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# A New Species of *Ruyschia* (Marcgraviaceae) from the South American Andes

Adrian C. de Roon

Nationaal Herbarium Nederland, Utrecht University branch, Heidelberglaan 2,  
3584 CS Utrecht, Netherlands. [aderoon@ncrvnet.nl](mailto:aderoon@ncrvnet.nl)

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**ABSTRACT.** *Ruyschia andina*, a new species found on the eastern slopes of the Andes in Ecuador, Peru, and Bolivia at altitudes of around 2000 m, is described and illustrated. The species is distinguished from the other species of the genus by the leaves with two conspicuous rows of numerous hypophyllous glands and the 3(or 4)-loculed ovary. The relationship between *Ruyschia* and *Souroubea* is discussed, and a generic key is given.

**Key words:** Andes, Bolivia, Ecuador, Marcgraviaceae, Peru, *Ruyschia*, South America.

The genera *Ruyschia* Jacquin and *Souroubea* Aublet are commonly considered to be closely related (de Roon, 1975). Swartz (1788) united the two genera, then still monotypic, under *Ruyschia*. This was followed by Martius (1832) and Triana and Planchon (1862), who described a number of new species of *Ruyschia* that currently are placed in *Souroubea*. Delpino (1869), the first monographer of the Marcgraviaceae, separated the two genera again. This was adopted by all subsequent students of the Marcgraviaceae, namely Wittmack (1878), Szyzylowicz (1893), Gilg and Werdermann (1925), de Roon (1975), Bedell (1985), and Dressler (2004). The two most important characters to distinguish *Ruyschia* and *Souroubea* are in the nectariferous bract and in the pistil. *Ruyschia* has small, foliaceous, flat or gibbous to slightly concave nectariferous bracts and a (sub)globular, mostly 2-loculed ovary with a minute or distinct style and a small stigma, while *Souroubea* has hollow, cup- or spur-shaped and auriculate nectariferous bracts and an often angular, (3- to)5-loculed ovary with a usually large, sessile, often radiate stigma. The placement of a given species in either one or the other genus has sometimes been arbitrary. *Ruyschia pilophora* Triana & Planchon was placed by Delpino (1869) in *Souroubea* on account of the small, slightly hollow, somewhat *Souroubea*-like nectariferous bracts, but was placed again in *Ruyschia* by de Roon (1975) on account of the 2-loculed ovary. On the contrary, *Ruyschia platyadenia* Gilg, with small, flat, foliaceous, nectariferous bracts, was placed in

*Souroubea* because of the 5-loculed ovary (de Roon, 1975). The separation of *Ruyschia* and *Souroubea* remains disputed and possibly needs reconsideration.

The current generic subdivision of the Marcgraviaceae–Noranteoideae was based on morphological features (Bedell, 1985; see also Dressler, 2004) and is not supported by the molecular data presently available. Ward and Price (2002) presented molecular data that suggest a closer relationship between a species of *Ruyschia* and a species of *Schwartzia* than to investigated species of *Souroubea*. In a recent study of wood anatomy and pollen morphology of the Marcgraviaceae, Van Evelghem (2003) found no support for an amalgamation of *Ruyschia* and *Souroubea*. However, both studies (Van Evelghem and Ward & Price) included only one species of *Ruyschia* and three of *Souroubea*, respectively. Decisions regarding possible taxonomic changes in the Marcgraviaceae have to wait until sufficient molecular and other data are available.

Up to now, seven species of *Ruyschia* have been accepted, all from mountainous areas: *R. clusiifolia* Jacquin is confined to the Lesser Antilles (St. Kitts, Guadeloupe, Martinique, and Dominica); *R. enervia* Lundell ranges from southern Mexico to Belize, Guatemala, Honduras, and Costa Rica; *R. phylladenia* Sandwith is rather common in Costa Rica and Panama; *R. valerii* Standley, closely related to *R. phylladenia*, and differing in leaf shape only, is a rare endemic in Costa Rica; *R. tremadena* (Ernst) Lundell is common and widespread in Panama (Darién), Colombia, and Venezuela; *R. pilophora* Triana & Planchon is endemic to Colombia; and *R. pavonii* G. Don is known from Colombia and Peru.

