DE MACROCARPAEAE GRISEBACH (EX GENTIANACEIS)
SPECIEBUS NOVIS XII: THREE NEW SPECIES FROM THE ANDES OF PERU

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Abstract. Three new species from Peru, *Macrocarpaea abiseo*, *M. felicitata*, and *M. huamantanga*, are described and illustrated.

Keywords: *Macrocarpaea*, Gentianaceae, Helieae, Ecuador

Three new species of *Macrocarpaea* Gilg from Peru are described and illustrated, one based on a single specimen from a poorly known locality, and two from recently collected material that have been sequenced and included in a new molecular phylogeny of the genus (*Vieu and Grant in prep.*). This paper continues a series of studies in preparation of a full monograph (*Grant, 2003, 2004, 2005, 2007, 2008, 2011, 2014; Grant and Struwe, 2001, 2003; Grant and Trunz 2011; Grant and Weaver, 2003).

1. *Macrocarpaea abiseo* J.R. Grant, sp. nov. TYPE: PERU. San Martín: Dist. Huallaga, Valley of Rio Apisoncho, 30 km above Jucushamba, 7°55’S, 77°10’W, 3000 m, 4 September 1965, A.C. Hamilton & P.M. Holligan 688 (Holotype K). Fig. 1.

*Macrocarpaea abiseo* is a new species from Amazon-facing slopes of the Andes in central Peru that differs from *Macrocarpaea pajonalis* in having slightly visible secondary veins on its leaves, spiculate calyces, and flowers that are less nodding.

**Shrub** glabrous to hyaline spicate, especially spicate on petioles, bracteoles, and calyces which are covered with short simple hairs. **Stems** terete to slightly quadrangular, solid, 4–5 mm in diameter just below the inflorescence. **Leaves** oval to ovate, sessile to short-petiolate, 3.0–8.5 cm long. **Petioles** 0–10 mm, robust with slight vagination one quarter the length of the petiole; **interpetiolar ridge** 2–3 mm.

**Blades** 3.0–7.5 × 1.5–5.0 cm, entire, revolute, dark above, and lighter below, glabrous, thick, leathery-coriaceous, midrib thick, secondary veins slightly visible either above or below; leaf base aequilateral to oblique, cuneate; leaf apex obtuse to rounded. **Inflorescence** a few branched short compact thyrses, 10–14 cm high; branches 3–5 cm long; 5–8 flowers per branch. **Bracts** oval to obovate, sessile to short-petiolate, 8–20 × 4–16 mm; bract base aequilateral, cuneate; bract apex obtuse to rounded; bract petioles 0–2 mm. **Flowers** pedicellate, erect; pedicels 5–8; bracteoles inconspicuous and scabrous, linear to triangular, 1.0–2.5 × 0.5–1.0 cm. **Calyx** campanulate, 6–8 × 5–6 mm, hyaline spicate, faintly rugose, ecarinate, reniform to ovate; calyx lobes 1–2 × 2.5–3.0 mm, rounded. **Corolla** funnel-shaped, 28–33 mm long, 12–15 mm wide at the apex of the tube, yellow, smooth; **corolla lobes** ovate, 7–8 × 6–7 mm, obtuse to rounded. **Stamens** 15–20 mm long; filaments 10–15 mm long, filiform, flattened; **anthers** elliptic to sagittate, 5 × 1.5–2.0 mm, sagittate, versatile; pollen glabra-type. **Pistil** 26–28 mm long; ovary 6.5–7.0 × 2–3; style 17–18 × 0.5–0.75 mm; stigma lobes spathulate, 2.5–3.0 × 2 mm. Capsules and seeds unknown.

**Distribution and habitat**: *Macrocarpaea abiseo* occurs on Amazon-facing slopes of the Andes in central Peru. Since this area has been little explored, it is not surprising there are novelties in the region. The only other species of *Macrocarpaea* known from this area is *Macrocarpaea gran-pajatena* J.R. Grant.

**Etymology**: Named for Parque Nacional del Río Abiseo in Peru, where it occurs.

*Macrocarpaea abiseo* has thick leathery leaves with scarcely visible secondary veins. It appears to belong to a group of species from southern Ecuador and Peru with these characteristics including *M. harlingii*, *M. lorantheoides*, *M. luya*, *M. pajonalis*, and *M. stenophylla*. It may be most closely related to *M. pajonalis*, a common species of the Oxapampa and Huánuco region of Pasco and Huánuco in central Peru. However, *M. abiseo* has more visible secondary veins on its leaves, hispid calyces, and flowers that are less nodding. *Macrocarpaea pajonalis* is always completely glabrous. Additional collections from the Oxapampa region that may eventually be attributed to *M. abiseo* are *Perea 694, Valenzuela 13762, van der Werff 22970*. These were collected within the general distribution of *M. pajonalis*, but at higher elevations.


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**TYPE:** PERU. Pasco: Dist. Oxapampa, bosque primario y de arenisca, 10˚40’36”S, 075˚18’55”W, 2400 m, arbolito 4 m, flores amarillo-verdosas, 21 February 2006, R. Rojas, A. Peña, J. Mateo, & C. Rojas 3935 (Holotype: MO; Isotype: NY). Fig. 2.

*Macrocarpaea felicitata* is a new species from Amazon-facing slopes of the Andes in central Peru that differs from *Macrocarpaea stenophylla* in being a 4 m tall tree with a large panicle of trumpet-shaped corollas and hispid to spiculate calyces.

