanish, the species of *Physalis* and *Quincula* have berries enclosed in an inflated calyx. Some species have edible fruits, one of which, *P. philadelphica* Lam. from Mexico, is widely cultivated. The fruits of that species are an important ingredient in “salsa verde” of Mexican cooking. The Asian species *P. alkekengi* L., the “Chinese Lantern Plant” and original type of the genus, has red or orange calyces and is cultivated as an ornamental. Molecular systematic studies (Whitson & Manos 2005) indicate that *P. alkekengi* is not closely related to the American species of *Physalis* and a proposal to conserve the genus with a new type has been put forward (Whitson 2011) so as to retain the name for the greatest number of species. This proposal has been considered by the Nomenclature Committee for Vascular Plants (Taxon 61: 1112. 2012) and it was recommended that *Physalis* be conserved with a new type (*Physalis pubescens* L.).

Physalis L.

Annual or perennial herbs in ours, unarmed, the surfaces often hairy, the hairs simple, or branched, often clearly multicellular with adjacent cells flattened when dry at right angles to each other, sometimes glandular. LEAVES petiolate, membranous

to submembranous, simple, the margins entire to dentate or occasionally lobed, the blade usually longer than the petiole. INFLORESCENCES uniflorous, appearing axillary. FLOWERS 5-merous, actinomorphic, 0.3–1.6 cm long (base of calyx to tip of anthers); calyx lobes acute, usually about as long as or shorter than the tube; corolla rotate, campanulate (sometimes with a reflexed margin) or urceolate, usually yellowish to whitish but less often purplish, often with dark spots (these sometimes merging in a ring) on central inner surface; stamens equal; anthers basifixed, oblong, yellow or bluish, opening by lateral slits, the edges of these whitish; filaments longer than the anthers; stigma capitate to weakly bilobed. FRUITS berries, surrounded by an inflated persistent calyx, the inflated calyx derived primarily from the tube, globose to ovoid, often prominently ribbed with obvious reticulate venation between main veins; seeds numerous, lenticular, yellow to orange, 1.5–3 mm wide. —9 spp. in AZ, ca. 80 worldwide. (Greek: for bladder, refers to the inflated calyx.)

We use the terms spreading and erect for hairs, which may not be clear to everyone. Spreading we use to mean extending from the surface in various directions and not appressed. Erect we use to mean perpendicular to a surface.

Kearney and Peebles and collaborators (1960) included *Physalis heterophylla* Nees in *Arizona Flora*. We have not found a specimen to verify its existence in AZ, although some specimens of *P. hederifolia* have been misidentified with that name.

1. Corolla urceolate, 3–5 mm long, purplish to greenish yellow.....***P. solanaceus***
- 1' Corolla rotate to campanulate, generally over 5 mm long, yellow to white, blue or purple, sometimes with central dark or lighter spots.
2. Stems glabrous to sparsely appressed pubescent, the hairs when present antrorse, unbranched, rarely over 1 mm long.
3. Perennials; flower campanulate, 1.1–1.6 cm long; leaf margins entire to repand-sinuate.***P. longifolia***
- 3' Annuals; flower rotate to campanulate, if campanulate up to 1 cm long; leaf margins dentate to incised or serrate.
4. Corolla rotate, 1–2.2 cm wide, yellowish white, occasionally with yellowish-orange darkened center; anthers 3–4 mm long, yellow.
.....***P. acutifolia***
- 4' Corolla campanulate, 0.4–1 cm wide, yellow, with a purplish or yellow-green center; anthers 1–2 mm long and yellow, or 3–4 mm long and tinged purplish.
5. Leaves ovate, lanceolate or elliptic, 1.7–2.2 times as long as wide; corolla 0.8–2.2 cm wide; anthers 3–4 mm long, tinged purplish, twisted when dry.....***P. philadelphica***
- 5' Leaves elliptic, 2.2–5 times as long as wide; corolla 0.4–1 cm wide; anthers 1–2 mm long, yellow, not twisted when dry.
.....***P. angulata***
2. Stems moderately to densely puberulent, pubescent or villous, the hairs erect, spreading or retrorse, sometimes branched, often over 1 mm long.
6. Plants perennial, the tap root or other underground parts difficult to extract from the soil.

