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A new species of *Geranium* (Geraniaceae) from Colombia¹

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AEDO, C. (Real Jardín Botánico, Consejo Superior de Investigaciones Científicas, Plaza de Murillo 2, 28014 Madrid, Spain). A new species of *Geranium* (Geraniaceae) from Colombia. *J. Torrey Bot. Soc.* 136: 289–292. 2009.—A new species, *Geranium mutisii*, from La Guajira in Colombia is described and illustrated.

Key words: Colombia, *Geraniaceae*, *Geranium*, taxonomy.

The genus *Geranium* L. comprises about 350 species distributed throughout most of the world. South America is the richest area of the world, with over 100 species. Most of these species belong in subg. *Geranium*. The exceptions are section *Brasiliensia* R. Knuth (Aedo 2001a) included in subg. *Erodioidea* (Picard) Yeo and some non-native representatives of subg. *Robertium* (Picard) Rouy (Aedo et al. 1998). The genus was monographed by Knuth (1912), but no recent revisions for South America are available. Aedo (2000, 2001b) revised *Geranium* in North America and Moore (1943) in Central America, but there are no native species in these revisions that occur south of Panama.

In pursuit of my aim to prepare a comprehensive monograph of the genus, I have studied some groups of *Geranium* from South America (Aedo 2001a, Aedo et al. 2002, 2003, 2005). During this revision a small group has been detected that comprises plants with 2-flowered cymules and well-developed stem, leaves and petals. This group is also characterized by its deeply dissected leaves with a tomentose indumentum of the abaxial side. Two described species can be included in this group: *Geranium paramicola* R. Knuth endemic to northern Colombia, and *G. matucanense* R. Knuth, endemic from central Peru. In this paper, a new species of this group is described from unidentified specimens of *Geranium*.

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Geranium mutisii Aedo, sp. nov. TYPE: Colombia. La Guajira, Sierra Nevada de Santa Marta, laguna Sabaca, nacimiento del río San Miguel, 10° 40' N, 73° 01' W, 3900 m, 16 Aug 1986, *Cuadros & Gentry 2709* (holotype, MA-626646!; isotype, MO!) (Fig. 1).

Differt a simili *Geranium paramicola* R.-Knuth habitu erecto—nec decumbenti—, foliis caulinaribus sessilibus—nec petiolatis—atque mucrone sepalorum longiore.

Herbs perennial, 30–61 cm tall. Rootstock unknown. Stem 0.29–0.49 cm diam., erect, without vegetative stems, leaved, herbaceous, with retrorse, appressed, eglandular hairs 0.2–0.5 mm long. Basal leaves unknown; cauline leaves with lamina 2.6–5.1 cm long, 2.4–7.7 cm wide, opposite, polygonal in outline, cordate, palmatifid (ratio main-sinus length/middle-segment length = 0.86–0.91), densely hairy, with \pm appressed, eglandular hairs beneath, and lanuginosus on the abaxial side, nervation not projected; segments 5, rhombic (ratio maximum width/middle-segment length = 0.65–0.79), 1.3–4.3 mm wide at the base, 3–7-lobed in distal half (ratio second-sinus length/middle-segment length = 0.41–0.52); petioles usually absent; stipules 3.5–6.6 mm long, 1.5–4.4 mm wide, lanceolate, minute eglandular hairs on abaxial surface and margin, almost glabrous adaxially. Inflorescence in dichasial cyme with monochasial branches; cymules 2-flowered, solitary or in aggregates at the top of each branch; peduncles 5.7–40 cm long, with retrorse, \pm appressed, eglandular hairs 0.4–0.6 mm long, and scattered, patent, glandular hairs 0.5–1.1 mm long; bracteoles 1.4–4.6 mm long, 0.3–1.1 mm wide, lanceolate, with eglandular and sometimes glandular hairs on abaxial side and on the margin, glabrous adaxially; pedicels 8.7–15.4 cm long, with retrorse, \pm appressed, eglandular hairs 0.2–0.5 mm long, and scattered, patent, glandular hairs 0.7–1.1 mm

