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Nelsonia canescens (Acanthaceae), a first species and genus record from Peru

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Abstract: The genus *Nelsonia* R.Br. and the species *N. canescens* (Lam.) Spreng. are reported here from Peru for the first time. A description and distribution map are also provided.

Key words: Distribution; Nelsonioideae; South America.

Introduction

Nelsonia R.Br. is a small genus widely distributed in tropical regions of the world (Barker, 1986; Wasshausen & Wood, 2003; Hu *et al*., 2011; Daniel & McDade, 2014; Deng, 2020; Deng & Gao, 2020). Taxonomically, *Nelsonia* and its alliance have traditionally been placed in the family Acanthaceae as tribe Nelsonieae (Nees von Esenbeck, 1832, 1847; Bentham, 1868; Bentham & Hooker, 1876) or more widely accepted as subfamily Nelsonioideae (Lindau, 1895; Cronquist, 1981, 1988; Brummitt, 1992; Thorne, 1992; Takhtajan, 1997, 2009; Scotland & Vollesen, 2000; APG II, 2003; APG III 2009; Wu *et al.*, 2003, 2009; Thorne & Reveal, 2007; Reveal & Chase, 2011; Reveal, 2012; Mabberley, 2017; Manzitto-Tripp *et al.*, 2022). Some authors (*e.g.*, Bremekamp, 1953, 1955, 1961, 1965; Raj 1961; Sreenmadhavan, 1977; Lu, 1990) excluded the Nelsonioideae from Acanthaceae. Bremekamp (1953) shifted Nelsonioideae to Scrophulariaceae as tribe Nelsonieae. Sreenmadhavan (1977) elevated Nelsonioideae to familial status which was supported by Lu (1990). However, recent molecular phylogenetic studies (McDade *et al.*, 2008; Wenk & Daniel, 2009) suggested that the subfamily Nelsonioideae comprises the basal lineage among the clades of Acanthaceae. Recent floristic accounts (Hu *et al*., 2011; Deng, 2020) have adopted a traditional approach and included the subfamily Nelsonioideae or the tribe Nelsonieae in the Acanthaceae.

The species number in *Nelsonia* varies as to whether a single variable species (*e.g.*, Hossain, 1984; McDade *et al.*, 2012) or several species (*e.g.*, Bremekamp, 1964; Morton, 1979; Vollesen, 1994) are recognized. Two species, *N. campestris* R.Br. and *N. rotundifolia* R.Br., were described from Australia when the genus was established by Brown (1810). Sprengel (1825) correctly transferred *Justica canescens* Lam. to *Nelsonia* as *N. canescens* (R.Br.) Spreng. Later, Nees von Esenbeck (1847) recognized five species in the genus. Bentham (1868) recognized only one species of *Nelsonia* in his *Flora Australiensis* and contended that it was "a common tropical weed in Asia, Africa and already abundant in parts of tropical America". Bremekamp (1955) indicated that *Nelsonia* was a Paleotropical genus that spread to the New World in post-Columbian times and doubted Bentham's conclusion. Later, Bremekamp (1964) concluded that the Australian and New Guinean specimens are quite different and two different species should be recognized. Morton (1979) revived *N. smithii* Oersted as a separate species from *N. canescens*. Hossain and Emumwen (1981) observed samples of *N. canescens sensu lato* from three different populations in dry sites in Nigeria and interpreted *N. canescens* to include what Morton (1979) considered *N. canescens sensu stricto* and *N. smithii*. Hossain (1984) treated the

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genus as monotypic with *N. canescens* with three varieties (var. *canescens*, var. *vestita* and *var. smithii*). Vollesen (1994) indicated that there are likely five species of *Nelsonia*, with distribution in Africa (*N. canescens*, *N. gracilis*, and *N. smithii*), southern Asia (*N. canescens*), Australia (*N. campestris*), and the New World (introduced *N. canescens* and native *N. pohlii*). Molecular phylogenetic studies including plants sampled from multiple continents suggested that only a single highly variable species was likely represented (McDade *et al*., 2012). However in the most recent treatment of Daniel and McDade (2014), two species, *N. canescens* and *N. gracilis* Vollesen, were recognized.