7. Leaves elliptic, rhomboid, or lanceolate, mainly 2.5–4 times as long as wide, the margins entire, sinuate, or coarsely toothed; hairs erect or spreading, ribbon-like, flattened in segments at right angles, mostly 1–2 mm long, not glandular, not branched; pine-oak forest above 1800 m (6000 ft) in the central and s AZ. *P. caudella*
- 7' Leaves ovate, lanceolate or rhomboid, mainly 1–2.5 times as long as wide, the margin toothed entire, sinuate, dentate or serrate; hairs erect, spreading or retrorse, mostly less than 1 mm long, sometimes glandular, sometimes branched; pinyon-juniper, chaparral and desert, mainly below 1800 m (6000 ft) throughout AZ.
8. Hairs erect, mostly less than 0.25 mm long, unbranched, sometimes inconspicuously glandular, but usually not accumulating debris; leaves ovate, 0.9–1.6 times as long as wide; margins entire, less often repand to sinuate; base cordate-oblique, rarely cuneate; peduncle usually about twice as long as the flower; corolla yellow, without darkened center. *P. crassifolia*
- 8' Hairs erect to retrorse, mostly greater than 0.25 mm long, often branched and/or obviously glandular, sometimes accumulating debris; leaves lanceolate to ovate or rhomboid, 1–2.5 times longer than wide; margins coarsely dentate or serrate, less often repand; base usually cuneate to truncate-oblique, less often scarcely cordate; peduncle usually about as long as the flower; corolla yellow to greenish yellow, usually with darkened center. *P. hederifolia*
- 6' Plants annual, the tap root easily extracted from soil.
9. Stems only moderately pubescent, the hairs not glandular; leaves 1.7–2.4 times as long as wide. *P. philadelphica*
- 9' Stems densely pubescent, the hairs glandular; leaves 0.6–1.2 times as long as wide.
10. Leaves ovate; apex acute to acuminate; base sometimes cordate; marginal teeth acute, few or none; Cochise, Pima and Santa Cruz cos. *P. pubescens*
- 10' Leaves elliptic to ovate; apex rounded, obtuse or bluntly acute; base rarely cordate; marginal teeth rounded, a few generally present; Yavapai, Coconino, Graham, Greenlee cos. *P. neomexicana*

Physalis acutifolia (Miers) Sandw. (acute-leaved). —Annual herb, with spreading and ascending stems and branches, sparsely antrorsely pubescent on leaf edges and veins, denser on new growth, the stems up to 50 cm long; hairs up to 1 mm long, not glandular. LEAVES elliptic, often narrowly so, less often lanceolate or ovate, 4–12.5 cm long, 1–5 cm wide, 1.8–6 times as long as wide; base acute to acuminate often obliquely so; apex acute to acuminate; margins dentate to incised or serrate. FLOWERS rotate, 0.7–1.2 cm long; peduncle 1.2–3 cm long, usually about 2–3 times as long as flower; calyx 0.3–0.5 cm long, the lobes about as long as the tube; corolla yellowish white, occasionally with yellowish orange darkened center, 1–2.2 cm wide; anthers yellow, 3–4 mm long, about 3–4 times as long as wide. FRUITING CALYX ovoid, 1.2–2.3 cm long, 1–2 cm wide, most about 1.5 cm wide;

berry 0.6–1.3 cm in diameter; seeds lenticular, 2–2.2 mm wide. [*P. wrightii* A. Gray]. —In cultivated lands, riparian areas, or along roadsides; Cochise, Graham, Maricopa, Pima, Pinal, Santa Cruz, Yavapai, Yuma cos.; 40–1450 m (130–4750 ft); flowering and fruiting Jul–Sep; s U.S., mainly CA to LA; nw Mex.

***Physalis angulata* L.** (for angled stems). —Annual herb, with spreading and ascending stems and branches, sparsely pubescent on leaf edges and veins, denser on new growth, the stems up to 30 cm long; hairs up to 1 mm long, not glandular. LEAVES elliptic, often narrowly so, 2.5–7 cm long, 0.5–2.5 cm wide, 2.5–5 times as long as wide; base acute to acuminate often obliquely so; apex acute to acuminate; margins dentate to incised or serrate. FLOWERS campanulate, up to 1 cm long; peduncle 0.6–2.5 cm long, usually about 1–2.5 times as long as flower; calyx 0.2–0.5 cm long, the lobes about as long as the tube; corolla yellow, with a purplish or yellow-green darkened center, 0.4–1 cm wide; anthers yellowish, 1–2 mm long, about 2 times as long as wide. FRUITING CALYX ovoid, 1–2.4 cm long, 0.7–2 cm wide; berry 0.5–1 cm in diameter; seeds lenticular, 1.5–2 mm wide. [*P. lanceifolia* Nees]. —Riparian areas; Cochise, Maricopa, Pima, Pinal, Santa Cruz cos.; 100–1400 m (300–4600 ft), mostly around 300 m; flowering and fruiting Jul–Nov; CA to MA, mainly in s states; widespread in temperate and tropical regions.

