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REVISION OF *CORYTOPLECTUS* OERST. (GESNERIACEAE)

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ABSTRACT. *Corytoplectus* Oerst. (Gesneriaceae: Gesnerioideae, tribe Episcieae) from northwestern South America is revised to comprise 11 species, including 2 new species: *C. longipedunculatus* from eastern Colombia and western Venezuela and *C. purpuratus* from eastern Colombia; 3 new combinations, *C. grandifolius* from Bolivia and Peru, *C. schlimii* from Colombia and Venezuela, and *C. zamorensis* from Colombia; and the most common species, *C. speciosus* is divided into varieties, var. *orbicularis* and var. *speciosus*. One species of *Corytoplectus* is transferred to *Drymonia* as *D. latifolia*.

Key words: *Corytoplectus*, Gesneriaceae, taxonomy

INTRODUCTION

The neotropical genus *Corytoplectus* Oerst. is a member of the tribe Episcieae, one of the most diverse tribes in Gesneriaceae with 22 genera and about 21% of the family's species (Clark & Zimmer 2003, Clark et al. 2006). Oersted (1858) circumscribed *Corytoplectus* and selected *Alloplectus capitatus* Hook. as the type species for the genus. Hanstein (1865), who surveyed the then known genera and species of Gesneriaceae, did not maintain *Corytoplectus* but combined it with *Alloplectus* Martius, where it remained until 1973 when Wiehler revived *Corytoplectus*. Wiehler recognized 7 species at that time; including species originally described in *Alloplectus, Columnea* L., and *Diplolegnon* Rusby (see also Wiehler 1982). In 1978, Wiehler renamed a taxon he had included in *Corytoplectus congestus* in 1973 as *C. pulcher*. Finally, in 1995, Wiehler described a new species of *Corytoplectus, C. cutucuensis* from Ecuador for a total of 9 species until the current revision.

There has been much confusion about what constitutes *Corytoplectus* and its species in herbaria. Specimens are often seen labeled as *Alloplectus* or *Drymonia* Martius, or other genera, and the specimens are frequently misidentified because of their similarity to each other and due to some overlap in distribution. Thus, a thorough examination of the specimens and a revision of *Corytoplectus* is called for. The appearance now of a revision of *Corytoplectus* is also timely because of the recent revision of *Alloplectus* by Clark (2005), who dealt with several of the names formerly placed in *Alloplectus* and which now reside in *Corytoplectus* and other genera. Revisions of *Alloplectus, Corytoplectus,* and Clark's revision of *Glossoloma* (in press), as well as earlier surveys of genera such as *Columnea* (Kvist & Skog 1993); will mean that a substantial portion of the tribe Episcieae will have been recently revised.

For this taxonomic revision, information was gathered from literature, specimens from several herbaria, and photographs of types. Both authors also visited herbaria at various times and were also able to observe and collect some material of *Corytoplectus* taxa in Ecuador, Peru, and Venezuela.

GENERIC AND SPECIFIC DELIMITATION

Corytoplectus can be distinguished from related genera, such as *Alloplectus, Columnea,* and *Drymonia* by 1) the translucent berries with dark striate seeds (vs. fleshy bivalved capsules in *Alloplectus, Glossoloma* Hanstein, *Crantzia* Scopoli, and *Drymonia* and the nontranslucent berries in *Columnea*); 2) the erect and mostly pedunculate inflorescences (vs. mainly pendent with sessile flowers in *Alloplectus, Drymonia,* and *Glossoloma*); 3) the terrestrial habit (vs. epiphytic habit in *Alloplectus* and some *Columnea* species); and 4) the dark green upper leaf surface with paler veins. A group of unidentified species of *Drymonia* has a similar dark green upper leaf surface pattern, but the similar plants of *Drymonia* are epiphytes and have sessile flowers. Other characters including the tubular-

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urceolate or tubular-ventricose corollas, useful for differentiating *Corytoplectus* from other genera, are shown in TABLE 1. Clark (2005) also included a long discussion about characters to separate the genera *Alloplectus, Drymonia, Glossoloma, Columnea,* and *Crantzia,* and summarized them in his TABLE 1. Therefore, the major genera in the Tribe Episcia can now be distinguished morphologically using numerous characters. The circumscriptions of these genera including *Corytoplectus* should, for the most part, now be stabilized.

The eleven species of *Corytoplectus* recognized here are distributed from Colombia to Guyana and Bolivia (see TABLE 2), between (600–) 1000 and 2200 (–2600) m. Colombia has the most species (5 with 3 endemics), followed by Venezuela (4 species with 2 endemics), Bolivia (3 species with 1 endemic), Ecuador (2 species with 1 endemic), Peru (2 species), Guyana (1 species), and Brazil (1 species) [See TABLE 2]. Plants of *Corytoplectus* are usually found in primary and/or disturbed montane and premontane cloud forests, in shaded areas and often near rivers or wet areas.

Within *Corytoplectus* the species can be separated into small groups by the combination of characters such as leaf indument, calyx lobes, corolla shape, floral bracts, and pedunculate vs. non-pedunculate inflorescences. *C. capitatus* (from Venezuela) and *C. grandifolius* (from Bolivia and Peru) both have the largest leaves in the genus, as well as densely long-acute glandular and strigose hairs on the blade above, the short sericeous indument above the veins, and the orbicular and strongly concave (apical edge folded toward the base) calyx lobes. *C. speciosus, C. congestus, C. longipedunculatus,* and *C. riceanus* are the species with non-caducous floral bracts. In *C. speciosus* and *C. congestus,* the two external floral bracts are larger enclosing the inflorescence and almost completely covering the calyx; in the other two species (*C. longipedunculatus* and *C. riceanus*), the floral bracts are large but do not cover the calyx. *C. cutucuensis* and *C. purpuratus* have urceolate and tubular-urceolate corollas respectively, but in contrast with *C. zamorensis* and *C. deltoideus* (species with tubular-urceolate corollas), the corolla limb is spreading and red or purple (vs. constricted to slightly spreading and pink or yellow). *C. deltoideus* and *C. schlimii* are distinctive from the other species for their large and broadly elliptic to lanceolate and rugose leaves, for their long pedicellate inflorescences, and for the deltoid to lanceolate calyx lobes (which are not strongly concave).

TABLE 1. Comparison of *Corytoplectus, Alloplectus, Glossoloma, Columnea, Drymonia,* and *Crantzia*. Modified from Clark (2005).

	Corytoplectus	*Alloplectus*	*Glossoloma*	*Columnea*	*Drymonia*	*Crantzia*
Leaves	Subisophyllous	Isophyllous	Isophyllous	Mostly anisophyllous	Isophyllous	Isophyllous
Flower orientation	Not resupinate	Resupinate	Not resupinate	Not resupinate	Not resupinate	Resupinate or not resupinate
Habit	Obligate terrestrial	Obligate epiphyte	Terrestrial (rarely epiphyte)	Facultative epiphyte or terrestrial	Epiphytic or terrestrial	Epiphytic or terrestrial
Fruit	Translucent berry	Fleshy capsule	Fleshy capsule	Nontranslucent berries (rarely fleshy capsule)	Fleshy capsule	Fleshy capsule
Corolla pouch	Medial always present	Terminal when present	Terminal when present	Medial when present	Medial when present	Terminal when present
Peduncled inflorescences	Present or absent	Absent	Absent (rarely short peduncle)	Absent	Absent (rarely short peduncle)	Absent

TABLE 2. *Corytoplectus* distribution.

Country	Species	Locality
Bolivia	*C. grandifolius*	La Paz
	*C. riceanus**	Cochabamba, La Paz, Santa Cruz
	C. speciosus var. *orbicularis*	La Paz
Brazil	*C. congestus*	Amazonas
Colombia	*C. congestus*	Cesar, Norte de Santander, Santander
	C. longipedunculatus	Magdalena
	*C. purpuratus**	Magdalena
	C. schlimii	Boyacá, Caquetá, Cundinamarca, Meta, Santander
	*C. zamorensis**	Boyacá, Cauca, Cundinamarca, Norte de Santander, Santander
Ecuador	*C. cutucuensis*	Morona-Santiago, Zamora-Chinchipe
	C. speciosus var. *orbicularis*	Loja, Zamora-Chinchipe
Guyana	*C. deltoideus*	Cuyuni-Mazaruni
Peru	*C. grandifolius*	Cuzco, Puno
	C. speciosus var. *orbicularis*	Amazonas, Ayacucho, Cajamarca, Cuzco, Huánuco, Junín, Lima, Madre de Dios, Pasco, San Martín, Ucayalí
	C. speciosus var. *speciosus**	Ayacucho, Cuzco, Huánuco, Junin, Pasco, San Martín, Ucayalí
Venezuela	*C. capitatus**	Aragua, Carabobo, Miranda, Yaracuy
	C. congestus	Amazonas, Barinas, Lara, Mérida, Trujillo
	C. deltoideus	Bolívar
	C. longipedunculatus	Falcón, Zulia
	C. schlimii	Lara, Portuguesa

* denotes endemic taxa.

MORPHOLOGY

Habit

The species of *Corytoplectus* are herbs and/or occasionally shrubs, between 0.5 and 1.5 m tall, and rarely more than 2 m. The stems are always erect, mostly unbranched and covered with a nonglandular indument (see below for details). Furthermore, the stems are subquadrangular in all species, sometimes becoming quadrangular toward the apex. The genus has no climbing or epiphytic species, and the internodes (particularly the older ones) have a flat, non-rugose and glabrescent epidermis.

Indument

Species of *Corytoplectus* have various types of glandular and nonglandular indument. The nonglandular trichomes are long (up to 10 cells), slender and uniseriate, and can be differentiated from the glandular trichomes as these arise from a basal ring of large and regular epidermal cells (vs. irregular basal epidermal cells and non-translucent cells at the apex in glandular hairs) (as found in *Rhytidophyllum,* see Skog 1976). The nonglandular trichomes mainly cover the stems, petioles, peduncles, pedicels, corolla exterior, and the margins of leaves, bracts, and calyx lobes.

The glandular trichomes are of four types (only the first three are shown in TABLE 3). The first is short-stalked with a spherical orange-yellow gland at the apex. The second type is very similar to the first, but has one or two long-celled stalks. These two types of glandular hairs are present on the leaf blades, bracts, calyx lobes, the inner surface of the corolla and style. The third and fourth types are characterized by a pointed apical cell, which is filled with a white non-translucent liquid and responsible for the nitid appearance of the leaves. The third type is a two-celled hair (with a spherical basal cell filled with liquid), and the fourth (not included in TABLE 3) is a uniseriate hair of three or four translucent cells. Glandular and nonglandular hairs cover both leaf surfaces, and the proportion among the different types of indument is a useful vegetative character.

Leaves

One obvious character in the leaf morphology in *Corytoplectus* is the variegated pattern (dark green with paler veins) above, and the reddish, purple or pinkish patterned color below. In species such as *C. congestus* and *C. longipedunculatus,* this pattern is more variable with some individuals without the paler veins or with paler green below. The leaves in all species are opposite and decussate, chartaceous when dry (less frequently membranous), varying from equal to subequal. Within the genus, the size of the leaves is also a variable character: *C. grandifolius* and *C. capitatus* have the largest leaves (20 to 30 cm long), and *C. congestus* and *C. cutucuensis* have the smallest (6 to

TABLE 3. Comparison of the adaxial leaf indument in *Corytoplectus* species.

Species	Glandular				Non-glandular				
	Long-acute	Short-acute	Short-capitate	Strigose	Strigillose	Sericeous	Pilose	Hispid	Surface
C. capitatus	Densely			Densely					Strongly rugose
C. congestus		Densely	Sparsely		Densely				Weakly rugose to flat
C. cutucuensis	Densely		Sparsely	Densely	Densely				Strongly rugose
C. deltoideus		Sparsely		Densely	Densely				Rugose
C. grandifolius	Intermediate							Intermediate	Strongly rugose
C. longipedunculatus			Sparsely	Sparsely		Sparsely	Sparsely		Flat
C. purpuratus	Intermediate			Intermediate					Rugose
C. riceanus	Intermediate							Intermediate	Strongly rugose
C. schlimii	Densely			Densely to sparsely					Rugose
C. speciosus		Densely	Intermediate		Densely				Flat
C. zamorensis		Densely	Intermediate		Densely				Flat

14 cm long). The shape, apex, base, and margin of the leaves are constant characters in the genus. The upper leaf surface can vary from strongly rugose to flat, and together with the indument, can be very useful characters to distinguish the species (TABLE 3).

Inflorescences

Inflorescences in *Corytoplectus* are axillary and/or pseudoterminal. Only *C. congestus* and *C. longipedunculatus* have inflorescences distributed along the stem. Although in all species the bracts are initially developed, in six species (*C. cutucuensis, C. deltoideus, C. grandifolius, C. purpuratus, C. schlimii,* and *C. zamorensis*) these are caducous. In other species such as *C. congestus, C. longipedunculatus,* and *C. speciosus* the two more external bracts are very large and enclose the inflorescence. Only four species (*C. capitatus, C. longipedunculatus, C. purpuratus* and *C. zamorensis*) have long peduncles, while the other species have almost sessile inflorescences or very short peduncles. The number of flowers per inflorescence is normally 3 to 7, although in *C. cutucuensis* and less frequently in *C. grandifolius* just one or two flowers are developed at the same time.

Calyx

Oersted, the Danish botanist who originally described the genus, derived the name *Corytoplectus* from the shape of the calyx: *coryto* = Greek for a leather pouch, *plectus* = pleated or folded. If one looks at the calyx in profile, the name is appropriate. The calyx lobes are normally subequal, and only those in *C. grandifolius* are unequal varying principally in size rather than in shape. The calyx lobe margins are usually flexed giving a concave appearance to the calyx. In *C. capitatus* and *C. grandifolius* only the sepals are strongly concave and folded apically. In *C. congestus, C. cutucuensis, C. longipedunculatus, C. riceanus,* and *C. speciosus* the sepals are folded laterally. Additionally, the shape and margin of the calyx lobes can be useful characters to separate the two varieties of *C. speciosus.* As in many other Gesneriaceae, the sepals in *Corytoplectus* continue to grow during the fruit development. The calyx lobes in the species of this genus are for the most part uniformly red and orange (rarely pink or purple), and only in *C. grandifolius* and *C. riceanus* are the sepals deep red at the apex.

Corolla

The corolla shape in *Corytoplectus* is uniform, varying principally from tubular-urceolate

to tubular-ventricose, with the exception of *C. speciosus* (a tubular corolla) and *C. cutucuensis* (an urceolate corolla). In all the species the corolla does not have lines, stripes, dots, etc., although in some species the color can vary from the base to the apex. For example, in *C. congestus* the corolla is white at the base and then yellow, pink or orange at middle and apex. In *C. deltoideus* the corolla is uniformly yellow.

Corytoplectus cutucuensis, C. longipedunculatus, C. congestus, and *C. speciosus* have smaller corollas (ca. 10–15 mm long), and *C. deltoideus, C. schlimii,* and *C. grandifolius* have larger (ca. 17–30 mm long).

Two corolla characters are useful to discriminate the species: 1) the shape of the corolla limb, and 2) the indument at the outside middle and apex. The corolla limb can vary from not spreading or constricted (in *C. grandifolius, C. capitatus, C. zamorensis,* and *C. deltoideus*), to spreading (*C. longipedunculatus, C. speciosus, C. purpuratus,* and *C. schlimii*). Some species are intermediate (*C. cutucuensis, C. zamorensis, C. congestus, C. schlimii,* and *C. riceanus*).

As for the indument character, species such as *C. congestus, C. schlimii, C. riceanus,* and *C. speciosus* are characterized by having trichomes of the corolla exterior arranged in obvious lines or stripes, whether villous, pilose, lanate, or sericeous. In *C. grandifolius, C. longipedunculatus,* and *C. cutucuensis* the stripes of lanate, villous, and sericeous indument (respectively) are not very evident, in contrast with *C. zamorensis, C. capitatus, C. deltoideus,* and *C. purpuratus* where the indument is not arranged in lines.

Androecium and Nectary

As in many neotropical Gesneriaceae, the species of *Corytoplectus* have four included stamens. In all species, the filaments are adnate to the corolla base for ca. 1 mm and are connate (from 1 to 6 mm, rarely to 8 mm) above the attachment of the corolla forming an open sheath. This sheath can vary from glabrescent to pubescent. With the exception of *C. deltoideus* and *C. schlimii* where the stamens form two groups, the stamens are equally distributed on this sheath.

The nectary number in *Corytoplectus* is usually one (dorsal) or sometimes two (one dorsal and one smaller ventral) or four. With the exception of *C. grandifolius* where the number of glands can vary from one to four, the gland number seems to be a constant and useful character from the specimens we have examined. For example, plants of *C. congestus* and *C. speciosus* can be confused, but the first species always has only one nectary gland, and the latter two. In contrast, the gland's shape and number of lobes can vary considerably among species and individuals of the same species.

Gynoecium

Characters of the ovary and style indument can be useful to separate similar species, but the ovaries are always ovoid, and the stigma bilobed capitate to stomatomorphic. With the exceptions of *C. schlimii, C. congestus, C. longipedunculatus,* and *C. riceanus* (these species have glabrous to glabrescent ovaries), the other species have pubescent or sericeous ovaries. In the case of the style indument, some species have glabrous or glabrescent styles (*C. zamorensis, C. congestus, C. longipedunculatus, C. riceanus, C. cutucuensis, C. purpuratus*), others pubescent (*C. capitatus, C. speciosus*), and others covered with long-capitate glandular indument (*C. grandifolius, C. deltoideus, C. schlimii* and occasionally *C. congestus, C. riceanus,* and *C. purpuratus*).

Fruit and Seeds

All species of *Corytoplectus* have translucent berry fruits, covered partially by the accrescent calyx lobes. The seeds are numerous, brown to reddish-brown and striate.

Pollination

No information about pollination of *Corytoplectus* species has been gathered. However, the tubular-urceolate, tubular-ventricose, tubular and urceolate corollas, together with the red, yellow and orange color, fit with the "lepidopterous" pollination syndrome described by Faegri and van der Pijl (1979). Very likely, flowers of *Corytoplectus* can also be visited and perhaps pollinated by small hummingbirds.

Molecular Information

Molecular studies in Corytoplectus have been few. Roalson et al. (2005) reported that *C. cutucuensis* is sister to *Columnea, Drymonia, Glossoloma* (as *Alloplectus*), and *Neomortonia* in the Episcieae clade. This is similar to the findings of Smith and Carroll (1997), and Smith (2000) who sequenced *C. speciosus.* Examination of other species is likely to show that the genus remains a member of the Episcieae, and related to the same genera as already reported.

Taxonomy

Corytoplectus Oerst., Centralamer. Gesner. 45–46.1858. TYPE: *Alloplectus capitatus*

Hook. [=*Corytoplectus capitatus* (Hook.) Wiehler (see Clark 2005)].