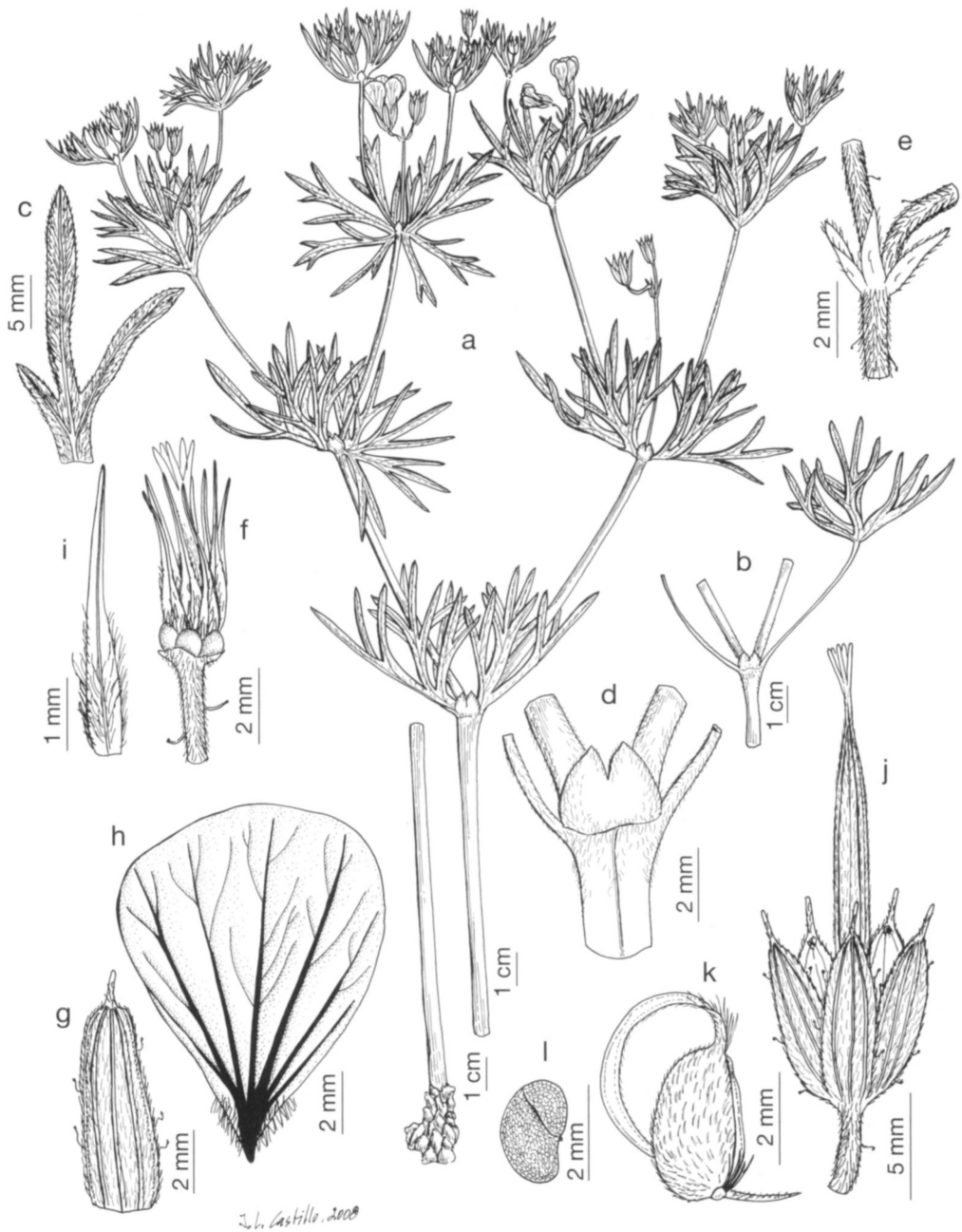


FIG. 1. *Geranium mutisii*. a. Habit. b. Basal node with a petiolate leaf. c. Leaf detail on abaxial side. d. Stipules. e. Bracteoles. f. Flower without petals and sepals. g. Sepal. h. Petal. i. Staminal filament. j. Fruit. k. Mericarp. l. Seed. (a–d: from Cuadros & Gentry 2709, MA; e–h: from Cuadros & Gentry 2709, MO; i–k: from Cuadros & Gentry 2713, MO).

