

Equisetum arvense L.

Standardized Common Name: Horsetail

Other Common Names: Common Horsetail, Field Horsetail, Joint Grass

Family: Equisetaceae

Taxonomy: *Equisetum* is a pteridophyte (non-seed plant) genus of about 15 species, found nearly worldwide. Hybridization among similar species is not uncommon; *E. ×litorale* Kühlewein ex Ruprecht, a hybrid between *E. arvense* and *E. fluviatile*, occurs throughout northern North America. *Equisetum arvense* is extremely variable in gross morphology; Hauke (1966) estimates that over 200 infraspecific taxa have been described. However, the features that distinguish these supposed varieties or forms are often under environmental control, so that multiple forms may appear in a single individual.

Description: Perennial, rhizomatous herb with jointed stems branching at the nodes; leaves whorled, reduced to a sheath surrounding the nodes. Reproductive stems and vegetative stems generally separate; reproductive stems brown, unbranched, short-lived, with rounded cones at apex; cones borne on vegetative stems in occasional abnormal plants. Vegetative stems 2–100 cm tall, 0.8–4.5 mm in diameter; internodes 1.4–4.5 cm long, with 4–16 ridges separated by valleys; in cross-section hollow, with central canal 1/3–2/3 diameter of stem (reduced in small stems), with large hollow spaces (vallecular canals) beneath valleys and small carinal canals beneath ridges, closer to central canal. Leaf sheaths on stems squarish in face view, 2–5(–10) mm high, 2–5(–9) mm broad; teeth 1–3.5 mm long, dark, narrow, often cohering in pairs. Branches in regular whorls at most nodes, ascending, solid, 3–4-ridged, with first internodes longer than the subtending stem sheaths; sheath teeth attenuated.

Parts in Commerce: Vegetative stems

Identification:

- First internode of each branch, except at the lowest nodes, longer than the subtending stem sheath
- Branches solid, lacking central cavity
- Branches occur in regular whorls on most or all of stem, not confined to midstem or lower part of stem
- Branches 3–4-angled, normally not further branched
- Stem sheath teeth (4–)8–10(–16), usually under 4 mm long, dark (not reddish), narrow, stiff (not papery), often cohering in pairs
- Branch sheath teeth attenuate (not broadly triangular)

Adulterants: *E. arvense* may be confused with other species of *Equisetum*. It is particularly important that *E. arvense* be distinguished from *E. palustre* L., as the latter species, which has been found as a contaminant of the former, is toxic when consumed by livestock. Differences between the two include:

	E. arvense	E. palustre
Number of stem ridges and stem sheath teeth	(4–)8–10(–16)	4–10
Position of branch whorls on stem	Regular whorls along whole length of stem	Only at midstem nodes; other nodes lacking branch whorls
Length of first internode of each branch	Longer than subtending stem sheath	Shorter than subtending stem sheath
Branch ridge number	3–4	4–6
Central cavity of branches	Absent; branches solid	Present (observe near base of branches)
Stem sheath teeth	Dark with inconspicuous light margins; often cohering in pairs	Dark with conspicuous white, membranous margins
Branch sheath teeth	Lanceolate-attenuate	Triangular

References:

- Hauke RL. A systematic study of *Equisetum arvense*. *Nova Hedwigia*. 1966;13:81–109.
- Hauke RL. A taxonomic monograph of *Equisetum* Subgenus *Equisetum*. *Nova Hedwigia*. 1978;30:385–455.
- Hauke RL. Equisetaceae. In: Flora of North America Editorial Committee, eds. *Flora of North America*. Vol. 2. New York, NY: Oxford University Press; 1993:76–84.

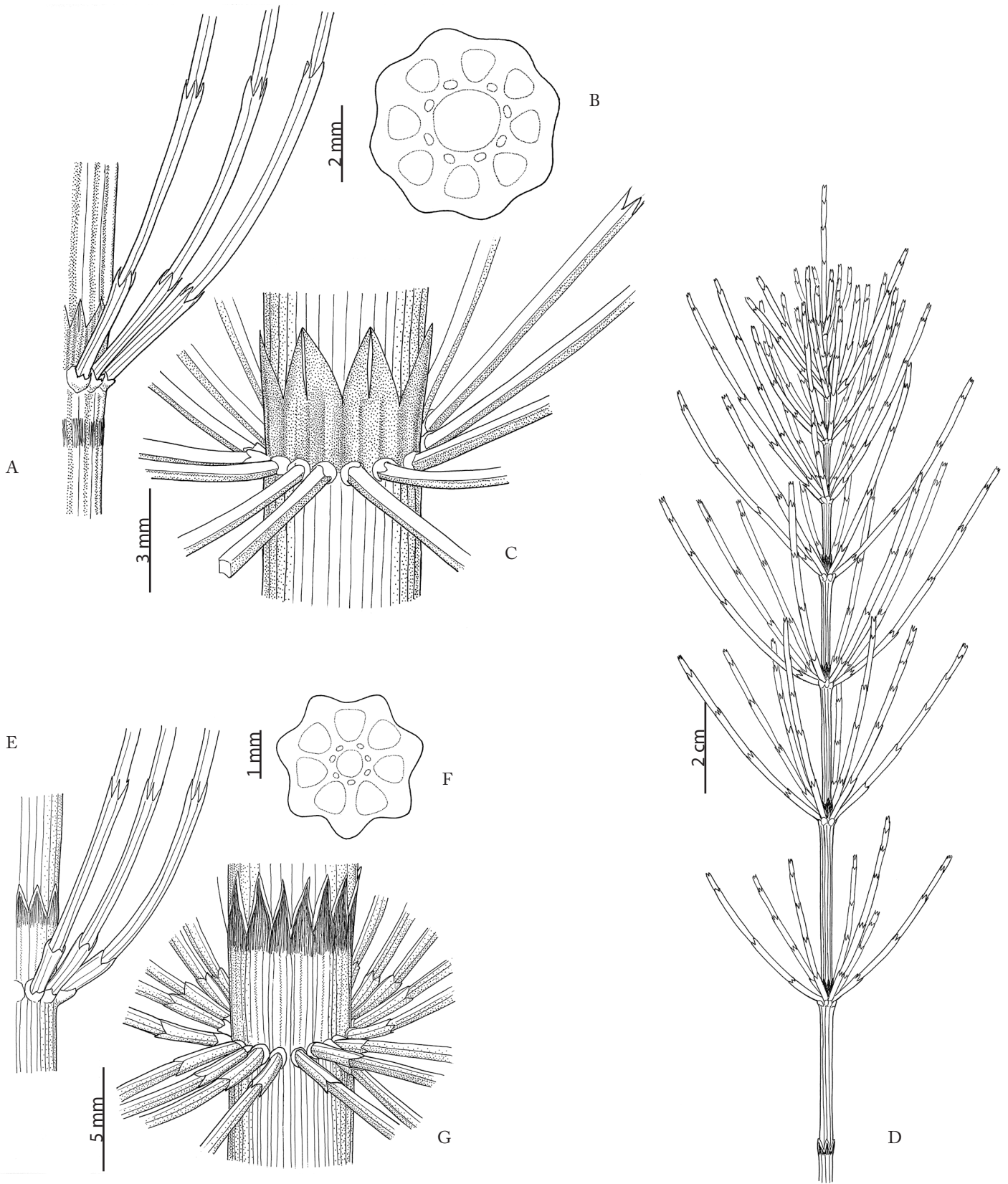


Figure 25: a–d, *Equisetum arvense*; e–g, *E. palustre*.