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A new rheophytic species of *Euceraea* (Flacourtiaceae) from Sierra de la Neblina, Venezuela

PAUL E. BERRY¹ AND MARK OLSON

Berry, P. E. & M. Olson (Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166-0299, U.S.A.). A new rheophytic species of *Euceraea* (Flacourtiaceae) from Sierra de la Neblina, Venezuela. *Brittonia* 50: 493–496. 1998.—***Euceraea rheophytica*** is newly described and illustrated. It differs from the two other species in the genus, *E. nitida* and *E. sleumeriana*, in its much smaller and narrower leaves and in its smaller, spicate (vs. branched) inflorescences. It is known only from frequently flash-flooded riverbanks in the large, central canyon of the Sierra de la Neblina massif in southernmost Venezuela.

Key words: Flacourtiaceae, *Euceraea*, Sierra de la Neblina, Venezuela

Berry, P. E. & M. Olson (Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166-0299, U.S.A.). A new rheophytic species of *Euceraea* (Flacourtiaceae) from Sierra de la Neblina, Venezuela. *Brittonia* 50: 493–496. 1998.—Se describe y se ilustra ***Euceraea rheophytica***. Esta especie se conoce solamente del Cañón Grande de la Sierra de la Neblina, donde crece en áreas sujetas a inundaciones repentinas. Se distingue de las otras dos especies del género, *E. nitida* y *E. sleumeriana*, por sus hojas mucho más pequeñas y angostas, así como por sus inflorescencias en espigas simples en vez de ser ramificadas.

The Sierra de la Neblina is a huge sandstone massif along the Venezuela–Brazil border. After Maguire's pioneering expeditions in the mid-1950s (Howard & Boom, 1990), the area was revisited by scientists in the 1980s during a series of expeditions organized by FUDECI, a Venezuelan scientific foundation (Brewer-Carías, 1988). Among the more than 14,000 plant collections made during these latter trips, numerous taxa new to science have been discovered and published. The species described below is based on three collections from two different localities in the generally inaccessible reaches of a steep, deep canyon.

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Euceraea rheophytica P. E. Berry & M. Olson, sp. nov. (Fig. 1)

TYPE: VENEZUELA. Amazonas: Cerro de la Neblina, Camp IV, 15 km NNE of Pico Phelps, N branch of river in canyon, 780 m, 0°51'N, 65°57'W, 15–18 Mar 1984, R. Liesner 16820 (HOLOTYPE: MO; ISOTYPES: F, K, NY, US, WIS, VEN).

Frutex 1–2-metralis, foliis ad ramulorum apices confertis, anguste lanceolatis 35–80 × 4–15 mm, punctatis; spicae subterminales, 2–4 cm longae; flores iis *Euceraeae* similes.

Densely (sympodially) branched shrub 1–2 m tall; stems slender, glabrous. Leaves glabrous, chartaceous, narrowly lanceolate, the blades 35–80 × 4–15 mm, narrowly acute at the apex, narrowly attenuate at the base, with scattered glandular punctations on the undersurface, the margins serrulate