During identification work another hitherto undescribed species was found. This new species is distinguished from the other species of the genus by its relatively large leaves with a conspicuous row of numerous hypophyllous glands running the length of the leaf blade on either side of the midvein, approximately halfway between the midvein and the leaf margins, a 15–30 cm long raceme with 60 to 130 flowers, and flowers with a 3(or 4)-loculed



ovary. The last character especially is remarkable, as all other species of the genus have a 2-loculed ovary.

***Ruyschia andina*** de Roon, sp. nov. TYPE: Ecuador. Prov. Zamora-Chinchipe: Road Loja–Zamora, km 28.3, secondary scrub above storm drain, 3°57'S, 79°3'W, 2000 m, 27 Dec. 1997 (fl), G. P. Lewis, P. Lozano & C. C. Berg 3733 (holotype, U; isotypes, AAU not seen, E not seen, K not seen, LOJA not seen, MO not seen, QCA not seen, QCNA not seen). Figure 1.

Frutex scandens saepe hemiepiphyticus. Folia petiolis ad 10 mm longis; lamina coriacea, obovata, 8–15 cm longa, 3.5–7.5 cm lata, apice obtusa vel rotundata, basi acuta vel cuneata; glandulae hypophyllae numerosae, biseriatae. Racemi 15–30 cm longi, flores 60–130; nectaria leviter cymbiformia, ovarium 3(–4) loculare.

Shrub, hemiepiphytic shrub, or woody climber, stem 10 cm diam., strongly branched. Leaves petiolate, petioles 5–10 mm long, 2–3 mm diam., flattened to canaliculate above; blades obovate, 8–15 cm long, 3.5–7.5 cm wide, apex obtuse to rounded and mucronate or minutely retuse after the mucro has fallen, base acute to cuneate, margin slightly revolute, coriaceous, midrib slightly prominent at base to slightly canaliculate above, prominent beneath, secondary veins obscure to slightly impressed above, obscure to subprominent beneath; hypophyllous glands poriform, usually in a conspicuous row of 10 to 25 ca. halfway between the margin and midrib on either side. Inflorescence a raceme, 15–30 cm long, with 60 to 130 flowers. Flowers pedicellate, pedicels 5–8 mm long; nectariferous bracts slightly cymbiform, 3–4 mm long, inserted just below the flowers; bracteoles directly subtending the calyx, sepaloïd, oval, 1.5–2 mm long, ca. 2 mm wide, persistent; sepals suborbicular, ca. 2 mm long, 2.5–3 mm wide, persistent; petals oblong, 6–7 mm long, 2–3 mm wide; stamens 5, filaments flattened, 1–1.5 mm long, ca 0.5 mm wide, abruptly narrowed toward the anthers; anthers 2–3 mm long, 1 mm wide; ovary 1–1.25 mm long, 3(or 4)-loculed, style conical, 0.75–1 mm long. Fruit depressed globose, apiculate by the persisting style and stigma, ca. 5 mm diam., fleshy, green tinged red.

**Phenology.** Flowering specimens are collected in December, January, March, and August, and fruiting specimens in November, December, January, March, April, and May.

**Distribution.** *Ruyschia andina* is found in primary and secondary tropical montane rain forests and cloud forests at altitudes of 1800–2300 m on

the eastern Andean slopes in Ecuador, Peru, and Bolivia.

Besides the new species, three other species are known from South America: *Ruyschia tremadena* in Venezuela, Colombia, and Panama (Darién), characterized by gibbous to semiglobose nectaries inserted at the base of the calyx and by 3 stamens; *Ruyschia pilophora* in Colombia, characterized by small, excavated, hat-shaped nectaries inserted at the base of the calyx; and *Ruyschia pavonii* in Colombia and Peru, characterized by (sub)globose nectaries inserted at about the middle of the pedicel.