In the course of the examination of specimens of Peruvian Acanthaceae in the herbaria of the National Museum of University of San Marcos (USM) and the Royal Botanic Gardens, Kew (K), three collections of *Nelsonia canescens* noted below are here reported from Peru for the first time (Fig. 1).

Taxonomic Treatment

Nelsonia R.Br., Prodr. Fl. Nov. Holland 480. 1810. *Type*: *Nelsonia campestris* R.Br.

Herbs, pubescent, without cystoliths. Leaves opposite, shortly petiolate; lamina pinnately veined, margins entire. Inflorescences axillary or terminal spikes; bracts overlapping. Flowers ± spirally arranged, sessile, subtended by a bract; bracteoles absent. Calyx 5-lobed to base; lobes unequal, anterior two lobes united to the half. Corolla tube slender, sometimes widening into a throat; limb 2-lipped; lower lip 3-lobed, upper lip 2-lobed; lobes ± equal, descending cochlear in bud. Stamens 2, included or slightly exserted; filaments basally pubescent; anthers 2-thecous; thecae sub-spherical, muticous, opening at base by a pore that has a small flap; staminodes absent. Ovary with 8–28 ovules in 2–4 rows per locule; stigma usually unequally 2-lobed. Capsules conical; retinacula absent. Seeds sub-spherical, small, flattened on 1 face, lacking trichomes.

Distribution: Two species: widely distributed in tropical Africa, Asia, Australia and South America.

Nelsonia canescens (Lam.) Spreng., Syst. Veg., ed. 16, 1: 42. 1824. *Justicia canescens* Lam., Tabl. Encycl. Meth., Bot. 1:41. 1791. *Type*: Senegal, *s.d*., *Roussillon 53* (holo P-LA [P00435346!]; iso P [P00435347!]). **Fig. 1**

For further synonyms see Daniel and McDade (2014: 27).

Annual, creeping, sprawling, prostrate, or decumbent herbs, 10–20 cm tall. Stems sub-terete, villous, often rooting at nodes. Petiole 0.2–3(–4) cm long, villous; lamina elliptic to ovate, 1.5–6 × 0.8–3 cm, base cuneate, margins entire, apex acute, both surfaces villous, secondary veins 3–7 on each side of midvein. Spikes 1–3 cm long; bracts elliptic, 6–7.5 × 3–4 mm, 5–7-veined. Calyx 5-lobed, abaxial lobe *c*. 2 × 0.6 mm, apex 2-lobed, adaxial lobe *c*. 3 × 1 mm, lateral lobes *c.* 2 × 0.5 mm. Corolla bluish purple or white, externally glabrous; tube cylindric for *ca*. 1.5 mm, contracted near midpoint then expanded into throat; lower lip *c*. 2.3 mm long; upper lip *c*. 2 mm long. Stamens inserted at base of throat; filaments *c*. 0.5 mm long, glabrous. Ovary glabrous; ovules 4–8 per locule. Capsules *c*. 5 × 2 mm, 8–16-seeded. Seeds broadly ellipsoid, granulate.

Flowering & fruiting: Flowering from March to May and fruiting from July to August.

Habitat: The species grows in the thicket at the elevation of about 200 m.

Distribution: The species is widely distributed in the tropical regions of the world. In Peru, it is known from departments of Madre de Dios and Ucayali (Fig. 2).

Specimens examined: PERU, **Madre de Dios,** Tahuamanu Province, Rio Tahumanu, forest floor herb 0.4 m, floodplain, 24.08.1995, *P. Nuñez, J. Terborgh & M. Sanchez* 17346 (USM); Tahuamanu Province, km 65 carretera Iberia-Iñapari, 18 May 1978, *F.C. Encarnación 1139* (K). **Ucayali**, Purús Province, Purús District, Camino a la quebrada de Esperancilla, 190 m, 16.03.2002, *J. Schunke Vigo & J.G. Graham* 15081 (USM).

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Fig. 1. Voucher specimen of *Nelsonia canescens* (Lam.) Spreng. in Peru (*J. Schunke Vigo & J.G. Graham* 15081 [USM181123]). Reproduced with the permission by Museo de Historia Natural, Universidad Nacional Mayor de San Marcos at Lima, Peru.