***Physalis caudella* Standl.** (small tail, for attenuate calyx lobes in fruit) —Perennial herb, ascending, with few branches, usually villous to pubescent, more densely so at nodes, stem bases, leaf mid-veins and leaf margins, peduncles, and flowering calyces, the stems up to 40 cm long; hairs erect or spreading, up to 4.5 mm long, obviously multicellular, the cells flattened, often at perpendicular angles to adjacent cells. LEAVES elliptic, rhomboidal, or lanceolate, 2.5–9.5 cm long, 1–5 cm wide, 2–4 times as long as wide; base usually oblique, rarely cuneate; apex broadly to narrowly acute, rarely broadly acuminate; margins entire, sinuate, or coarsely toothed. FLOWERS campanulate, 0.8–1.1 cm long; peduncle 5–12 mm long, usually 0.6 to 1.1 times as long as flower; calyx 0.7–2 cm long, the lobes about as long as the tube; corolla yellow with purple or brownish center, 1.1–2.1 cm wide; anthers bluish yellow, 2–3.5 mm long. FRUITING CALYX globose to ovoid, 2–5 cm long, 1–3 cm wide; berry 0.4–1.5 cm in diameter; seeds lenticular, ca. 2 mm wide. [*P. lanceolata* auct. non Michx.]. —Canyons, steep slopes, rocky ridges, near streams, and often in loose gravelly sand or soil, pine-oak forests; s Apache, Cochise, Pima, and Santa Cruz cos.; 1800–2800m (6000–9100 ft); flowering and fruiting Aug–Sep; NM; nw Mex.

This species most likely has a large underground taproot or rhizome that is rarely collected due to the difficulty of extracting it from the ground.

***Physalis crassifolia* Benth.** (thick-leaved). —Perennial herb, ascending to trailing-procumbent, inconspicuously puberulent, the trailing stems to 40 cm long; hairs erect, mostly less than 0.25 mm long, sometimes inconspicuously glandular, but not accumulating sand. LEAVES ovate, 1–3.5 cm long, 0.8–3.6 cm wide, 0.9–1.6 times as long as wide, the petiole occasionally longer than the blade; base cordate-oblique, rarely cuneate; apex rounded-acute, occasionally acuminate; margins entire,

less often repand to sinuate. FLOWERS campanulate, 1–1.5 cm long; peduncle 1.1–3.2 cm long, usually about twice as long as the flower; calyx 0.5–0.7 cm long, the lobes shorter than the tube; corolla yellow, without darkened center, 1.1–1.7 cm wide; anthers yellow, 3–3.5 mm long. FRUITING CALYX 1.5–3 cm long, 1.3–2.2 cm wide; berry 0.5–1.2 cm in diameter; seeds reddish orange, lenticular ca. 1.5–2 mm wide, the surface rugose. [*Physalis versicolor* Rydb., *P. crassifolia* var. *versicolor* (Rydb.) Waterf.] —Rocky slopes and canyons, usually in upland Sonoran Desert or Mohave Desert; Coconino, La Paz, Maricopa, Mohave, Pima, Pinal, Yavapai, Yuma cos.; 70–1300 m (250–4000 ft); flowering and fruiting nearly throughout the year but mainly from Mar–Apr and Sep–Oct; CA, NV, UT; nw Mex.

Physalis crassifolia is commonly confused with *P. hederifolia* in AZ. See discussion under that species.

Physalis hederifolia A. Gray (leaves of *Hedera*, ivy) —Perennial herb, usually ascending, puberulent to pubescent, sometimes glandular pubescent, the stems up to 50 cm long; hairs greater than or equal to 0.25 mm long, often branched and/or, retrorse and/or obviously glandular, often accumulating sand. LEAVES lanceolate to ovate or rhomboid, 2.5–4 cm long, 1–3.5 cm wide, 1–2.5 times longer than wide; base usually cuneate to truncate-oblique, less often scarcely cordate; apex acute to bluntly acute; margins coarsely dentate or serrate, having (2–)3–4(–5) teeth per side, less often repand. FLOWERS campanulate, 0.8–1.1 cm long; peduncle 0.7–1 cm long, usually about as long as the flower; calyx 0.5–1.1 cm long, the lobes shorter than the tube; corolla yellow with darkened center, 1.1–1.5 cm wide; anthers yellow, 2–3 cm long. FRUITING CALYX 1.4–2.7 cm long, 1.2–2.5 wide; berry 0.8–2 cm wide; seeds lenticular ca. 1.5 mm wide, the surface rugose. [*P. fendleri* A. Gray, *P. hederifolia* var. *fendleri* (A. Gray) Cronquist, *P. hederifolia* var. *palmeri* (A. Gray) C. L. Hitchc.]. —Canyon bottoms, washes in upland Sonoran Desert, chaparral, and pinyon-juniper woodland; all cos. except Yuma and perhaps La Paz; 500–2100 m (1700–7000 ft); flowering and fruiting Apr–Oct; w N. Amer. and ne U.S.; n Mex.