Herbs to shrubs; stems erect, to 1.5 m tall, rarely more than 2 m, 3.5–7 (–10) mm in diameter, covered with sericeous, tomentose, strigillose, or hirsutulous indument distally, glabrescent at base, internodes 1–6 (–10) cm long. ***Leaves*** opposite, isophyllous to subequal; blades chartaceous or membranous when dry, (3.5–) 8–25 (–36) cm long, (2–) 3–14 (–20) cm wide, most commonly ovate to broadly elliptic, less commonly elliptic, base cuneate, obtuse or attenuate (rarely cordate or oblique), apex acute, acuminate or obtuse, margin mostly crenate-serrate to crenulate-serrulate, less commonly serrate, serrulate or crenate, strongly rugose to flat, adaxially dark green or dark green with paler veins, densely to sparsely strigose, strigillose, and with glandular indument, rarely long pilose, abaxially paler green, red or purple, the veins densely to sparsely strigillose and glandular (sometimes strigose), or densely sericeous to strigose above, margin ciliate to hirsutulous, lateral veins (5–) 7–12 (–16) per side; petioles (1–) 4–9 (–12) cm long, densely to sparsely strigillose, tomentose, hirsutulous or hirsute. ***Inflorescences*** vary from densely congested umbel-like cymes to open cymes, pseudoterminal and axillary in the apical part of the stem, less frequently distributed along the stem, erect, of (1–) 3–7 (–15) flowers; peduncles 0–25 (–50) mm long, strigillose, tomentose, hirsute or sericeous; pedicels usually shorter than or equal to the peduncle (when the latter is present), 6–45 (–60) mm long, strigillose, tomentose, hirsute, or sericeous; bracts 2 (sometimes with 2 or 4 prophylls), varying from persistent to caducous, 7–29 (–40) mm long, (1.5–) 4–20 (–30) mm wide, most commonly lanceolate, ovate, or orbicular, rarely oblanceolate, base obtuse, attenuate, or cuneate, apex acute, acuminate, or obtuse, margin varying from entire to denticulate or serrulate, flat to rugose, red, orange, pink, purple, or green flushed with red, outside densely or sparsely pubescent, inside glabrescent covered with short glandular and strigillose indument. ***Calyx*** red, pink, orange, or purple, lobes free, subequal or unequal, ovate, deltoid, lanceolate, orbicular, or elliptic, 9–15 (–30) mm long, (3.5–) 6.5–13 (–21) mm wide, varying from reflexed laterally to strongly concave (apical edge folded toward the base), base attenuate, cuneate, or obtuse, apex acute, acuminate or obtuse, outside strigillose or strigose with short glandular hairs (rarely merely pubescent), midvein varying from densely sericeous to strigose, inside glabrescent covered with short glandular and strigillose indument at apex, margin remotely denticulate, serrulate to entire (rarely serrate), hirsutulous to pilose. ***Corolla*** tubular-urceolate to tubular-ventricose, rarely tubular or urceolate, slightly oblique and longer than calyx, 14–25 (–30) mm long, 5–11 (–16) mm in diameter at widest point, throat constricted 3–6 (–9) mm in diameter, yellow, orange, pink, or red, less frequently purple, outside glabrous at base and villous, lanate, or sericeous apically, sometimes indument in stripes, inside puberulous or glabrous at base, glabrescent or glandular at middle, and with short-capitate glandular hairs at throat; limb purple, pink, orange, yellow, red, or purple, varying from constricted to broadly spreading, lobes (0.5–) 1.3–3 (–7) mm long and wide, subequal, rotund to orbicular (sometimes almost reniform), entire to erose, outside glabrous or covered with indument, inside usually glabrous. ***Androecium*** of stamens with filaments (5–) 7–13 (–15) mm long (free part), adnate to base of corolla tube for ca. 1 mm, connate for (1–) 1.5–4 (–8) mm in an open sheath, sheath apex usually pubescent, free portion of filaments glabrous or pubescent, stamens equally distributed on the sheath, less frequently in pairs; anthers 1.5–3 mm long, 2–3 mm wide, dehiscing by longitudinal slits; staminode absent. ***Disc*** of nectary glands solitary or two (rarely four), to 3 mm high and 3.5 mm wide, glabrous. ***Gynoecium*** with the ovary ovoid, 1.5–3 (–5) mm long, 2.5–3.5 (–5) mm in diameter, glabrous or pubescent, sometimes sericeous; style 5.5–10 (–18) mm long, glabrous or pubescent with glandular hairs; stigma bilobed–capitate to stomatomorphic. ***Fruit*** a translucent berry, (3.5–) 7–10 (–13) mm in diameter, sparsely pubescent to glabrous; seeds numerous, fusiform to elliptic, to 1 mm long, 0.5 mm wide, striate, dark brown to black.

Key to the Species and Varieties of Corytoplectus

1. Upper leaf surface always flat, never rugose, densely strigillose, or sparsely strigose, pilose or sericeous; floral bracts flat below; calyx lobes never strongly concave (apical edge folded toward the base).
   2. Short peduncled inflorescences, peduncle 0–0.5 (–1.5) cm long; floral bracts persis-

tent (sometimes caducous at fruit), the larger 2 enclosing the inflorescence and covering the calyx almost completely; nectary glands two (plants of Bolivia, Ecuador, and Peru) . . . . . 10. *C. speciosus*

3. Calyx lobes orbicular to rotund, apex obtuse, not reflexed laterally; floral bracts caducous in fruit; peduncle absent in fruit. . . . . 10 a. *C. speciosus* var. *orbicularis*

3′. Calyx lobes lanceolate, apex acuminate, reflexed laterally; floral bracts persistent in fruit; peduncle present in fruit . . . . . 10 b. *C. speciosus* var. *speciosus*

2′. Long peduncled inflorescences, peduncle (0.5–) 1.1–3.5 (–5) cm long; floral bracts persistent or caducous, but never enclosing the inflorescences and covering the calyx; nectary gland one (plants of Colombia and Venezuela).

4. Stems and petioles with yellow or pink strigillose to short sericeous indument; leaves sparsely pilose, strigose to sericeous above, below paler green to green suffused with red or purple, (7–) 11–19 (–23) cm long; corolla tubular-ventricose, limb spreading. . . . . 6. *C. longipedunculatus*

4′. Stems and petioles with purple hirsutulous to tomentose indument; densely strigillose leaves above, below deep purple, (6–) 7.5–12.5 (–18) cm long; corolla tubular-urceolate, limb slightly spreading to constricted . . . . . 11. *C. zamorensis*

1′. Upper leaf surface always rugose, densely to sparsely strigose, short-acute glandular or long-acute glandular, never sericeous; floral bracts flat or rugose below; calyx lobes strongly concave (apical edge folded toward the base).

5. Peduncle 2–4 cm long; stems and petioles sericeous, pilose, villous or lanate (plants of Colombia and Venezuela).

6. Stems, petioles and inflorescences sericeous to pilose; leaves 9–14 (–20) cm wide; calyx lobes strongly concave; corolla pink to yellow, villous to sericeous at apex, limb not spreading; inflorescences of congested umbel-like cymes. . . . . 1. *C. capitatus*

6′. Stems, petioles, and inflorescences villous to lanate; leaves 10–17 (–22) cm long and 4–8 (–11) cm wide; calyx lobes not concave; corolla deep purple, sparsely pilose at apex, limb obviously spreading; inflorescences of non-congested umbel-like cymes . . . . . 7. *C. purpuratus*

5′. Peduncle 0–2 cm long (if to 2 cm then floral bracts enclosing the flowers); stems and petioles tomentose, strigillose, strigose, hirsute, hirsutulous, or short-sericeous (plants of Colombia, Ecuador, Guyana, and Venezuela).

7. Calyx lobes lanceolate, elliptic, or orbicular; peduncle to 2 cm long.

8. Leaves rugose above, (4–) 6–14 (–20) cm long, densely short-acute glandular and strigillose; floral bracts orange, pink, or red, and flat below; corolla tubular-ventricose, yellow, pink, or orange . . . . . 2. *C. congestus*

8′. Leaves strongly rugose above, (10–) 14–30 (–38) cm long, less densely long-acute glandular and hispid; floral bracts paler green at base and red at apex, and strongly rugose below; corolla tubular-urceolate, red (rarely orange).

9. Inflorescences not congested; calyx lobes strongly concave; pedicels 1.8–3.8 cm long; leaves (5–) 7–11 (–15) cm wide; floral bracts almost always caducous; ovary pubescent . . 5. *C. grandifolius*

9′. Inflorescences very congested; calyx lobes not strongly concave; pedicels 0.4–1.9 (–2.4) cm; leaves 4–10 cm wide; floral bracts non-caducous; ovary glabrous to glabrescent . . . . . 8. *C. riceanus*

7′. Calyx lobes deltoid to ovate; peduncle very short or lacking.

10. Stamens equally distributed at base; leaves chartaceous, ovate to broadly elliptic, (6–) 8–14 (–17) cm long; peduncle 1–4 (–5) cm long; corolla 1.1–2 cm long (plants of Ecuador). . . . . 3. *C. cutucuensis*

10′. Stamens distributed in pairs at base forming two groups; leaves membranous to chartaceous, lanceolate, elliptic to broadly elliptic, (7–) 11–20 (–22) cm long; peduncle (1.5–) 2–5 (–6) cm long; corolla 1.7–2.6 (–3) cm long (plants of Colombia, Venezuela, and Guyana).

11. Corolla densely short- sericeous externally, limb not spreading; stems, petioles, and pedicels tomentose; ovary densely seri-

ceous; style glandular-pilose . . . 4. *C. deltoideus*

11′. Corolla villous to sericeous externally and apically, limb slightly spreading to spreading; stems, petioles and pedicels strigose, strigillose or hirsute; glabrescent ovary; style glabrescent . . 9. *C. schlimii*

1. *Corytoplectus capitatus* (Hook.) Wiehler, Phytologia 27: 313. 1973. *Alloplectus capitatus* Hook., Bot. Mag. 75: pl. 4452. 1849. *Columnea capitata* (Hook.) Kuntze, Revis. Gen. Pl. 2: 472. 1891. *Crantzia capitata* (Hook.) Fritsch, in Engler and Prantl. Nat. Pflanzenfam. 4(3b): 168. 1894. TYPE: Collector unknown, Cult. Hort. Kew (holotype: K (photo US!)).

Herbs to shrubs; stems erect, to 1.5 m tall, rarely greater than 2 m, 4–7 mm in diameter, red (rarely white) sericeous to pilose toward the apex, glabrescent at base, internodes 1–4 cm long. ***Leaves*** opposite, isophyllous; blades chartaceous when dry, (7–) 15–20 (–30) cm long, 9–14 (–20) cm wide, ovate to broadly elliptic, base obtuse, apex acute to usually acuminate, strongly rugose, adaxially dark green with paler veins, densely long-acute glandular and strigose, short sericeous along the veins, abaxially purple to paler green, purple villous to pilose, densely purple sericeous on the veins, margin serrate to serrulate, ciliate, lateral veins 10–12 (–16) per side; petioles (4–) 7.5–9 (–12) cm long, densely red or purple pubescent to sericeous. ***Inflorescences*** of congested umbel-like cymes, pseudoterminal and axillary (in the apical part of the stem), erect, of 8–14 flowers; peduncles shorter than the petioles, 2–3 cm long, red or purple pubescent to sericeous; pedicels shorter or equal than the peduncle, 12–26 mm long, red or purple pilose to sericeous; bracts 2 (2 or 4 prophylls), non-caducous, 7–13 mm long, 2–5 mm wide, lanceolate, base obtuse, apex acuminate, margin remotely denticulate to entire, flat, red to purple or sometimes green flushed with red, outside purple pilose to sericeous, inside glabrescent. ***Calyx*** red to purple, lobes free, subequal, orbicular, 10–13 (–20) mm long, 7–11 (–14) mm wide, strongly concave (apical edge folded toward the base), base and apex obtuse, rarely acute, outside red pilose with short-capitate glandular hairs, midvein sericeous densely lanate at base, inside glabrescent with short-capitate glandular hairs at middle and short-acute glandular hairs at apex, margin remotely denticulate to entire, purple pilose. ***Corolla*** tubular-urceolate, slightly oblique and longer than calyx, 1.6–2 (–3) cm long, 7–9 mm in diameter at widest point, throat constricted 4.5–5 mm in diameter, yellow to pink, outside glabrous at base and reddish villous to sericeous apically, inside puberulous at base, glabrescent at middle and with short-capitate glandular hairs at throat; limb purple, pink, or orange, small, not spreading, lobes 1.3–1.5 mm long, 1–2 mm wide, subequal, rotund to orbicular, entire to slightly erose, outside glabrous and villous at base, inside glabrous. ***Androecium*** of stamens with filaments 11 mm long (free part), adnate to base of corolla tube for ca. 1 mm, connate for 1 mm forming an open sheath, pubescent at apex of sheath, free portion glabrous, stamens equally distributed on the sheath; anthers ca. 2 mm long, 1.5 mm wide, dehiscing by longitudinal slits. ***Disc*** of nectary gland one and dorsal, to 1 mm high, glabrous. ***Gynoecium*** with the ovary ovoid, ca. 3 mm long, 2 mm in diameter, densely pubescent; style 5.5 mm long, pubescent; stigma bilobed capitate. ***Berry*** ca. 6 mm in diameter, sparsely pubescent; seeds fusiform to elliptic, ca. 0.7 mm long, 0.4 mm wide, striate, dark brown to black.

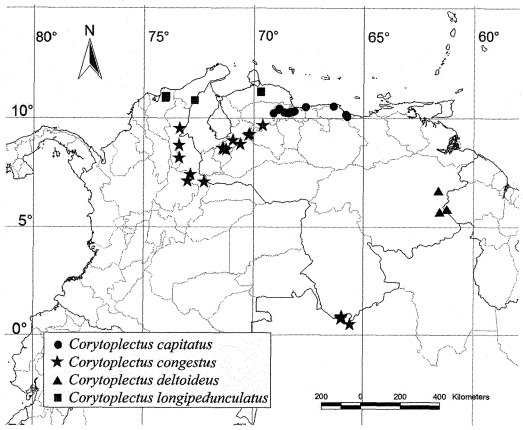

FIGURE 1. Distribution of *Corytoplectus capitatus* (Hook.) Wiehler, *C. congestus* (Linden ex Hanst.) Wiehler, *C. deltoideus* (C.V. Morton) Wiehler, and *C. longipedunculatus* C. Rodríguez-Flores & L.E. Skog. Map was generated using ArcView GIS 3.2a (ESRI 2000).

PHENOLOGY: Collected in flower from March to December.

DISTRIBUTION: (FIGURE 1) Venezuela (Aragua, Carabobo, Miranda, Yaracuy); in primary and secondary cloud forest; (600–) 1100–1300 (–1600) m.

ADDITIONAL SPECIMENS EXAMINED: **Venezuela.** Aragua: Close to Alto de Choroní, *Badillo 1892* (VEN); between Quebrada Río Hondo S of Tremaria and Choroní, on the slope toward the sea, on the slopes close to the Río Grande del Medio, *Steyermark & Carreño 89938*

(VEN), *Steyermark & Carreño 105856* (SEL).—Carabobo: Autónomo Mora, *Diaz 67* (US); Pico de la Fila las Perdices toward Río Brazo Grande, *Meier & Llamozas 3654* (VEN); Distrito Bejuca, W of Bejuca-Canoabo highway, between La Cumbre Paragüito and Cerro El Marquero, *Meier & Kunert 4999* (US, VEN); Distrito Bejuca, N of Bejuca, between Cerro San Isidro and Cerro de Paja (Cariaprima), *Meier et al. 5501* (US, VEN); Distrito Valencia, Cordillera de la costa, excursion Chirgua (Cariaprima), Fila-Maestra-Las Trincheras, northern slope, *Meier 8300* (VEN); along headwaters of Río San Guian, up to La Toma, S of Borburata, *Steyermark & Steyermark 95186* (NY, US, VEN).—Miranda: Distrito Paez, Filo La Tigra, Quebrada San Juan, 18 km SW of Cupira, *González & Ortega 1169* (VEN-2 sheets); Cerros del Bachiller, near E end between base and summit, above Quebrada Corozal, S of Santa Cruz, *Steyermark & Davidse 116640* (MEXU, PORT, SEL, VEN).—Yaracuy: Close to Caserío de San José, Aroa, *Aristeguieta & Pannier 1873* (NY, VEN); Distrito Urachiche 15 to 20 km N of Urachiche, *Aymard et al. 1633* (UC, VEN); Distrito Nirgua, Caserio La Candelaria, *Benitez de Rojas 2291* (F, MO, VEN); Cerro La Chapa, approximately 5 km N of Nirgua, *Bunting & Ferrari 4514* (VEN); Hacienda El Jaguar 15 km N-NE of Aroa, *Colonnello* 919 (NY); along road between Salom to Candelaria, *Croat 60812* (MO); El Amaparo, road to "La Candelaria", side of the highway *Diederichs 122* (NY, VEN); Distrito Nirgua-San Felipe, close to Caserío "La Palma," Salom-Temerla highway, top of the mountain, *Duno de Stefano et al. 375* (VEN-2 sheets); Municipio Aroa, Bolívar, between El Diamante and Cerro el Tigre, *Fernández 3949* (NY); Sierra de Aroa, Cerro Tigre 10 km E of Aroa air distance, Río Carabobo and adjacent slope up to road, *Liesner & González 9727* (SEL, VEN); Sierra de Aroa, Cerro Tigre 10 km E of Aroa air distance, Río Carabobo, *Liesner & González 9955* (MO, SEL, US, VEN); Distrito Nirgua, Serranía Santa María-Cerro La Chapa, 6 km N of Nirgua, *Meier & Roeser 903* (VEN); Distrito Nirgua, NW of Mantalbun, between television towers and top of Capotillo, N slope, headwaters of Río Temerla, *Meier & Kunert 4628* (VEN); Distrito Nirgua, N of Miranda (Estado Carabobo), between La Fila Campoamor and Cumbre El Orégano, NW slopes, *Meier & Kunert 4690* (US, VEN); Distrito Yaritagua, western end of Serranía de Aroa, NW of Yaritagua, N of Camburito, *Meier et al. 5783* (VEN); Distrito Bolívar, Sierra de Aroa, N side, along the Aroa-Cumaragua-Cocorote highway, *Meier et al. 5803* (US, VEN); Distrito Nirgua, Camino Salon-Temerla, *Rutkis 482* (US, VEN 2-sheets); Cerro La Chapa, N of Nirgua, *Steyermark & Bunting 85708* (VEN); Sierra de Aroa, Cerro Negro at the headwater affluents of Río Cocorotico, pendent slopes of San Felipe, *Steyermark & Wessels-Boer 100406* (VEN); Cerro La Chapa, N of Nirgua, *Steyermark & Bunting 105260* (SEL, NY); Quebrada Honda, 17.3 km del pueblo de Aroa, *Steyermark 105402* (NY, SEL, US, VEN); headwater of Quebrada Amparo, El Amparo toward La Candelaria, 7.9 km N of Salom, *Steyermark et al. 111173* (VEN). Locality Unknown—*Basil s.n* (NY). **Cultivated.** G-291, *Wiehler s.n.* (SEL, US); G-291, *Skog 5388* (US); G-291, *Skog & Linett 5496* (US).

DISTINGUISHING CHARACTERS: The combination of long peduncles and pedicels, small floral bracts, inflorescences with many uncongested flowers, and strongly convex (folded vertically) calyx lobes, clearly separates *Corytoplectus capitatus* from other species in the genus.

The most similar species to *Corytoplectus capitatus* is *C. purpuratus,* but the latter species has smaller leaves, very densely pink or white villous indument on stems, petioles, peduncle, and pedicels (vs. purple to red sericeous to pilose indument), calyx lobes not concave (vs. calyx lobes strongly concave), sparsely pilose and deep purple corolla with spreading limb (vs. villous to sericeous and pink to yellow corolla with small limb), nectary glands two (vs. nectary gland one) and non-congested cymes (vs. congested umbel-like cymes). Vegetatively, the plants of *C. grandifolius, C. speciosus, C. zamorensis, C. cutucuensis,* and *C. schlimii* can be confused with plants of *C. capitatus,* but the inflorescences of the first two species have short or no peduncles, and two or more nectary glands (in contrast with the long peduncle and the single nectary gland in *C. capitatus*). In *C. speciosus* and *C. zamorensis* the upper leaf surface is flat and covered with densely strigillose hairs, instead of a rugose surface with long-glandular and strigose hairs in *C. capitatus.* Additionally, the flowers of *C. speciosus* are yellow and tubular with obviously spreading limb, instead of yellow to pink and tubular-urceolate and a small limb. The inflorescences of *C. zamorensis* have long peduncles and the corollas are sericeous outside as in *C. capitatus*, but in the former the leaf surface above is flat, the inflorescences have fewer flowers, the calyx lobes are not concave and the corolla limb is very constricted. The leaf indument and the corolla shape of *C. cutucuensis* is very similar to *C. capitatus,* but in addition to the differences already noted, the plants of *C. cutucuensis* are restricted to Ecuador. In the case of *C. schlimii,* the leaf indument is less velvety appearing almost glabrescent and rugose on con-

tact, the calyx lobes are deltoid not concave, and the corolla is sparsely pubescent outside with a spreading limb.

NOTES: In literature (Hooker 1849, Skog 1999) *Alloplectus speciosus* Hort. ex Hook. (1849) and *Macrochlamys speciosus* Decne. (1849) are included as synonyms of *Corytoplectus capitatus,* but apparently neither was validly published. In the discussion of *Alloplectus capitatus* by Hanstein (1865), a collection of Funcke and Schlim in Colombia is cited, but it is not the type.

2. *Corytoplectus congestus* (Linden ex Hanst.) Wiehler, Phytologia 27: 313. 1973. *Alloplectus congestus* Linden ex Hanst., Linnaea 34: 371. 1865. *Columnea congesta* (Linden ex Hanst.) Kuntze, Revis. Gen. Pl. 2: 472. 1891. *Crantzia congesta* (Linden ex Hanst.) Fritsch, in Engler and Prantl. Nat. Pflanzenfam. 4(3b): 168. 1894. TYPE: Venezuela, Mérida, *Moritz 1131* (holotype: B, no longer extant; lectotype selected here: GH (photo US!); isolectotypes: G (photo US!), GH (photo US!), K (photos SEL!, US!), L (photo US!), P, W (photo US!)).

