A New Species of *Lilaeopsis* (Apiaceae) from Mauritius

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ABSTRACT. A new species of *Lilaeopsis*, *L. mauritiana*, is described and illustrated. The species is endemic to Mauritius (southwest Indian Ocean), where it has been found at a single locality in Le Val Nature Park. The predominantly temperate and alpine genus *Lilaeopsis* has not previously been recognized from Mauritius.

Lilaeopsis E. L. Greene (Apiaceae) consists of small, perennial, rhizomatous herbs occupying moist or truly aquatic habitats. Five species occur in North America, six in South America (including two North American disjuncts), two in Australia, and two in New Zealand. An unidentified species has been reported from Kerguelen Island in the South Indian Ocean, but a possible occurrence of *Lilaeopsis* on Madagascar (Raynal, 1977) is considered dubious (Affolter, 1985: 34). In the treatment of the Apiaceae for the *Flore des Mascareignes* (Scott, 1990), *Lilaeopsis* is not included.

The species of *Lilaeopsis* are morphologically difficult to distinguish due to their much reduced vegetative habit and relatively simple, uniform inflorescences. The leaves are linear to spathulate, hollow, and transversely septate. They are assumed to consist of only the axis of the compound leaves common to most Apiaceae species. Mainly morphological and anatomical characters of the fruit have been applied to distinguish species (Affolter, 1985).

Lilaeopsis mauritiana G. Petersen & Affolter, sp. nov. TYPE: Cult. from Mauritius, Le Val Nature Park near Le Val, 20°21′S, 57°37′E, 5 Mar. 1992, *H. Windeløv s.n.* (holotype, C; isotypes, GA, UC). Figures 1, 2.

Note. All types are cultivated specimens derived through vegetative propagation of the original collection; 5 Mar. 1992 is the collection date.

Differt a aliis speciebus *Lilaeopsidis* fructibus costis conspicuis, tenuibus, obtusis, sed sine cellulis spongiosis et sine cellulis pusillis, incrassatis, lignosis, ornatis.

Glabrous, perennial herbs with creeping rhizomes. Rhizomes 0.5–1.2 mm diam. Leaves arise individually or in 2–3(–4)-leaved clusters directly from horizontal rhizomes, hollow and terete to elliptical in cross section proximally, becoming flattened and solid in cross section distally, linear to subulate, 2.8–13.0 cm long, 0.4–1.3 mm broad, 4–9 septate, attenuate at apex, expanded at base into a scarious sheath, 0.1–0.5 cm long. Peduncles 6–26 mm long, borne directly at nodes on the horizontal rhizome, subtended by a short bract 0.9–1.2 mm long, sometimes opposite a leaf. Involucral bracts 0.4–2.0 mm long. Umbels 3–6-flowered; pedicels 0.9–6.0 mm long. Petals greenish white. Fruits globose to ellipsoid or obovoid, 1.9–2.5 mm long, 1.7–2.0 mm broad, spongy cells absent from all ribs; dorsal and intermediate ribs prominent and narrowly rounded, lateral ribs broadly rounded; vittae 6–8, 2–3 on the commissure. Chromosome number $2n = 22$. Figures 1, 2.

The phylogeny of *Lilaeopsis*, which included 13 species in the monograph by Affolter (1985), is completely unknown. Hence, it is difficult to determine whether the closest relatives to *L. mauritiana* should be found among the New World or Australasian species.

Two important characters for separating many species of *Lilaeopsis* are the abundance and distribution of "spongy cells" in the fruit. These are storage tracheids, nearly isodiametric in shape, that lack a living protoplast at maturity. In cross sections of fresh, green fruits they are visible to the naked eye as bright white patches; under microscopic examination the spongy cells display characteristic secondary wall thickenings. They appear to enhance dispersal in *Lilaeopsis* by increasing the buoyancy of the fruits.

Spongy cells are completely absent from the fruits of *L. mauritiana* (Fig. 2). This character has been observed in only three other species of the