This widespread and variable species is often confused with *Physalis crassifolia* in AZ. The differences are outlined in the key in lead 8, but occasional intermediates may be found. Whether or not these are hybrids remains to be established. Their habitats and ranges may overlap only slightly: *P. crassifolia* is found in deserts, mainly to the sw of Phoenix and Tucson and the Mojave Desert; *P. hederifolia* is found in chaparral to pinyon-juniper woodlands to the n and e of Phoenix and Tucson. The hairs of *P. hederifolia* vary greatly, being short and retrorse, longer and glandular, or longer and branched. *Physalis crassifolia* has unbranched, erect, short hairs (<0.25 mm) that are usually not glandular. Specimens of *P. hederifolia* with branched hairs have been assigned to *P. fendleri*, or *P. hederifolia* var. *fendleri* but the degree of branching is quite variable; specimens with short glandular hairs have been assigned to *P. hederifolia* var. *palmeri*; we do not believe that these groups warrant formal recognition.

Physalis longifolia Nutt. (long-leaved). —Perennial herb with rhizome, erect to ascending, glabrous to sparsely pubescent on leaf margins, fruits and young growth, the stems up to 80 cm long; hairs mostly appressed, 0.1–0.5 mm long.

LEAVES lanceolate to \pm elliptic, 4–11 cm long, 1–4 cm wide, (2–)3–4 times as long as wide; base cuneate, often oblique; apex acute to narrowly acute, or narrowly acuminate; margin entire to repand-sinuate. FLOWERS campanulate, 1.1–1.6 cm long, 1.2–2 cm wide; peduncle 1–1.6(–2.2) cm long, usually equal to or longer than the flower; calyx 0.8–1.2 cm long, the lobes often longer than the tube; corolla cream to greenish-yellow with darkened center; anthers often bluish, 2.5–4 mm long. FRUITING CALYX ovoid, 1.2–3.5 cm long, 1–2.8 cm wide; berry 0.6–1.2 cm in diameter; seeds lenticular, 2–2.2 mm wide. [*P. lanceolata* Michx. var. *longifolia* Trel.] —Pine-oak woodland, oak savanna, chaparral, semi-desert grassland, Great Basin scrub, riparian forest and meadows; Apache, Cochise, Coconino, Gila, Pima, Santa Cruz cos.; 700–2600 m (2400–8500ft); Mar–Oct. widespread in N. Amer. from Can. to Mex.

Physalis neomexicana Rydb. (from New Mexico). —Annual herb, erect and unbranched to ascending with spreading branches, the stems up to 44 cm long, densely pubescent, the hairs 0.25–1.2 mm long, obviously multicellular, glandular, spreading. LEAVES elliptic to ovate, 1.1–5.5 cm long, 1–4.9 cm wide, ca. 1.2 times as long as wide; petiole 0.5–5.4 cm long; petiole usually about 2/3 the length of the leaf blade; base rounded, often oblique; apex rounded, obtuse or bluntly acute; margins sinuate to coarsely toothed, the teeth rounded. FLOWERS campanulate, 0.5–0.7 cm long; peduncle 0.5–0.9 cm long; slightly longer than flower; calyx 0.4–0.7 cm long, lobes slightly shorter than or equal to the tube; corolla yellow with darkened center, 0.6–0.7 cm wide; anthers yellow or bluish, 0.1–0.2 cm long. FRUITING CALYX ovoid to suglobose, 1.2–2.4 cm wide, 2–3 cm long; berry 0.7–1.5 cm in diameter; seeds lenticular, 2–2.2 mm wide. [*Physalis subulata* Rydb. var. *neomexicana* (Rydb.) Waterf. ex Kartesz & Gandhi]. —Pinyon-Juniper woodland, interior chaparral, oak woodlands, and riparian areas; s Apache, Coconino, Graham, Greenlee, s Navajo, Yavapai cos.; 1500–2200 m (5100–7000 ft); flowering and fruiting Feb–Mar, Aug–Oct; NM.