Herbs or rarely subshrubs; stems erect, to 1 m tall, to 4–6 mm in diameter, white or pink tomentose to strigillose toward the apex, glabrescent at base, internodes 2–6 (–8) cm long. ***Leaves*** opposite, isophyllous to subequal; blades chartaceous when dry, (4–) 6–14 (–20) cm long, (2–) 3–7 (–9) cm wide, ovate to broadly elliptic, base cuneate to obtuse, apex acute or sometimes acuminate, margin serrate-crenate to serrulate-crenulate, weakly rugose to flat, adaxially dark green, but white along midrib, densely short-acute glandular and strigillose, with short-capitate glandular hairs, abaxially paler green and occasionally suffused with red, blade short-acute glandular, densely pink or white tomentose or strigillose above the veins, lateral veins (5–) 7–9 (–11) per side; petioles (1–) 4–6 (–11) cm long, densely yellow and pink strigillose. ***Inflorescences*** of congested cymes, distributed along the stem, erect, of 4–10 flowers; peduncles very small, shorter than the petioles, 3–9 (–20) mm long, densely pink and white strigillose to tomentose; pedicels longer than or equal to the peduncle, 6–14 mm long, yellow and red strigillose, strigose at apex; bracts 2 (2 or 4 prophylls), 2 larger enclosing the inflorescence and almost completely covering the calyx, non-caducous, 19–26 mm long, 12–20 mm wide, ovate to orbicular, base attenuate to cuneate, apex acute to acuminate, margin serrulate to denticulate, flat, orange, pink, or red, outside strigillose with short-acute glandular hairs above the blade, veins densely strigillose to tomentose, inside glabrescent with short-capitate glandular hairs at middle and short-acute glandular hairs at apex, margin hirsutulous. ***Calyx*** red, pink, or orange, lobes free, subequal, lanceolate (rarely ovate), 9–15 (–19) mm long, 3.5–9 (–14) mm wide, reflexed (lateral sides folded), base attenuate to cuneate, apex acuminate, outside with short-acute glandular hairs and strigillose, midvein densely strigillose, inside glabrescent with short-capitate glandular hairs at middle and short-acute glandular hairs at apex, margin denticulate to serrulate, hirsutulous. ***Corolla*** tubular-ventricose, slightly oblique, longer than calyx, 14–18 (–21) mm long, 6–8 mm in diameter at widest point, throat constricted 4–4.5 mm in diameter, white at base, yellow, pink, or orange at middle and apex, outside glabrous at base, apically white or pink villous to pilose, indument in stripes, inside glabrous at base, but with long-capitate glandular hairs at middle and short-capitate glandular hairs at throat; limb pink or orange, lobes slightly spreading, small, (1–) 1.3–1.5 (–2.5) mm long and wide, subequal, rotund to orbicular, entire to erose, glabrous on both sides. ***Androecium*** of stamens with filaments 7–11 mm long (free part), adnate to base of corolla tube for ca. 1 mm, connate for 1.5–3 mm forming an open sheath, pubescent at sheath apex, free portion glabrous, stamens equally distributed on the sheath; anthers ca. 1.5 mm long, 1.5–1.6 mm wide, dehiscing by longitudinal slits. ***Disc*** of nectary gland one (sometimes bilobed) and dorsal, to 2 mm high and 3 mm wide, glabrous. ***Gynoecium*** with the ovary ovoid, 2–3 mm long, 1.5–2.5 mm in diameter, glabrous; style 7–10 mm long, glabrous (rarely sparsely glandular); stigma bilobed capitate. ***Berry*** 3.5–6.5 mm in diameter, glabrous; seeds elliptic to rotund, 0.5–0.7 mm long, 0.3–0.5 mm wide, striate, dark brown to black.

PHENOLOGY: Collected in flower from July to April; in fruit in February and from July to November.

DISTRIBUTION: (FIGURE 1) Brazil (Amazonas), Colombia (Cesar, Norte de Santander, Santander) and Venezuela (Amazonas, Barinas, Lara, Mérida, Trujillo); in moist forest and shaded areas near riverbanks; (1000–) 1300–2300 m.

ADDITIONAL SPECIMENS EXAMINED: **Brazil.** Amazonas: Río Negro, Río Cauaburi, Río Maturacea, between Anta camp and Palmito camp, *Silva & Brazão 60648* (US). **Colombia.** Cesar: La Jagua de Ibirico, La Victoria de San Isidro, Vereda Alto de Las Flores, Escuela Nueva de Flores, *Fernández et al. 13447* (COL).—Norte de Santander: Cordillera Oriental, Sarare region, between Alto

del Loro and Alto de Santa Inés, *Cuatrecasas et al. 12395* (COL, F 2-sheets, GH 2-sheets, US); Cordillera Oriental, Sarare region, hoya del Río Margua between Campohermoso and Río Negro, *Cuatrecasas 12880* (COL, F 2-sheets, MO, US); Munic. Toledo, Alto de Santa Inez, *Luer et al. 7917* (SEL); Cucutilla, Vereda El Carrizal, sector Sisavita, *Prieto-C. & Mendoza 1041* (COL).—Santander: Eastern Cordillera, Río Surata valley, above Surata, *Killip & Smith 16630* (COL, GH, NY US); Tona, Finca La Mariana, *Orozco et al. 1627* (COL 2-sheets). **Venezuela.** Amazonas: Dept. Río Negro, Cerro de la Neblina, 5.1 km NE Pico Phelps, *Bell 345* (US, VEN); Cerro Neblina, camp #7, S slopes of cañon grande, *Croat 59460* (NY, US); trail S from Cerro Neblina camp, *Gentry & Stein 46558* (US, VEN); Cerro Neblina, Río Yatua, E of camp 3, *Maguire et al. 36913* (US); Cerro de la Neblina, Río Yatua, occasional on upper escarpment slopes above camp 4, *Maguire et al. 36989* (NY, US 2-sheets); Cerro Neblina, Río Yatua, escarpment slopes above camp 3, *Maguire et al. 42027* (US); Cerro Neblina, Río Yatua, between camp 4 and Cumbre, *Maguire et al. 42589* (US); Río Negro Dept., camp VII, *Renner 2064* (US 2-sheets).—Barinas: Santo Domingo, Barinitas, *Aristeguieta 4925* (MO, NY, VEN). Distrito Bolivar, Mpio. Altamira, "La Gallineta," Caserio "El Celoso" near feldspar mine, *Dorr et al. 5413* (NY, US); Distr. Bolivar, near feldspar mine, between Altamira and Santo Domingo, *Werff & Ortíz 5872* (SEL); Dist. Bolivar, near feldspar mine, between La Soledad and Sto Domingo, ca. 35 km downhill from Sto. Domingo, *Werff & Ortega 6128* (US, VEN).—Lara: Sanare, *Aristeguieta 3933* (US); Distrito Jiménez, Yacambú National Park, 10–14 km by road SE of Sanare, ridges of Fila Potreritos, between Alto del Viento and El Volcán, *Davidse & González 21143* (U, US, VEN); Jimenez, Yacambú National Park, Quebrada Negra, El Blanquito, SSE of Sanare, *Steyermark et al. 103490* (US, VEN); Jimenez, Yacambú de El Blanquito National Park, *Steyermark et al. 103525* (MO, NY, US, VEN 2-sheets); Distr. Moran, tributary of Río Tocuyo, 1 km S of Humocoro Alto, *Steyermark & Nehlin* 109953 (SEL); Sanare, *Wiehler 72454* (NY, SEL, US).—Mérida: between La Carbonera y La Azulita, *Aristeguieta 2842* (VEN); lower slopes of El Toro, *Bernardi 19* (NY); slopes of El Toro, *Bernardi 343* (NY); Santo Domingo, *Bernardi 991* (NY); La Carbonera, 30 km W of Mérida, *Breteler 3491* (MO, NY, P, S, US); Justo Briceño, Quebrada El Molino (near Las Cuadras), *Clark & Yustiz 6868* (MER, PORT, SEL, US, VEN); Andrés Bello, Comunidad San Eusebio (El Chorotal), ca. 18 km N of La Azulita, near border of Sierra Nevada National Park, *Clark & Yustiz 6880* (MO, PORT, US, VEN 2-sheets); 66 km NE of Mérida, along Mérida-Azulita road, *Davidse 3239* (MO, SEL); Distrito Andrés Bello, steep slopes between Quebrada el Trigal and Quebrada Zerpa, between Mirabel and San Benito, *Davidse & González 18895* (US); between La Carbonera and La Azulita, *de Bruijn 1132* (MO, NY); environs de La Azulita, *Humbert 26629* (SEL); 5 min SE of Mérida, on tributary of River Chalua, *Reed 499* (US); Distrito Libertador, El Maciegal, above La Pedregosa, 10 km NW of Mérida, *Ruíz-Terán & Ruíz-Pérez 15688* (MERF, US); Distrito Libertador, El Maciegal, close to the tank of El Yagrumal, *Ruíz-Terán & Ruíz Pérez 16296* (US); between Los Corales and Las Cuadras, *Steyermark 55768* (F, NY, US); Vertientes del Río Capaz, arriba de La Azulita, *Steyermark & Rabe 97081* (US); Vertientes del Río Capaz, arriba de La Azulita, *Steyermark & Rabe 97118* (US); La Azulita, *Wiehler 72473* (SEL, US).—Trujillo: Boconó, La Laguna Negra, main road between El Batatal and Mosquey, near border of Guaramacal National Park, *Clark & Yustiz 6886* (AAU, K, MO, PORT, US 2-sheets, VEN); Distrito Boconó, Guaramacal National Park, plot of phytosociological study no. 5, close to the Aqueducto de Boconó, *Licata & Niño 284* (NY, PORT, US); above Escuque, between Escuque and La Mesa de San Pedro, *Steyermark 104738* (US 2-sheet, VEN); Escuque, *Wiehler 72465* (SEL, US). **Cultivated.** W-1869, *Wiehler s.n.* (SEL).

DISTINGUISHING CHARACTERS: *Corytoplectus congestus* is similar to *C. speciosus* (especially var. *speciosus*), but differs by the elliptic to oval, long acuminate and dentate calyx lobes, glabrous ovary, glabrescent style, single nectary gland, and the slightly spreading corolla limb in contrast with the orbicular rounded calyx lobes (in *C. speciosus* var. *orbicularis*), pubescent ovary, pubescent and long-glandular style, nectary glands two and the obviously spreading corolla limb in *C. speciosus*. Additionally, the upper leaf surface is rugose and the indument in *C. congestus* is mainly short-acute glandular (instead of a flat surface and densely strigillose indument). The collections of *C. congestus* come from Colombia, Brazil, and Venezuela, and *C. speciosus* occurs in Peru, Ecuador, and Bolivia.

Corytoplectus congestus and *C. longipedunculatus* are sympatric, and share some characteristics such as inflorescences arranged along the stem (not only at apex), bracts large and noncaducous, corolla tubular-ventricose, corolla indument villous in stripes and calyx lobes lanceolate to elliptic and reflexed at the margin. *C. congestus* differs in the smaller ovate leaves, shorter petioles and peduncles, slightly spreading limb, and floral bracts enclosing the flowers.

The upper leaf indument of *Corytoplectus congestus* is a useful character to set this species

apart from other sympatric species such as *C. capitatus, C. schlimii* (with both rugose leaves and densely long-acute glandular hairs adaxially) and *C. zamorensis* (with flat leaves and densely strigillose adaxially).

NOTES: In the original description of *Alloplectus congestus* Decne. ex Linden (1849) there were no cited specimens. Clark (2005) included this species in the synonomy of *Corytoplectus capitatus* (Linden ex Hanst.) Wiehler, based on the vague description and locality of this species.

3. *Corytoplectus cutucuensis* Wiehler, Gesneriana 1(1): 35. 1995. TYPE: Ecuador, Morona-Santiago, Cordillera de Cutucú, western slope, along trail from Logroño to Yaupi, *Wiehler 8406* (holotype: QCA; isotype: SEL!).

Herbs terrestrial; stems erect, to 30 cm tall, to 4–7 mm in diameter, tomentose to hirsute toward the apex, glabrescent at base, internodes 1.2–5 (–7) cm long. ***Leaves*** opposite, isophyllous; blades chartaceous when dry, (6–) 8–14 (–17) cm long, 5–9 cm wide, ovate to broadly elliptic, base obtuse or oblique, apex acute, margin crenate to crenulate, strongly rugose, adaxially dark green with white veins, densely strigose, long-acute glandular and strigillose, with short-capitate glandular hairs, abaxially purple, blade densely short-acute glandular and strigillose, densely strigose above the veins, lateral veins 8–12 per side; petioles 3.5–6 (–8) cm long, densely purple tomentose to hirsute. ***Inflorescences*** of axillary and pseudoterminal cymes, erect, of 1–3 (–4) flowers; epedunculate; pedicels shorter than or equal to the petioles, 1–4 (–5) cm long, white or purple sericeous to hirsute; bracts 2, caducous, 13–15 mm long, 3–4 mm wide, lanceolate, base cuneate, apex acute, flat, red, purple or green flushed with maroon, outside sericeous, inside glabrescent with strigillose hairs, margin entire, hirsutulous. ***Calyx*** red to orange, lobes free, subequal, ovate to deltoid, 10–15 mm long, 9–13 mm wide, concave, base obtuse, apex acute, outside densely strigillose and short-acute glandular hairs above the blade, midvein tomentose, inside glabrescent with short-capitate glandular hairs at middle and strigillose at apex, margin denticulate, hirsutulous. ***Corolla*** urceolate, slightly oblique, longer than calyx, 11–20 mm long, 8–15 mm in diameter at widest point, throat constricted 5 mm in diameter, yellow at base, red at middle and apex, outside glabrous at base, apically sericeous, indument in stripes not very evident, inside puberulous at base, pubescent at middle and glandular-capitate hairs at throat; limb red, slightly spreading, lobes 1–2.5 mm long and wide, subequal, rotund to orbicular, weakly erose, glabrous to glabrescent on both sides. ***Androecium*** of stamens with filaments 7.5–8.5 mm long (free part), adnate to base of corolla tube for ca. 1 mm, connate for 3–3.5 mm forming an open sheath, pubescent at apex of sheath, free portion glabrous, stamens equally distributed on the sheath; anthers 1.5–2 mm long, 1.7–2 mm wide, dehiscing by longitudinal slits. ***Disc*** of nectary glands two (one dorsal and one ventral), to 2 mm high and 2.5 mm wide, glabrous. ***Gynoecium*** with the ovary ovoid, 2.5 mm long, 2.5 mm in diameter, pubescent; style 7–9 mm long, sparsely pubescent at base, glabrous at middle and apex; stigma stomatomorphic. ***Berry*** 8.5–10 mm in diameter, sparsely pubescent; seeds fusiform to elliptic, 0.7–0.8 mm long, 0.2–0.3 mm wide, striate, dark brown to black.

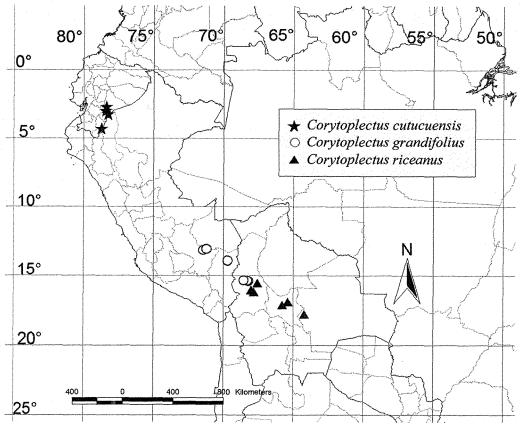

FIGURE 2. Distribution of *Corytoplectus cutucuensis* Wiehler, *C. grandifolius* (Britton ex Rusby) C. Rodríguez-Flores & L.E. Skog, *C. riceanus* (Rusby) Wiehler. Map was generated using ArcView GIS 3.2a (ESRI 2000).

PHENOLOGY: Collected in flower from June to October, and in fruit in January and May.

DISTRIBUTION: (FIGURE 2) Ecuador (Morona-Santiago, Zamora-Chinchipe); in primary wet forest; (600–) 1000–1700 m.

ADDITIONAL SPECIMENS EXAMINED: **Ecuador.** Morona-Santiago: Cantón Limón Indanza, road from Limón (Gral. Leonidas Plaza Gutiérrez) to San Antonio (Yuzuianza way), *Clark et al 5932.* (AZUAY, HA, QCNE, US); Vieja Cordillera de Cutucú, km 19 on Mendez-Morona road paralleling the Río Namangoza, *Dorr & Valdespino 6303* (US); Limón, *Dunn 9405017* (US); along new road Mendez-Morona, *Werff & Gudiño 11148* (SEL, US).—Zamora-Chinchipe: Pachicutza, road toward El Hito, *Jaramillo 13949*

(NY). **Cultivated.** USBRG 94–02B, *Clark 6267* (US); G-1054, *Moore 7014* (US).

DISTINGUISHING CHARACTERS: *Corytoplectus cutucuensis* is endemic to Ecuador where it is sympatric and similar to *C. speciosus,* but differs by the small and caducous floral bracts, the few flowered cymes, the orange urceolate corolla, the glabrous style, the small and not spreading corolla lobes, and the rugose upper leaf surface covered with strigose and glandular indument.

Corytoplectus cutucuensis can be confused vegetatively with *C. capitatus* and *C. zamorensis,* but these species have pedunculate inflorescences, larger leaves, and are distributed in Venezuela and Colombia respectively. *C. deltoideus* (from Guyana and Venezuela), *C. schlimii* (from Colombia and Venezuela) and *C. grandifolius* (from Peru and Bolivia) have non-pedunculate inflorescences like *C. cutucuensis.* But these species have large elliptic to lanceolate leaves (vs. smaller and ovate to broadly elliptic leaves in *C. cutucuensis*), longer peduncles (vs. short peduncles in *C. cutucuensis*) and long tubular-urceolate corollas (vs. short and urceolate corollas in *C. cutucuensis*).

4. ***Corytoplectus deltoideus* (C.V. Morton) Wiehler,** Phytologia 27: 313. 1973. *Alloplectus deltoideus* C.V. Morton, Fieldiana, Bot. 28(3): 521. 1953. TYPE: Venezuela, Bolívar, collected on Ororopantepuí, *Steyermark 60170* (holotype: US!; isotype: F (photo US!), VEN!).

Herbs to suffrutescent shrubs; stems erect, to 1 (–1.5) m tall, 3.5–6.5 mm in diameter, densely white or pink tomentose toward the apex, glabrescent at base, internodes 2–4 cm long. ***Leaves*** opposite, isophyllous to subequal; blades chartaceous when dry, (11–) 14–20 (–22) cm long, 5.5–8.5 (–9.5) cm wide, elliptic to lanceolate, base cuneate, apex acute to acuminate, margin crenate to crenulate (less frequently crenate-serrate), rugose, adaxially dark green, sometimes with paler green veins, densely strigillose and strigose with short-acute glandular hairs, abaxially paler green suffused with pink, densely short-acute glandular and strigillose, densely pink tomentose or strigillose above the veins, lateral veins 8–9 (–12) per side; petioles 3–7 cm long, densely yellow and pink tomentose. ***Inflorescences*** pseudoterminal-axillary cymes, erect, of 3–7 flowers; non-pedunculate; pedicels shorter than or equaling the petioles, (1.5–) 2–5 cm long, densely yellow or pink tomentose; bracts 2, caducous, 8–15 mm long, 1.5–3.5 (–7) mm wide, lanceolate, base cuneate to obtuse, apex acuminate, sparsely denticulate, flat, outside densely strigillose with short-acute glandular hairs, inside glabrescent. ***Calyx*** red to orange, lobes free, subequal, deltoid to lanceolate, 12–16 mm long, 6.5–9.5 (–11) mm wide, not reflexed, base obtuse to cordate, apex acuminate to long-acuminate, outside blade densely strigillose and with glandular-capitate hairs, midvein densely strigillose and sericeous toward the base, inside glabrescent with short-capitate glandular hairs at middle and short-acute glandular hairs at apex, margin sparsely denticulate to entire hirsutulous. ***Corolla*** tubular-urceolate, slightly oblique, longer than calyx, 19–26 (–30) mm long, 6–12 (–15) mm in diameter at widest point, throat constricted 3–5 mm in diameter, yellow, outside glabrous at base, apically densely yellow short-sericeous, inside glabrous at base, pilose at middle, with long-capitate glandular and short-capitate glandular hairs at throat; limb yellow, not spreading, lobes 1–1.5 mm long and 0.5–1.5 mm wide, subequal, rotund, almost entire, sericeous outside, glabrous inside. ***Androecium*** of stamens with filaments 11–13 mm long (free part), adnate to base of corolla tube for ca. 1 mm, connate for 3.5–5 mm forming an open sheath, pilose at apex of sheath, free portion glabrous, stamens distributed in pairs on the sheath forming two groups; anthers ca. 1.5–1.7 mm long, 1.5 mm wide, dehiscing by longitudinal slits. ***Disc*** of nectary glands two (one dorsal, one ventral), bilobed, to 2.3 mm high and 1.5 mm wide, glabrous. ***Gynoecium*** with the ovary ovoid, 2–5 mm long, 2.5–3.3 mm in diameter, densely sericeous; style 7–13 mm long, pilose at base and middle, long-capitate glandular hairs at apex; stigma stomatomorphic to bilobed. ***Berry*** 8.5 mm in diameter, pubescent; seeds fusiform, ca. 1 mm long, 0.5 mm wide, striate, dark brown to black.

PHENOLOGY: Collected in flower in April, July, August, and December.

DISTRIBUTION: (FIGURE 1) Guyana (Cuyuni-Mazaruni) and Venezuela (Bolívar); in cloud forest; 1300–1900 (–2250) m.

