



## *Piper delirioi* (Piperaceae), a new species from southeastern Brazil

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### Abstract

*Piper delirioi* Sarnaglia & E. F. Guim. (Piperaceae), is a new species from southeastern Brazil (Espírito Santo State) proximately related to *P. aduncum* and *P. gaudichaudianum*. Although considered a taxonomic novelty, it is already regarded as endangered by the IUCN standards, due to its limited distribution area of about 250 km<sup>2</sup>. We present complete description, taxonomic and geographic notes, and illustrations.

**Key words:** Atlantic rainforest, Neotropics, radula, taxonomy

### Introduction

*Piper* Linnaeus (1753:28) is the largest genus of Piperaceae, comprising about 2000 species in a pantropical genus (Quijano-Abril *et al.* 2006, Wanke *et al.* 2007) that diversified predominantly in the Neotropics (Jaramillo and Manos 2001). Its monophyly was proven by phylogenetic studies, which supported the subdivision of the genus in 10 clades, among them the Radula clade. This group is equivalent to *Piper* sect. *Radula* Miquel (1844:426), a section including about 450 neotropical species, easily recognized by their shrubby habit (often herbs or scandent shrubs), leaves pinnately nerved, basally unequal, pubescent, and erect or curved inflorescences, forming banding patterns (Jaramillo & Manos 2001, Jaramillo *et al.* 2008)

In Brazil 285 species are recorded for *Piper* (Guimarães *et al.* 2013), mainly within the Atlantic and Amazon forests. Recent collections from the State Espírito Santo revealed a new species from *Piper* sect. *Radula*, described and illustrated here by photos and carefully compared with closely related species.

### Taxonomy

*Piper delirioi* Sarnaglia & E. F. Guim., *sp. nov.* (Fig. 1)

*Piper delirioi* is characterized by its shrubby habit, pilose-villous stems with hairs up to 2.5 mm long, densely grouped near internodes; ciliate blades and loosely long and scabrous leaf surface adaxially, blade with apex falcate-acuminate; spikes curved, floral bracts round-triangular, subpeltate, marginally fringed with a pilose pedicel; stamens 4; stigmas 3; fruit ca. 1 mm diam., oblong-obovate, the apex depressed and puberulent.

**Type:**—BRAZIL. Espírito Santo: Santa Maria de Jetibá, PCH Rio Bonito, 650–700m, 20°02'46"S, 40°38'56"W, 2 February 2013, E. J. de Lirio 137 (holotype RB!, isotypes MBML!, VEN!, NY!).

Shrub 1–2.5 m tall, internodes 3.7–5.6 cm, stems ca. 2 mm, terete, pilose-villous with the hairs up to 2.5 mm long, more densely near internodes. Prophylls 0.5–0.6 mm, caducous, villous, lanceolate, apex acute. Leaves alternate, petiole 0.4–0.7 cm long, pilose-villous, with a short basal sheath; blade 11.9–17.5 × 3.8–6.1 cm, ovate, lanceolate or elliptic; base inequilaterally acute or rounded, one side differing from the other by 1–5 mm; apex falcate-acuminate; membranaceous; ciliate; blade with adaxial side slightly scabrous to glabrescent, the abaxial side pilose, more densely along the veins, brown-glandulous; vein pattern eucamptodromous, with 4–5 secondary veins on each side, to about

**Etymology:**—*Piper delirioi* was named in honour of the collector of the type specimen, the biologist Elton John de Lirio (Rio de Janeiro, Escola Nacional de Botânica Tropical).

**Distribution and conservation:**—This species is known only from montane region of state of Espírito Santo, Brazil (collections marked by black dots in Fig. 2). It grows in montane rainforest and humid places, near to rivers, at elevations from 650 to 1000 meters. The distribution of *P. delirioi* within Espírito Santo extends to conservation priority areas (Brazil 2007) and two of the five localities of occurrence are outside conservation units. The conservation status of this species would be Endangered (EN) under criteria B2ab (IUCN 2012), known at 5 localities and with an estimated area of occurrence of about 250 km<sup>2</sup>.

**Comments:**—*Piper delirioi* is characterized by its shrubby habit, pilose-villous stems with hairs up to 2.5 mm long, denser near internodes, ciliate blade and loosely long scabrous adaxial leaf surface. This new species is assigned to *Piper* sect. *radula* and is closely related to *P. aduncum* Linnaeus (1753:29) and *P. gaudichaudianum* Kunth (1840: 639) due to the scabrous adaxial leaf blade surface, the unequal base of the leaf blade, curved spikes, four stamens, three stigmas and oblong-obovate fruits; differing from both in having the hairs denser near to internodes, longer hairs and blade apex falcate-acuminate, among others (table 1).

**TABLE 1.** Morphological characters for *Piper delirioi* compared to the closely related species, *P. aduncum* and *P. gaudichaudianum*.

	<i>Piper delirioi</i>	<i>P. aduncum</i>	<i>P. gaudichaudianum</i>
Stem Indumentum	pilose-villous	pubescent-villous	pubescent or apressed-strigose
Hair width	up to 2,5 mm	up to 0,5 mm	up to 1 mm
Disposition of hairs in stems	more dense close to internodes	uniformly	uniformly
Blade margin	ciliate	ciliate	eciliate
Shape of the blade apex	falcate-acuminate	acuminate	acuminate
Fruit indumentum	puberulent	glabrous	glabrous or hirtellous

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