Small *tree* to 6 m, hyaline hispid to spiculate with short simple hairs on stems, petioles, leaves, inflorescences, bracts and calyces. *Stems* terete to slightly quadrangular, solid to hollow, 7–10 mm in diameter just below the inflorescence. *Leaves* oval to broadly elliptic, petiolate, 45 cm long. *Petoile* 6 mm long, robust with strong open vagination one half the length of the petiole; interpetiolar ridge 1–3 mm high. *Blade* 39 × 22 cm, entire, dark green, with slightly impressed veins above, and slightly raised veins below, hyaline hispid to spiculate throughout especially along veins on lower surface, papery thin; leaf base aequilateral, oblique, to cuneate; leaf apex obtuse to acute. *Inflorescence* a much branched open thyrs 29–36+ cm high; branches 10–25 cm long; 5–10 flowered per branch. *Bracts* ovate, oval, elliptic, to narrowly oblanceolate, sessile to petiolate, 12–190 × 2–100 cm; bract base aequilateral to oblique, cuneate, rounded to short-attenuate; bract apex acute to obtuse; bract petioles 0–25 mm long. *Flowers* pedicellate, spreading; pedicel 9–26 mm long, linear to lanceolate; bracteoles 1.5–12 × 0.5–2.0 mm.

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**Figure 1.** *Macrocarpaea abiseo.* **A,** habit of flowering stem; **B,** detail of stem nodes; **C,** bud; **D,** open corolla; **E,** immature fruit. All drawn from Hamilton & Holligan 688 (K).
Figure 2. *Macrocarpaea felicitata*. A, lower leaf; B, habit of flowering stem; C, bud and pistil in calyx. A from Vieu et al. JV11 (NY), B–E from Rojas et al. 3935 (MO).
Calyx campanulate, 8–11 × 5–6 mm long, hyaline hispid to spiculate with short simple hairs, ecarinate; calyx lobes ovate to reniform, 1.5–2.0 × 2–3 mm, rounded to obtuse, the edges slightly fimbriate. Corolla funnel-shaped, 57–63 mm long, 23–30 mm wide at the apex of the tube, greenish-yellow, smooth; corolla lobes ovate to elliptic, 11–18 × 7–14 mm, apex obtuse to rounded. Stamens 43–48 mm long; filaments 38–42 mm long, filiform, flattened; anthers elliptic to sagittate, 5–6 × 1.5–3 mm, sagittate, versatile; pollen glabra-type. Pistil 60–62 mm long; ovary 8–11 × 3–4 mm; style 45–47 × 1 mm; stigma lobes spathulate to oblong, 5–6 × 1.0–2.5 mm. Capsules and seeds unknown.

**Distribution and habitat:** *Macrocarpaea felicitata* occurs in primary to secondary forests on Amazon-facing slopes of the Andes on the Cordillera Central in central Peru near Oxapampa. This is the area where *Macrocarpaea* is currently best understood in Peru. There are ample herbarium collections of all the species, which was useful in discriminating *M. felicitata* from the known taxa. The region has an impressive number of at least nine overlapping species including *M. angustifolia* J.S. Pringle, *M. felicitata* J.R. Grant, *M. ostentans* J.R. Grant, *M. pajonalis* J.R. Grant, *M. revoluta* (Ruiz & Pavon) Gilg, *M. robin-fosteri* J.R. Grant, *M. tahuantinsuyuana* J.R. Grant, *M. viscosa* (Ruiz & Pavon) Gilg, and *M. wallnoeferi* J.R. Grant. *Macrocarpaea felicitata* can be easily identified within this group in having small (5 mm long) puberulent hairy calyces.

**Etymology:** From the Latin, *felicitata.*


3. *Macrocarpaea huamantanga* J.R. Grant & J. Vieu, sp. nov. TYPE: PERU. Cajamarca: Distrito de Jaén, caserío San Jose, camino hasta la cataráta “del velo de la novia,” Bosque de Huamantanga, 5˚42.370 S, 78˚57.106 W, 2223 m, 21 February 2012, J. Vieu & D. Desrousseaux 43 [DNA voucher = JV47] (Holotype: NY; Isotype: MO). Fig. 3.

**Distribution and habitat:** *Macrocarpaea huamantanga* occurs in the understory of primary forest of the Andes of Cajamarca in northern Peru.

**Etymology:** Named for its locality at Bosque de Huamantanga, Jaén, Cajamarca.

**Additional specimens examined:** PERU. Cajamarca: Distrito de Jaén, caserío San Jose, camino hasta la cataráta “del velo de la novia,” Bosque de Huamantanga, 5˚42.370 S, 78˚57.106 W, 2223 m, 21 February 2012, J. Vieu & D. Desrousseaux 42 [DNA voucher = JV45], and 44 [DNA voucher = JV48] (NY).

**Distribution and habitat:** *Macrocarpaea huamantanga* is most closely related to *M. chthonotropa* as can be seen in both morphology as well as in DNA sequences. It is distinct in having generally oblanceolate leaves, a large paniculate inflorescence with comparatively small flowers, and an urceolate-campanulate calyx with thickened calyx lobes, and a thickened area at the base between each calyx lobe.
Figure 3. *Macrocarpaea huamantanga*. A, lower leaf and habit of flowering stem; B, bud; C, pistil in calyx. All drawn from Vieu & D. Desrousseaux 43 (NY).
LITERATURE CITED