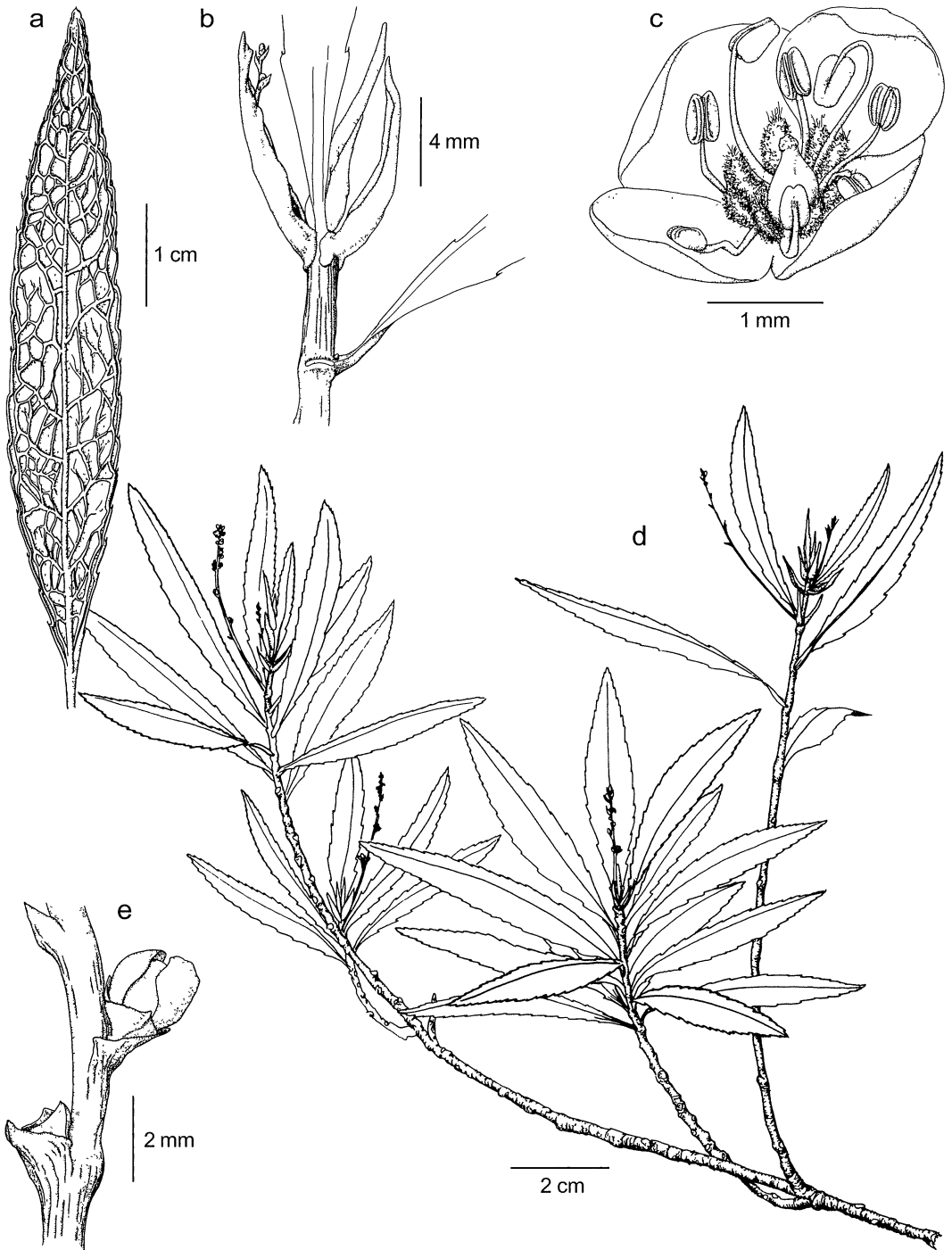


FIG. 1. *Euceraea rheophytica* (Davidse & Miller 27309). A. Abaxial surface of leaf. B. Stem apex showing details of stipules before abscission. C. Detail of flower at anthesis. D. Habit showing sympodial branching, subterminal position of the inflorescences, and leaves clustered near the branch tips. E. Detail of floral spike showing bud (right) and bracts remaining after abscission of the flower (left).

with dark, sharply ascending glandular teeth, secondary veins 9–14 on either side of the midvein and anastomosing into a prominent submarginal vein; petiole 4–8 mm long; stipules paired, clasping, 3–9 mm long, enveloping the terminal bud, soon deciduous, leaving lateral scars on the subapical leaf bases, the scars 1–1.5 mm wide and divided into a series of several dark teeth 0.3–0.4 mm long, these remnants falling off completely farther down the stem. Inflorescences subterminal, axillary spikes 2–4 cm long, laxly flowered. Flowers bisexual or staminate (plants androdioecious?), sessile, the outer bract cupular, ca. 1 mm diam., the inner bract with 2 lateral, keeled projections ca. 1.2 mm long; sepals 4, white, imbricate, basally connate for 0.5 mm, suborbicular, 2 × 1.6 mm; stamens 8, the 4 longer filaments 1 mm long and opposite the sepals, the 4 shorter ones 0.6 mm long and alternate with the sepals; anthers bilocular, subglobose, 0.3 mm wide; disk lobes 8, spatulate and pilose, 0.3 mm long, alternating with the stamens and connate with them basally; rudimentary ovary superior, 0.2 mm tall. Fruit not seen.

