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A new species of *Phaedranassa* (Amaryllidaceae) from Ecuador

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Phaedranassa Herbert (1845: misc. 16) is a small genus of bulbous, terrestrial geophytes comprising some eleven species, eight endemic to Ecuador, three known from Colombia, and one from Costa Rica (Meerow 1990). Most of the species are narrow endemics known from few collections. All but one of the species known from Ecuador are considered to be under some threat (IUCN, 2014) because of their restricted distribution and threatened habitat where they occur. Five of them are regarded as Endangered and one as Vulnerable (Oleas 2011). Here we describe a distinctive new species in this genus. Despite its occurrence on cliffs along roads, the species has remained unnoticed by previous floristic explorers.

Materials and Methods

The plants were first discovered in the outskirts of the city of Cuenca in Southern Ecuador during one of our botanical expeditions in 2006, but only collected recently. We consulted "Flora of Ecuador" (Meerow 1990), the treatment in the Catalogue of Ecuadorian vascular plants (Jørgensen 1999), types and photographs available in the JStor Global Plant Initiative site and Tropicos®, as well as specimens deposited at the following herbaria: HA, LOJA, MO, QCA, QCNE (acronyms follow Thiers 2014). The description and measurements were taken from live material.

Description of the new species

Phaedranassa cuencana *Minga, C. Ulloa & Oleas,* **spec. nov. (Fig. 1A–E).**

Type:—ECUADOR. Azuay, Autopista Cuenca-Azogues y 12 de Octubre, salida a Punta-Coral, sector la Virgen del Cisne, corte en el carretero, 02°55'59.2"S, 79°01'42.0"W, 2615 m, 30 June 2014, *N. Oleas, D. Minga, C. Ulloa & A. Verdugo 1031* (holotype HA!, isotypes HUTI!, MO!).

Bulb globose, 5.2–6 × 5.6–6 cm diameter, pure white; neck 3.5–6 cm long, 1–1.5 cm wide; tunic dark brown. Leaves 1 or 2, only rarely present at anthesis; petiole 8.2–18 cm long, 0.6–1.4 cm wide; lamina 21–34 × 5.5–11 cm, lanceolate to broadly elliptic, base long-attenuate, obtuse at apex, dark green adaxially, pale green abaxially, glaucous, the midvein flattened above, prominently raised below, 5–8 mm wide at base and 1–2 mm at apex, secondary venation evenly parallel. Inflorescence scapose, umbellate. Scape 64–85 × 1–1.5 cm proximally, ca. 0.5 cm wide distally, dark green, basal 1/4 glaucous; bracts 35–40 × 6–9 mm at base, basal portion deltoid ca. 5 × 8 mm, narrowing abruptly into a long, slender, caudate apex 2.5 mm wide at the base, marcescent; bracteoles 19–25 mm, narrow, marcescent. Flowers 4–6, 5.8–7.3 cm long, perfect, actinomorphic, pedicellate, pendent; pedicels (20–)42–50 × ca. 2 mm diam., dark green, strongly arcuate distally, dark green, slightly glaucous; perigone funnelform-tubular, fleshy, consisting of six subequal tepals in two series of three, the segments connate below into a short tube and concrescent for most of their length and spreading distally; tube subcampanulate, 9–16 mm long, 5–8 mm wide at the throat, constricted at its juncture with

