

Urtica dioica L. subsp. *dioica*

Standardized Common Name: Stinging Nettle

Other Common Names: Common Nettle, Nettle

Family: Urticaceae

Taxonomy: *Urtica* includes about 45 species of herbs with stinging hairs. Eleven species are found in Europe and four in North America. *Urtica dioica* is divided into three subspecies. *Urtica dioica* subsp. *dioica*, native to Eurasia and naturalized in several areas of the United States, is, according to Herbs of Commerce, the only material officially sold in the U.S. as Stinging Nettle. The most widespread North American subspecies, subsp. *gracilis* (Aiton) Selander, is sold as California Nettle because it was formerly treated as a separate species, sometimes called *U. californica* Greene. It is not always clearly distinguishable from the Western North American *U. dioica* subsp. *holosericea* (Nutt.) Thorne.

Description: Dioecious, rhizomatous perennial herb. Stems 0.3–1.5(–3) m high, sometimes weak and sprawling, branched or unbranched, quadrangular, pubescent and bearing stinging hairs. Leaves opposite, petiolate, stipulate, ovate to elliptical or lanceolate, (1–)3–20 cm long; base rounded to cordate or rarely truncate; apex acute to acuminate; margins serrate to biserrate; both surfaces normally pubescent with stinging hairs, the lower surface usually also bearing nonstinging hairs, especially over veins. Inflorescences panicle, to 10 cm long, bracteate, with numerous flowers borne in clusters. Flowers minute (<1 mm long), green, unisexual; tepals 4; male flowers with 4 stamens; female flower with 1 ovary, 1-ovuled. Fruit an achene, 1.1–1.3 mm long.

Parts in Commerce: Leaves, or rhizome and roots

Identification: Characteristic stinging hairs are normally present on aboveground vegetative parts. These can be distinguished from other hairs by their larger size (often 1–2 mm long) and their shape. The body of the hair is straight, sturdy and colorless. The base of the hair is often distinct from the shaft, bulbous or slightly elongated, and yellowish.

Leaves:

- Blade ovate to lanceolate or elliptical, variable in size (2–14 cm)
- Petiole less than half as long as blade, bearing stinging hairs
- Base cordate to rounded or rarely truncate
- Apex acute to acuminate
- Margins coarsely serrate, rarely biserrate
- Upper surface dark green, darker than lower

- Both surfaces usually bearing stinging hairs (except in rare variants)
- Leaves usually more or less pubescent with straight pale nonstinging hairs, at least along veins of lower surface, sometimes on both surfaces; sometimes glabrous
- Venation pinnate; several secondary veins arising from base, the innermost pair most prominent; major veins conspicuous beneath, often yellowish; ultimate venation reticulated, observable beneath
- Stem fragments quadrangular, with whitish pith, the smaller stems pubescent and bearing stinging hairs
- Little odor or taste

Urtica dioica subsp. *gracilis* (California Nettle) is very similar to subsp. *dioica* in leaf morphology. Stinging hairs are only sparsely present on the stems and leaves, and may be restricted to one leaf surface, whereas subsp. *dioica* frequently has numerous stinging hairs on the stems and leaves. Literature states that the lower surface will always bear most of the stinging hairs, but some herbarium specimens have been observed to have most of the stinging hairs on the upper surface. Otherwise, the leaves are glabrous or barely pubescent.

Urtica urens L. (Dwarf Nettle) differs from typical *U. dioica* in several features:

- Leaves smaller, the blades usually 1–3.5(–5) cm long
- Petiole variable in length, sometimes as long as blade
- Petiole usually lacks stinging hairs
- Blade elliptical to suborbicular
- Base cuneate to rounded-truncate
- Marginal teeth deeply incised, often rounded
- Stinging hairs mostly on upper surface of leaf
- Leaves otherwise glabrous or barely pubescent with small fine hairs on upper surface
- Stem fragments with few to many stinging hairs, otherwise glabrous

Rhizome and roots

- Rhizome yellowish-brown, 3–10 mm thick (most commonly 5–6 mm in dried material), tapering, sometimes branching

- Roots arising at swollen nodes of rhizome; larger roots 1–5 mm thick, often grayish; rootlets numerous, very thin, tough
- Internodes 1–3 cm long, longitudinally furrowed
- Fracture fibrous, tough
- Internodes hollow; inner surface whitish
- Larger roots longitudinally furrowed and twisted, often grayish; rootlets smooth
- Rhizome cross-section shows thin cork and cortex; pericycle containing small clusters of fibers and large crystals; distinct cambium; ring of narrow rays of vascular tissue separated by broad rays of parenchyma that contain bands of lignified cells; pith of simple parenchyma, broken down and hollow in the center.
- Root cross-section similar to rhizome, with secondary vascular tissue containing broad parenchyma rays with bands of lignified cells; center of root contains small amount of primary xylem rather than a hollow space
- Taste bitter

Adulterants: According to Wichtl, *U. kiovensis* Rogow. (marsh nettle) and *U. pilulifera* L. (Roman nettle) have rarely occurred as adulterants of nettle root. Both have essentially identical root anatomy, meaning that they could not be distinguished morphologically, and the latter species is also chemically identical. Substitution of other nettle species is probably not a significant quality control problem.

The unrelated *Lamium album* L. (White Nettle, Dead Nettle), which belongs to the mint family but strongly

resembles nettle, has been reported as an adulterant of nettle leaf. It can be distinguished by its lack of stinging hairs on any part. Its leaves are usually pubescent on both surfaces and ciliate on the margins; yellowish or dark glandular spots may be seen on the lower surface. The marginal teeth are often more rounded (crenate) than is typical of *U. dioica*.

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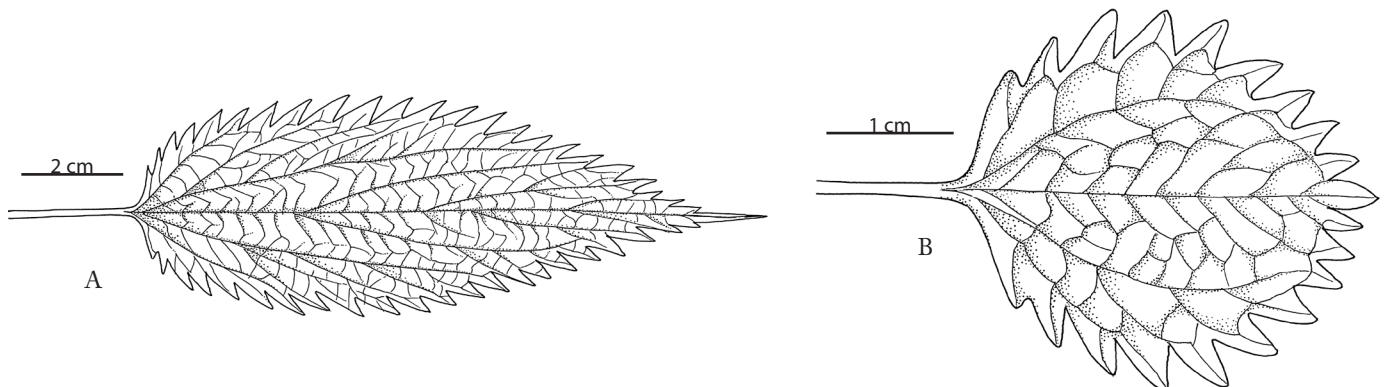


Figure 81: a, *Urtica dioica* leaf; b, *U. urens* leaf.