ADDITIONAL SPECIMENS EXAMINED: **Guyana.** Cuyuni-Mazaruni: upper Mazaruni Dist, *Renz 14169* (U); upper Mazaruni Dist., *Renz 14223* (U 2-sheets); Waukauyengtipu slope, *Clarke et al. 5526* (NY, US). **Venezuela.** Bolívar: border of the highway, km 123–138 S of El Dorado, El

Dorado-Santa Elena highway, *Morillo 7723* (VEN); Danto waterfall, at km marker 118–119 S of El Dorado, *Pruski & Steyermark 1383* (NY); near base of sandstone bluff, Cerro Uananapan, south of Ueitepui, between Luepa and Cerro Venamo, *Steyermark 753* (VEN); in the drainage of Río Cuyuni, S of El Dorado, *Steyermark et al. 104394* (US, VEN). **Cultivated.** W-1805, *Wiehler s.n.* (SEL).

DISTINGUISHING CHARACTERS: *Corytoplectus deltoideus* has the most eastern distribution, and is not sympatric with other species. The most similar species is *C. schlimii,* but *C. deltoideus* differs principally by the non-spreading corolla limb, the densely sericeous ovary, the short sericeous indument externally on the corolla and the glandular-pilose style, in contrast with the slightly spreading to spreading corolla limb, the glabrescent ovary, the villous to sericeous indument externally on the corolla, and the almost glabrous style in *C. schlimii.* Additionally, the plants of *C. deltoideus* have very densely tomentose indument on the stems, petioles and pedicels (vs. the strigose and hirsute indument in *C. schlimii*). The distribution of these two species differs, with *C. deltoideus* in the Guianas and far eastern state of Bolívar in Venezuela and *C. schlimii* in Colombia and the states of Lara and Portuguesa in western Venezuela.

5. *Corytoplectus grandifolius* (Britton ex Rusby) C. Rodríguez-Flores & L.E. Skog, comb. nov. *Alloplectus grandifolius* Britton ex Rusby, Bull. Torrey Bot. Club 27: 30. 1900. TYPE: Bolivia, Mapiri, *Rusby 2483* (holotype: NY (photo US!); isotypes: F, GH, NY (photo US!), PH (photo US!), US!).

FIGURE 3.

Herbs to shrubs; stems erect, to 2 m tall, 5–9 mm in diameter, white or purple strigose to hirsute toward the apex, glabrescent at base, internodes 1.5–5 (–8) cm long. ***Leaves*** opposite, isophyllous to subequal; blades chartaceous when dry, (10–) 18–30 (–36) cm long, (5–) 7–11 (–15) cm wide, elliptic, sometimes broadly elliptic, base obtuse to cuneate, apex acute, margin crenulate to crenulate-serrulate, strongly rugose, adaxially green with paler veins, long-acute glandular and hispid indument, abaxially purple or paler green flushed with pink, densely strigillose, short-acute glandular and strigose, densely purple strigose above the veins, margin ciliate, lateral veins 10–13 (–15) per side; petioles 3–8 (–10) cm long, densely yellow to purple hirsute. ***Inflorescences*** pseudoterminal-axillary cymes, erect, of (1–) 3–5 (–7) flowers; peduncles very short, 0–1 (–5) mm long, densely maroon to purple hirsute; pedicels shorter than or equaling the petioles, 18–38 mm long, white or purple hirsute, occasionally with short-capitate glandular hairs; bracts 2 (sometimes 2 prophylls), caducous, rarely persistent, 11–19 (–26) mm long, 3–15 mm wide, lanceolate, occasionally ovate, base cuneate, apex acute to acuminate, margin almost entire, rugose internally, paler green to red at apex, outside densely strigillose to strigose, inside with short-acute glandular indument. ***Calyx*** pink to red and deep red at apex, lobes free, unequal, orbicular to elliptic, 11–19 (–30) mm long, 5–14 (–21) mm wide, strongly concave (apical edge folded toward the base), base cuneate to obtuse, apex acute to obtuse, outside densely purple strigose and long-acute glandular, midvein strigose and more dense at base, inside glabrescent with short-capitate glandular hairs at middle and short-acute glandular and strigillose hairs at apex, margin remotely denticulate to entire, purple hirsute. ***Corolla*** tubular-urceolate, slightly oblique and longer than calyx, 15–29 mm long, 7–11 mm in diameter at widest point, throat constricted 4–5 mm in diameter, yellow at base, red at middle and apex, outside glabrous at base and densely short sericeous apically, occasionally lanate in stripes, inside glabrous at base, pubescent to long-capitate glandular at middle and short-capitate glandular hairs at throat; limb red, small, not or rarely spreading, lobes 1–4 (–7) mm long, 1–3 mm wide, subequal, rotund to orbicular, entire to slightly erose, outside glabrous and sometimes lanate at base, inside glabrous. ***Androecium*** of stamens with filaments 6–12 (–15) mm long (free part), adnate to base of corolla tube for ca. 1 mm, connate for 4–6 (–8) mm forming an open sheath, pilose at apex of sheath, free portion glabrous, stamens equally distributed on the sheath; anthers 2–3 mm long, 2.5–3 mm wide, dehiscing by longitudinal slits. ***Disc*** of nectary gland one, two, or rarely four, 1–3 mm high, 1–3.5 mm wide, glabrous. ***Gynoecium*** with the ovary ovoid, 2.5–3.5 mm long, 3–5 mm in diameter, densely pubescent to pilose; style 7–15 mm long, pilose at base and middle, long-capitate glandular hairs at apex; stigma bilobed capitate. ***Berry*** 10–11 mm long, 10–13 mm wide, sparsely pubescent; seeds orbicular to elliptic, 0.5–0.7 mm long, 0.3–0.5 mm wide, striate, dark brown to black.

PHENOLOGY: Collected in flower from December to April, and August.

DISTRIBUTION: (FIGURE 2) Bolivia (La Paz) and Peru (Cuzco, Puno); in primary and secondary premontane forest; (650–) 900–1600 m.

ADDITIONAL SPECIMENS EXAMINED: **Bolivia.** La Paz: Prov. B. Saavedra, Area Natural de Manejo Integrado Apolobamba, *Araujo-Murakami et al. 693* (US); Prov. Muecas, along Río San

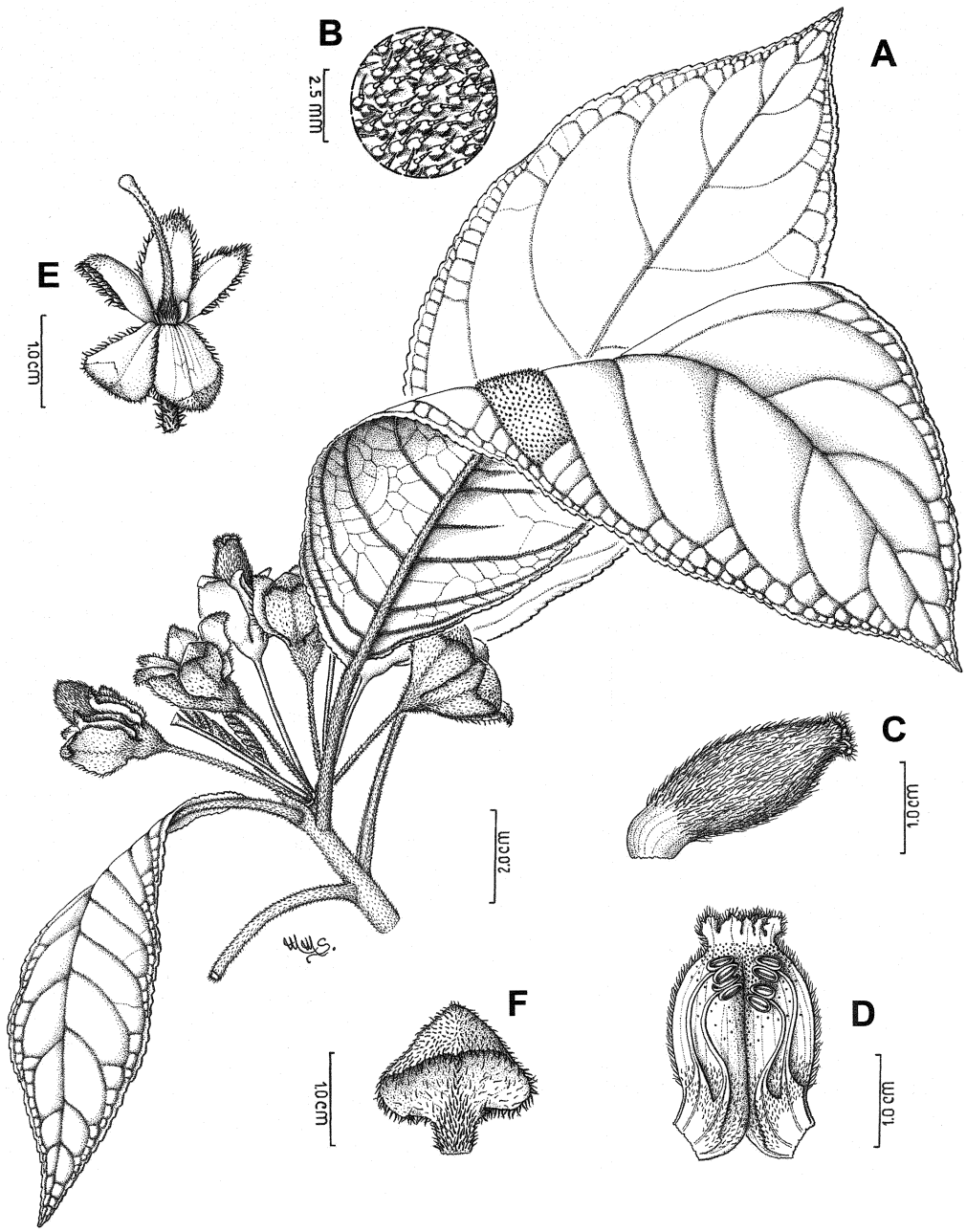

FIGURE 3. *Corytoplectus grandifolius* (Britton ex Rusby) C. Rodríguez-Flores & L.E. Skog. **A.** Habit. **B.** Section of abaxial leaf surface. **C.** Corolla. **D.** Corolla opened to show stamens. **E.** Calyx opened and corolla removed to show pistil and nectary glands. **F.** Sepal. (A, B from *Buchtien 1342* (US); C–F from *Vargas 6755* (US)).

Cristobal, near Consata, *Besse et al. 598* (SEL); Apolo, Salinas, *Boeke 1457* (NY, SEL, US); Mapiri region, San Carlos, *Buchtien 1342* (HBG 2-sheets, NY, US 2-sheets), *Buchtien 1343* (HBG, US), *Buchtien 1949* (NY 2-sheets, US 2-sheets); Hacienda Simaco above the road to Tipuani, *Buchtien 5558* (NY, US), *Buchtien 5559* (US); Larecaja, Mapiri trail (trek from Ingenio to Mapiri), from campamento "Incapampa" to Mapiri, *Clark & Barrientos 6704* (LPB, SEL, US); Ma-

piri, *Rusby 2483* (F, GH 2-sheets, NY, PH, US 2-sheets); Prov. Larecaja, 6 km N (below) Consata, *Solomon et al. 6570* (US); Ticunhuaya, *Tate 1099* (NY 2-sheets); Chuquini, *Tate 1145* (NY). **Peru.** Cuzco: Prov. Paucartambo, Valle del Pilcopata, road from Patria to Pillahuata, *Foster & Wachter 7464* (US); Prov. Paucartambo, Kosnipata Valley, km 150, San Pedro, Río Unión and Río Kosnipata junction, *Nuñez 11966* (MO); Prov. Paucartambo, Ceja de Selva, Kosñipata, San Pedro, *Núñez & Alanya 13374* (MO); Kosñipata Valley, road Pillawata to Patria, *Plowman & Davis 4989* (GH, SEL); Prov. Paucartambo, S. Pedro-Sta. Isabel, *Vargas 6755* (US); Prov. Paucartambo, S. Pedro to Tambomayo, *Vargas 6776* (US); Prov. Quispicanchis, near Quince Mil, *Vargas 16061* (US).—Puno: Prov. Sandia, near Sagrario, *Metcalf 30627* (A, F, G, MO, UC, US). **Cultivated.** W-2163, *Wiehler s.n.* (SEL).

DISTINGUISHING CHARACTERS: The most closely related species to *Corytoplectus grandifolius* is *C. riceanus.* The former differs by the non-congested inflorescences, longer petioles and pedicels, larger leaves, obtuse to cuneate leaf bases, floral bracts principally caducous, calyx lobes strongly concave, the pubescent ovary, and the nectary gland number variable (FIGURE 3). Another species with strongly concave calyx lobes is *C. capitatus,* but this differs by the pilose to sericeous indument on the stems, petioles, peduncles, and pedicels (vs. hirsute to strigose indument on the stems, petioles, and pedicels in *C. grandifolius*), the leaves are covered with dense and velvety indument (vs. sparse and coarse indument adaxially in *C. grandifolius*), the mainly ovate leaves (vs. the elliptic leaves in *C. grandifolius*), and the long pedunculate inflorescences (vs. non-pedunculate or very short pedunculate in *C. grandifolius*). Additionally *C. capitatus* has been collected only in Venezuela, whereas *C. grandifolius* is distributed in Bolivia and Peru.

The plants of *C. grandifolius* from Peru have large and more spreading corolla lobes, corolla covered with lanate indument externally, larger bracts and longer peduncles, compared with the plants from Bolivia.

6. *Corytoplectus longipedunculatus* C. Rodríguez-Flores & L.E. Skog, sp. nov. TYPE: Colombia, Magdalena, Sierra Nevada de Santa Marta, In Quebrada W of Finca Los Arroyitos, *Kirkbride 2210* (holotype: COL!; isotypes: COL!, NY!, SEL! US!). FIGURE 4.

A Corytoplecto capitato (Hook.) Wiehler in lobis calycum non concavis differt. A Corytoplecto purpurato C. Rodríguez-Flores & L.E. Skog in corollis flavis et corollis tubulosis-ventricosis differt.

Herbs, rarely subshrubs; stems erect, to 0.8 (–2) m tall, 3–5 mm in diameter, yellow or pink strigillose to short sericeous toward the apex and glabrescent at base, internodes 1.5–4.5 (–9) cm long. ***Leaves*** opposite, isophyllous to subequal; blades chartaceous to membranous when dry, (7–) 11–19 (–23) cm long, (2.5–) 4–8 (–11) cm wide, elliptic to broadly elliptic, base cuneate to obtuse, apex acuminate to long acuminate, margin serrulate to crenate-serrate, flat, adaxially dark green to green, sparsely pilose, strigose to sericeous on the blade, sometimes with very sparse indument above to almost glabrous, with short-capitate glandular hairs, abaxially paler green to green suffused with red or purple, sparsely strigillose with short-acute glandular trichomes, densely pilose to sericeous on the veins above, lateral veins 9–12 per side; petioles 3–7 (–9) cm long, densely yellow or pink sericeous to strigillose, sometimes sparsely hirsute. ***Inflorescences*** of umbel-like cymes, distributed along the stem, erect, of 3–7 (–13) flowers; peduncles shorter than or equaling the petioles, (5–) 12–35 (–50) mm long, hirsute to sparsely hirsute, occasionally densely short sericeous; pedicels shorter than the peduncle, 7–21 (–48) mm long, hirsute to sparsely hirsute, occasionally densely short sericeous; bracts 2 (also with 2 or 4 prophylls), the larger almost covering the calyx, non-caducous, 17–25 mm long, 9–17 (–22) mm wide, ovate to orbicular, base attenuate to cuneate, occasionally cordate, apex acute to acuminate, flat, pink, red, or orange, outside strigillose with short-acute glandular hairs, rarely setulose, veins densely strigillose to tomentose, inside glabrescent with short-capitate glandular hairs at middle and short-acute glandular hairs at apex, margin remotely serrulate to denticulate, hirsutulous. ***Calyx*** red, pink, or orange, lobes free, subequal, lanceolate to ovate, 9–15 (–19) mm long, 5.5–10.5 (–14) mm wide, reflexed (lateral sides folded), base attenuate or cordate, apex acuminate to long acuminate (rarely acute), outside with short-acute glandular hairs and strigillose (rarely pubescent), midvein strigose to sericeous, inside glabrescent with short-acute glandular hairs at apex, margin denticulate to serrulate, hirsute. ***Corolla*** tubular-ventricose, slightly oblique, longer than calyx, 12–15 mm long, 5–6.5 mm in diameter at widest point, throat constricted to 3.5–5 mm in diameter, yellowish at base, yellow, reddish or orange at middle and apex, outside glabrous at base, apically white or pink villous to pilose, indument in stripes, inside glabrous at base, and with short-capitate glandular hairs at middle and throat; limb yellow to reddish, spreading (6 mm in diameter), lobes 2–3 mm long and wide, subequal, rotund to orbicular, entire to weakly erose, lanate

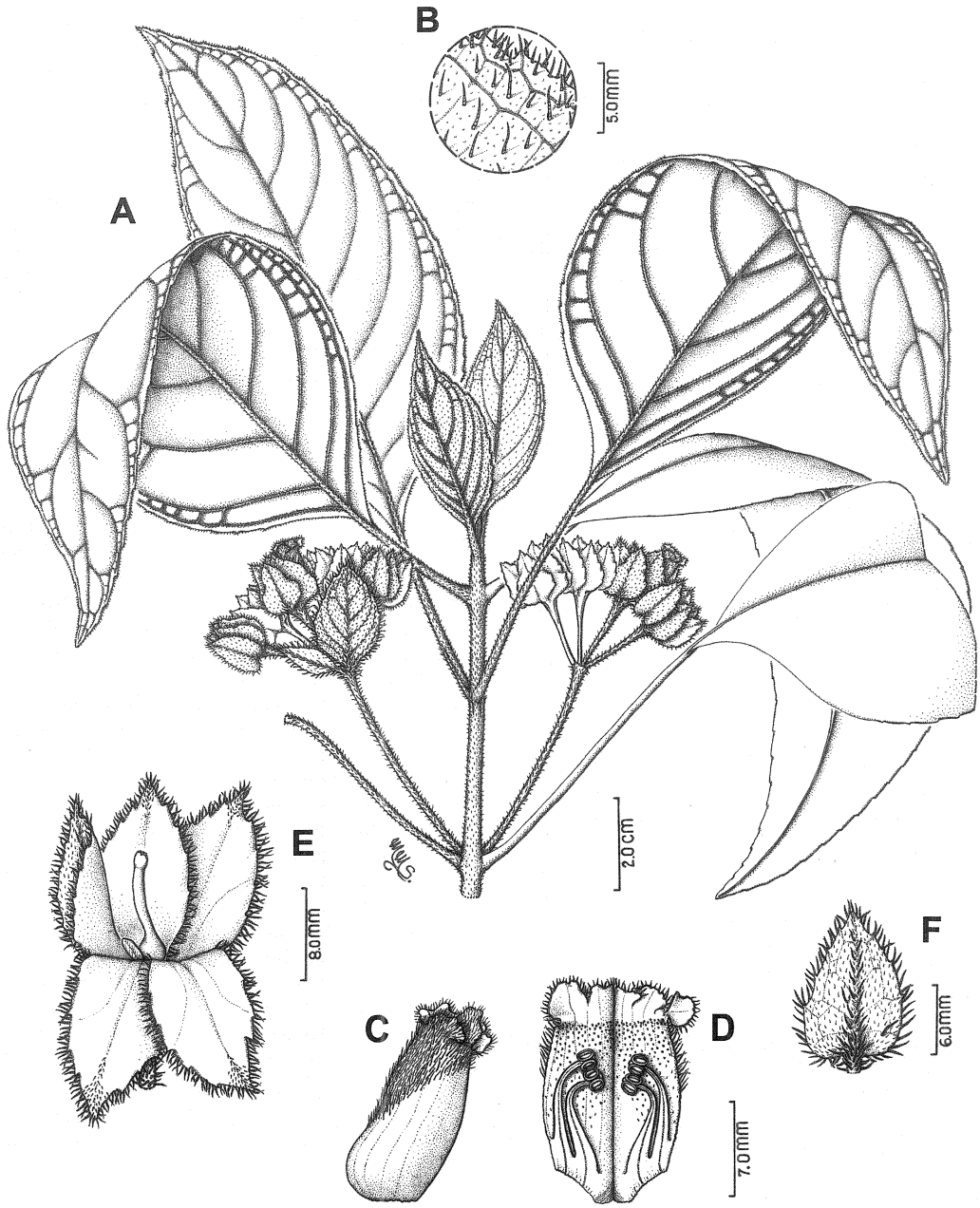

FIGURE 4. *Corytoplectus longipedunculatus* C. Rodríguez-Flores & L.E. Skog. **A.** Habit. **B.** Section of abaxial leaf surface. **C.** Corolla. **D.** Corolla opened to show stamens. **E.** Calyx opened and corolla removed to show pistil and nectary gland. **F.** Sepal. (A, B from *Kirkbride 2210* (COL); C-F from *Romero-Castañeda 7043* (COL)).

to villous at base outside, glabrous inside. ***Androecium*** of stamens with filaments 8–9 mm long (free part), adnate to base of corolla tube for ca. 1 mm, connate for 1.5–3 mm forming an open sheath, glabrous at apex of sheath, free portion glabrous, stamens equally distributed on the sheath; anthers ca. 1.5–1.7 mm long, 1.4–2 mm wide, dehiscing by longitudinal slits. ***Disc*** of nectary gland one (sometimes bilobed) dorsal, to 2 (–3) mm high and 1–2 (–3) mm wide, glabrous. ***Gynoecium*** with the ovary ovoid, 1.3–2.5 mm long, 2–3.5 mm in diameter, glabrous, sometimes sparsely pubescent; style 6–7 mm long, glabrous; stigma bilobed-stomatomorphic.

