

ZANNICHELLIACEAE**HORNED PONDWEED FAMILY**

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Submerged aquatic herbs, primarily annuals, dioecious or monoecious. STEMS caulescent. LEAVES opposite, alternate and/or pseudowhorled on the same plant, linear, sessile, the stipules forming a hyaline tubular sheath, non-persistent, the sheath usually ligulate at the apex. INFLORESCENCES solitary or cymose, axillary. FLOWERS unisexual, sessile; perianth generally absent; staminate flowers often with 3 minute transparent scales, with 1–3 stamens, the filaments slender, the anthers 1–4-celled, dehiscent longitudinally; pistillate flowers with 1 to 9 pistils, the styles short to long, the stigmas capitate to peltate, or 2–4-lobed; ovules solitary, pendulous. FRUITS drupaceous, 1-seeded, indehiscent, sessile or generally on a short stipe.—4 genera, 10–12 spp., nearly worldwide. Haynes, R. R. & C. B. Hellquist. 2000. Zannichelliaceae. *in* Flora of North America. 22: 84–85.

Zannichellia L.

Horned Pondweed

LEAVES entire, 1–3-veined, generally terete. INFLORESCENCES axillary, usually 2-flowered cymes of a single staminate and pistillate flower, usually enclosed in bud by a non-persistent sheath. STAMINATE FLOWERS usually solitary; stamen usually 1, the filament usually long and slender, exceeding the pistillate flower, the anthers 4-celled. PISTILLATE FLOWERS enclosed in a non-persistent membranaceous, hyaline sheath; pistils 2 to 8, the styles short, persistent in fruit, the stigmas peltate, asymmetrical. FRUITS obliquely oblong (slightly incurved), laterally compressed, usually minutely to deeply dentate on the convex margin, rarely smooth; endosperm often coarsely papillose; developing fruits usually on a short stipe.—4–5 spp., nearly worldwide. (named in honor of Gian Girolamo Zannichelli, 1662–1729, a Venetian apothecary and botanist).

Zannichellia palustris L. (marshy, swampy). Common Poolmat.—Annual, monoecious, rooted on the bottom and generally floating below the surface of the water. STEMS simple to much-branched, generally slender, to 50 cm long, 0.2–0.6 mm thick. LEAVES linear to filiform, 2–10 cm long, 0.2–1 mm wide, sessile, the apex acute, often sharply pointed, generally 1-nerved; sheath membranaceous, scarious, 0.2–2 cm long. STAMINATE FLOWERS with filaments 1.5–2 mm long, the connective with a prolonged blunt tip 0.1 mm long. PISTILLATE FLOWERS sessile at first, often on a short stipe after anthesis; pistils 2 to 8, the styles recurved, persistent, 0.4–0.7 mm long. FRUITS 1.7–2.8 long, 0.6–0.9 mm wide, the rostrum 0.7–2 mm long, the stipe 0.1–1.5 mm long. $2n = 12, 24, 28, 32, 36$.—Slow moving streams, lakes, ponds, tanks: all cos. (Fig. 1); 300–1700 m (900–5500 ft.); flowering and fruiting summer and fall; throughout N. Amer., C. Amer., S. Amer., W. Indies, Africa, Eurasia and Australia.

The architecture of the ribbing of the fruit can vary greatly, from nearly smooth to excessively spiny, although the “banana-like” shape of the fruit generally remains constant. The

genus *Zannichellia* is in need of global revision, the identity of non-European, especially North American species are generally considered to be *Z. palustris* L.

LITERATURE CITED

HAYNES, R. R. AND C. B. HELLQUIST. 2000. Zannichelliaceae. Pp. 84–85. *In*: Flora of North America Editorial Committee (eds.). *Flora of North America north of Mexico*. Vol. 22. New York: Oxford University Press.

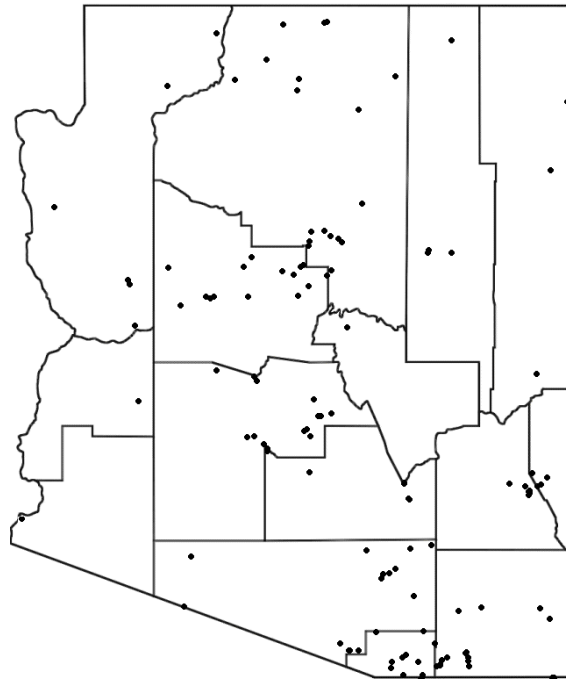


Figure 1. Distribution Map of *Zannichellia palustris*.

