

# A New Species of *Oserya* (Podostemaceae) from Jalisco, Mexico

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**ABSTRACT.** A new species of Podostemaceae, *Oserya longifolia*, from Jalisco, Mexico, is described and illustrated. Leaf length is the most prominent feature that distinguishes this species.

**RESUMEN.** Se describe e ilustra una especie nueva de la familia Podostemaceae, *Oserya longifolia*, del estado de Jalisco, México. La longitud de la hoja es la característica más prominente que distingue a esta especie.

*Oserya* Tulasne & Weddell is an American genus of six species, most recently monographed by van Royen (1954). Like all Podostemaceae, species of *Oserya* grow attached to rocks in swift-moving river currents. Five of the six species (*O. biceps* Tulasne & Weddell, *O. flabellifera* Tulasne & Weddell, *O. minima* van Royen, *O. perpusilla* (Went) van Royen, *O. sphaerocarpa* Tulasne) occur in northern Brazil and northeastern South America, while *O. coulteriana* Tulasne occurs in Mexico.

Little is known of the geographic distributions of species of *Oserya*. In fact, four of the South American species are known only from the type collections. At the time of van Royen's monograph, *O. coulteriana* was known from few collections in the Mexican states of Jalisco and Michoacán. During our recent studies of Mexican Podostemaceae we have found this species to be relatively widespread in Colima, Nayarit, and Guerrero, in addition to Jalisco and Michoacán. A collection from southern Sinaloa is also now known (Novelo & Philbrick, unpublished).

While conducting field studies of Mexican Podostemaceae, we made collections that did not correspond to any described species. These collections serve as the basis for the description of a new species, *Oserya longifolia* Novelo & Philbrick.

***Oserya longifolia* Novelo & Philbrick, sp. nov.**

**TYPE:** Mexico. Estado de Jalisco: municipio de La Huerta, Río Purificación, 4 km al oeste de La Huerta, 19°30'N, 104°40'W, 300 m, 26 Mar. 1993, *Novelo & Philbrick 1166* (holotype, MEXU; isotypes, MO, NY, WCSU). Figure 1.

Herbae aquaticae plerumque caulibus stoloniferis applanatis. Folia circinata usque ad 40 cm longa; petiolus laevis; lamina repetite 2-4(-5)-divisa, divisionibus ultimis 0.3-0.6 mm latis, applanatis, apice acutis. Flores hermaphroditi, zygomorphi, pedicellati, axillares, solitarii. Tepala 3, filamentis alternata, uno in furca duorum staminum affixo. Stamina 2, andropodio portata; antherae ellipticae, dorsifixae, per 2 rimas laterales longitudinaliter dehiscentes. Ovarium 2 carpellis, 2 stylis 0.7-1.2 mm longi. Fructus 2 valvis, quaque valva 3-costata.

Aquatic herbs usually with stoloniferous and flattened stems 0.8-1.0 mm diam., strongly adhering to rocks. Leaves alternate, circinate, up to 40 cm long, petiole 2-17 cm long, cylindrical, smooth, 0.7-1.6 mm diam., with a broadened base; blade 2-4(-5) divided, the ultimate divisions 0.3-0.6 mm wide, flattened, apex acute. Flowers hermaphroditic, zygomorphic, pedicellate, borne singly, axillary, protected by a spathe; spathe up to 7 mm long, thin clavate. Pedicels 3.5-8.0 mm long, elongating during anthesis, not expanded at capsule base. Tepals 3, alternate with the filaments, free, membranous, subulate, one of them attached in the fork between the two stamens; lateral tepals 0.9-1.2 mm long, medial tepal 0.7-0.9 mm long. Stamens 2, borne by an andropodium, andropodium 0.8-1.3 mm long, elongating during anthesis; filaments 1.0-1.8 mm long, subulate, flattened, elongating during anthesis, deciduous; anthers 0.4-0.6(-0.8) mm long, elliptic, dorsifixed, 2-celled, dehiscing longitudinally by 2 lateral slits. Ovary superior, 1.7-2.1 mm long,



