

PHYTOLACCACEAE POKEWEEED FAMILY

Victor Steinmann
Rancho Santa Ana Botanic Garden
1500 N. College Ave.
Claremont, CA 91711

Trees, shrubs, or herbs. LEAVES alternate, simple, the margins entire; stipules wanting or vestigial. INFLORESCENCES in ours racemes. FLOWERS mostly perfect, actinomorphic; sepals usually 4 or 5, distinct or fused below; petals absent; stamens 4-many, often in 2 alternating cycles and twice as many as the sepals; pistil superior, 1-many carpellate, the carpels distinct or united, unilocular, the placentae basal; styles and stigmas as many as the carpels. FRUITS berries or drupelets in ours. —Ca. 18 genera, ca. 125 spp.; cosmopolitan but mainly tropical or subtropical regions, especially diverse in the New World. Nowicke, J. W. 1968. *Ann. Missouri Bot. Gard.* 55:294-364; Walter, H. 1909. in *Das Pflanzenreich IV*. 83 [Heft 39]: 1-154.

- 1. Stamens 4 per flower; pistils unicarpellate *Rivina*
- 1' Stamens 8 or more per flower; pistils 5-16 carpellate *Phytolacca*

Phytolacca L. Pokeweed

Trees, shrubs, or perennial herbs. LEAVES petiolate, glabrous, the apices acute. INFLORESCENCE terminal or axillary. FLOWERS bracteate; calyx deeply lobed; stamens in ours 8-10(-12), in one cycle; ovary in ours with 8-10 united carpels. FRUITS in ours berries. SEEDS lens-shaped, black and shiny. —3-4 spp. in the U.S.; ca. 20 spp. in temperate and tropical regions. (Greek *phyto* = plant + Latin *lacca* = crimson lake, referring to the fruit color).

- 1. Inflorescence an open raceme, drooping in fruit; fruiting pedicels mostly 4 mm or longer . . .
..... *P. americana*
- 1' Inflorescence a dense spike-like raceme, erect in fruit; fruiting pedicels mostly 3 mm or shorter
..... *P. icosandra*