long. Sepals 6.1–8.5 mm long, 2.2–3.5 mm wide, not accrescent, 3-nerved, with mucro 0.7–1.3 mm long, with scarious margins 0.2–0.3 mm wide, with appressed, eglandular hairs 0.4–0.7 mm long and patent, glandular hairs

0.8–1.3 mm long on the abaxial side, glabrous adaxially. Petals 11–12.9 mm long, 4.6–9.3 mm wide (ratio petal wide/petal length = 0.40–0.77), erect-patent, entire, hairy on both sides (mainly on the base of adaxial side), ciliate on

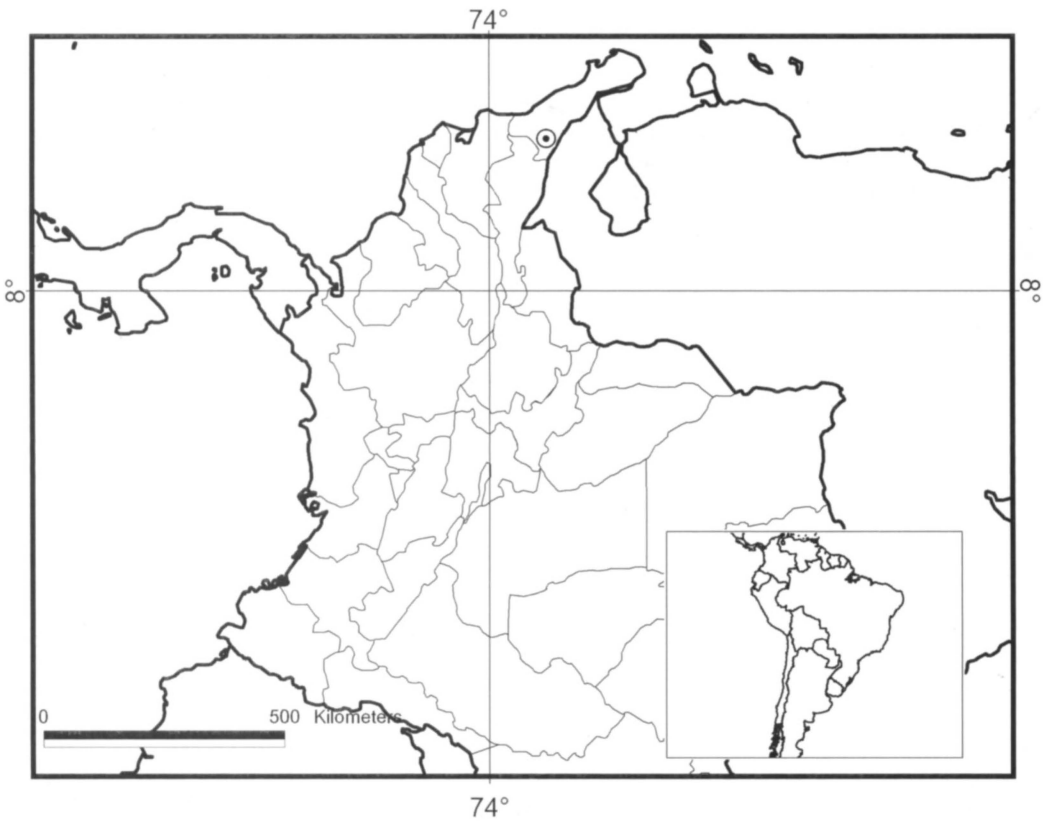


FIG. 2. Distribution of *Geranium mutisii* Aedo.