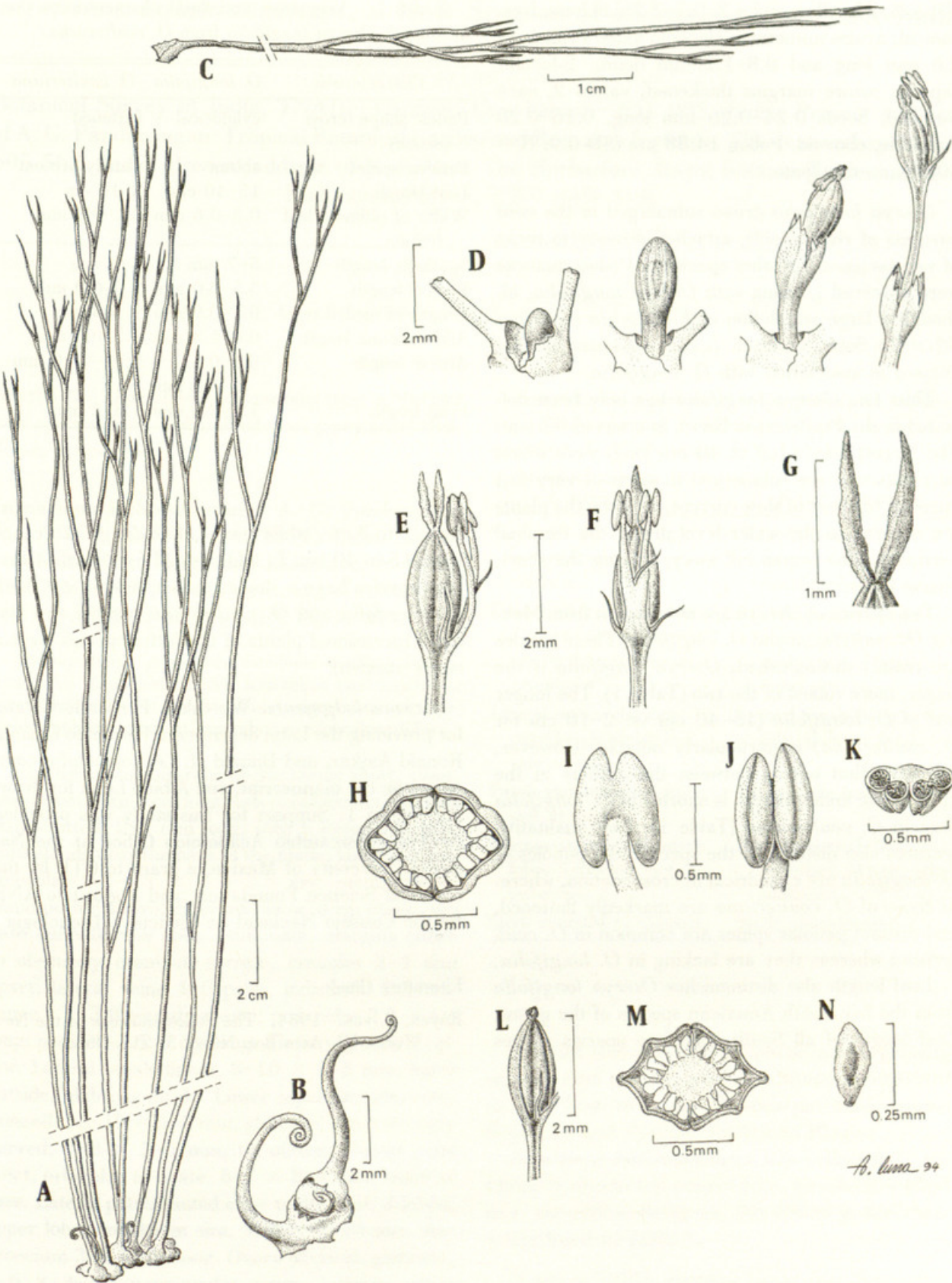


Figure 1. *Oserya longifolia* Novelo & Philbrick. Drawings based on the holotype. —A. General habit of plant with several parts of the leaves interrupted (longest leaf 40.1 cm). —B. Top of the stem with several circinate new leaves. —C. Detail of a single leaf (26.7 cm long). —D. Several stages of flower development from between leaf bases, before (left) and after (right) the spathe is ruptured. —E. Lateral view of the mature flower showing orientation of the styles, anthers, and tepals at the time of dehiscence. —F. Abaxial view of the mature flower showing the andropodium and tepals. —G. Mature styles with receptive stigmas. —H. Cross section of ovary showing placenta and numerous ovules. —I. Abaxial view of a single anther. —J. Adaxial view of a single anther. —K. Cross section of anther. —L. Mature fruit. —M. Cross section of a capsule showing ribs and dehiscence points of the capsule valves. —N. Seed.



ellipsoid, 2-locular; styles 2, 0.7–1.2 mm long, free, conical, ovules numerous, placenta axile. Fruit 1.7–2.6 mm long and 0.8–1.2 mm diam., 2-locular capsule, suture margins thickened; valves 2, each 3-ribbed. Seeds 0.24–0.26 mm long, 0.16–0.20 mm wide, obovoid. Pollen 14.88  $\mu$ m (SD 0.9, N = 30) diam., tricolpate.

*Oserya longifolia* grows submerged in the swift currents of river rapids, attached directly to rocks of various sizes. No other species of Podostemaceae were observed growing with *Oserya longifolia*, although a large population of *Eichhornia crassipes* (Martius) Solms-Laubach occurs in areas of slow current in association with *O. longifolia*.

Thus far, *Oserya longifolia* has only been collected in the Purificación River, in areas of full sun. The largest leaves (up to 40 cm long) were found on plants that are submerged in areas of very fast current. In areas of slow current, or when the plants are exposed as the water level drops, the terminal portions of the leaves fall away, leaving the short, coarse bases.