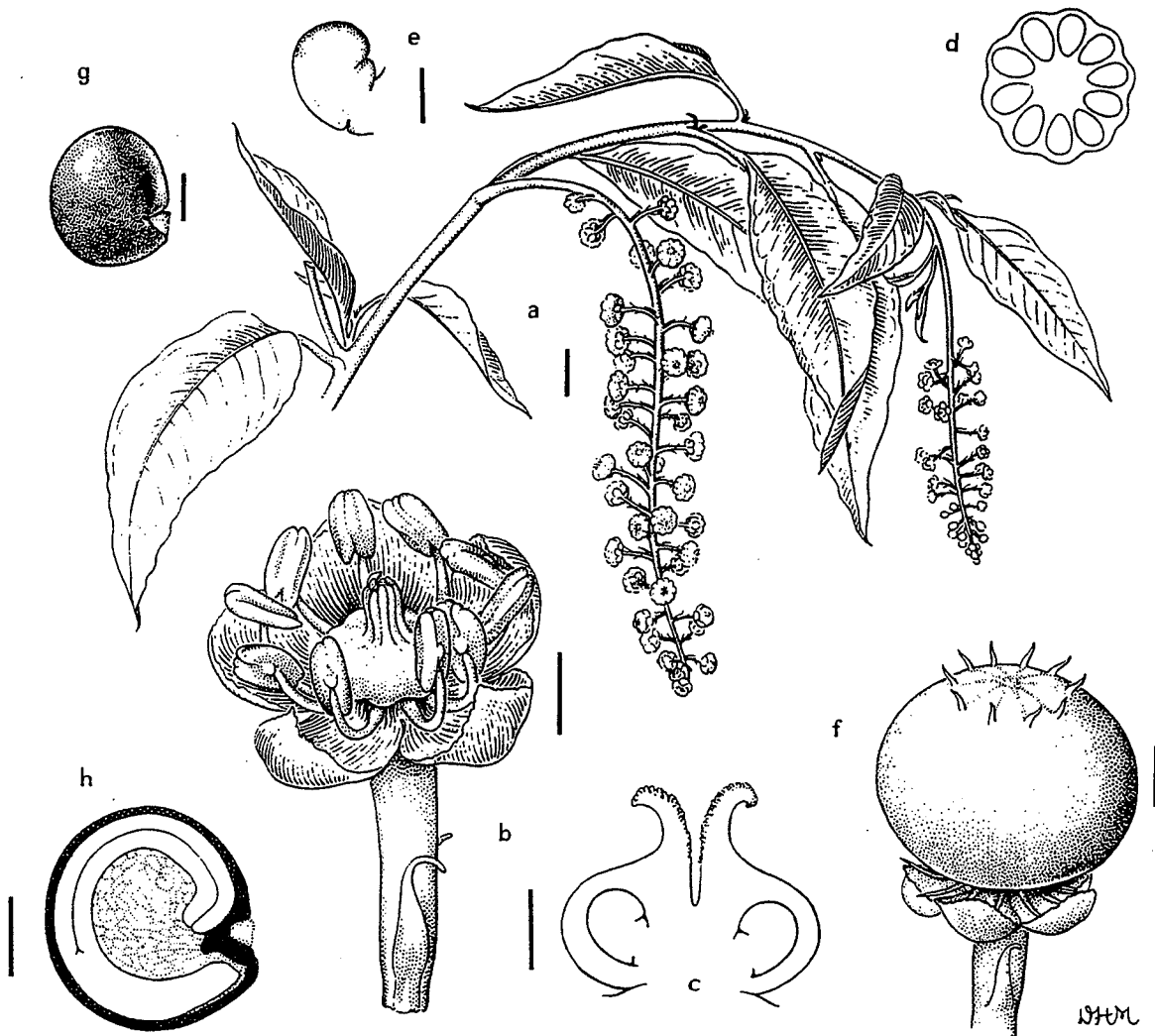
Phytolacca americana L. (of the Americas). Pokeweed. —Perennial herbs 1-3 m high, mostly glabrous. STEMS somewhat succulent. LEAVES 5-32 cm long, lanceolate, elliptic or ovate. INFLORESCENCES lax in fruit, 8-25 cm long, glabrous to puberulent. FLOWERS green, white, or pink; calyx 2-3 mm long; stamens (9-)10(-12). FRUIT on pedicels 4 mm or more long. $2n = 36$. —Disturbed habitats: Navajo, Santa Cruz, Yavapai cos.; 1200-1600 m (4000-5300 ft); Jun-Nov; se Can., e U.S., ne Mex. Widely naturalized including AZ. Sauer, J. D. 1952. *Ann. Missouri Bot. Gard.* 39:113-125.

Phytolacca icosandra L. (with 20 stamens). —Perennial herbs 1-2 m high, glabrous to puberulent. STEMS somewhat succulent. LEAVES elliptic to ovate, 5-30 cm long. INFLORESCENCES spike-like racemes, erect in fruit, 7-16 cm long, puberulent. FLOWERS green, white, or pink; calyx 2-3 mm long; stamens 8-10 in ours. FRUIT on pedicels 3 mm or less long. [*P. octandra* L.] Disturbed and burned habitats: mts of Cochise, Pima cos., possibly also in Santa Cruz co.; 1500-1850 m (5000-6000 ft); Jul-Dec; Mex. to n S. Amer. and naturalized in the Old World.