KEY TO THE NEOTROPICAL SPECIES OF *RUYSCHIA*

- 1a. Stamens 3.
  - 2a. Leaf blade 3–5 cm wide; nectaries gibbous to semiglobose . . . . . *R. tremadena*
  - 2b. Leaf blade 1.5–3 cm wide; nectaries foliaceous, flattened or slightly gibbous.
    - 3a. Leaf blade acuminate; pedicels 3–5 mm long . . . . . *R. valerii*
    - 3b. Leaf blade obtuse to subacuminate; pedicels 5–9 mm long . . . *R. phylladenia*
- 1b. Stamens 5.
  - 4a. Nectaries inserted near the middle of the pedicel . . . . . *R. pavonii*
  - 4b. Nectaries inserted at the base of the flowers.
    - 5a. Nectaries hollowed out, hat-shaped . . . . . *R. pilophora*
    - 5b. Nectaries solid, gibbous to semiglobose.
      - 6a. Hypophyllous glands numerous in a distinct row of 10 to 25 ca. halfway between the margin and midvein on either side; ovary 3-celled . . . . . *R. andina*
      - 6b. Hypophyllous glands few, scattered or in a row of 2 to 7 between the margin and midvein on either side, sometimes absent; ovary 2-celled.
        - 7a. Hypophyllous glands small or minute; nectaries cymbiform, concave beneath; pedicels slender, 4–10 mm long, ca. 1 mm thick . . . . . *R. clusifolia*
        - 7b. Hypophyllous glands large, with a light-colored circumvallation, nectaries gibbous to semiglobose, flattened beneath; pedicels stout, 3–5 mm long, 1–1.5 mm thick . . . . *R. enervia*

**Paratypes.** BOLIVIA. **La Paz:** Prov. Sud Yungas, Sirubaya near Yanacachi, O. Buchtien 520 (US, W); 7 km de Huanacané en carr. a San Isidro, D. N. Smith, V. García, L. Dorr & L. Barnett 13915 (B, LPB not seen, MO not seen, U). ECUADOR. **Prov. Zamora-Chinchipe:** Road Loja–Zamora, G. P. Lewis, J. Luteyn, R. Fuller & E. M. Guerrón 3249 (AAU not seen, B, K not seen, LOJA not seen, MO not seen, QCA not seen, QCNE not seen); area of Estación Científica San Francisco, ca. 30 km away from Loja on hwy. tow. Zamora, S. Matezki 227 (FR, MO not seen), S. Matezki 453 (FR, UBT not seen); E Andean