Physalis philadelphica Lam. (of Philadelphia). —Annual herb with spreading and ascending stems and branches, sparsely pubescent on leaf edges and veins, more densely pubescent on new growth, the stems up to ca. 45 cm long; hairs up to 1 mm long, not glandular, sometimes clearly multicellular. LEAVES ovate, lanceolate or elliptic, 2–6 cm long, 1–3.4 cm wide, 1.7–2.4 times as long as wide; base acute, often obliquely so; apex acute to acuminate; margins dentate or serrate. FLOWERS campanulate, up to 1.5 cm long; peduncle 0.5–1.2 cm long, usually about 0.5–2 times as long as flower; calyx 0.2–0.6 cm long, the lobes about as long as the tube; corolla yellow, with a purplish darkened center, 0.8–2.2 cm wide; anthers purplish tinged, 3–4 mm long, about as 3–4 times as long as wide, becoming twisted upon drying. FRUITING CALYX ovoid to subglobose, to ca. 2.5 cm long, to ca. 2 cm wide; berry up to 2.5 cm in diameter; seeds lenticular, 2–2.5 mm wide. —Disturbed areas, grasslands; Cochise, Mohave, Pima, Santa Cruz cos.; 1100–1500 m (3600–5000 ft); flowering and fruiting Aug–Sep; widespread in the U.S., Can. and Mex., widely cultivated.

This is the cultivated “tomatillo” from Mexico. It is unclear if populations in Arizona are native or escaped. Cultivated plants should be expected to be more robust than those described here. *Physalis philadelphica* is most similar to *Physalis angulata*. The species are compared in lead 6 of the key.

***Physalis pubescens* L.** (pubescent). —Annual herb, densely pubescent, the hairs 0.25–1.2 mm long, clearly multicellular, glandular. LEAVES ovate (0.9–) 1.5–8.1 cm long, (0.7–) 1.2–8.1 cm wide, 0.6–1 times long as wide; apex acute to acuminate; base slightly cordate to cuneate, often oblique; margins entire to sparsely toothed, the teeth acute. FLOWERS campanulate, 0.5–0.7 cm long; peduncle 0.5–0.9 cm long; calyx 0.4–0.7 cm long; corolla yellow with darkened center, 0.6–0.7 cm wide; anthers yellow or bluish, 0.1–0.2 cm long. FRUITING CALYX ovoid to subglobose 1.7–3.6 cm wide, 2.0–4.0 cm long; berry 0.7–1.7 cm in diameter; seeds lenticular, 1.5–2 mm wide. [*P. latiphysa* Waterf.]. —Forests, canyons, riparian, moist, or disturbed areas, growing with mesquite, cottonwood, oak, and juniper: Cochise, Graham, Pima, Santa Cruz cos.; 1200–2400 m (4000–8000 ft); Feb–Mar, Aug–Oct; NM, w Mex.

***Physalis solanaceus* (Schltdl.) Axelius** (like *Solanum*). —Annual herb, ascending, mainly subglabrous but sparsely to densely strigose on young growth, flowering calyx and peduncles, the stems up to 40 cm long; hairs usually not clearly multicellular, whitish, to ca. 0.5 mm long. LEAVES ovate to ovate-lanceolate, 2.5–7 cm long, 1–3.5 cm wide, 2–2.5 times as long as wide; petiole 1–3 cm long, about 0.5 times as long as blade; base attenuate; apex acute; margins entire to repand. FLOWERS urceolate, 3–5 mm long, 2.5–3.5 mm wide; peduncle 2–3 mm long; calyx ca. 2 mm long, the lobes shorter than the tube; corolla purple or yellow with distinct purple base, 2–3.5 mm wide, the widest point near the middle; anthers purplish, ca. 1 mm long. FRUITING CALYX globose to ovoid, 10–12 mm wide and long; berry 4–7 mm diameter; seeds ca. 2 mm wide. [*Margaranthus solanaceus* Schltdl., *M. lemmoni* A. Gray]. —Canyons, grasslands, desert scrub, woodlands of cottonwood, oak, or pinyon-juniper; Cochise, Gila, Graham, Greenlee, Maricopa, Pima, Santa Cruz, Yavapai cos.; 1000–2000 m (3300–6600 ft); flowering Sep–Aug; NM, n Mex.

Quincula Raf.

Perennial herbs, unarmed, usually trailing-procumbent, sparsely to densely scurfy on young growth, the stems to 35 cm long; hairs subglobose, often deflated and flat in dried specimens, whitish, ca. 0.1 mm long. LEAVES elliptic to obovate, 2–8 cm long, 1–4 cm wide, 1–3.5 times as long as wide; base attenuate, the blade often extending narrowly along the petiole, the petiole occasionally longer than the blade; apex acute to rounded; margins coarsely lobed or toothed or merely sinuate, the lobes or teeth when present 3–5 per side, nearly perpendicular to the margins. INFLORESCENCES uniflorous, appearing axillary. FLOWERS 5-merous, acinomorphic, rotate, erect, 0.7–1 cm long; peduncle 2–4 cm long, usually 2 or more times as long as the flower; calyx 4–7 mm long, the lobes as long as or shorter than the tube; corolla blue to purple, with a whitish center, ca. 2 cm wide; anthers yellow,

ca. 2 mm long. FRUITS berries, surrounded by an inflated persistent calyx, the inflated calyx derived primarily from the tube; fruiting calyx subglobose to ovoid, 1–1.5 cm long and wide; berry 5–6 mm in diameter; seeds yellowish orange, flattened-triangular, ca. 2–3 mm long, the distal edge crenate. —A monotypic genus. (Latin for little five, for spots on the corolla that are sometimes present).