Berry 5.5–6 mm long, 7–9 mm wide, glabrous; seeds fusiform, 0.6–0.8 mm long, 0.2–0.4 mm wide, striate, dark brown to black.

PHENOLOGY: Collected in flower from November to January, and from March to September; in fruit in April, August, September, and November.

DISTRIBUTION: (FIGURE 1) Colombia (Magdalena) and Venezuela (Falcón and Zulia); in cloud forest, along river margins; 1000–1900 (–2600) m.

ADDITIONAL SPECIMENS EXAMINED: **Colombia.** Magdalena: Highway between Santa Marta and San Lorenzo, television tower, *Albert & Sant 3458* (NY); Sierra Nevada de Santa Marta, San Lorenzo, Sta. Marta National Park, Cuchilla San Lorenzo, around Centro Forestal, *Díaz 150* (COL); Sierra Nevada de Santa Marta, Cerro El Ratón, *Fernández 5292,* (COL); Sierra Nevada de Santa Marta, NW end of Serranía de San Javier, *Forero & Kirkbride 680* (COL, NY); between Cleveland and Cincinnatti, *Foster et al. 1428* (A, COL); El Paraiso, Sierra Nevada de Santa Marta National Park, *Gentry & Saenz 76316* (MO, US); Cerro Ratón on Serranía San Javier, *Kirkbride & Forero 1890* (COL, NY); along the edge of the water, quebrada Indiana, *Kirkbride 2003* (COL 2-sheets, NY); N of finca Cecilia. Quebrada Indiana, *Kirkbride 2025* (COL); Sierra Nevada de Santa Marta, Quebrada La Sirena, above Finca Reflejo, *Kirkbride 2124* (COL 2-sheets, NY, SEL, US); road San Javier to San Andrés, Cerro Ratón, *Romero-Castañeda 7043* (COL); W slope of La Sierra Nevada. San Andrés, *Romero-Castañeda 7621* (COL); Santa Marta from Cerro Quemado to Cincinnatti, *Romero-Castañeda 7825* (COL 2-sheets); "Santa Marta," *Smith 1397* (F, GH, MICH, MO, US 2-sheets). **Venezuela.** Falcón: Mpio. Petit, Sierra de San Luis National Park, N slope, between La Chapa, Soledad and antennas, *Fernández et al. 18070* (US); Cerro Galicia, near tourist quarters of Curimagua, *Ruíz & Vera 3611* (US); Sierra de San Luis, around Hotel Parador, S of La Tabla, *Steyermark 98945* (NY, VEN); Sierra San Luis, above Hotel Parador, *Wingfield 6394* (US).—Zulia: Dist. Mara, environs of Puesto "El Bosque" de la Guardia Nacional, *Bunting et al. 12121* (MARAX, US); Perijá, *Gines 1540* (COL); Sierra de Perija, between La Mision de Los Angeles de Tukuku and Pishikakao, passing Coromoto, Wapia, *Kanowapa & Ipika, Steyermark et al. 105782* (MO, NY, VEN, US). **Cultivated.** G-244, *Clark s.n.* (SEL); G-244, *Moore 6979* (US); G-244, *Skog 5606* (US); G-244, *Stone 468* (US); G-244, *Wiehler 7026* (BH, US).

DISTINGUISHING CHARACTERS: *Corytoplectus capitatus, C. purpuratus, C. zamorensis,* and *C. longipedunculatus* are the species with long peduncles in the genus. In contrast to *C. capitatus,* the calyx lobes in *C. longipedunculatus* are attenuate to cordate (not obtuse), flat (not concave), folded laterally (not vertically), and the floral bracts are non-caducous. Additionally, the upper leaf surface in *C. longipedunculatus* is flat and sparsely to very sparsely strigose to sericeous (vs. densely long-acute glandular and strigose in *C. capitatus*) and the cymose inflorescences are not congested (vs. congested umbellike cymes in *C. capitatus*) (FIGURE 4).

The stems, petioles, peduncles, and pedicels in *Corytoplectus purpuratus* are noticeably lanate to villous (instead of strigillose to short sericeous in *C. longipedunculatus*), the floral bracts are caducous (instead of non-caducous floral bracts in *C. longipedunculatus*), the corolla is purple and tubular-urceolate (instead of yellow to reddish and tubular-ventricose corolla in *C. longipedunculatus*) and the nectary glands two (instead of a single nectary gland in *C. longipedunculatus*).

Corytoplectus zamorensis is set apart from *C. longipedunculatus* by the purplish indument on the stems, petioles, peduncles, and pedicels, the densely strigillose leaves above; the leaves are for the most part broadly elliptic and deep purple below, the corolla tubular-urceolate, and the corolla limb small.

Both *Corytoplectus congestus* and *C. longipedunculatus* have large and non-caducous floral bracts, inflorescences arranged along the stem, calyx lobes lanceolate to elliptic and reflexed at the margin, tubular-ventricose corollas, corolla villous in lines outside, glabrous ovaries, and solitary nectary glands; sterile plants of both species can be confused. However, the leaves in *C. capitatus* are smaller, the floral bracts almost completely enclose the flowers, have shorter petioles, peduncles, and pedicels, and the corolla limb is slightly spreading.

7. *Corytoplectus purpuratus* C. Rodríguez-Flores & L.E. Skog, sp. nov. TYPE: Colombia, Magdalena, Sierra Nevada de Santa Marta, NE end of Serranía San Javier, *Kirkbride & Forero 1904* (holotype: COL!; isotypes: COL!, NY!, SEL!, US!). FIGURE 6.

A Corytoplecto capitato (Hook.) Wiehler et C. longipedunculato C. Rodríguez-Flores & L.E. Skog foliis minoribus, corollis purpureis, et caulibus petiolis inflorescentiis dense villosis differt.

Herbs to shrubs; stems erect, to 1 m tall, 4–6 mm in diameter, white or red villous to lanate mainly at the apex, glabrescent at base, internodes 1.5–5 (–6.5) cm long. ***Leaves*** opposite, subequal; blades chartaceous to membranous when dry, 10–17 (–22) cm long, 4–8 (–11) cm

wide, elliptic to broadly elliptic, base cuneate, apex acuminate, margin crenate-serrate to crenulate-serrulate, rugose, adaxially dark green, long-acute glandular and strigose, abaxially paler green sometimes flushed with pink, short-acute glandular and strigose, densely purple strigose on the veins above, lateral veins 9–12 per side, margin ciliate; petioles 3–5.5 (–8) cm long, densely red or white villous to lanate. ***Inflorescences*** of non-congested umbel-like cymes, pseudoterminal and axillary (in the apical part of the stem), erect, of 3–4 (–6) flowers; peduncles shorter than the petioles, 2–3 (–4) cm long, red or white villous; pedicels equal to or shorter than the peduncles, 1.5–3 cm long, red or white villous; bracts 2 (2 or 4 prophylls), caducous, 18–25 mm long, 3–10 mm wide, lanceolate to oblanceolate, base attenuate to cuneate, apex acute, margin remotely denticulate to entire, flat, red, abaxial surface pilose or strigose, densely above the midvein, adaxial surface glabrescent with short-capitate glandular hairs. ***Calyx*** red, lobes free, subequal, ovate to deltoid, 12–16 mm long, 9–11 mm wide, non-concave, base cordate to obtuse, apex acute, outside sparsely pilose to strigose, midvein densely pilose, inside glabrescent with short-capitate glandular hairs at middle and short-acute glandular hairs at apex, margin remotely denticulate to entire, purple pilose. ***Corolla*** tubular-urceolate, slightly oblique and longer than calyx, 17–20 mm long, 10–15 mm in diameter at widest point, throat constricted 6–8 mm in diameter, yellow to white at base, deep purple at middle and apex, outside glabrous at base, sparsely purple pilose at middle and apex, inside puberulous at base, glabrescent at middle and with short-capitate glandular hairs at throat; limb purple, spreading (almost 7.5 mm in diameter), lobes 2–3 mm long, 1.5–2.5 mm wide, subequal, rotund to orbicular, nearly entire, glabrescent both sides. ***Androecium*** of stamens with filaments 5–6 mm long (free part), adnate to base of corolla tube for ca. 1 mm, connate for 2 mm forming an open sheath, sparsely pubescent at apex of sheath, free portion glabrous, stamens equally distributed on the sheath; anthers ca. 1.5 mm long, 1.5–2 mm wide, dehiscing by longitudinal slits. ***Disc*** of nectary glands two (one dorsal and one ventral), to 2 (–4) mm high and 1.5–4 mm in diameter, glabrous. ***Gynoecium*** with the ovary ovoid, ca. 3 mm long, 3.5 mm in diameter, pubescent to pilose; style 5.5 mm long, glabrous to sparsely glandular; stigma stomatomorphic. ***Berry*** ca. 1.2 cm in diameter, sparsely pubescent; seeds fusiform, ca. 0.7 mm long, 0.4 mm wide, striate, dark brown to black.

PHENOLOGY: Collected in flower in February and August; in fruit in January, July, and August.

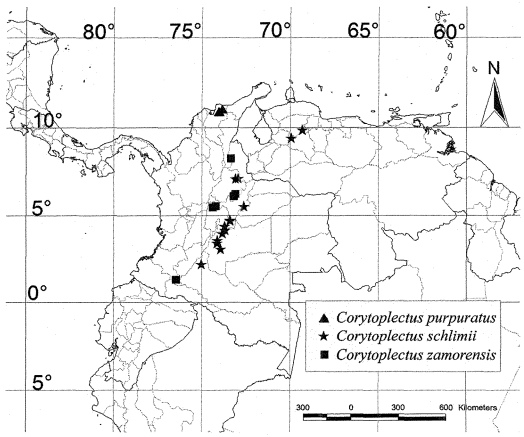

FIGURE 5. Distribution of *Corytoplectus purpuratus* C. Rodríguez-Flores & L.E. Skog, *C. schlimii* (Planch. & Linden) Wiehler, and *C. zamorensis* (Linden & André) C. Rodríguez-Flores & L.E. Skog. Map was generated using ArcView GIS 3.2a (ESRI 2000).

DISTRIBUTION: (FIGURE 5) Colombia (Magdalena); in cloud forest; 1800–2200 m.

ADDITIONAL SPECIMENS EXAMINED: **Colombia.** Magdalena: Sierra Nevada de Santa Marta, between San Pedro and city of Río Sevilla, slopes between La Cebolleta and Yerba Buena, *Barclay & Juajibioy 6810* (COL, MO, US); Sierra Nevada de Santa Marta, transect of Alto Río Buritaca, Cuchilla, *Jaramillo et al. 5269* (COL); around Hierbabuena, *Romero-Castañeda 7076* (COL).

DISTINGUISHING CHARACTERS: The whitish or reddish villous to lanate stems, petioles, and inflorescences, together with the tubular-ventricose purple corolla, and the non-concave calyx lobes, set apart *Corytoplectus purpuratus* from all other species (FIGURE 6).

See discussion under *Corytoplectus capitatus* and *C. longipedunculatus* to distinguish these species from *C. purpuratus.*

8. *Corytoplectus riceanus* (Rusby) Wiehler, Phytologia 27: 313. 1973. *Diplolegnon riceanum* Rusby, Bull. Torrey Bot. Club 27: 30. 1900. TYPE: Bolivia, Yungas, *Rusby 2152* (holotype: NY (photo US!)).

Herbs to subshrubs; stems erect, to 2 m tall, 5–8 mm in diameter, densely purple hirsutulous or short-sericeous toward the apex, glabrescent at base, internodes 1.5–3.5 (–5) cm long. ***Leaves*** opposite, isophyllous to subequal; blades chartaceous when dry, (10–) 14–25 (–30) cm long, 4–10 cm wide, elliptic to broadly elliptic, base

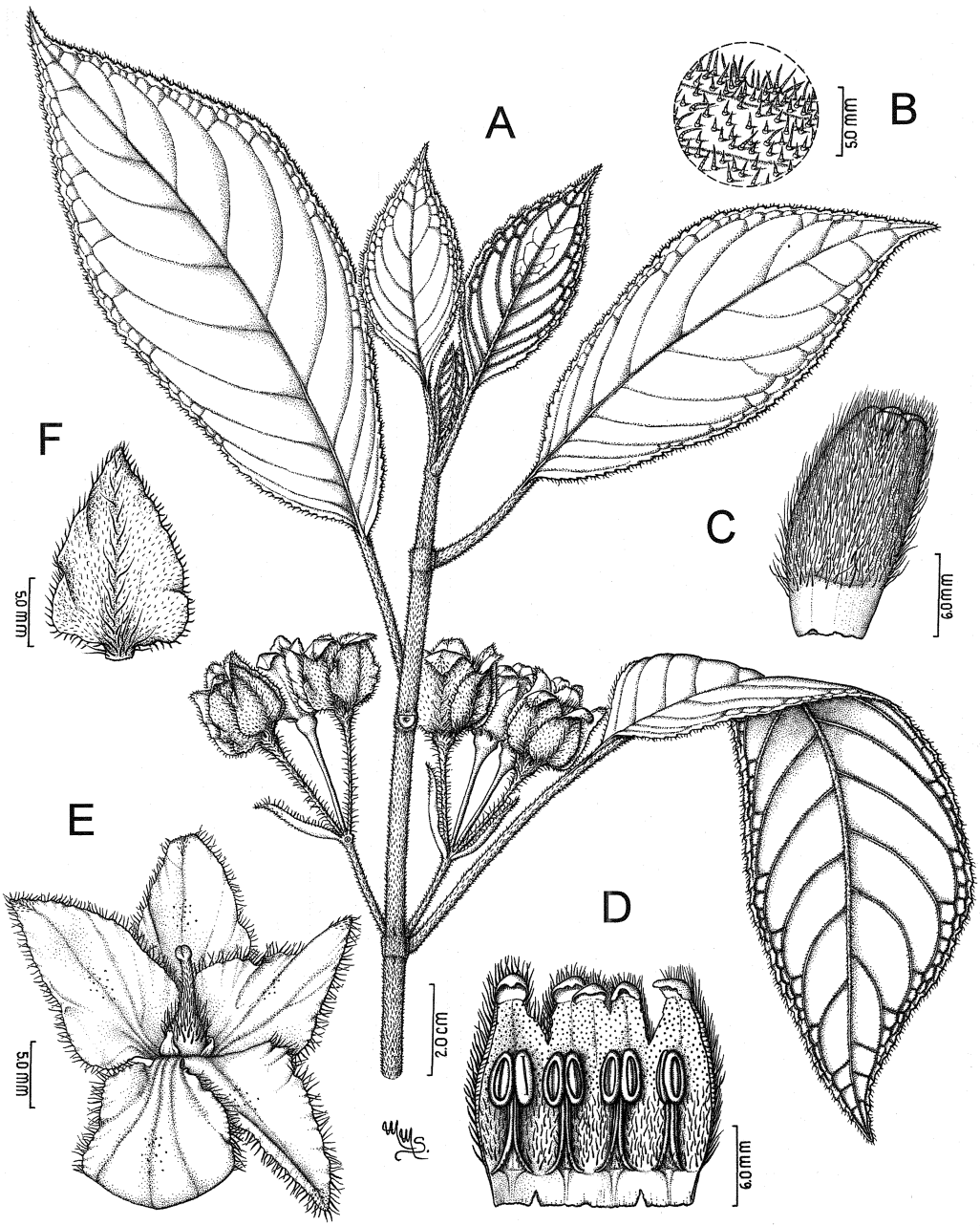

FIGURE 6. *Corytoplectus purpuratus* C. Rodríguez-Flores & L.E. Skog. **A.** Habit. **B.** Section of abaxial leaf surface. **C.** Corolla. **D.** Corolla opened to show stamens. **E.** Calyx opened and corolla removed to show pistil and nectary glands. **F.** Sepal. (A, B from *Kirkbride 1904* (COL); C-D from *Romero-Castañeda 7076* (COL); E–F from *Barclay & Juajibioy 6810* (COL)).

cuneate, apex acute to acuminate, margin serrulate to crenulate-serrulate, strongly rugose, adaxially green with paler veins, long-acute glandular and hispid indument, abaxially purple to reddish, densely strigose and short-acute glandular, sometimes pilose, densely purple strigose on the veins above, lateral veins 9–14 per side, margin ciliate; petioles 2–6 (–10) cm long, densely hirsutulous to short-sericeous. ***Inflorescences*** of congested cymes, pseudoterminal-ax-

illary, erect, of 3–4 (–6) flowers; peduncles very short, 0–5 (–9) mm long, hirsutulous; pedicels equal to or longer than the peduncle, 4–19 (–24) mm long, purple hirsute to hirsutulous; bracts 2 (sometimes 2 prophylls), non-caducous, 17–29 (–36) mm long, 8–20 (–28) mm wide, lanceolate, occasionally broadly ovate, base cuneate, apex acute to acuminate, margin almost entire, rugose internally, pale green to red at apex, outside densely strigillose and strigose, more densely at the midvein, inside strigillose with short-acute glandular indument. ***Calyx*** pink to red and deep red at apex, lobes free, subequal to unequal, lanceolate to elliptic, or sometimes ovate, 12–16 mm long, 6–10 mm wide, not concave, folded laterally, base cuneate to obtuse, apex acute to acuminate, sometimes obtuse, outside purple strigose to strigillose with glandular indument, midvein more densely strigose at base, inside glabrescent with short-capitate glandular hairs at middle and strigillose hairs at apex, margin remotely denticulate to entire, purple hirsute. ***Corolla*** tubular-urceolate, slightly oblique and longer than the calyx, 18–25 mm long, 7–10 (–16) mm in diameter at widest point, throat constricted to 4–6 (–9) mm in diameter, yellow, red, or orange, outside glabrous at base and middle, lanate in stripes at apex, inside glabrous at base, pubescent to puberulent at middle with short-capitate glandular hairs at throat; limb red, small, spreading, lobes 2–2.5 mm long, 1.5–3 mm wide, subequal, rotund to orbicular, almost entire, outside glabrous and lanate at base, inside glabrous. ***Androecium*** of stamens with filaments 8–12 mm long (free part), adnate to base of corolla tube for ca. 1 mm, connate for 3–6 (–7) mm forming an open sheath, pubescent to puberulent at apex of sheath, free portion glabrous, stamens equally distributed on the sheath; anthers 1.5–2.5 mm long, 2–2.7 mm wide, dehiscing by longitudinal slits. ***Disc*** of nectary glands two (one dorsal, one ventral), sometimes bilobed. 1.5–3 mm high, to 3 mm wide, glabrous. ***Gynoecium*** with the ovary ovoid, 2–4 mm long, 1.5–2.5 mm in diameter, glabrous to glabrescent; style 10–13 (–18) mm long, sparsely long-capitate glandular hairs at middle and apex, sometimes glabrous; stigma bilobed to stomatomorphic. ***Berry*** 6 mm long, 7–9 mm wide, glabrous; seeds elliptic to fusiform, 0.5–0.7 mm long, 0.3 mm wide, striate, dark brown to black.

PHENOLOGY: Collected in flower from November to April, and in fruit in December.

DISTRIBUTION: (FIGURE 2) Bolivia (Cochabamba, La Paz, Santa Cruz); in disturbed moist forest; 1300–1900 (–2200) m.

ADDITIONAL SPECIMENS EXAMINED: **Bolivia.** Cochabamba: Prov. Charrasco, above Monte Puncu, along Río Lope Mendoza, *Besse et al. 661* (SEL); Prov. Chapare, along road to Villa Tunari, *Besse et al.* 504 (SEL), *Luer et al.* 4893 (SEL); Prov. Chapare, Cochabamba, 89 km toward Villa Tunari, *Beck 7279* (US); Prov. Chapare, ca. 25 km below the crest toward El Chapare, *Beck 21670* (LPB, US); Chapare, close to Villa Tunari in direction of Cochabamba, *Fernández-Casas FC7696* (MO, NY).—La Paz: Prov. Murillo, Valle de Zongo, end of the road (Cahua), along the path below Río Zongo, *Beck 2797* (LPB, SEL 2-sheets, US); Prov. Nor Yungas, above Valle Huaranilla, *Beck 21882* (LPB, US); Prov. Murillo, 44.3 km N of (below) dam at Lago Zongo, *Solomon 9180* (LPB, US); Prov. Murillo, 45.5 km below dam at Lago Zongo, Zongo valley, vicinity of Cahua hydroelectric plant, *Solomon 12910* (US); Prov. Nor Yungas, Serranía de Bella Vista, 15.1 km N of the bridge at Carrasco on the road to Palos Blancos (Alto Beni) (36 km N of Caranavi), *Solomon 14837* (US).—Santa Cruz: Prov. Florida, Amboro National Park, La Playa, 15–20 km N of Santa Rosa de Lima, litoral of Río Agua Dulce and conjunction with Río Moija, *Vargas et al. 2164* (NY).