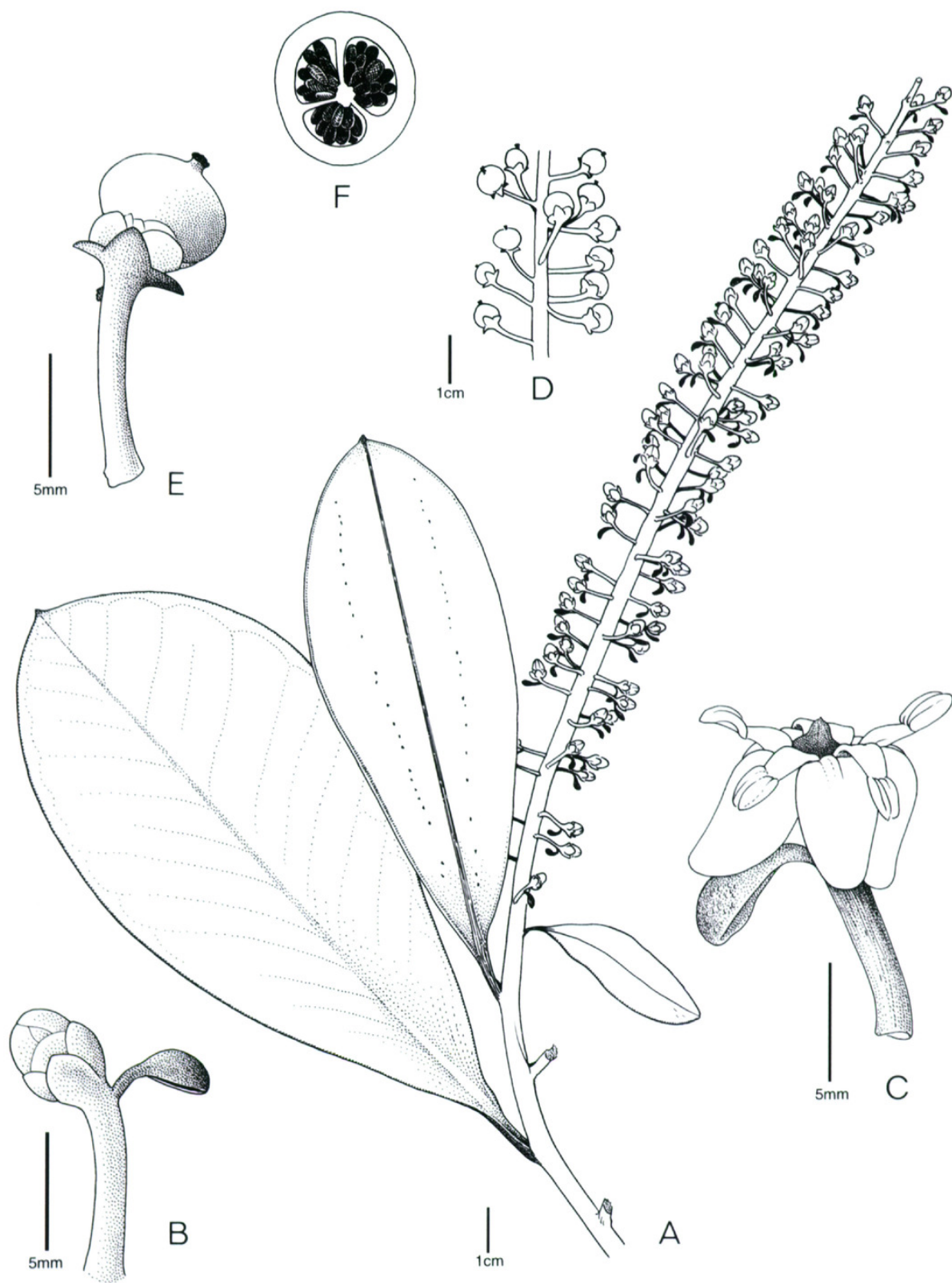


Figure 1. *Ruyschia andina* de Roon. —A. Flowering branch. —B. Flower bud with nectariferous bract. —C. Flower. —D. Inflorescence. —E. Fruit. —F. Fruit, transverse section. A, B from *Lewis et al.* 3733 (U) ; C from *Matezki* 453 (FR); D from *Lewis et al.* 3249 (B); F from *Matezki* 227 (FR).

slopes, Quebrada El Milagro watershed, *D. Neill & QCNE botany interns* 12612 (FR, MO not seen, QCNE not seen); El Panguí, Cordillera del Cóndor, dest. militar Cóndor Mirador en la Frontera Ecuador-Peru, *G. Pabon, J. Caranqui & Grupo Post-Grado MO-QCNE* 333 (MO not seen,

U); sandstone escarpment above & W of Tikimints, valley of Río Coangas, *P. E. Berry & D. Neill* 7635 (FR, MO not seen, QCNE not seen). **Prov. Morona Santiago:** Cantón San Miguel de los Cuyes, main trail betw. the villages of San Miguel de los Cuyes & Ganazhuma (via Río San Mi-

guel de los Cuyes). *J. L. Clark & C. Morocho 5859* (U, US not seen). PERU. **Cajamarca:** Prov. San Ignacio, San José de Lourdes, Camino al Cerro Picorana, *J. Campos, L. Campos & L. Zurita 5514* (FR, MO not seen).

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