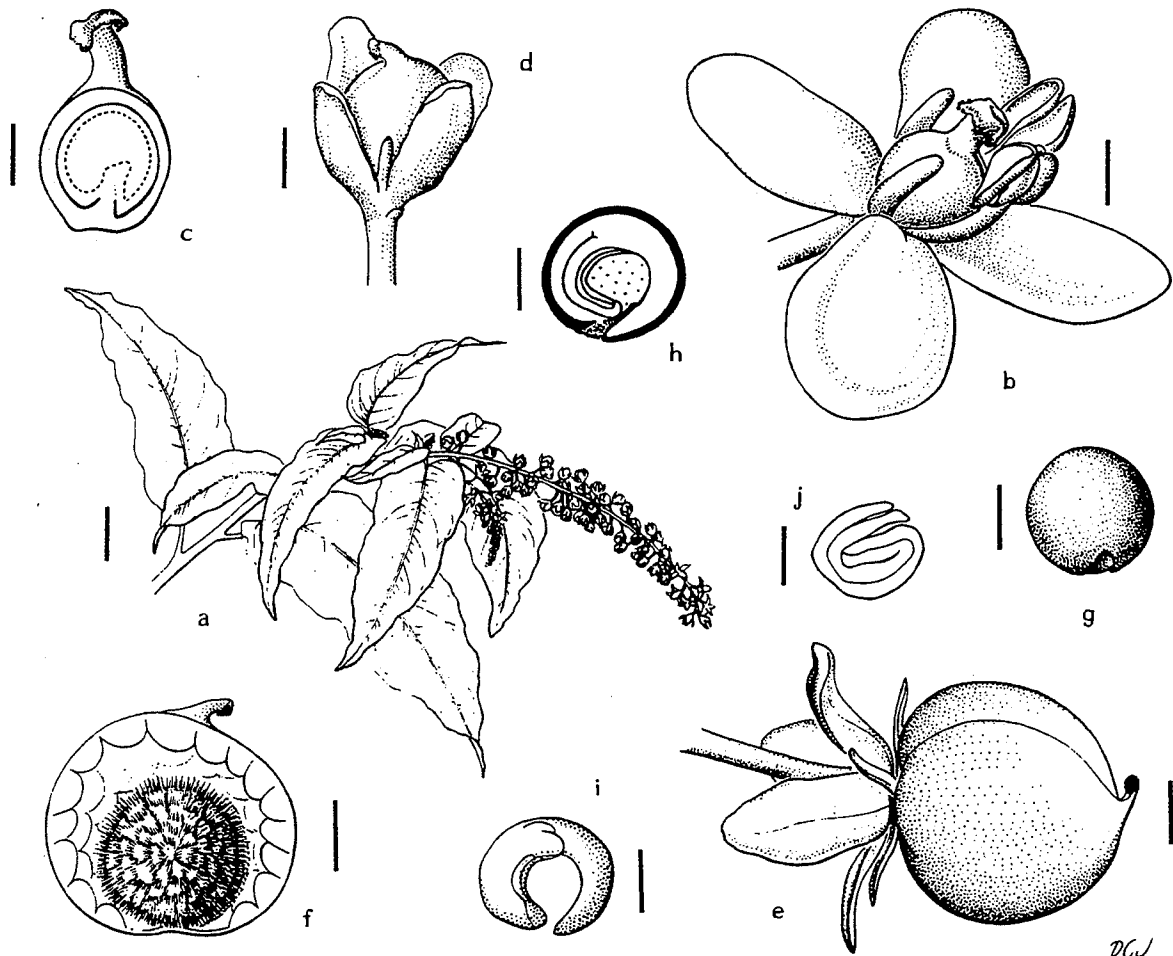
Rivina L.

Perennial herbs, sometimes suffrutescent, 0.1-1 m high, puberulent. STEMS slender. LEAVES petiolate, 3-11 cm long, deltoid to ovate, the apices acute to acuminate. INFLORESCENCES terminal or axillary, 3-15 cm long. FLOWERS white to pink, bracteate; calyx deeply 4-lobed, 2.0-3.5 mm long; stamens 4, distinct and alternating with the sepals; pistil 1-ovuled. FRUITS drupelets. SEEDS black, lens-shaped. —A monotypic New World genus distributed in both hemispheres and naturalized in the Old World. (for A.Q. Rivinus, a German Botanist, 1652-1723).