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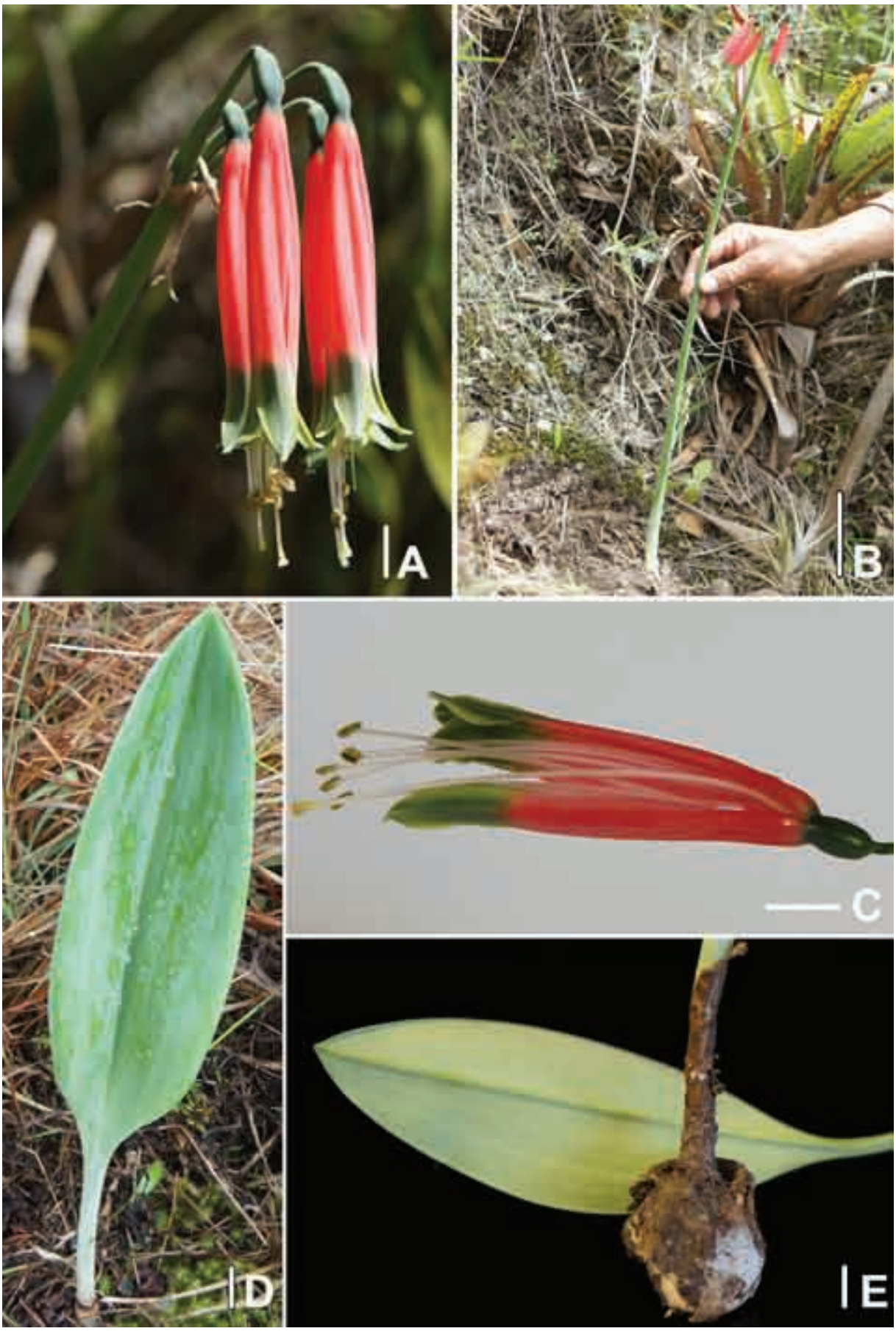

FIGURE 1. *Phaedranassa cuencana*. A. Inflorescence (bar = 1 cm). B. Plant habit, in surrounding vegetation with bromeliads (bar = 10 cm). C. Flower opened lengthwise showing stamens (bar = 1 cm). D. Leaf, adaxial side (bar = 2 cm). E. Leaf, abaxial side, and bulb (bar = 2 cm). Photographs A–D by D. Minga, E. C. Ulloa.

the ovary to 3.5–4 mm wide, uniformly pinkish-red with a faint, less than 1 mm, yellow band and 1–2 mm dark green band at the juncture with the ovary, slightly ribbed, fresh flowers filled with nectar; tepals spreading distally to 10–20 mm wide, pinkish-red 3/4 of their length from base, light green with pale yellow margins in the apical 1/4, apiculate, the apiculum green, the margins apically undulate, outer whorl 44–57 × 6–7 mm, narrowly oblanceolate, acute to acuminate, inner whorl 42–45 × 8–12 mm, lanceolate, acute. Stamens six, attached at the top of the perigone tube, free, the filaments pale pink in the proximal 3/4 of their length, pure white in the distal 1/4, subequal, 55–60 mm long, exserted 12–16 mm beyond the limb; anthers oblong, 3.5–4.5 mm long, dorsifixed, versatile, green, pollen yellow. Ovary inferior, trilocular, ellipsoid-trigonous, 6–8 × 5–7 mm, dark green, slightly glaucous. Style filiform, 72–87 mm long, pale pink in the proximal 3/4 of its length, pure white in the distal 1/4, exerted ca. 15 mm beyond the limb, stigma capitate, 1–1.5 mm diam., greenish-white. Capsule not seen.

