

URTICACEAE NETTLE FAMILY

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Monoecious, dioecious, or polygamous, fibrous- or taprooted annual or rhizomatous perennial herbs or small shrubs or trees, usually hairy, sometimes with stinging hairs. LEAVES stipulate or estipulate, petiolate, deciduous, simple, opposite or alternate, the blades with linear or punctiform cystoliths. INFLORESCENCES of paniculately or racemosely arranged cymes, or spikelike, axillary or terminal; monoecious plants with the staminate and pistillate flowers in the same or in separate inflorescences. FLOWERS hypogynous, mostly actinomorphic. STAMINATE FLOWERS usually pedicellate, white or green; tepals and stamens 4 or 5; filaments inflexed at first and eventually ejecting the pollen explosively; pistil rudimentary. PISTILLATE FLOWERS usually sessile, greenish or reddish; tepals 2-4; staminodia present or absent; style 1 or absent; stigma linear; ovule 1, basal. PERFECT FLOWERS with 4 tepals and 4 stamens. FRUIT an achene, free, either loosely or tightly surrounded by the persistent and accrescent perianth. --Ca. 40 genera, 900 spp., chiefly tropical and subtropical.

1. Plants without stinging hairs, the hairs soft and flexible and without a bulbous or cylindrical base, at most the hairs nearly pustulate at the base; fruiting tepals 3 or 4, free, or fused and forming a tubular perianth, or apparently absent, but actually tightly enclosing the achenes.
 2. Leaves opposite or alternate, toothed; perianth segments appearing shorter than achenes or apparently absent *Boehmeria*
 - 2' Leaves opposite, entire; perianth segments longer than achenes, free at maturity, ascending and loosely enclosing the achene *Parietaria*
- 1' Plants with stinging hairs, the hairs with a long, sharply pointed, stiff, translucent apical portion and a distinct bulbous or cylindrical base; fruiting tepals 2 or 4, free *Urtica*

Boehmeria Jacquin False Nettle

Erect, monoecious, rarely dioecious, perennial, rhizomatous herbs, subshrubs, or shrubs without stinging hairs, sparsely to more or less densely hairy. LEAVES opposite or occasionally subopposite or alternate, stipulate; blades lanceolate to widely ovate, dentate or serrate, the upper surface with punctiform cystoliths. INFLORESCENCES axillary, of remote or crowded clusters of flowers borne along a central axis in a spike-like arrangement, or paniculiform. STAMINATE FLOWERS with 4 tepals, 4 stamens, the rudimentary pistil represented by a globose structure. PISTILLATE FLOWERS with the perianth parts fused and adnate to the ovary; style elongate, persistent; stigma linear, straight, or hooked. FRUITS flattened achenes. --2 spp. in N. Amer., ca. 100 worldwide, mostly in the tropics and subtropics. (For G. R. Boehmer).

Boehmeria cylindrica (L.) Swartz (cylindric). Bog-hemp. --Herbs or subshrubs, 0.1-1.6 m tall. LEAVES opposite or subopposite, rarely alternate; blades elliptic, lanceolate, to widely ovate, 5-18 cm long, 2-10 cm wide, subglabrous on both surfaces to scabrous adaxially and densely short pilose or puberulent abaxially. INFLORESCENCES spikelike, often with a tuft of reduced leaves at the apex. FLOWERS in remote or crowded clusters of 1-few staminate flowers and several pistillate flowers or, rarely, all flowers of one kind. ACHENES flattened, ovoid to subcircular, 0.9-1.6 mm long, 0.9-1.2 mm broad, subglabrous or bearing straight and hooked hairs; seed shape clearly apparent through the tightly adnate calyx, surrounded except at the base by corky tissue. $2n = 14$. [*B. cylindrica* (L.) Swartz var. *drummondiana* (Weddell) Weddell, *B. decurrens* Small, *B. drummondiana* Weddell, *B. scabra* (Porter) Small]. --Swamps, bogs, marshes, wet meadows, ditches throughout the range; in AZ previously known from only two collections,

in Gila Co., at "Catalpa" (now covered by Roosevelt Lake) (Sep 1891) and in Cochise Co., at Fort Huachuca (July 1893), but recently rediscovered in Sierra Ancha Wilderness Area (Aug 1991); se Canada to FL, w to the Great Plains, also Bermuda, W Ind., Mex. and C Amer., disjunct in Argentina, s Brazil, Paraguay and Uruguay.