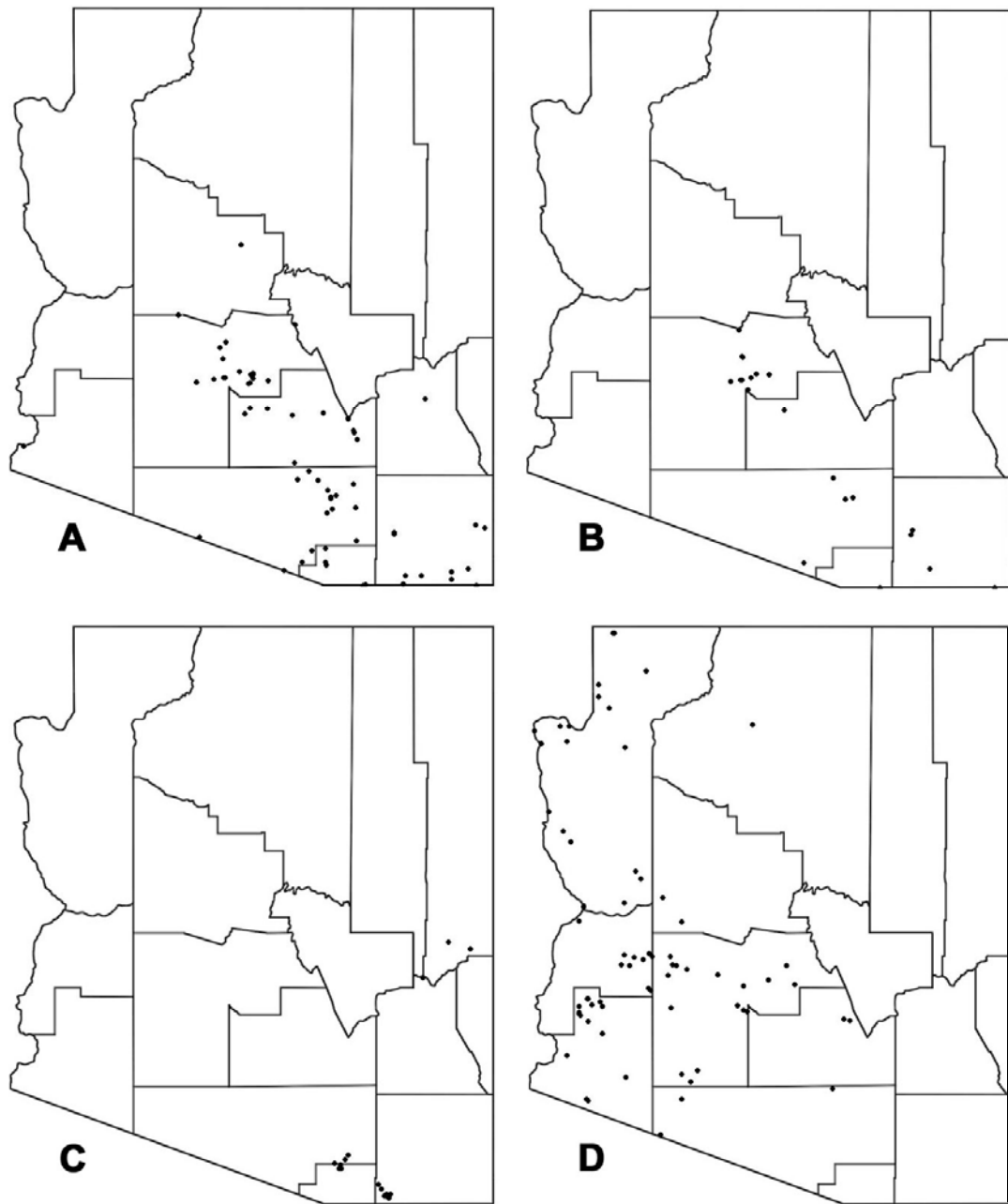
Quincula lobata (Torr.) Raf. (lobed) [*Physalis lobata* Torr.]. —Upland Sonoran desert and desert flats, often with *Prosopis*, often in disturbed places; Apache, Maricopa, Mohave, Pima, Pinal, Yavapai, Yuma cos.; 150–1700 m (450–5600 ft); flowering and fruiting nearly throughout the year but mainly from Mar–May and Sep–Oct; CA to KS, OK, TX; n Mex.