DISTINGUISHING CHARACTERS: *Corytoplectus grandifolius* is similar to *C. riceanus*, and both species are sympatric in Bolivia. Both *C. riceanus* and *C. grandifolius* have short or non-pedunculate inflorescences, the adaxial surface of the bracts rugose, paler green and deep red at apex, calyx lobes red and deep red at apex, corolla tubular-urceolate, red on the tube and limb lobes. But *C. riceanus* differs in the very congested inflorescences, shorter petioles and pedicels, smaller cuneate leaves, floral bracts non-caducous, calyx lobes not strongly concave, the glabrous to glabrescent ovary, and nectary glands always two.

9. *Corytoplectus schlimii* (Planch. & Linden) Wiehler, Phytologia 27: 313. 1973. *Alloplectus schlimii* Planch. & Linden, Fl. Serres Jard. Eur. 8(1): 211, pl. 827. 1852–53. *Columnea schlimii* (Planch. & Linden) Kuntze, Revis. Gen. Pl. 2: 472. 1891. TYPE: Colombia, Santander, Bucaramanga, *Schlim 238* (holotype: not seen, based on Plate 827 in the protologue).

Hypocyrta pulchra N.E. Br., Gard. Chron., ser. III, 16: 244. 1894. *Corytoplectus pulcher* (N.E. Br.) Wiehler, Selbyana 5: 61. 1978. TYPE: Colombia, *Burke s.n.* (holotype: K (photo US!)).

Herbs; stems erect, 0.5–1.5 m tall, 3–6 mm in diameter, densely white or pink strigose, stri-

gillose or hirsute toward the apex, glabrescent at base, internodes 2.5–5 cm long. ***Leaves*** opposite, subequal; blades membranous when dry (chartaceous when young), (7–) 11–17 (–19) cm long, 5–9 (–13) cm wide, lanceolate, elliptic to broadly elliptic, base obtuse to cuneate, sometimes cordate, apex acute (rarely acuminate), rugose, adaxially dark green with paler veins, sparse to densely long-acute glandular strigose, abaxially paler red, purple, lavender, or green suffused with pink, blade densely short-acute glandular, strigillose and strigose, densely pink sericeous or strigillose on the veins above, margin crenate-serrate to crenulate-serrulate, lateral veins 9–10 (–13) per side; petioles 2–6 (–10) cm long, densely purple strigose, strigillose, or hirsute. ***Inflorescences*** of pseudoterminal-axillary cymes, erect, of (1–) 2–5 (–8) flowers; non-pedunculate; pedicels shorter than or equaling the petioles, (1.5–) 2.5–5 (–6) cm long, densely purple or pink strigillose to hirsute; bracts 2, caducous, 9–17 mm long, 2–5 (–6) mm wide, lanceolate or sometimes elliptic, base cuneate to obtuse, apex acuminate, rarely acute, entire, flat, red, abaxially densely strigillose and short-acute glandular hairs, densely strigose above the midvein, adaxially strigillose at apex. ***Calyx*** red to orange, lobes free, subequal, deltoid to ovate, 10–20 (–25) mm long, 10–14 (–18) mm wide, not reflexed, base obtuse to cordate, apex acuminate to acute, outside densely strigillose with glandular-capitate hairs and/or strigose, sometimes with short-acute glandular indument, midvein densely strigose mainly at base, inside glabrescent with short-capitate glandular hairs at middle and strigillose at apex, margin serrulate to serrate, hirsutulous. ***Corolla*** tubular-urceolate, slightly oblique, longer than the calyx, 17–23 (–26) mm long, 7–11 mm in diameter at widest point, throat constricted 3–5 mm in diameter, yellow at base, orange to red at middle and apex, outside glabrous at base, apically villous to sericeous in stripes, inside glabrous at base, sparsely glandular and pubescent at middle, long-capitate glandular and short-capitate glandular hairs at throat; limb red to orange, slightly spreading to spreading (up to 6 mm in diameter), lobes 1–2 (–2.5) mm long and wide, subequal, rotund to orbicular, erose to entire, sericeous outside, glabrous inside. ***Androecium*** of stamens with filaments 8–12 mm long (free part), adnate to base of corolla tube for ca. 1 mm, connate for 4–5 mm forming an open sheath, pilose at apex of sheath, free portion glabrous, stamens distributed in pairs on the sheath forming two groups; anthers ca. 1.5–3 mm long, 1.5–3.5 mm wide, dehiscing by longitudinal slits. ***Disc*** of nectary glands two (one dorsal, one ventral), bi- or trilobed, to 2.5 mm high and wide, glabrous. ***Gynoecium*** with the ovary ovoid, 2–3.5 mm long, 2–3 mm in diameter, glabrescent, sparsely pilose at apex; style 7–12 mm long, pilose and long-capitate glandular trichomes at base, glabrous at middle and apex; stigma stomatomorphic to bilobed. ***Berry*** to 8 mm long, 10 mm wide, glabrous; seeds elliptic to fusiform, ca. 0.7 mm long, 0.5 mm wide, striate, dark brown to black.

PHENOLOGY: Collected in flower in January and March, May to August, and October; in fruit June and August to October.

DISTRIBUTION: (FIGURE 5) Colombia (Boyacá, Caquetá, Cundinamarca, Meta, Santander), Venezuela (Lara, Portuguesa); in second growth forest and cloud forest; 1000–1800 (–2300) m.

ADDITIONAL SPECIMENS EXAMINED: **Colombia.** Boyacá: Labranzagrande, *Guevara 358* (US).—Caquetá: Mpio. San Vicente del Caguán, Neiva-San Vicente highway, campamento Los Andes to Vereda La Campana (casa del paisa), Cordillera Oriental, E slope, *Betancur et al. 1868* (COL, US); San Vicente, inspección Guayabal, Vereda La Esperanza toward San Jorge, old road to La Finca El Mirador, *Orozco et al. 2728* (COL).—Cundinamarca: Ubala B, Vereda Algodones, right litoral Río Trompeta, *Fernández et al. 16008* (COL); Ubala B, Vereda Campo Hermoso, Escuela de Campo Hermoso, *Fernández et al. 16386* (COL); Ubala B, Vereda Campo Hermoso, toward El Retiro, *Fernández et al. 16431* (COL 3-sheets); Cordillera Oriental, San Antonio valley, 15 km SE of Gutierrez, 60 km S of Bogotá, *Grant 9816* (COL, NA 2-sheets, NY, US); Ubala B, Vereda Campo Hermoso, Escuela de Campo Hermoso, *Murillo et al. 1748* (COL).—Meta: Mesetas, Vereda Villa Lucia, Resguardo indígena de Villa Lucía, *Cárdenas et al 13527* (COL); from Villavicencio, *Daire 293* (US); road from El Calvario to San Juanito, *Estrada et al. 108* (COL); Sierra de La Macarena, Vereda El Tablazo, Morro Bello, *Forero et al. 805* (COL, US); Cordillera Oriental, Buenavista, hills above Villavicencio, *Fosberg 22080* (NY, US); Cordillera la Macarena (extreme NE), Macizo Renjifo, summit and environs, *Idrobo & Schultes 962* (COL, US); Renjifo, Cordillera la Macarena, *Idrobo & Schultes 1076* (COL, US); Reserva Nacional de la Macarena, Pico Renjifo, *Idrobo 2489* (COL); Acacías, Colonia Penal and Agrícola de Oriente, *Jaramillo 7229* (COL); Acacías, Colonia Penal and Agrícola de Oriente, Campamento La Meseta, *Jaramillo et al. 7389* (COL); Acacías, Colonia Penal and Agrícola de Oriente, Cuchilla de La Meseta, *Jaramillo et al. 7534* (COL); Acacías, Colonia Penal and Agrícola de Oriente, close to campamento Las Blancas, *Jaramillo 7715* (COL); Lejanías, vereda El

Triunfo, *López et al. 4037* (COL); along trail across Río Negro from finca of H. Schmidt-Mann, ca. 20 km W of Villavicencio, *Moore & Dietz 9866* (BH 2-sheets, COL, UC, US); Villavicencio, highway to Restrepo, ca. 1 km before the bridge above Río Guatiquía, *Vergara et al. 30* (COL); by Acacías near Villavicencio, *Vogel 148* (US).—Santander: Piedecuesta, Vda. Mesitas de San Javier, Finca Salto del Mico, *Betancur et al. 11057* (COL); Tona, highway from El 18 to Tona, 1–4 km from El 18, *Bernal et al. 3520* (COL); Floridablanca-Tona, Vdas. El Brasil and El Mortiño, *Fernández-A. & Albesiano 21425* (COL); Floridablanca-Tona, Vereda El Mortiño, *Fernández-A. & Albesiano 21637* (COL); km 18 on the Bucaramanga-Pamplona highway, place "El Mortiño", road along the highway, *Parra-O. 485* (COL); La Corcova, *Rentería et al. 622* (COL, MO). **Venezuela.** Lara: Distrito Palavecino, pendent slopes toward the SE in Quebrada de La Toma, in la Loma Redonda, S of Terepaima, 25 km S of Cabudare, *Steyermark et al. 103346* (COL, MO, NY, US 2-sheets); Jimenez, Yacambu National Park, Quebrada Negra, El Blanquito, SSE of Sanare, *Steyermark et al. 103464* (MO, NY, US, VEN); Iribarren, Fila de Las Goteras, Río Claro, *Steyermark et al. 103695* (US, VEN).—Portuguesa: 15 km E of Chabasquén, 67 km NNO of Guanare, *Steyermark et al. 126604* (MO, U, VEN).

DISTINGUISHING CHARACTERS: The species most similar to *Corytoplectus schlimii* is *C. deltoideus* (see the discussion under *C. deltoideus*). Similarly, some plants of *C. schlimii* are reminiscent of plants of *C. speciosus,* but in contrast with that species, the floral bracts of *C. schlimii* are smaller and caducous, the upper leaf surface is rugose and covered with long-acute glandular strigose indument, and the calyx lobes are deltoid acuminate (instead of larger and persistent floral bracts, upper leaf surface flat densely strigillose, and the orbicular or rounded calyx lobes in *C. speciosus*). The non-pedunculate inflorescences, the rugose leaves, the smaller calyx lobes, the longer corolla, the corolla exterior indument in stripes, the red and orange spreading limb, and the nectary glands two in *C. schlimii,* are characteristics that help to separate these species from *C. zamorensis* (also distributed in Colombia).

NOTE: In 1973 Wiehler included *Hypocyrta pulchra* N.E. Br. (1894) in the synonomy of *Corytoplectus congestus,* but in 1978 he reconsidered and made *C. pulcher* a separate species.

10. *Corytoplectus speciosus* (Poepp.) Wiehler, Phytologia 27: 313. 1973.

Herbs or rarely subshrubs; stems erect, to 0.7 (–1) m tall, to 4.5–6.5 (–10) mm in diameter, white or purple hirsutulous to pubescent toward the apex, glabrescent at base, internodes 1–5 (–10) cm long. ***Leaves*** opposite, isophyllous to subequal; blades chartaceous, rarely coriaceous when dry, (3.5–) 6–14 (–21) cm long, (3–) 4–8 (–12) cm wide, broadly elliptic to ovate, sometimes elliptic, base obtuse or cuneate, apex acute to obtuse (sometimes acuminate), flat (rarely slightly rugose), adaxially dark green to paler green above the veins, densely strigillose, with short-acute and short-capitate glandular hairs, abaxially purple, red, or paler green suffused with red, densely short-acute glandular strigillose and/or short-capitate glandular, densely strigose on the veins above, margin crenulate to serrulate-crenulate, lateral veins (6–) 9–11 (–12) per side; petioles 2–6 (–9.5) cm long, white or purple hirsutulous to pubescent. ***Inflorescences*** of congested umbel-like cymes, pseudoterminal and axillary (in the apical part of the stem), erect, of (2–) 3–7 (–15) flowers; peduncles very small, shorter than the petioles, 0–5 (–15) mm long, densely purple and white hirsutulous to pubescent; pedicels longer than the peduncle, 1.5–3.5 (–6) cm long, purple and white hirsutulous to pubescent; bracts 2 (plus 2 or 4 prophylls), the larger enclosing the inflorescence and almost completely covering the calyx, persistent or sometimes caducous in fruit, (11–) 18–30 (–40) mm long, 9–21(–30) mm wide, ovate, broadly elliptic, or sometimes oblanceolate, base cuneate to attenuate, apex acute to obtuse, rarely acuminate, flat, red or orange, outside strigillose, with short-acute and short-capitate glandular hairs, veins densely strigose, inside glabrescent with short-capitate glandular hairs at middle and strigillose at apex, margin almost entire, denticulate at apex, hirsutulous. ***Calyx*** red, rarely orange, lobes free, subequal, lanceolate to orbicular (sometimes ovate to rotund), 9–13 (–16) mm long, 7–11 (–14) mm wide, reflexed (lateral sides folded) or non-reflexed, base obtuse or attenuate to cuneate, apex acuminate-acute or obtuse, strigillose, with short-acute and short-capitate glandular hairs, midvein densely strigose, inside glabrescent with short-capitate glandular hairs at middle and short-acute glandular and strigillose hairs at apex, margin entire at base and denticulate to dentate at apex, hirsutulous. ***Corolla*** tubular, slightly oblique, longer than the calyx, 12–20 (–25) mm long, 6–8 mm in diameter at widest point, throat slightly constricted to 3.5–6 mm in diameter, yellow, outside glabrous at base, apically white or yellow villous, indument in stripes, inside sparsely pubescent at base, glabrescent at middle with short-capitate glandular hairs at throat; limb yellow, obviously spreading (7–12 mm in diameter), lobes 1–3

(–4.5) mm long and 2–4 (–6) mm wide, subequal, rotund, orbicular, or reniform, erose, sometimes entire, villous outside, glabrous with short-capitate glandular hairs at base inside. ***Androecium*** of stamens with filaments 6–8 mm long (free part), adnate to base of corolla tube for ca. 1 mm, connate for 3–5 mm forming an open sheath, sparsely pubescent at apex of sheath, free portion glabrous, stamens equally distributed on the sheath; anthers ca. 1.5–2 mm long, 1–2 mm wide, dehiscing by longitudinal slits. ***Disc*** of nectary glands two (one dorsal and one ventral) linear and bilobed, to 2 mm high and wide, glabrous. ***Gynoecium*** with the ovary ovoid, 1.5–3 mm long, 1.5–3.5 mm in diameter, pubescent; style 8–12 mm long, pubescent, sometimes with long-capitate glandular hairs at apex; stigma bilobed capitate. ***Berry*** 6.5–10 mm in diameter, pubescent; seeds elliptic to fusiform, 0.5–1 mm long, 0.5 mm wide, striate, dark brown to black.

DISTINGUISHING CHARACTERS: *Corytoplectus speciosus* is the most widespread species in the genus, widely distributed in Ecuador, Peru, and Bolivia. *C. speciosus* is characterized by the following combination of characters: 1) densely strigillose flat leaves above; 2) almost non-pedunculate inflorescences; 3) large floral bracts, sometimes caducous in fruit; 4) yellow tubular corollas with an obviously spreading limb; 5) the pubescent and long-glandular style; and 6) nectary glands two. For the distinguishing characters of *C. speciosus* from other species, see the discussion under *C. congestus, C. cutucuensis,* and *C. zamorensis.* The two varieties of *C. speciosus* are present in Peru, whereas var. *orbicularis* is also distributed in Ecuador and Bolivia.

10a. *Corytoplectus speciosus* var. ***orbicularis*** **C. Rodríguez-Flores & L.E. Skog, var. nov.** TYPE: Ecuador. Prov. Zamora-Chinchipe: Zamora Cantón, Romerillos Bajo, eastern border of Podocarpus National Park, Quebrada Neya, Fundación Maquipucuna, Bosque (plot) #2, *Clark et al. 3340* (holotype: QCNE (not seen); isotypes: AAU, COL 2-sheets, E, GB, LOJA, MO, SRP, US). FIGURE 8.

Alloplectus corymbosus Klotzsch ex Hanst., Linnaea 34: 371. 1865. *Columnea corymbosa* (Klotzsch ex Hanst.) Kuntze, Revis. Gen. Pl. 2: 472. 1891. *Crantzia corymbosa* (Klotzsch ex Hanst.) Fritsch, in Engler and Prantl, Nat. Pflanzenfam. 4(3b): 168. 1894. TYPE: Peru, Chicoplaya, *Ruíz & Pavón 18/64* (holotype: B, not extant; lectotype selected here: MA (photo US!); isolectotype: F (photo US!)).

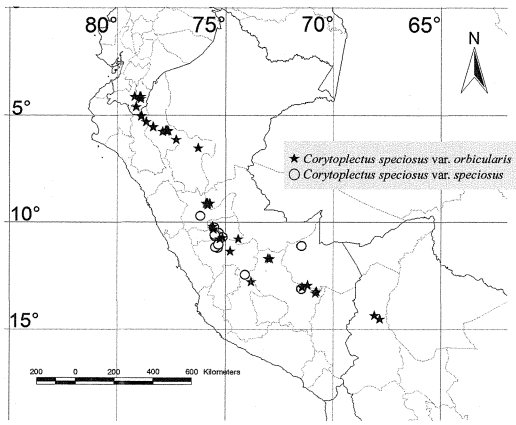

FIGURE 7. Distribution of *Corytoplectus speciosus* var. *orbicularis* C. Rodríguez-Flores & L.E. Skog, and *Corytoplectus speciosus* (Poepp.) Wiehler var. *speciosus.* Map was generated using ArcView GIS 3.2a (ESRI 2000).

A *Corytoplecto specioso* (Poepp.) Wiehler var. *specioso* lobis calycum orbicularis rotundatis et pedunculis minoribus differt.

Leaves (3.5–) 7–13 (–21) cm long, (3–) 4–8 (–12) cm wide, elliptic to ovate, sometimes broadly elliptic, apex acute to acuminate, lateral veins (6–) 9–11 (–12) per side; petioles 2–6 (–9.5) cm long. ***Peduncles*** 0–4 (–9) mm long; pedicels 1.2–3.5 (–6) cm; bracts persistent in flower and caducous in fruit. ***Calyx*** lobes orbicular to rotund, non-reflexed, base obtuse to cuneate, apex obtuse, 8–12 (–16) mm long, 8–12 (–16) mm wide.

PHENOLOGY: Collected in flower from January to December; in fruit from June to December.

DISTRIBUTION: (FIGURE 7) Bolivia (La Paz), Ecuador (Loja, Zamora-Chinchipe) and Peru (Amazonas, Ayacucho, Cajamarca, Cuzco, Huánuco, Junín, Lima, Madre de Dios, Pasco, San Martín, Ucayalí); in montane rainforest, primary and disturbed cloud forest; (700–) 1000–1800 (–2500) m.