Parietaria L. Pellitory

Erect, ascending, or decumbent, polygamous, sparsely to densely hairy, annual or perennial herbs, often branched from the base. LEAVES alternate, estipulate, the blades triangular, circular to narrowly elliptic, or lanceolate, entire, one or both surfaces with punctiform cystoliths that appear as minute pustules. INFLORESCENCES of few flowered axillary cymes, the lowermost flowers usually perfect, those above pistillate. FLOWERS subtended by 1-3 linear to lanceolate bracts; tepals 4; stamens 4; ovary short stipitate on a ciliate, disklike receptacle. FRUITS shining, hard and bony, ovoid, stipitate achenes, enclosed by the perianth; stipe ring-like or very short cylindrical and flanged, the style base persisting as an apical [ours] or subapical mucro or deciduous. --20-30 spp. primarily in temperate and subtropical regions. (Latin: based on *paries* = wall).

1. Leaves ovate to oblong or occasionally subcircular, rounded at the base; lowest pair of lateral veins arising at the junction of blade and petiole; involucre usually more than twice the length of the achene ***P. hespera***
- 1' Leaves narrowly elliptic, lanceolate, oblong or ovate, narrowly to broadly cuneate at the base; lowest pair of lateral veins arising above junction of blade and petiole; involucre usually less than twice the length of the achene ***P. pensylvanica***

Parietaria hespera B. D. Hinton (western). --Prostrate, decumbent, ascending, or erect, simple or freely branched, sometimes densely matted, annuals 3-55 cm tall. LEAVES narrowly to very broadly ovate, oblong or circular, 0.4-4.5 cm long, 0.4-2.7 cm wide, about as wide as long to longer than wide; apex attenuate, acute, obtuse or rounded; base broadly cuneate, rounded or truncate. FLOWERS subtended by bracts ca. 1-4.5 mm long; tepals acute, loosely connivent at maturity; bracts shorter than or exceeding the tepals. ACHENES symmetrical, 0.9-1.2 mm long, 0.6-0.7 mm broad. --2 vars.; sw U.S. and n Mex.

Var. *hespera*. --LEAF BASE broadly cuneate, rounded or truncate. TEPALS acute, loosely connivent at maturity, ca. 2-2.8 mm long, obtuse. --Deserts, dry woodlands, roadsides, sand dunes, rock crevices, often in shaded and moist places: all cos. except Apache, Greenlee, Navajo; below ca. 1600 m (5300 ft); late winter-early summer, rarely at other times of year; s half of CA, sw NM, se NV and sw UT; also in nw Mex. *Parietaria floridana* Nutt., the name for a superficially similar species from the e and se coastal U.S. with smaller, stipitate achenes, has been applied incorrectly to this species.

Var. *californica* B. D. Hinton (of California), occurs in s CA and Baja C., Mex. and might be expected in extreme sw AZ; it has tepals long attenuate to caudate and spreading or recurved and twisted at maturity, and leaves about as wide as long or slightly longer and rounded to subcordate at the base.

Parietaria pensylvanica Muhlenberg ex Willdenow (of Pennsylvania). --Decumbent, ascending, or erect, simple or freely branched annuals 4-60 cm tall. LEAVES narrowly to broadly elliptic, lanceolate, oblong, or ovate, (0.8-)2-9 cm long, 0.4-3 cm wide, longer than wide; apex attenuate to long attenuate or obtuse to rounded; base cuneate. FLOWERS subtended by bracts ca. 1.8-5 mm long; tepals ca. 1.5-2 mm long, the bracts exceeding the tepals. ACHENES symmetrical, 0.9-1.2 mm long, 0.6-0.9 mm broad. $2n = 16$. [*P. obtusa* Rydberg ex Small, *P. occidentalis* Rydberg, *P. pensylvanica* Muhl. ex Willd. var. *microphylla* Weddell in DC., *P. pensylvanica* Muhl. ex Willd. var. *obtusa* (Rydberg ex Small) Shinnery]. --Dry ledges, talus slopes, waste and shaded places, preferring soils with a neutral or basic reaction: all cos. except Navajo and Yuma; to 2200 m (7200 ft); spring-late fall; British Columbia to Quebec, s through most of the U.S., except extreme E Coast, into Mex.