Two species of *Oserya* are now known from Mexico: *O. coulteriana* and *O. longifolia*. These species are readily distinguished. *Oserya longifolia* is the larger, more robust of the two (Table 1). The longer leaf of *O. longifolia* (15–40 cm vs. 2–10 cm for *O. coulteriana*) is particularly notable. However, the tepal that occurs between the anthers at the apex of the andropodium is shorter in *O. longifolia* than in *O. coulteriana* (Table 1). Two qualitative features also distinguish the species: the petioles of *O. longifolia* are cylindrical in cross section, whereas those of *O. coulteriana* are markedly flattened, and distinct petiolar spines are common in *O. coulteriana* whereas they are lacking in *O. longifolia*.

Leaf length also distinguishes *Oserya longifolia* from the five South American species of the genus. Leaf length of all South American species ranges

TABLE 1. Vegetative and floral characteristics that distinguish *Oserya longifolia* from *O. coulteriana*.

Characteristic	<i>O. longifolia</i>	<i>O. coulteriana</i>
Petiole shape (cross section)	cylindrical	flattened
Petiolar spines	absent	usually present
Leaf length	15–40 cm	2–10 cm
Width of ultimate leaf division	0.3–0.6 mm	0.1–0.3 mm
Spathella length	5–7 mm	3–6 mm
Pedicle length	3.5–8.0 mm	2.0–6.0 mm
Length of medial tepal	0.7–0.9 mm	1–1.3 mm
Andropodium length	0.8–1.3 mm	0.2–0.5 mm
Anther length	0.4–0.6 (–0.8) mm	0.75–1.10 mm
Fruit length	1.7–2.6 mm	1.8–2 mm

from 2 to 3 cm, while leaves of *O. longifolia* range from 15 to 40 cm. In addition, all five South American species have a single stamen; in contrast, both *O. longifolia* and *O. coulteriana* possess two stamens (occasional plants of the latter species have a single stamen).

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