ADDITIONAL SPECIMENS EXAMINED: **Bolivia.** La Paz: Prov. Franz Tamayo, Serranía de Chepite, Campamento Sísmico de Texaco, 15 km W of Río Tuichi, *Killeen 3727* (LPB, US); Prov. Franz Tamayo, ca. 30 km E of Rurrenabaque, 5 km S del Río Tuichi, *Perry 1050* (US). **Ecuador.** Loja: Parque Nacional Podocarpus National Park, Cajanuma, above la guardería, *Palacios & Tirado 13234* (US).—Zamora-Chinchipe: Zamora Cantón, Jamboe Bajo, eastern border of Podocarpus National Park, *Clark et al. 3201* (AAU, COL, QCNE, US); Cantón Zamora. Po-

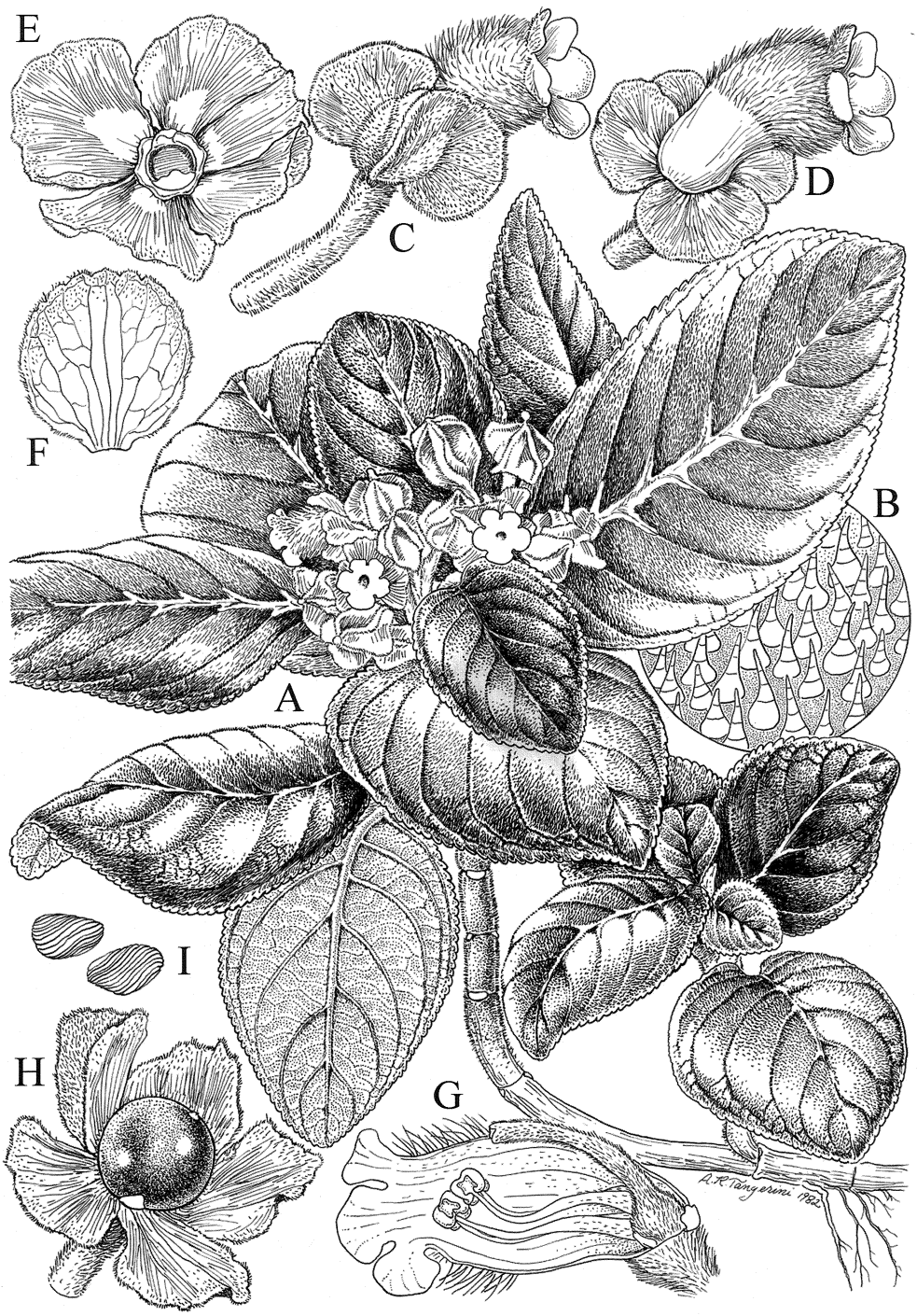

FIGURE 8. *Corytoplectus speciosus* var. *orbicularis* C. Rodríguez-Flores & L.E. Skog. **A.** Habit. **B.** Section of abaxial leaf surface. **C.** Flower. **D.** Flower with corolla base exposed. **E.** Calyx and nectary glands. **F.** Sepal. **G.** Corolla opened to show stamens and pistil. **H.** Fruit. **I.** Seeds (A–E from *Skog et al. 5119* (US); F–I from *Schunke 3055* (US)).

docarpus National Park, Bombuscara entrance, *Clark & Elmers 6432* (SEL); along road from Zamora to Romerillos along Río Jambué, *Croat 91822* (US); along road between Zumba and Vilcabamba, *Croat 92492* (US); Podocarpus National Park, Placería Bombuscara, a.c. 6 km S of Zamora, collections close to Río Bombuscara, *Freire-Fierro et al. 2258* (NY); road Loja-Zamora, *Harling & Andersson 13700* (SEL), *13751* (SEL); road from Zamora to Zumba, *Harling & Andersson 13825* (GB, NY, SEL, US); northern side of Río Palanda at crossing with Zumba road, *Harling & Andersson 21265* (GB, US); Zumba-Bellavista, *Harling & Ståhl 26260* (GB); Zamora-Loja road, east of the pass, Nudo de Sabanilla, *Luther et al. 2741* (SEL, US); Quebrada del León, affluent of Río Bombuscara S of Zamora, limit of Podocarpus National Park, *Madsen 75146* (NY); Podocarpus National Park, SW of town of Zamora, near refugio and along trail that follows Río Bombuscara, *Rome et al. 1006* (US); road from Zumba to Valladolid, along Río Palanuma, *Stein & D'Alessandro 2767* (NY, US); along Río Valladolid between W side of Río Valladolid at Tambo Valladolid to Río Molino above Tambo Vallad, *Steyermark 54645* (F, US). **Peru.** Amazonas: trail E from La Peca into Serrania de Bagua, *Gentry et al. 23080* (MO, US); Prov. Pongara, Dist. Yambrasbamba; above Campamento Buenos Aires, across Río Chirisco from Yambrasbamba, ca. km 58, *Tillett 673–307* (GH, US); Prov. Bagua, Aramango, Chorro Blanco, *Vásquez & Rojas 25278* (US); Bagua District, Aramango, new road from Esperanza to the waterfall, *Vásquez et al. 27417* (US).—Ayacucho: Estrella, between Huanta and Río Apurimac, *Killip & Smith 23084* (F, NY, US).—Cajamarca: Prov. San Ignacio, San José de Lourdes, *Campos & Vásquez 6392* (US); Prov. San Ignacio, Huarango, Quebrada de los Yaraguas, camino a Nuevo Mundo, *Campos et al. 6588* (US); Prov. San Ignacio, Distrito Huarango, Nuevo Mundo, Caserío Gosén, arriba del márgen izquierdo de la quebrada Las Juntas, *Rodríguez & Reyes 1740* (US); Prov. San Ignacio, Distr. Huarango, Nuevo Mundo, Caserío Pisaguas, *Rodríguez-R. 1901* (US); San Ignacio, San José de Lourdes, *Vásquez & Flores 26265* (US).—Cuzco: Marcapata valley, *Herrera 1165* (US); Prov. Quispicanchis, Camanti, 254 km from Cuzco road to Maldonado, Quince Mil area, *Nuñez 13007* (US); Prov. La Convención, Dtto. Echarati, Pagoreni well site, *Nuñez et al. 21496* (AAU, CUZ, F, US, USM); Prov. La Convención, Dtto. Echarati, Pagoreni well site, *Nuñez et al. 21805* (CUZ, US, USM); Prov. La Convención, Distr. Echarati, Pagoreni well site, near Río Camisea, *Nuñez et al. 24098* (US); Kero—Valle Cosnipata, *Scolnik 912* (US); Prov. Paucartambo, km 164 on Paucartambo—Manu road (Peru 26B), between Pillahuata and Pilcopata, in Manu National Park, *Skog & Skog 5188* (F, US, USM); Prov. Quispicanchi, Camanti, Maniri, en el camino que va de la carretera a la represa de Yanamayo, *Timaná 729* (US); Prov. Quispicanchis, along trail 25 km SW of Quincemil, *Wasshausen & Encarnación 743* (K, US); Prov. Paucartambo, between Santa Isabel and Asunción, *West 7117* (GH, MO, UC).—Huánuco: Leóncio Prado, along road from Tingo María to Pucalpa, at "La Divisoria" (divide just south of border with Dept. Ucayalí), 2.5 km W of Ucayalí border, *Croat & Sizemore 81712* (US); Cordillera Azul, ca. 38.2 km E of Tingo María on road to Pucallpa, *Davidson & Jones 9300* (LAM, US); Cordillera Azul, ca 42.7 km E of Tingo María on the road to Pucallpa, *Davidson & Jones 9366* (LAM, MO, US); Prov. Leóncio Prado, Cumbre "La Divisoria," carretera entre Tingo María y Pucallpa, *Díaz & Baldeón 2273* (US); Prov. Leóncio Prado, La Divisoria, ca. 18 km NNE of Tingo María on road to Pucallpa, canyon just S of pass, *Dillon 2649* (MO, NY, US); Divisoria, *Ferreyra 2234* (US, USM); Prov. Leóncio Prado, La Divisoria, Cordillera Azul near border with Ucayalí, *Gentry et al. 29582* (MO, US); Cordillera Azul, Tingo María—Aguaytia road, *Gentry et al. 36144* (US); Prov. Leóncio Prado, Dtto. Hermilio Valdizán, La Divisoria, road from Pumahuasi to La Cumbre, *Plowman & Schunke 7422* (F, SEL, U); Boquerón, km 228, *Ridoutt 13056* (US, USM); Leóncio Prado, Dtto. Emileo Baldizan; Carretera Tingo María—Pucallpa, La Divisoria, *Rimachi 4974* (IBE, MO, NA, NY, US); Prov. Huánuco, Dtto. Acomayo, near the highway, 0.5 km above new village of Chinchao or ca. 16.8 km below entrance to Carpish tunnel, *Simpson & Lopez 842* (F, G, US); Prov. Leóncio Prado, at Divisoria, *Skog et al. 5119* (MO, US, USM); Prov. Leóncio Prado, road between Tingo María and Pucallpa, km 35, *Sullivan & Young 1171* (US); Divisoria, *Woytkowski* 34497 (UC); Prov. Huánuco, km 468 on Lima-Tingo María road, Huánuco, 1/2 km above San Miguel Chinchao, *Young & Sullivan 612* (US).—Junín: Prov. Satipo, Gran Pajonal, between Paucarete and Tihuanaski, *Smith 6551* (US); Prov. Satipo, Río Satipo Valley, on road from Satipo to Concepción, km 18 to 23, *Stein & Todzia 2388* (US).—Lima: road to Ramazuy, 10 km of San Luis, *Cardenas 14550* (MO, US).—Madre de Dios: Prov. Manu, Carbón a Salvación, *Vargas 16915* (US).—Pasco: 24 km N of Huancabamba, along road above Río Pozuzo, *Gentry et al. 40039* (MO, US); Pichis Trail (formerly in Junín), Porvenir, *Killip & Smith 25935* (F, NY, US), *25953* (US); Pichis Trail (formerly in Junín), San Nicolas, *Killip &*

Smith 26049 (NY, US); Oxapampa, Distrito Pozuzo, Yanachaga Chemillen National Park, *Monteagudo et al. 4857* (US); Oxapampa, Distr. Pozuzo, Puesto de Control Huampal, *Rojas et al. 1270* (US); Prov. Oxapampa, Abra los Mellizos, 4–8 km from Eneñas, *Skog et al. 5030* (MO, US, USM); Distrito Oxapampa, Yanachaga Chemillen National Park, Sector Huampal, *Vásquez et al. 27866* (US); Oxapampa, along road to Pozuzo-Oxapampa in P.N. Yanachaga, *Werff et al. 17938* (US).—San Martín: Prov. Lamas, close to the tunnel between Yurimaguas and Tarapoto, *Ferreyra 17491* (MO, US, USM), *Ferreyra et al 18277* (MO, US, USM); 20–27 km NE of Tarapoto, road to Yurimaguas, near top of Cordillera, *Gentry et al. 37871* (MO, US); Pedro Ruíz-Moyabamba road, km 398 Carretera Marginal, *Grant & Rodriguez 3955* (US); Prov. San Martín, Dtto. Tarapoto, Carretera Tarapoto—Yurimaguas, from km 12 to 13.5, *Rimachi 5146* (US); Prov. Rioja, Dist. Elias Soplin Vargas, road S of Naciente Río Negro, route to Pucatambo (road to Vista Alegre), up Quebrada Corontochaque, *Sánchez & Dillon 8302* (US); Prov. Rioja, Dist. Pardo Miguel, Venceremos, km 392 of the highway to Rioja, *Sánchez & Dillon 8668* (US); Prov. Rioja, Dist. Pardo Miguel, Aguas Verdes, *Sánchez & Dillon 8929* (US); Prov. Rioja, km 385–390 on Moyabamba-Bagua road, Venceremos to Campamento Garcia, *Smith et al. 5972* (US); Prov. San Martín, hills NE of Tarapoto, c. 14 km from Tarapoto on road to Yurimaguas, Quebrada leading to Ahuashyaco waterfall, *Stein & Todzia 2135* (US); Tarapoto, *Tina et al. 2425* (US); Prov. Rioja, Buenos Aires, along road Pedro Ruiz—Rioja, *Werff et al. 15395* (US); Prov. Rioja, along road Rioja—Pedro Ruiz, *Werff et al. 15537* (US): Rioja, along road Rioja-Yorongos-La Florida, *Werff et al. 16447* (US); along road Rioja-Pedro Ruiz, about bridge Serranoyacu, *Werff et al. 16800* (US).—Ucayalí: Divisoria, 59 km from Tingo María on highway to Pucallpa, at Divisoria, *Allard 21229* (US), *21253* (US), *21304* (US), *21794* (US); Prov. Coronel Portillo, Plantación Margarita, cerca a Divisoria, *Ferreyra 992* (AAU, BR, M, MO, US, USM); Prov. Coronel Portillo, Divisoria, *Ferreyra 1644* (MO, US 2-sheets, USM); between Divisoria and Boquerón, *Ferreyra 4270* (MO, US, USM); Prov. Coronel Portillo, between La Divisoria and Boquerón, on new road to Pucallpa, *Plowman & Kennedy* 5750 (GH, K, SEL); Prov. Coronel Portillo, Dtto. Padre Abad, Boquerón de Padre Abad, *Schunke 3055* (F, US); Prov. Coronel Portillo, Dtto. Padre Abad; Río Chino, W of Restaurant Acapulco, *Schunke 9194* (MO, US), *9195* (MO, US); Prov. Coronel Portillo, Dtto. Padre Abad, La Divisoria, close to Río Chino, *Schunke 9262* (GH, MO, NY, US); Prov. Coronel Portillo, Dtto. Padre Abad, La cumbre de la Divisoria, *Schunke 9849* (MO, U, US); Prov. Coronel Portillo, Dtto. Padre Abad, Fundo de Maximo Rodriguez Gonzales, cerca al río Chino, *Schunke 11207* (IBE 2-sheets, US, USM); Prov. Coronel Portillo, at Boquerón del Padre Abad, ca. 92 km from Tingo María on Tingo María—Pucallpa road (Peru 5), *Skog et al. 5131* (US, USM); Prov. Coronel Portillo, near bridge over Río Chino between La Divisoria and Boquerón de Padre Abad on Tingo María—Pucallpa road (Peru 5), *Skog et al. 5168* (AAU, F, K, MO, US, USM), *5171* (US). Prov. Coronel Portillo, Cordillera Azul, km 43 on Tingo María—Pucallpa road, *Young & Sullivan 738* (US).

DISTINGUISHING CHARACTERS: The characters of *C. speciosus* var. *orbicularis* that distinguish it from var. *speciosus* are the orbicular calyx lobes, rounded at apex and base, the caducous floral bracts, and the lack of a penduncle in fruit (FIGURE 8).

10b. *Corytoplectus speciosus* (Poepp.) Wiehler var. *speciosus*

Alloplectus speciosus Poepp., in Poepp. and Endl., Nov. Gen. Sp. Pl. 3: 6. 1840. *Columnea poeppigiana* Kuntze, Revis. Gen. Pl. 2: 472. 1891. *Crantzia speciosa* (Poepp.) Fritsch, in Engler and Prantl, Nat. Pflanzenfam. 4 (3b): 168. 1894. TYPE: Peru, Huánuco, Cuchero, *Poeppig 1079* (holotype: W (photo US!); isotypes: F, G, W (photos SEL!, US!)). *Alloplectus vittatus* Linden & André, Ill. Hort. 17: 72, pl. 13. 1870. *Crantzia vittata* (Linden & André) Rechinger, Oesterr. Bot. Z. 49: 182. 1899. TYPE: Peru, Moyobamba, *Wallis s.n.* (holotype: not seen).

Leaves (5–) 7.5–13.5 (–16) cm long, (3–) 4–8 (–11) cm wide, broadly elliptic to ovate, apex acute, lateral veins (7–) 8–10 per side; petioles 1.5–7cm long. ***Peduncles*** 0–12 (–30) mm long; pedicels (0.7–) 1–2.6 (–4) cm; bracts persistent. ***Calyx*** lobes lanceolate to ovate, reflexed (lateral sides folded), base attenuate to cuneate (rarely obtuse), apex acute to acuminate, 10–14 mm long, 7–11 (–14) mm wide.

PHENOLOGY: Collected in flower January to December; in fruit from January to March, and from May to November.

DISTRIBUTION: (FIGURE 7) Peru (Ayacucho, Cuzco, Huánuco, Junín, Pasco, San Martín, Ucayalí); in dense and disturbed montane rain forest; 1000–1600 (–1900) m.

ADDITIONAL SPECIMENS EXAMINED: **Peru.** Ayacucho: Carrapa, between Huanta and Río Apurimac, *Killip & Smith 23208* (F, NY, US).—

Cuzco: Chontachaca and Pillahuata, Pillopata, road from Cuzco to Shintuya, *Nuñez* 6971 (US)—Huánuco: Prov. Huánuco, Distr. Chinchao, San Pedro de Carpish, near tunnel, trail towards Hacienda Patti, *Clark et al.* 8200 (SEL); Hda. Patty down to Carpish, *Ferreyra 9344* (US, USM); between Huánuco and Pampayacu, *Kanehira 85* (GH); Mirador, *Ridoutt 11605* (MO, US, USM).—Junín: Chilpes, 8 km S of Vitoc, trail along steep slopes overlooking Río Tulumayo, *Gentry et al. 40170* (MO, US); Prov. Tarma, valley of the Río Palca, vicinity of Oreja Capelo on road between Tarma and San Ramón, *Hodge 6251* (F, US 2-sheets); Chanchamayo valley, *Hutchison 1168* (UC, US, USM); E of Quimirí Bridge, near La Merced, *Killip & Smith 23831* (NY, US); Schunke Hacienda, above San Ramón, *Killip & Smith 24523* (NY, US); Schunke Hacienda, above San Ramón, *Schunke A14* (US); Yaupi, *Woytkowski 6674* (MO, US); Prov. Tarma, Agua Dulce, *Woytkowski 35425* (G, MO, UC).—Pasco: Pichis trail (formerly in Junín), Yapas, *Killip & Smith 25590* (F, NY, US); Pichis Trail (formerly in Junín), Eneñas, *Killip & Smith 25755* (F, NY, US), *25780* (US); Pichis Trail (formerly in Junín), Porvenir, *Killip & Smith 25921* (NY, US), *25927* (NY, US); Prov. Oxapampa, Distrito Chontabamba, highway to La Suiza, *Monteagudo et al. 4585* (US); Prov. Oxapampa, near the Oxapampa—Chontabamba road (Peru 18), 6–8 km from Oxapampa, *Skog et al. 5069* (US, USM); Prov. Oxapampa, Río Boqueria, ca. 26 km from Oxapampa via Río Yamaquizu, *Smith et al. 1818* (US); Prov. Oxapampa, 5 km SE of Oxapampa, *Smith 2932* (MO); Prov. Oxapampa, Río El Tunqui, *Smith & Alban 5496* (US); Oxapampa, *Soukup 1812* (US); Oxapampa, Distrito Oxapampa, La Suiza, *Vásquez & Rojas 27774* (US); along road Chatarra-Pto. Bermudez, *Werff et al. 18196* (US).—San Martín: Prov. San Martín, Tarapoto-Yurimaguas by tunnel, *Besse et al. 793* (SEL); Prov. San Martín, Dtto. Tarapoto, Carretera de Tarapoto-Yurimaguas, km 12 to 16, *Rimachi 3846* (IBE)—Ucayalí: highway of Aguaytia, km 209, *Ridoutt 13095* (US). **Cultivated.** G-64, *Moore 7412bis* (US); G-475, *Morrow* s.n. (BH 2-sheets, NY, US); G-482, *Stone 452 bis* (US); G-482, *Wiehler* s.n. (SEL, US); G-506, *Wiehler s.n.* (SEL).

DISTINGUISHING CHARACTERS: The characters that distinguish *C. speciosus* var. *speciosus* from var. *orbicularis* include the lanceolate and acuminate calyx lobes, the persistent floral bracts, and the conspicuous penduncles in fruit.

NOTES: *Alloplectus bicolor* Poepp. in sched. in Hanstein, Linnaea 34: 370. 1865, nom. nud. pro syn., is included in *C. speciosus* (see Clark 2005).

11. *Corytoplectus zamorensis* (Linden & André) C. Rodríguez-Flores & L.E. Skog, comb. nov. *Alloplectus zamorensis* Linden & André, Ill. Hort. 19: 110, 352. 1872. TYPE: Locality unknown, in Nueva Granada, *Wallis s.n.* (holotype: not seen, based on Plate 110 in protologue). FIGURE 9.