the margin, purplish. Staminal filaments 4.6–5.1 mm long, lanceolate, pilose on the abaxial side, ciliate on the proximal half, with eglandular hairs 0.4–0.7 mm long; anthers 1.3–1.4 mm long, 0.5–1 mm wide. Nectaries 5, hemispheric, with a tuft of hairs at the top, dorsally glabrous. Gynoecium 4.7–6.7 mm long. Fruit 15–19.5 mm long; mericarps 2.9–3.5 mm long, 1.3–1.4 mm wide, with \pm antrorse-appressed, eglandular hairs 0.4–0.8 mm long, brownish; rostrum 11–12.3 mm long, with a narrowed apex 1.3 mm long, with \pm antrorse-appressed, eglandular hairs 0.3–0.4 mm long; stigmatic remains 2.5 mm long, with 5 glabrous lobes. Seeds 2.2 mm long, 1 mm wide, finely reticulate, reddish; hilum 1/6 as long as the perimeter.

Habitat and phenology: unknown habitat, collected between 3700 and 3900 m. Flowering in August.

Distribution: Colombia (department of La Guajira). Fig. 2.

Paratype: LA GUAJIRA: Sierra Nevada de Santa Marta, laguna Sabaca, nacimiento del

río San Miguel, 10° 40' N, 73° 01' W, 3700 m, 16 Aug 1986, *Cuadros & Gentry 2713* (MA, MO).

Etymology: Named in honor of José Celestino Mutis y Bosio (1732–1808) in the bicentenary of his death.

Discussion. *Geranium mutisii* is quite similar to *G. paramicola* in leaf indumentum and it is also endemic from Sierra Nevada de Santa Marta, northern Colombia. However it is an erect plant with retrorse appressed hairs on stem and rostrum, and a longer sepal mucro. Its leaves are more deeply divided and have narrower segments than in *G. paramicola*, and with 3-lobed segments ((5)6–11-lobed in *G. paramicola*). Unfortunately, as in many other species of *Geranium*, basal leaves of *G. mutisii* are soon deciduous, and no fragment is available at the collected specimens. Cauline leaves of *G. mutisii* are usually sessile while in *G. paramicola* petioles decrease in length towards the apex. It is interesting to note that in one of the four available specimens

(Cuadros & Gentry 2709, MA) the basal node of inflorescence has shortly petiolate leaves while the medium and upper nodes bear sessile leaves. Further collections could confirm if it is an exception. Inflorescence structure is also different in both species. *G. mutisii* has a dichasial cyme with monochasial branches with 2-flowered cymules, solitary or in aggregates at the top of each branch, which sometimes are 1-flowered. In *G. paramicola* inflorescence is a monochasial cyme with 2-flowered, solitary cymules. Nectaries of *G. mutisii* have a tuft of hairs at the top, while in *G. paramicola* they are glabrous. Stipules of *G. mutisii* are usually connate at least on leaves of first and second nodes. This feature is only found in some species from Himalayas and Africa belonging to other sections of subg. *Geranium*.

Geranium matucanense shares a similar structure of the inflorescence with *G. mutisii*. However its cymules are always 2-flowered and with a long peduncle. In fact, this long peduncle is a distinguishing feature for *G. matucanense*. The indumentum of retrorse, appressed hairs found in stem, petioles and inflorescence is also similar in both species. However, in *G. matucanense* no glandular hairs were found, while in *G. paramicola* and *G. mutisii* these hairs are at least on sepals and pedicels. *G. matucanense* also differs in its petiolate leaves (from *G. mutisii*) and in its longer sepals, petals and fruits. Hairs of staminal filaments are also noticeably longer than in both *G. paramicola* and *G. mutisii*. The following key enables the identification of species in this group.

1. Petals (14.1)20–22(27.2) mm long; fruit rostrum with a narrowed apex 6.3–8.5 mm long; sepals and pedicels without glandular hairs ***G. matucanense***
1. Petals 9.8–14.1 mm long; fruit rostrum with a narrowed apex 1.2–2 mm long; sepals and pedicels with glandular hair 2
 2. Stem with patent, eglandular hairs; cauline leaves always petiolate . . . ***G. paramicola***
 2. Stem with retrorse, appressed, eglandular hairs; cauline leaves on medium and upper nodes of the inflorescence sessile ***G. mutisii***

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