Extremes of *Parietaria pensylvanica* with short, oblong or ovate leaves resemble *P. hespera* var. *hespera*. *Parietaria hespera* is usually more delicate and has thinner leaves with the lowest pair of lateral

veins arising from the junction of the blade and petiole. Leaf shape and morphology overlap in the two spp., but in *P. pensylvanica* the lowest pair of lateral veins arise clearly above the junction of the blade and petiole. Intermediate plants, found where the ranges of the two spp. approach or overlap, are: Mohave Co., Black Canyon of Bocum Wash, T37N, R14W, NE 1/4, sec. 22, G. K. Brown & B. D. Parfitt 435 (ASU); Gila Co., Tonto National Forest, 3 Bar Area, Rock Creek near Watershed F, C. P. Pase 1402 (ASU) (both *P. pensylvanica*); and Yuma Co., Havasu National Wildlife Refuge, G. C. Kobetich 73-104-BW2 (ASU) (which is *P. hespera*, but with slightly more elongate leaves). A single mixed collection, Gila Co., Rock Springs, 16 April 1961, R. Dammann s.n. (ASU), provides evidence that the two species occasionally grow together.

Urtica L. Nettle

Erect, ascending, or sprawling, monoecious or dioecious, annual or perennial herbs with stinging and non-stinging hairs. LEAVES opposite, stipulate, the blades elliptic, lanceolate, ovate to broadly ovate, or circular, dentate to serrate, with punctiform or more or less elongate cystoliths. INFLORESCENCES axillary, of cymes arranged in lax racemes or panicles, or in loose to tight clusters, staminate and pistillate flowers in separate inflorescences, or staminate and pistillate flowers alternately arranged in the same inflorescence. STAMINATE FLOWERS with 4 equal tepals, 4 stamens, and a rudimentary, cuplike ovary. PISTILLATE FLOWERS with 4 tepals (the 2 outer smaller, at least in fruit); style absent; stigmas tufted. FRUIT flattened, ovoid or deltoid, loosely enclosed by the inner tepals, the stigmatic tuft deciduous or persistent on the mature fruit. --A genus of about 45 spp. indigenous to temperate areas of both hemispheres. Woodland, D. W. 1982. *Syst. Bot.* 7:269-281. Woodland, D. W. 1982. *Syst. Bot.* 7:282-290. Woodland, D. W., I. J. Bassett, & C. W. Crompton. 1976. *Canad. J. Bot.* 54:374-383. (Latin: based on *urere* = to burn).

1. Plants perennial, rhizomatous; inflorescences either staminate or pistillate *U. dioica*
- 1' Plants annual, tap rooted; inflorescences with both staminate and pistillate flowers, or staminate and pistillate flowers in separate inflorescences in *U. gracilentia*.
 2. Leaf blades ovate to circular, or the uppermost lanceolate, widest near the subcordate to truncate base, occasionally the uppermost leaves cuneate at the base; achenes 1.4-1.6 mm long *U. gracilentia*
 - 2' Leaf blades elliptic to widely elliptic, widest near the middle, cuneate at the base; inflorescences elongate; achenes 1.5-1.8 mm long *U. urens*

Urtica dioica L. (dioecious). Stinging Nettle. --Dioecious or monoecious, erect or sprawling, rhizomatous perennial herbs, 0.5-3 m tall. LEAVES elliptic, lanceolate, narrowly to widely ovate, or cordate, the blades 5.5-20 cm long, 1.5-13 cm wide; margins coarsely or sometimes doubly serrate; apex acute or attenuate; base rounded to cordate; cystoliths punctiform. INFLORESCENCES paniculate, either staminate or pistillate, pedunculate, elongate, the staminate ascending, the pistillate lax or recurved. PISTILLATE FLOWERS with outer tepals linear to slightly spatulate, or lanceolate, 0.8-1.2 mm long; inner tepals ovate to broadly ovate, 1.4-1.8 mm long, 1.1-1.3 mm wide. FRUITS ovoid to broadly ovoid, 1-1.3 mm long, 0.7-0.9 mm broad, flattened. Subsp. *dioica*, from the Old World, has become established in many parts of N. Amer., but is not known from AZ; our 2 subspp. are indigenous in N. Amer.

