



Odontonema (Acanthaceae), new to Peru

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Summary. A new species, *Odontonema peruvianum* J.R.I.Wood is described and illustrated. This represents the most southerly extension in the range of the genus and the first confirmed record of its occurrence as a native in Peru.

Key Words. Endemism, new species, range extension, taxonomy.

Odontonema Nees is a genus of around 30 species restricted to the New World Tropics with greatest diversity in Mexico from where eight species are known (Daniel 1995a). One Mexican species, *O. cuspidatum* (Nees) Kuntze, known as cardinal guard, scarlet flame or firespike, is widely cultivated throughout the tropics for its striking red flowers. A second species *O. callistachyum* (Schldtl. & Cham.) Kuntze, known as purple firespike, is also cultivated for its large, purple flowers. Although the genus is diverse in Central America the number of species falls rapidly in South America with only five native species recorded from Colombia (Wood 2016) and two from Ecuador (Wasshausen 2013; Cornejo 2017). Hitherto the genus was unrepresented in Peru or further south, the only native species listed from Peru in Brako & Zarucchi (1993), *O. hookerianum* (Nees) Kuntze, having already been transferred to *Pseuderanthemum* Radlk. as *P. hookerianum* (Nees) V.M.Baum (1982). The new species *O. peruvianum*, described in this paper, therefore, represents an extension southwards in the range of the genus.

Odontonema Nees belongs to a group of mostly ill-defined genera in the tribe *Justicieae* characterised morphologically by the presence of two fertile stamens and two staminodes. The group appears as a distinct clade within the *Pseuderanthemum* lineage sensu McDade *et al.* (2000) together with several Old World genera. In the neotropics the group consists of *Pseuderanthemum* Radlk. ex Lindau, *Psilanthele* Lindau, *Pulchranthus* V.M.Baum, Reveal & Nowicke, *Oplonia* Raf. and *Chileranthemum* Oerst. as well as *Odontonema*. Species in all these genera have stamens with bithecous anthers and a stipitate capsule, and are reported to be heterostylous.

The relationships between genera in this group are problematic in the New World (Wasshausen 2013: 226). The genera differ morphologically from each other mostly by the shape of the inflorescence and the form of the corolla, which appears to have evolved in response to different pollinators. *Pseuderanthemum* and

Pulchranthus have corollas with a cylindrical tube and subequally lobed limb. The remaining four genera have a bilabiate corolla. *Oplonia* has solitary or few-flowered axillary inflorescences, while the monotypic genus *Psilanthele* has raceme-like inflorescences terminating short axillary branches. In contrast, *Chileranthemum* and *Odontonema* resemble each other in their terminal inflorescences. Their closeness is confirmed by molecular studies (McDade *et al.* 2000; Deng *et al.* 2016), which show these two genera to be sisters to each other. *Chileranthemum* is geographically restricted to Mesoamerica and differs from *Odontonema* by the larger calyx with ovate or broadly triangular lobes, which are abaxially glabrous (Daniel 1995b). Although the new species has unusually small corollas for *Odontonema*, the very short linear-lanceolate, puberulent calyx lobes strongly suggest it is best placed in this genus.

Odontonema peruvianum is only known from the type collection, which was included in a loan of *Stenostephanus* Nees specimens from the Smithsonian Institution. It is described as new below.

***Odontonema peruvianum* J.R.I.Wood, sp. nov.** Type: Peru, Cajamarca, Cutervo, Cerro Pan de Azucar, unos 15 km al E de La Capilla, 2600 m, 23 May 1983, C. Ochoa & A. Salas 15217 (holotype US3395454).

<http://www.ipni.org/urn:lsid:ipni.org:names:60478984-2>

Erect perennial *herb*; stem glabrous. *Leaves* petiolate, 4.5 – 13 × 1.5 – 5.5 cm, narrowly elliptic to obovate, very shortly acuminate, basally attenuate and slightly asymmetric, margin obscurely crenulate, veins about ten pairs, both surfaces glabrous or the veins beneath puberulent when young, cystoliths present adaxially but not easily visible; petioles 0.5 – 3.5 cm. *Inflorescence*



Fig. 1. *Odontonema peruvianum*. A habit; B adaxial leaf surface; C abaxial leaf surface; D bud showing calyx and bracteoles; E corolla and calyx; F corolla opened out to show stamens and staminodes; G capsule; H seed. From C. Ochoa & A. Salas 15217. DRAWN BY ANITA BARLEY.

of 3 elongate terminal racemose thyrses c. 22×3.5 cm, one central and two lateral; rhachis appressed puberulent; flowers in up to 4 dichasia arranged in verticels along the rhachis, the lowermost c. 3 cm apart, the uppermost c. 0.8 cm apart; peduncles 5 – 18 mm, minutely appressed puberulent; secondary peduncles 3 – 7 mm; bracteoles 1 – 2 mm, linear-subulate; pedicels 1 – 2 mm; calyx 1.5 mm long, accrescent to 2 mm in fruit, lobes deltoid-lanceolate, acuminate, abaxially minutely puberulent; corolla 2-lipped, 7 – 8 mm long, densely puberulent, colour unknown but pallid, tube 3 – 4 mm long, upper lip c. 1.5 mm long, lower lip deflexed, c. $2 - 2.5 \times 1.75$ mm, the central lobe broad, stamens included, anthers 1 mm; style c. 3 mm, stigma minutely bilobed, ovary puberulent. *Capsule* 13×3 mm, clavate, densely puberulent, 4-seeded; *seeds* 2×1.5 mm, pale cream, rugose. Fig. 1.

RECOGNITION. This species is easily distinguished from other species of *Odontonema* by the very small, pallid (not red or purple) corolla, which is up to 8 mm long, the tube only 3 – 4 mm in length. The very small pallid corolla resembles that of *Psilanthele eggersii* Lindau from Ecuador but the inflorescence structure is completely different.

DISTRIBUTION & HABITAT. Endemic to Cajamarca Province in northwestern Peru and only known from the type location. No habitat details are known.

SPECIMENS EXAMINED. PERU. Cajamarca: Cutervo, Cerro Pan de Azucar, unos 15 km al E de La Capilla, 2600 m, 23 May 1983, C. Ochoa & A. Salas 15217 (holotype US).

CONSERVATION STATUS. Data Deficient. The location of the only collection lies 15 km east of [Santo Domingo de] La Capilla and indicates that the plant was collected within the Cutervo National Park. Although this would provide legal protection, illegal deforestation is known to affect the park (Plan Maestro del Parque Nacional de Cutervo, n.d.). The Pan de Azucar region has had a more than fourfold increase in human population and grazing by livestock is also a threat (loc.cit.). Since nothing is known of the habitat or frequency of this species, it is impossible to assess its conservation status in any meaningful way so it must be classified as Data Deficient until the area has been thoroughly explored. In the absence of other collections it must be presumed to be rare so it is probably Vulnerable (VUL), if not Endangered (EN), perhaps even critically so within IUCN guidelines.

NOTE. Assuming this is a distylous species, this specimen represents a thrum flower with a short style. As noted earlier, the corolla is unusually small for *Odontonema*, suggesting that it is adapted for pollination by small bees or similar insects. The exact colour of the corolla is not obvious from the specimen but is probably pale yellow or pale lilac, certainly not a deep red or purple as might be expected if it were a bird-pollinated species.

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