Distribution and ecology.—Known only from a deep river canyon (the Cañón Grande of the Río Baría or Mawarinuma) that bisects the large Sierra de la Neblina massif from the west to the northeast, at elevations between 350 and 780 m. This canyon has been described as one of the largest and most spectacular in the world (Maguire & Wurdack, 1959). The area where this species was collected has been characterized as almost xerophytic, due to the locally strong winds and a rain shadow; however, the river is known to rise several meters in a matter of minutes when it rains on the upper tepui slopes, and the rushing current frequently floods the streambanks where *Euceraea rheophytica* grows (hence the specific epithet).

Additional specimens examined: VENEZUELA. **Amazonas:** Neblina Massif, Canyon Grande, along Río Mawarinuma between mouth of canyon and first major fork of river, ca. 7 air km ENE of Puerto Chimo, 0°50'–51'N, 66°02'–06'W, 350–400 m, 9–14 Jul 1984, *Davidse & Miller 27309* (MO, NY, VEN, WIS); Cerro de la Neblina Camp IV, 15 km NNE of Pico Phelps, N branch of river in canyon, 780 m, 0°51'N, 65°57'W,

15–18 Mar 1984, *Liesner 16660* (MO, NY, US, VEN, WIS).

Another recently described rheophyte from the same canyon is *Anaxagorea rheophytica* P. Maas & Westra (Maas et al., 1986), which occurs at elevations of 100–200 m. Both this species and the *Euceraea* described here share similar long, narrow, willow-like leaves, dense branching, lack of indument, and flowers more or less hidden in the foliage. These are traits that Steenis (1981) signals as characteristic of species specialized to the swift-running water and temporary submersion of rheophytic habitats.

Euceraea is a genus with only two previously described species, both confined to the Guayana Shield (Sleumer, 1980; Berry et al., 1995). The genus belongs to the tribe Caseariae Benthham (Lemke, 1988), which is characterized by apetalous flowers with partially perigynous stamens of the same number or twice as many as the sepals. Within the tribe, *Euceraea* is distinctive in its 4-merous flowers in a branched-spicate inflorescence. Whereas *Euceraea sleumeriana* Steyermark & Maguire is only marginally distinct from the more widespread *E. nitida* Martius, *E. rheophytica* is unique in its narrow, willow-like leaves and its simple spikes.

Some plants of both *Euceraea rheophytica* and *E. nitida* appear to be entirely staminate. Other collections of *E. nitida* that have developing fruits also have stamens, but the anthers appear to be vestigial. In the Río Coro Coro valley, Amazonas state, Venezuela, specimens were collected from a large local population of *E. nitida* between 200 and 320 m elevation in March 1987 by Bruce Holst and Ronald Liesner. *Holst & Liesner 3463* (MO) has only staminate flowers, whereas *Holst & Liesner 3460* (MO) has numerous young fruits with small vestigial anthers; on the label of *3463*, the population is described as “apparently dioecious.” Additional field studies would be helpful to determine whether *Euceraea* species are androdioecious or functionally dioecious, both in this locality and in other parts of their range.

Key to the species of *Euceraea*

1. Leaves narrowly lanceolate, 4–8 times longer than wide, 4–8 × 0.4–1.5 cm; flowers in a simple spike 2–4 cm long.
..... *E. rheophytica*
1. Leaves narrowly to broadly elliptic, generally < 4 times as long as wide, 6.5–12(–17) × 2.5–4(–8) cm; flowers in a branched panicle 4–15 cm long.
 2. Leaves narrowly elliptic, the lateral veins 12–40 on either side of the midvein, the margin crenulate throughout, the lower-order reticulation prominent on both surfaces. *E. nitida*
 2. Leaves broadly elliptic, the lateral veins 8–12 on either side of the midvein, the margin serrate in the distal half, entire and slightly revolute in the lower half, the lower-order reticulation often obscure on the lower surface.
..... *E. sleumeriana*

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