1. Stem glabrous to strigose; undersurface of leaves glabrous or puberulous subsp. *gracilis*
- 1' Stem soft hairy; undersurface of leaves tomentose or villous subsp. *holosericea*

Subsp. **gracilis** (Aiton) Selander (slender). --Lower surface of leaves glabrous to puberulous, with stinging hairs. $2n = 26, 52$. [*U. gracilis* Aiton]. --Alluvial woods, margins of deciduous woodlands, fencerows, waste places: Apache, Cochise, Coconino, Graham, Navajo cos.; to 3000 m (10,000 ft); late spring-summer; across Canada and the n U.S. from AK to the Atlantic, s in the mts. and along the coasts in the U.S., n Mex.

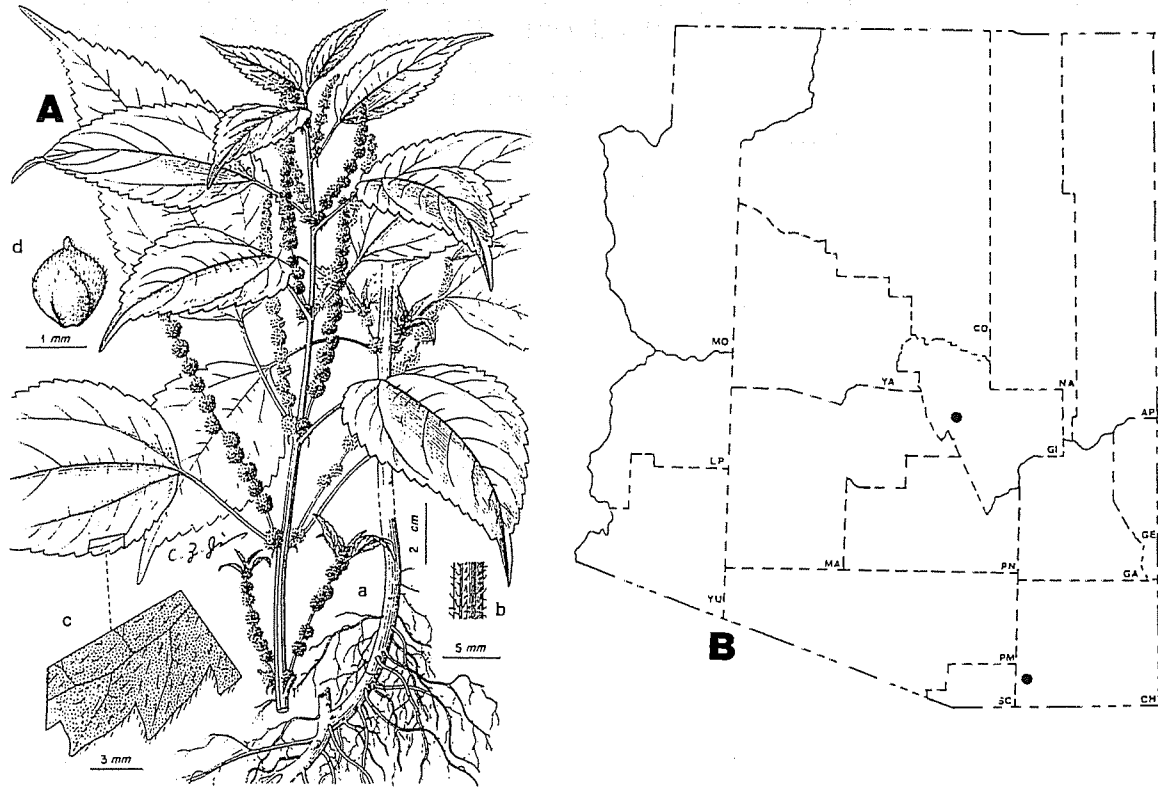
Subsp. *holosericea* (Nuttall) Thorne (entirely silky). --Lower surface of leaves sparingly to densely tomentose and moderately strigose, soft to the touch, with stinging hairs. $2n = 26$. [*U. holosericea* Nuttall, *U. serra* of authors, not Blume]. --Alluvial woods, margins of deciduous or mixed woodlands, fencerows, waste places; n Apache, n Coconino cos.; 2150-3050 m (7000-10000 ft); late spring-summer; CA, w CO, ID, sw MT, OR, NM (Catron co.), NV, UT, WA, sw WY; Mex.