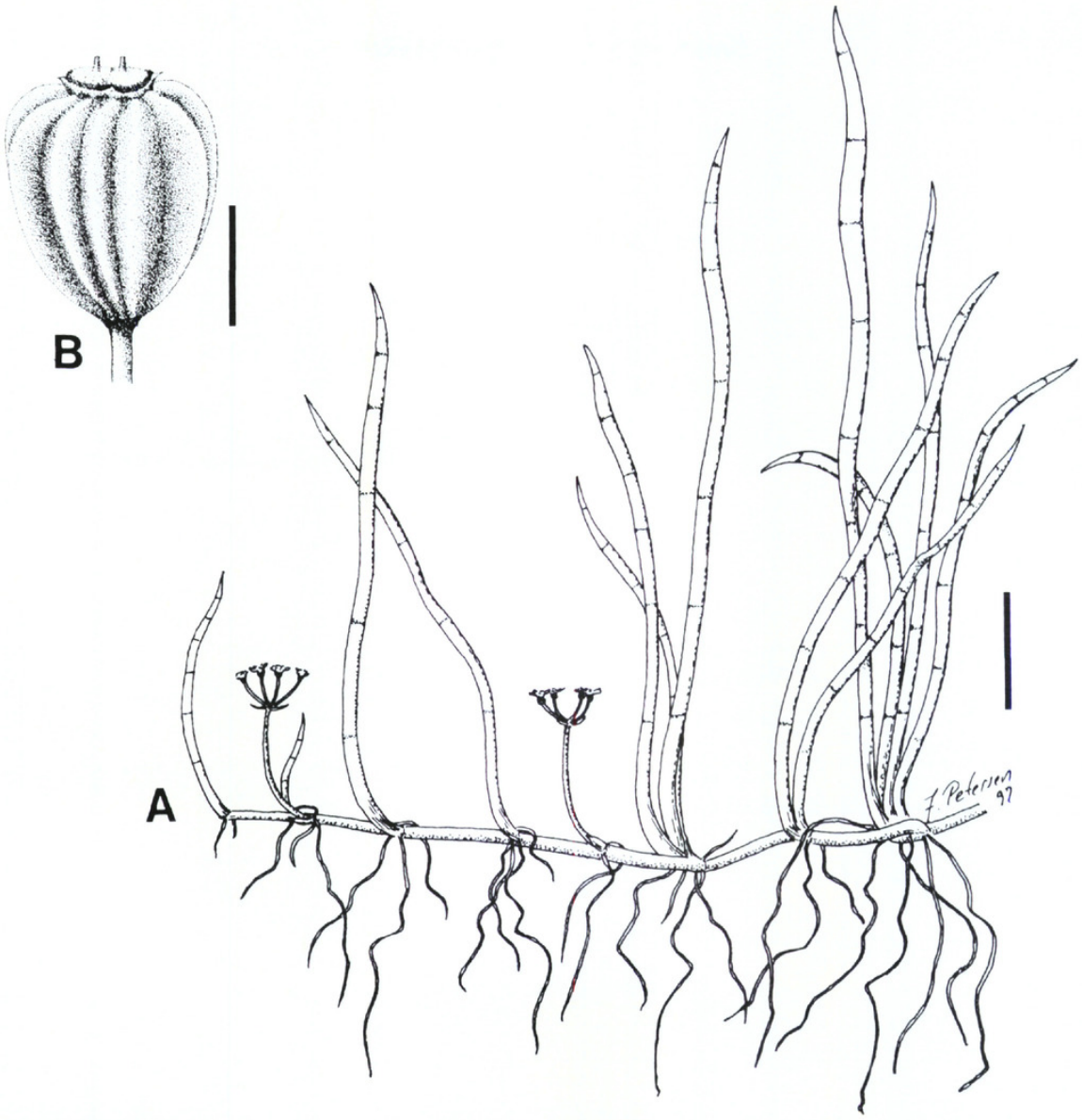

Figure 1. *Lilaeopsis mauritiana* G. Petersen & Affolter. —A. Habit. —B. Fruit. Scale bars: A = 1 cm, B = 1 mm. (Based on *H. Windeløv s.n.*)

genus. Fruits of the widespread and highly variable *L. macloviana* (Gandoger) A. W. Hill from South America sometimes lack spongy cells, but unlike *L. mauritiana* the lateral ribs are then low and obscure rather than broadly rounded. Another variable species, *L. polyantha* (Gandoger) H. J. Eichler from Australia, also occasionally produces fruits without spongy cells, but in that case the fruits possess distinctive thick-walled lignified cells that are not present in the fruits of *L. mauritiana*. Finally, fruits of *L. ruthiana* Affolter, from New Zealand, often lack spongy cells, but all the fruit ribs are low and obscure—much less prominent than those of *L. mauritiana*.

Further studies are clearly needed to produce a phylogenetic hypothesis for *Lilaeopsis*. As morphological characters are scarce and variable, molecular data may prove most helpful.

Distribution and habitat. *Lilaeopsis mauritiana* has only been collected at a single locality in Le Val Nature Park near Le Val in the southeast part of the island of Mauritius. The habitat, located at an altitude of approximately 300–500 m, is a moderately flowing, clear-watered stream, along which the plants were found growing both fully submerged and on the drier part of the bank.

The flora of Mauritius is characterized both by a large number of introduced species and by a large number of endemics (Baker, 1877; Vaughan, 1937; Vidal, 1988). The locality occupied by *L. mauritiana* is a popular recreation area, and in the stream it was found growing together with *Aponogeton*

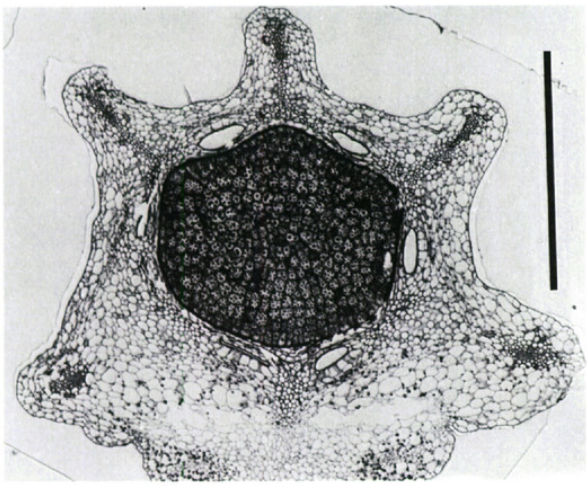

Figure 2. *Lilaeopsis mauritiana (H. Windeløv s.n.)*. Transverse section of mature fruit embedded in GMA and stained in PAS-ABB. Scale bar = 0.5 mm.

madagascariensis H. Bruggen. *Aponogeton madagascariensis* is usually recognized as a Madagascan endemic introduced to Le Val, Mauritius, in the mid 1850s (H. W. E. van Bruggen, pers. comm.; Vaughan, 1937, under the synonym *A. fenestralis* J. D. Hooker). The possibility exists that *Lilaeopsis mauritiana* has been introduced to Mauritius, but as the species is clearly distinct from all other described species it must be considered endemic to the island until proven otherwise. With the discovery of *Lilaeopsis mauritiana* on Mauritius, the postulated occurrence of a species of *Lilaeopsis* on Madagascar (Raynal, 1977) merits further attention.

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