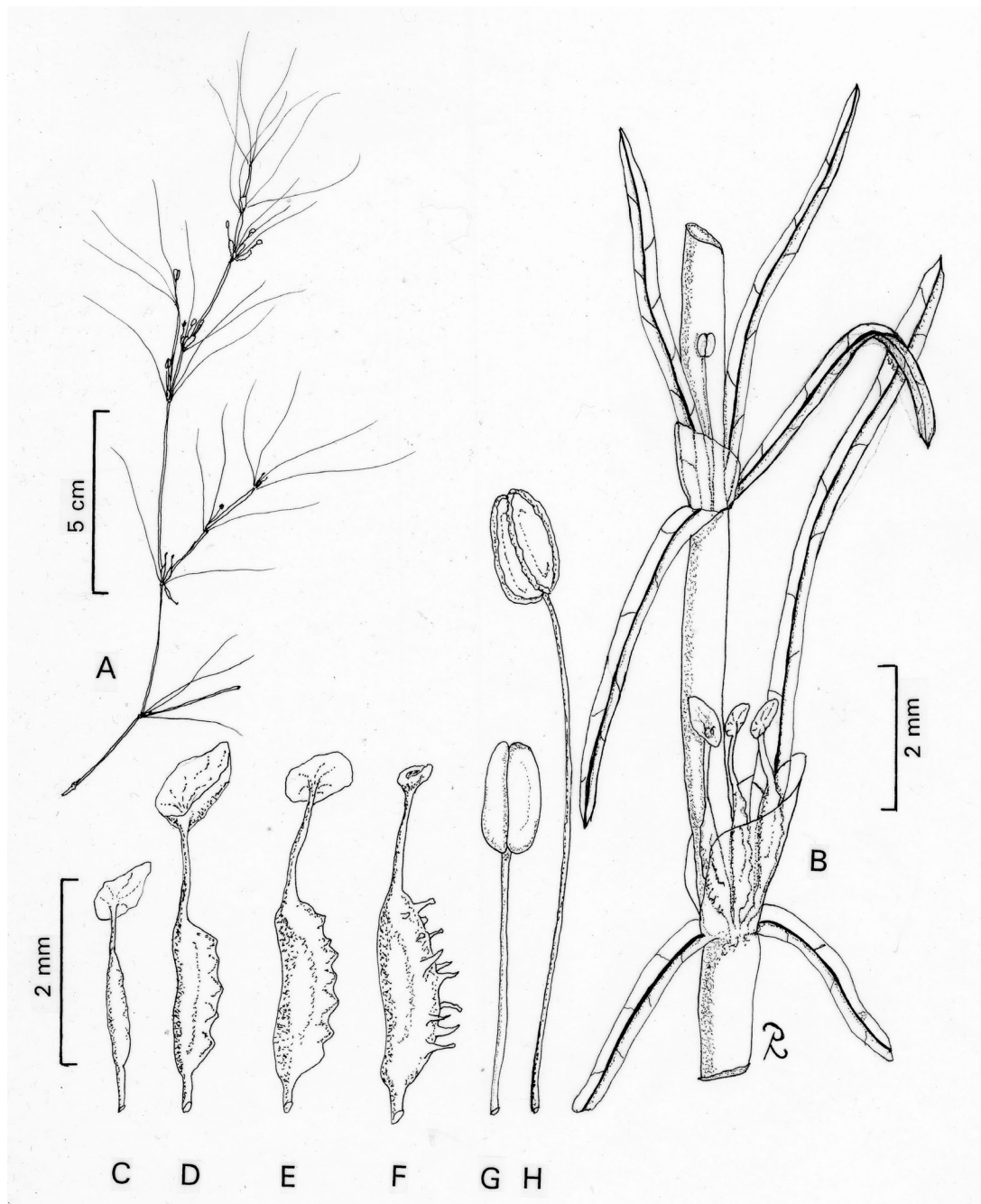


Figure 1. *Zannichellia palustris* L. A. Habit. B. Detail of stem showing a staminate and pistillate inflorescence. C–F. Maturing pistil showing degrading stigma and development of “spines”. G–H. Maturing stamen showing filament growth and anther dehiscence at anthesis. [Drawn by Jon Ricketson].