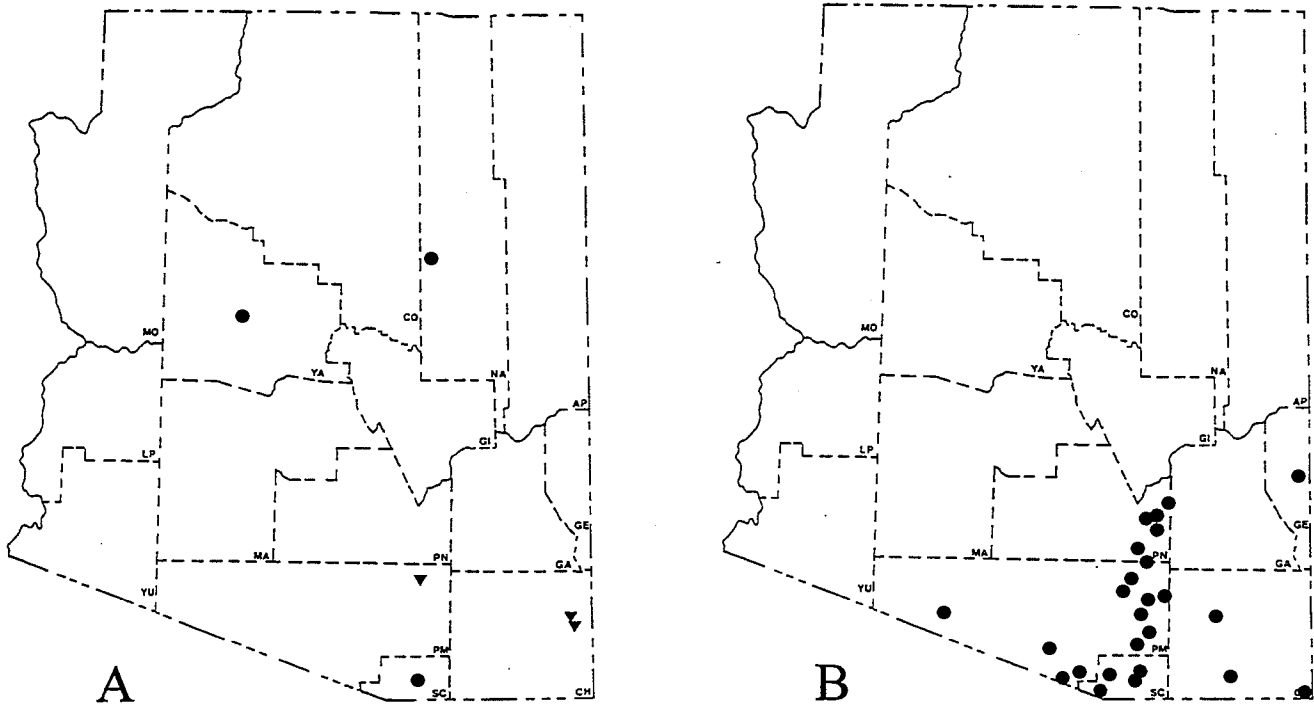
Rivina humilis L. (low growing). Rouge Plant. —Canyons and riparian habitats in oak woodland, grassland, and desertscrub: Cochise, Graham, Greenlee, Pima, Santa Cruz cos.; 800-1800 m (2700-5900 ft); Jun-Dec; NM, TX; s to Argentina.



Phytolaccaceae Fig. 1. *Phytolacca americana*, reproduced with permission from the *Journal of the Arnold Arboretum* volume 66, 1985. a, branchlet with flowers and immature fruits, scale bar = 0.75 cm; b, flower, stigmas not yet receptive, scale bar = 1 mm; c, gynoecium with receptive stigmas, semidiagrammatic, vertical section, 2 ovules visible, scale bar = 0.5 mm; d, gynoecium, diagrammatic cross section, with ovule filling each locule, scale bar = 1 mm; e, ovule, lateral view, micropyle below, scale bar 0.25 mm; f, mature fruit, scale bar = 2 mm; g, seed, lateral view, funicular remnant to right, scale bar = 1 mm; h, seed in section, semidiagrammatic, seed coat black with white stipples, embryo unshaded, perisperm in center, scale bar = 1 mm.



Phytolaccaceae Fig. 2. *Rivina humilis*, reproduced with permission from the *Journal of the Arnold Arboretum* volume 66, 1985. a, tip of flowering shoot, scale bar = 0.75 cm; b, flower, 2 anthers removed, scale bar = 0.5 mm; c, gynoecium in vertical section—note basal ovule, scale bar = 1 mm; d, very young fruit, scale bar = 1 mm; e, mature fruit, scale bar = 1 mm; f, mature fruit, longitudinal section, note hairy endocarp, fleshy mesocarp, and liquid-filled space between mesocarp and endocarp—note that “bumps” in mesocarp fit into “areoles” on very thin endocarp, scale bar = 1 mm; g, seed, scale bar = 1 mm; h, seed in vertical section, radicle of embryo at micropyle, perisperm stippled, scale bar = 1 mm; i, embryo, oriented as in “h,” scale bar = 1 mm; j, section through center of cotyledons of embryo, oriented as in “i,” scale bar = 0.5 mm.



Phytolaccaceae. Fig. 3. Distribution of: A, *Phytolacca americana* (dots) and *P. icosandra* (triangles); B, *Rivina humilis*.