Urtica dioica subsp. *holosericea* is highly variable in leaf shape and degree of hairiness. The least hairy plants appear to grade into subsp. *gracilis* and it is sometimes difficult to separate the two.

Urtica gracilentia Greene (slender). --Monoecious annual herbs, erect, simple or branched from the base, 0.3-2 m tall. LEAVES ovate to widely ovate below, becoming ovate-lanceolate to lanceolate above, the blade 7-15 cm long, 5-10 cm wide; apex acute to somewhat caudate; base truncate to cordate; margins coarsely dentate; cystoliths punctiform or occasionally elongate. INFLORESCENCES racemes, with either staminate or pistillate flowers, or pistillate flowers at the apex of mostly staminate inflorescences, subsessile to short pedunculate. PISTILLATE FLOWERS with outer tepals lanceolate to narrowly ovate, 0.8-1 mm long; inner tepals widely ovate, 1.4-2.2 mm long, 1.3-1.4 mm wide. FRUITS ovoid, 1.4-1.6 mm long, 1-1.1 mm broad, flattened. $2n = 26$. --Alluvial or calcareous soils, often in moist, shaded places: Cochise, Gila, Graham, Greenlee, Santa Cruz cos.; 1100-2400 m (3600-7800 ft); summer-fall, or occasionally all year; NM, w TX, n Mex.

Urtica urens L. (burning, stinging). Burning Nettle, Dog Nettle. --Monoecious annual herbs, erect, simple or branched, 10-75 cm tall. LEAVES elliptic to widely elliptic, the blades 1.8-9 cm long, 1.2-4.5 cm wide; apex acute; base cuneate to widely cuneate; margins coarsely serrate, the serrations often with lateral lobes; cystoliths punctiform. INFLORESCENCES spikelike to paniculate, with both staminate and pistillate flowers, subsessile to short pedunculate. PISTILLATE FLOWERS with outer tepals ovate, 0.5-0.7 mm long; inner tepals widely ovate, 0.6-0.9 mm long, 1.2-1.4 mm wide. FRUITS ovoid, 1.5-1.8 mm long, 1.1-1.3 mm broad. $2n = 24, 26$. --Waste places, roadsides, cultivated fields; Cochise, Maricopa cos.; to ca. 600 m (2000 ft); spring-summer. Scattered throughout N. Amer., but more common along the Atlantic and Pacific coasts, especially in CA; introduced from Eurasia.