Herbs; stems erect, 0.2–0.7 (–1.5) m tall, 3–6 mm in diameter, densely purple hirsutulous to tomentose toward the apex, glabrescent at base, internodes 2–4 cm long. ***Leaves*** opposite, subequal; blades chartaceous, rarely membranous when dry, (6–) 7.5–12.5 (–18) cm long, 3.5–7.5 (–10) cm wide, broadly elliptic to elliptic, base obtuse to cuneate, apex acute (rarely acuminate), flat, adaxially dark green, densely strigillose and short-acute glandular hairs, mixed with short-capitate glandular hairs, abaxially purple (rarely red), densely short-acute glandular strigillose and with glandular-capitate indument, densely purple sericeous or strigose on the veins above, margin crenulate to crenulate-serrulate, lateral veins 7–9 (–12) per side; petioles 3–7 (–10) cm long, densely purple hirsutulous to tomentose. ***Inflorescences*** of umbel-like cymes, pseudoterminal-axillary, erect, of 2–3 (–8) flowers; peduncles shorter than the petioles, 1.1–2.9 (–4.3) cm long, densely purple hirsutulous to tomentose; pedicels shorter than the peduncles, 0.8–2.4 (–4) cm long, densely purple hirsutulous to tomentose; bracts 2, caducous, 12–20 mm long, 13–19 mm wide, broadly obovate, base attenuate, apex obtuse (sometimes acute), entire to serrulate, flat, red, outside densely strigillose with short-acute glandular hairs, densely short-acute glandular hairs or strigose above the midvein, inside glabrescent with short-capitate glandular hairs. ***Calyx*** red to violet, lobes free, subequal, deltoid to ovate, 11–14 (–16) mm long, 8–14 mm wide, not reflexed, base obtuse to cordate, apex acuminate to apiculate, outside densely strigillose and with glandular-capitate hairs, sometimes with short-acute glandular indument, midvein densely strigose, inside glabrescent with short-capitate glandular hairs at middle and strigillose at apex, margin serrate to serrulate at apex, hirsutulous. ***Corolla*** tubular-urceolate, slightly oblique, longer than the calyx, 12–18 mm long, 5–8 mm in diameter at widest point, throat constricted to 2–2.5 mm in diameter, yellow to red, outside glabrous at base, apically densely sericeous, inside glabrescent with few short-capitate glandular hairs at throat; limb pink, slightly spreading to constricted, lobes 1–1.5 mm long, 0.7–2 mm wide, subequal, rotund to orbicular, nearly entire, sericeous outside, glabrous inside. ***Androecium*** of stamens with filaments 6–8.5 mm long (free part), adnate to base

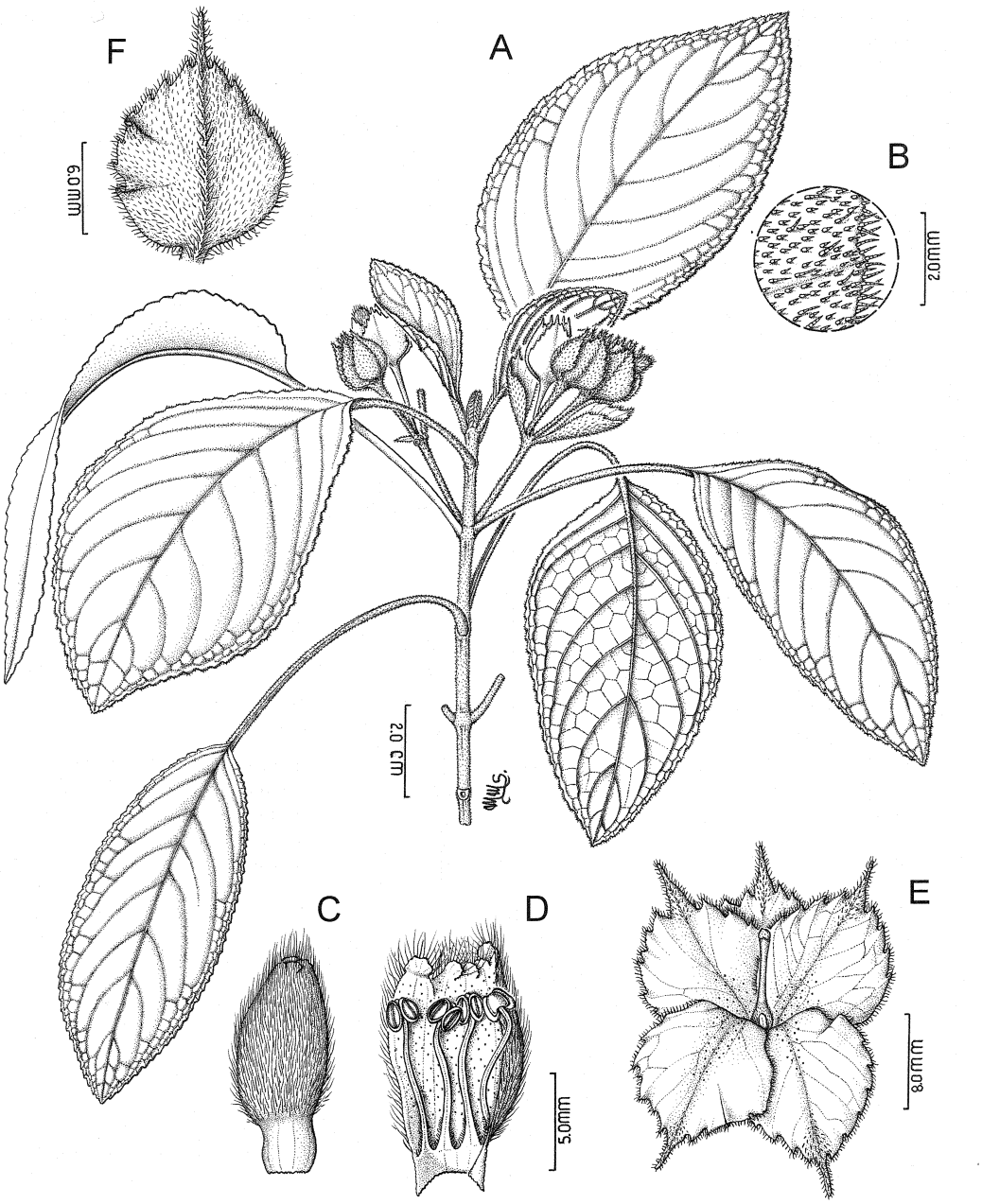

FIGURE 9. *Corytoplectus zamorensis* (Linden & André) C. Rodríguez-Flores & L.E. Skog. **A.** Habit. **B.** Section of abaxial leaf surface. **C.** Corolla. **D.** Corolla opened to show stamens. **E.** Calyx opened and corolla removed to show pistil and nectary glands. **F.** Sepal. (A, B from *Valbuena & Harker 19* (COL); C–D from *Huertas & Camargo 6964* (COL); E–F from *Pinto et al. 9* (COL)).

of corolla tube for ca. 1 mm, connate for 2–2.5 mm forming an open sheath, pubescent at apex of sheath, free portion glabrous, stamens equally distributed on the sheath; anthers ca. 1–1.5 mm long and wide, dehiscing by longitudinal slits. ***Disc*** of nectary gland one (rarely two), to 1.3 mm high, 2.5 mm wide, glabrous. ***Gynoecium*** with the ovary ovoid, 2–4 mm long, 1.5–3 mm in diameter, pubescent, puberulent at base; style 6–9 mm long, glabrescent; stigma stomato-

morphic to bilobed. ***Berry*** to 11 mm long, 14 mm wide, puberulent; seeds elliptic to fusiform, ca. 1 mm long, 0.3 mm wide, striate, dark brown to black.

PHENOLOGY: Collected in flower in March, May, June, September, and October; in fruit in January, March, May, June, and November.

DISTRIBUTION: (FIGURE 5) Colombia (Boyacá, Cauca, Cundinamarca, Norte de Santander, Santander); in subandean and cloud forest, primary and disturbed vegetation; (1000–) 1300–1900 m.

ADDITIONAL SPECIMENS EXAMINED: **Colombia.** Boyacá: Region of Mt. Chapon, extreme western part of Dept. Boyaca, NW of Bogotá, *Lawrance 1* (A, F, NY, S, US); Togüí, road between Togüí and Chitaraque, Hacienda El Hatillo, left edge of Quebrada Mata-Puercos, *Pinto et al. 9* (COL).—Cauca: Municipio de Santa Rosa, Mocoa-Pitalito highway km.26, Vereda "Santa María," *Cogollo et al. 6846* (MO).—Cundinamarca: Yacopí, Insp. de Policía de Guadualito, Vereda de La Laguna, *Lozano et al. 7292* (COL).—Norte de Santander: Ocaña, *Triana 2501* (FI, G, P, W).—Santander: Charalá, Corregimiento Virolín, carretera El Carmen-Virolin, km 67, *Betancur et al. 6230* (COL); Charalá, Corregimiento de Virolín, road to Olival, Vereda El Reloj, Río Luisito, *Caro et al. 27* (COL); Charalá, Corregimiento de Virolín, Vereda El Reloj, *Díaz 1295* (COL); La Paz, alrededores del hoyo del Aire, *Huertas & Camargo 6964* (COL); Charalá, corregimiento Virolín, *Londoño & Kvist 811* (US); Charalá, Corregimiento de Virolín, camino al Reloj, *Moreno & Mendez 16* (COL); Charalá, Inspección de Virolín, vereda El Olival, km 73 carretera Duitama-Charalá, Camino al Reloj, *Ramírez 28* (COL); Charalá, Inspección Virolín, Vereda El Volcán, *Torres 2559* (COL); Charalá, Corregimiento Virolín, Verada El Reloj, Camino a El Oliva, *Valbuena & Harker 19* (COL).

DISTINGUISHING CHARACTERS: The combination of the following characters sets *Corytoplectus zamorensis* apart from all other species: 1) purple velutinous indument on the stems, petioles, peduncles, and pedicels; 2) densely strigillose flat leaves above; 3) the long pedunculate inflorescences; 4) the caducous floral bracts; 5) the small corolla limb, and 6) the single nectary gland. *C. zamorensis* (endemic to Colombia) and *C. speciosus* (distributed in Ecuador, Peru and Bolivia) have similar leaves (shape and indument), but the latter species differs in the short-pedunculate inflorescences, the yellow tubular corollas with an obviously spreading limb, and the large and non-caducous floral bracts (see FIGURE 9). For the characters that separate *C. zamorensis* from other species, see the discussions under *C. congestus, C. cutucuensis, C. longipedunculatus,* and *C. schlimii.*

NOTE: In 1973 Wiehler included *Alloplectus zamorensis* Linden & André (1872) in the synonomy of *Corytoplectus congestus,* but the non-peduncled inflorescences, the shape of the calyx and corolla, and the lack of large floral bracts, are sufficient to separate *C. congestus* from. *C. zamorensis.* The epithet "zamorensis" probably comes from the name of the Río Zamora in Ecuador, However, the protologue of *Alloplectus zamorensis* said that the plant was collected in Nueva Granada in 1868 by Wallis. According to Vegter (1988), Wallis collected in Colombia in 1868. Because Wallis collected numerous collections along the Río Zamora before and after 1868 (Renner 1993) the authors of this species may have assumed this species was also collected there.

EXCLUDED SPECIES

Corytoplectus latifolius (Rusby) Wiehler, Phytologia 27: 313. 1973. *Columnea latifolia* Rusby, Descr. New Sp. S. Amer. Pl.: 126. 1920. = ***Drymonia latifolia* (Rusby) Rodriguez-Flores & L.E. Skog, comb. nov.**

NOTE: In Brako and Zarucchi (1993), *Columnea latifolia* Rusby appears as a synonym of *Drymonia candida* Hanst. We consider this to have resulted from confusion with *Columnea latisepala* (Rusby) Leeuwenb, which is a synonym of *D. candida.*

In his revision of the genus *Alloplectus,* Clark (2005) identified *Alloplectus bicolor* Linden (1869) as *Corytoplectus sp.* Because the original specimens of this species are unknown, we are not able to assign a name.

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Appendix: *Corytoplectus* collections examined, listed alphabetically by collector's name, including collection numbers and species determinations in parentheses. (1) *C. capitatus,* (2) *C. congestus,* (3)

C. cutucuensis, (4) *C. deltoideus,* (5) *C. grandifolius,* (6) *C. longipedunculatus,* (7) *C. purpuratus,* (8) *C. riceanus,* (9) *C. schlimii,* (10a) *C. speciosus* var. *orbicularis,* (10b) *C. speciosus* var. *speciosus,* and (11) *C. zamorensis.*

Albert, L. & S.J. Sant 3458 (6).
Allard, H.A. 21229 (10a); 21253 (10a); 21304 (10a); 21794 (10a).
Araujo-Murakami, et al. 693 (5).
Aristeguieta, L. 2842 (2); 3933 (2); 4925 (2).
Aristeguieta, L. & F. Pannier 1873 (1).
Aymard, G. et al. 1633 (1).
Badillo, V.M. 1892 (1).
Barclay, H.G. & P. Juajibioy 6810 (7).
Basil, H.B. s.n. (1).
Beck, S.G. 2797 (8); 7279 (8); 21670 (8); 21882 (8).
Bell, D. 345 (2).
Benitez de Rojas, C. 2291 (1).
Bernal, R. et al. 3520 (9).
Bernardi, A.L. 19 (2); 343 (2); 991 (2).
Besse, L. et al. 504 (8); 598 (5); 661 (8); 793 (10b).
Betancur, J. et al. 1868 (9); 6230 (11); 11057 (9).
Boeke, J.D. 1457 (5).
Breteler, F.J. 3491 (2).
Bruijn, J. de 1132 (2).
Buchtien, O. 1342 (5); 1343 (5); 1949 (5); 5558 (5); 5559 (5).
Bunting, G.S. & G. Ferrari 4514 (1).
Bunting, G.S. et al. 12121 (6).
Burke, J. s.n. (9).
Campos, J. & R. Vásquez 6392 (10a).
Campos, J. et al. 6588 (10a).
Cárdenas, V. 14550 (10a).
Cárdenas, D. et al. 13527 (9).
Caro, C. et al. 27 (11).
Clark, J.L. 6267 (3).
Clark, J.L. & D. Barrientos 6704 (5).
Clark, J.L. & K. Elmers 6432 (10a).
Clark, J.L. & S. Yustiz 6868 (2); 6880 (2); 6886 (2).
Clark, J.L. et al. 3201 (10a); 3340 (10a); 5932 (3); 8200 (10b).
Clark, R.B.; s.n. (6).
Clarke, D. et al. 5526 (4).
Colonnello, G. 919 (1).
Croat, T.B. 59460 (2); 60812 (1); 91822 (10a); 92492 (10a).
Croat, T.B.and M. Sizemore 81712 (10a).
Cuatrecasas, J. 12880 (2).
Cuatrecasas, J. et al. 12395 (2).
Daire, M.T. 293 (9).
Davidse, G. 3239 (2).
Davidse, G. & A.C. González 18895. (2); 21143 (2).
Davidson, C. & J. Jones 9300 (10a); 9366 (10a).
Díaz, C. & S. Baldeón 2273 (10a).
Díaz, S. 150 (6); 1295 (11).
Díaz, W. 67 (1).
Diederichs, E. 122 (1).
Dillon, M.O. 2649 (10a).
Dorr, J.L. & I. Valdespino 6303 (3).
Dorr, J.L. et al. 5413 (2).
Dunn, R.W. 9405017 (3).
Duno de Stefano, R. et al. 375 (1).
Estrada, J. et al. 108 (9).
Fernández, A. 3949 (1); 5292 (6).
Fernández, A. et al. 18070 (6).
Fernández, J.L. et al. 13447 (2); 16008 (9); 16386 (9); 16431 (9).
Fernández-A.J.L. & S. Albesiano 21425 (9); 21637 (9).
Fernández-Casas, J. FC7696 (8).
Ferreyra, R. 992 (10a); 1644 (10a); 2234 (10a); 4270 (10a); 9344 (10b); 17491 (10a).
Ferreyra, R. et al. 18277 (10a).
Forero, E. & J.H. Kirkbride Jr. 680 (6).
Forero, E. et al. 805 (9).
Fosberg, F.R. 22080 (9).
Foster, M.B. et al. 1428 (6).
Foster, R. and T. Wachter 7464 (5).
Freire-Fierro, A. et al. 2258 (10a).
Gentry, A. & C. Saenz 76316 (6).
Gentry, A. & B. Stein 46558 (2).
Gentry, A. et al. 23080 (10a); 29582 (10a); 36144 (10a); 37871 (10a); 40039 (10a); 40170 (10b).
Gines, Bro. 1540 (6).
González, A. & F. Ortega 1169 (1).
Grant, J.R. & E. Rodriguez 3955 (10a).
Grant, M.L. 9816 (9).
Guevara, B. 358 (9).
Harling, C. & B. Ståhl 26260 (10a).
Harling, G. & L. Andersson 13700 (10a); 13751 (10a); 13825 (10a); 21265 (10a).
Herrera, F.L. 1165 (10a).
Hodge, W.H. 6251 (10b).
Huertas, G. & L.A. Camargo 6964 (11).
Humbert, H. 26629 (2).
Hutchison, P.C. 1168 (10b).
Idrobo, J.M. 2489 (9).
Idrobo, J.M. & R.E. Schultes 962 (9); 1076 (9).
Jaramillo, J. 13949 (3).
Jaramillo, R. 7229 (9); 7715 (9).
Jaramillo, R. et al. 5269 (7); 7389 (9); 7534 (9).
Kanehira, R. 85 (10b).
Killeen, T. 3727 (10a).
Killip, E.P. & A.C. Smith 16630 (2); 23084 (10a); 23208 (10b); 23831 (10b); 24523 (10b); 25590 (10b); 25755 (10b); 25780 (10b); 25921 (10b); 25927 (10b); 25935 (10a); 25953 (10a); 26049 (10a).
Kirkbride, J.H. Jr. 2003 (6); 2025 (6); 2124 (6); 2210 (6).
Kirkbride, J.H. Jr. & E. Forero 1890 (6); 1904 (7).
Lawrance, A.E. 1 (11).
Licata, A. & M. Niño 284 (2).
Liesner R. & A. González 9727 (1); 9955 (1).
Londoño, X. & L.P. Kvist 811 (11).
López, R. et al. 4037 (9).
Lozano, G. et al. 7292 (11).
Luer, C. et al. 4893 (8); 7917 (2).
Luther, H. et al. 2741 (10a).
Madsen, J.E. 75146 (10a).
Maguire, B. et al. 36913 (2); 36989 (2); 42027 (2); 42589 (2).
Meier, W. 8300 (1).
Meier, W. & O. Kunert 4628 (1); 4690 (1); 4999 (1).
Meier, W. & S. Llamozas 3654 (1).
Meier, W. & M. Roeser 903 (1).
Meier, M. et al. 5501 (1); 5783 (1); 5803 (1).
Metcalf, R.D. 30627 (5).
Monteagudo, A. et al. 4585 (10b); 4857 (10a).
Moore, H.E. Jr. 6979 (6); 7014 (3); 7412bis (10b).

Moore, H.E. Jr. & R.E. Dietz 9866 (9).
Moreno, L.D. & A.V. Mendez 16 (11).
Morillo, G. 7723 (4).
Moritz, J. 1131 (2).
Morrow, L.O. s.n. (10b).
Murillo, J. et al. 1748 (9).
Nuñez, P. 6971 (10b); 11966 (5); 13007 (10a).
Nuñez, P. & M. Alanya 13374 (5).
Nuñez, P. et al. 21496 (10a); 21805 (10a); 24098 (10a).
Orozco, C.I. et al. 1627 (2); 2728 (9).
Palacios, W. & M. Tirado 13234 (10a).
Parra-O. C. 485 (9).
Perry, A. 1050 (10a).
Pinto, P. et al. 9 (11).
Plowman, T. & E.W. Davis. 4989 (5).
Plowman, T. & H. Kennedy. 5750 (10a).
Plowman, T. & V.J. Schunke 7422 (10a).
Poeppig. E. 1079 (10b).
Prieto-C., A. & H. Mendoza 1041 (2).
Pruski, J. & J. Steyermark 1383 (4).
Ramírez, M. 28 (11).
Reed, E. 499 (2).
Renner, S.S. 2064 (2).
Rentería, E. et al. 622 (9).
Renz, J. 14169 (4); 14223 (4).
Ridoutt, C.A. 11605 (10b); 13056 (10a); 13095 (10b).
Rimachi, M. 3846 (10b); 4974 (10a); 5146 (10a).
Rodríguez, E. & M.P. Reyes 1740 (10a).
Rodríguez-R., E. 1901 (10a).
Rojas, R. et al. 1270 (10a).
Rome, A. et al. 1006 (10a).
Romero-Castañeda, R. 7043 (6); 7076 (7); 7621 (6); 7825 (6).
Ruíz, H. & J.A. Pavón. 18/64 (10a).
Ruíz, T. & B. Vera 3611 (6).
Ruiz-Terán, L. & L. Ruiz-Pérez 15688 (2); 16296 (2).
Rusby, H.H. 2152 (8); 2483 (5).
Rutkis, E. 482 (1).
Sánchez, I. & M.O. Dillon 8302 (10a); 8668 (10a); 8929 (10a).
Schlim, L. 238 (9).
Schunke, C. A14 (10b).
Schunke, J. 3055 (10a); 9194 (10a); 9195 (10a); 9262 (10a); 9849 (10a); 11207 (10a).
Scolnik, R. 912 (10a).
Silva, N.T. & U. Brazão 60648 (2).
Simpson, D.R. & W. Lopez 842 (10a).
Skog, L.E. 5388 (1); 5606 (6).
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