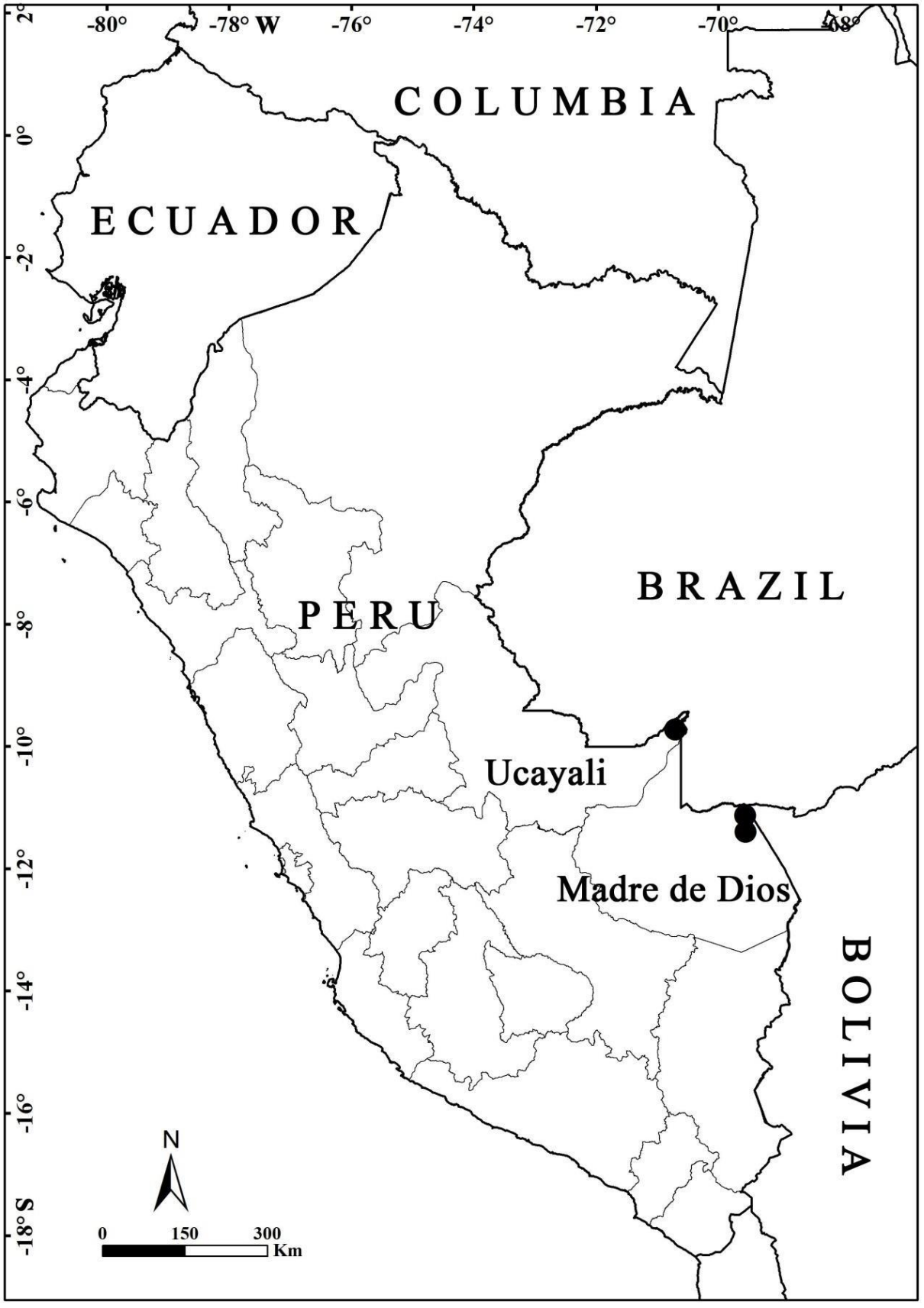

Fig.2. Distribution of *Nelsonia canescens* (Lam.) Spreng. in Peru (Map drawn with Arcgis Desktop 10.8.0.).

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