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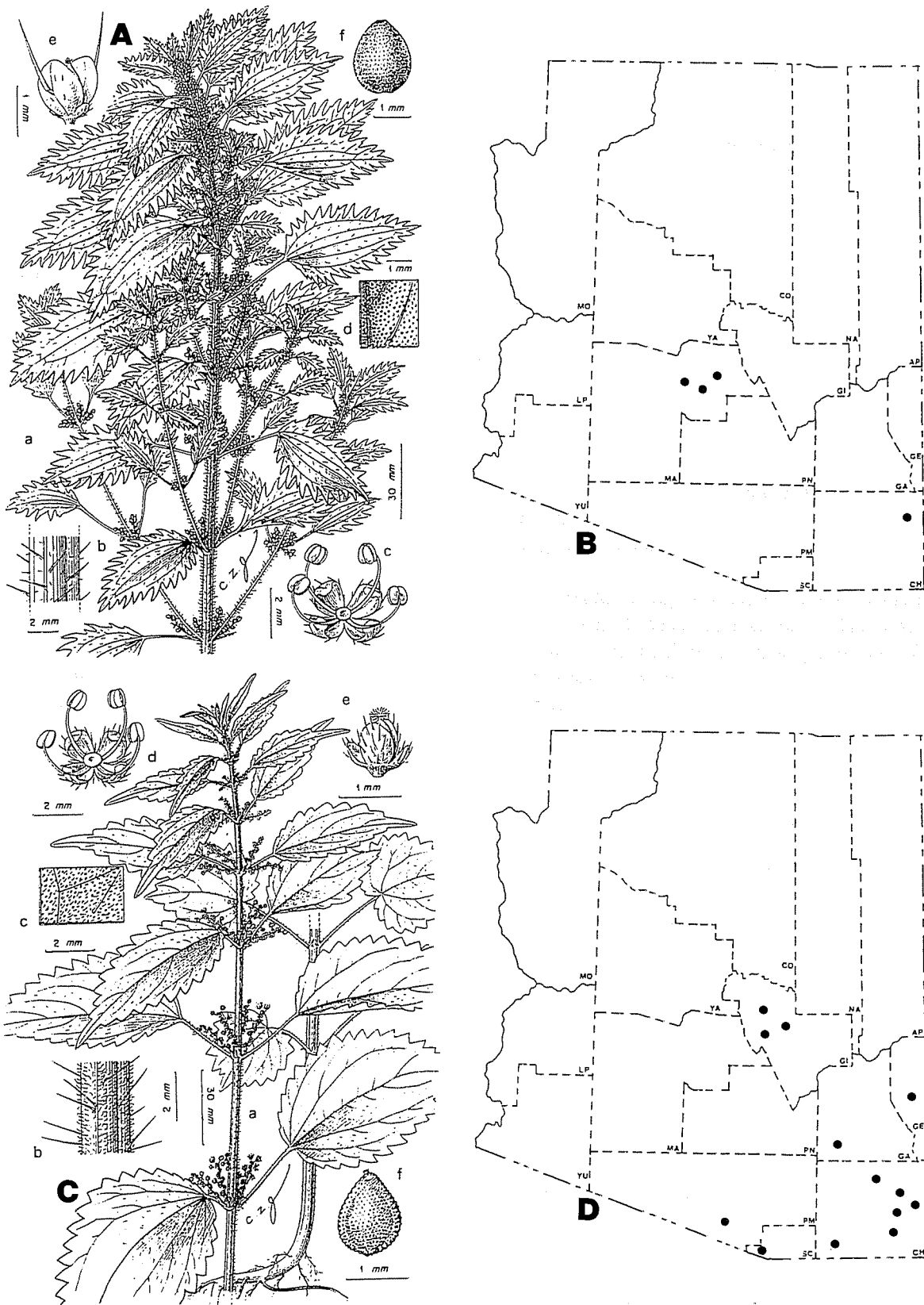
Urticaceae Fig. 1. A, *Boehmeria cylindrica* (L.) Weddell. a, habit; b, portion of stem; c, leaf surface showing punctiform cystoliths; d, achene. B, distribution of *Boehmeria cylindrica*.



Urticaceae Fig. 2. A, *Parietaria hespera* Hinton var. *hespera*. a, habit; b, portion of stem; c, leaf surface showing punctiform crystals; d, calyx; e, achene. B, distribution of *Parietaria hespera* var. *hespera*. C, *Parietaria pensylvanica* Muhl. ex Willd. a, upper portion of plant; b, portion of stem; c, leaf surface showing punctiform crystals; d, achene. D, distribution of *Parietaria pensylvanica*.



Urticaceae Fig. 3. A, *Urtica dioica* L. subsp. *gracilis* (Aiton) Selander. a, habit; b, portion of stem showing stinging hairs; c, upper surface of leaf with punctiform cystoliths and stinging hairs; d, lower surface of leaf; e, achene; f, pistillate flower; g, staminate flower. B, distribution of *Urtica dioica* subsp. *gracilis*. C, *Urtica dioica* L. subsp. *holosericea* (Nuttall) Thorne. a, upper portion of plant; b, portion of stem showing soft and stinging hairs; c, upper surface of leaf; d, achene; e, staminate flower; f, pistillate flower. D, distribution of *Urtica dioica* L. subsp. *holosericea*.



Urticaceae Fig. 4. A, *Urtica urens* L. a, upper portion of plant; b, portion of stem showing stinging and non-stinging hairs; c, staminate flower; d, upper surface of leaf; e, pistillate flower; f, achene. B, distribution of *Urtica urens*. C, *Urtica gracilenta* Greene. a, habit; b, portion of stem showing stinging and non-stinging hairs; c, upper surface of leaf; d, staminate flower; e, pistillate flower; f, achene. D, distribution of *Urtica gracilenta*.