Additional specimen examined (paratypes):—ECUADOR. Azuay/Cañar border, Cojitambo, 2650–3000 m, 6 July 2014, *D. Minga s.n.* (HA!, QCNE!); *ibidem*, 8 September 2014, *N. Oleas, D. Minga, P. Peña & M. Moreno 1032–1035* (HA!, HUTI!).

Distribution and habitat:—The species is known from two populations in southern Ecuador. It grows in the inter-Andean valley of Azuay province and along the border with Cañar province (Fig. 2), on cliffs and in ravines, in heavily disturbed secondary forest with introduced *Eucalyptus globulus* Labill. (Myrtaceae) and *Agave americana* L. (Asparagaceae) and remnants of native species including *Cantua quercifolia* Juss. (Polemoniaceae), *Dodonaea viscosa* Jacq. (Sapindaceae), *Echeveria quitensis* (Kunth) Lindley (Crassulaceae), *Epidendrum secundum* Jacq. (Orchidaceae), *Ferreyranthus verbascifolius* (Kunth) Robinson & Brettell (Asteraceae), *Scutellaria ocymoides* (Kunth) Epling (Lamiaceae), and various taxa of Bromeliaceae. During full anthesis, the leaves are senescent at the base and new leaves were observed in non-reproductive plants nearby.

FIGURE 2. Distribution map of *Phaedranassa cuencana.*

Etymology:—We name this species for the city of Santa Ana de los Cuatro Ríos de Cuenca, as the species is found in the ravines just outside of the city. It is locally known as "urcu cebolla" (wild onion).

Conservation Status:—Plants were found in heavily altered vegetation and have survived repeated anthropogenic activities, such as deforestation, introduction of exotic trees, fires, cattle grazing, and road construction. The Azuay population of some ten plants is on a cliff along a road outside a village and has persisted at least eight years since we first observed it. The Cañar population is larger, of some one hundred plants, and occurs in the Cojitambo archeological

site, which has some degree of protection. However, none of the areas is officially within Ecuador´s System of Protected Areas. Based on our field observations, the restricted area in which the species is found, and serious habitat degradation, *Phaedranassa cuencana* can be categorized as Endangered B1ab(iii) according to IUCN criteria (IUCN 2014). The species, as do others in the family, has a great ornamental potential. The bulbs are probably propagated easily, as is already known for other species, and should be a priority for ex situ conservation.

Taxonomic relationships:—According to Meerow's (1990) taxonomic criteria, *Phaedranassa cuencana* falls next to *P. dubia* (Kunth in Humboldt *et al.* 1816: 281) Macbride (1931: 12), in the group of species with pink staminal filaments. Both species have the perigone mostly pink with the tepals distally stained deep green with margins pale yellow to white in *P. dubia* and greenish-yellow in *P. cuencana*. The new species differs in its leaves conspicuously glaucous (vs. not glaucous), staminal filaments pale pink in proximal 3/4 and pure white in distal 1/4 of their length (vs. entirely pale pink), pedicels twice as long as in *P. dubia* and longer than in any other species in the genus, perigone tube subcampanulate and constricted at its juncture with the ovary (vs. subglobose and juncture abrupt) and wider at throat (5–8 mm vs. 3.5–4.5 mm), and much longer style (72–87 mm vs. up to 64 mm). Glaucous leaves are present in *P. cinerea* Ravenna (1984: 196), but this species belongs to the group with white stamens, has much more numerous and smaller flowers, and occurs at much lower elevations. *Phaedranassa glauciflora* Meerow (1990: 34) has conspicuously glaucous flowers which are robust and numerous, the floral tube with a noticeable, wider band of yellow, especially in young buds, and staminal filaments pale pink along all their length. *Phaedranassa schizantha* Baker (1880: 556) has pink to salmon tepals, only medially striped with green distally, shorter pedicels, stamens and style, and staminal filaments entirely pale pink.

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