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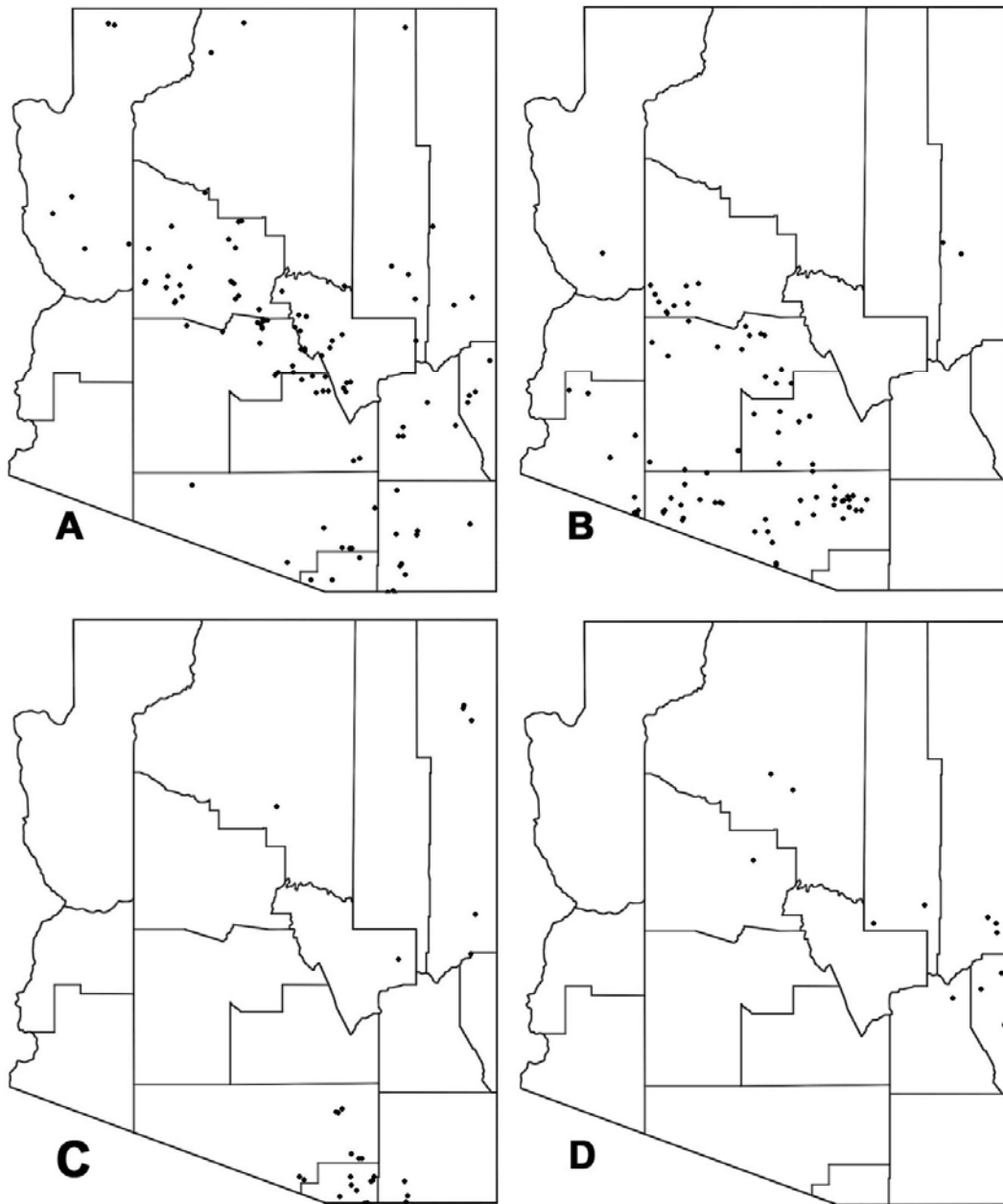
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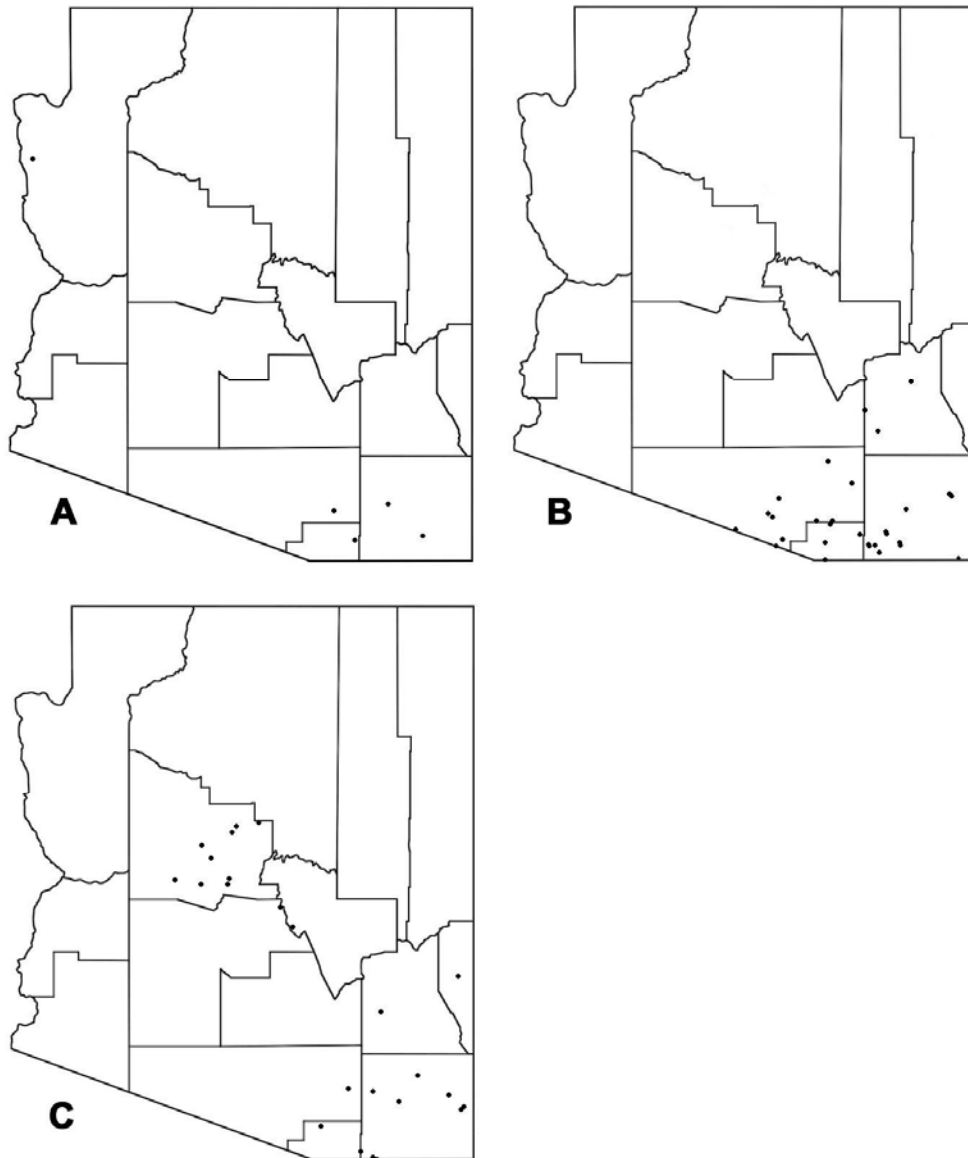
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Solanaceae: *Physalis* Figure 1. Distributions of: (A) *Physalis acutifolia*; (B) *Physalis angulata*; (C) *Physalis caudella*; (D) *Physalis crassifolia*.



Solanaceae: *Physalis* Figure 2. Distributions of: (A) *Physalis hederifolia*; (B) *Quincula lobata*; (C) *Physalis longifolia*; (D) *Physalis neomexicana*.



Solanaceae: *Physalis* Figure 3. Distributions of: (A) *Physalis philadelphica*; (B) *Physalis pubescens*; (C) *Physalis solanaceus*.



Solanaceae: *Physalis* Figure 4. Images of: (1) *Physalis acutifolia*; (2) *Physalis angulata*; (3) *Physalis caudella*; (4) *Physalis crassifolia*; (5) *Physalis hederifolia*; (6) *Quincula lobata*; (7) *Physalis longifolia*; (8) *Physalis philadelphica*; (9) *Physalis neomexicana*; (10) *Physalis pubescens*; (11) *Physalis solanacus*. Photos 1 & 11 by M. Licher; 2, 2b & 10 by L. Landrum; 3 by T. Van Devender; 4 & 6 by P. Alexander; 5 & 9 by F. Coburn; 7 by R. Sivinski; 8 by E. Makings.