

Novae Gesneriaceae Neotropicarum IV: *Alloplectus purpureus* and *Columnnea nematoloba*— New Gesneriaceae from northwestern South America

LARS P. KVIST AND LAURENCE E. SKOG

Kvist, Lars P. (Department of Botany, Dendrology & Forest Genetics, Royal Veterinary & Agricultural University, DK-1958 Fredericksberg C, Copenhagen, Denmark) and Skog, Laurence E. (Department of Botany, U.S. National Museum of Natural History, Smithsonian Institution, Washington, DC 20560, U.S.A.). Novae Gesneriaceae Neotropicarum IV: *Alloplectus purpureus* and *Columnnea nematoloba*—New Gesneriaceae from northwestern South America. *Brittonia* 44: 475–480. 1992.—Two species of Gesneriaceae are described: ***Alloplectus purpureus*** from the lower montane forests of northwestern Ecuador and adjacent Colombia and ***Columnnea nematoloba*** from the lowland rain forests of western Colombia. The first with its fimbriate calyx lobes is probably nearest to *Alloplectus sprucei*, occurring in the same region but mostly at lower elevations. The second is in a group with two recently described species from western Ecuador and Colombia, *Columnnea fililoba* and *C. incredibilis*, all having filiform corolla lobes.

Key words: Gesneriaceae, *Alloplectus*, *Columnnea*, Colombia, Ecuador.

Recent studies have reduced the number of species in some genera of Gesneriaceae that have centers of diversity in northwestern South America, e.g., *Heppiella* (Kvist, 1990) and *Kohleria* (Kvist & Skog, in press, b). Several other genera from the area that have not been revised recently apparently also include many more names than real species, e.g., *Capanea*, *Diastema*, and *Monopyle*. In contrast a few genera, particularly in the tribe Episcieae, e.g., *Paradrymonia*, *Nautilocalyx*, *Drymonia*, *Alloplectus*, and *Columnnea*, still include many undescribed species. In this paper two species belonging to the latter two genera are described, *Alloplectus purpureus* and *Columnnea nematoloba*.

Alloplectus purpureus Kvist & L. E. Skog, sp. nov. (Fig. 1)

TYPE: ECUADOR. Pichincha: El Paraiso-Saguangal road, km 11, 0°12'N, 78°46'W, 1200 m, 2 May 1982, B. Øllgaard, L. Holm-Nielsen, N. H. B. Andreasen, B. Boysen Lar-

sen, L. P. Kvist & A. R. Jensen 37673 (HOLOTYPE: AAU).

Ab *Alloplecto sprucei* (Kuntze) Wiehler foliis lanceolatis, parvis, 7–14 × 1.5–3.5 cm, glabris vel sparsim pilosis, pagina inferiori rubro-purpurea, necnon calycis lobis glabrescentibus vel pilosis differt.

Suffrutescent herbs, rarely epiphytic or climbing/scandent, the shoots 50–200 cm tall, rarely branched, glabrescent at the base to pilose or villous and yellow-brown toward the apex, the internodes 1–9 cm long, to 0.8 cm diam. at base. Leaves opposite, equal in pairs; blades lanceolate, 7–14 × 1.5–3.5 cm, the apex acuminate, the base acute-cuneate, the upper surface dark green, shiny, glabrous or sparsely pilose, the lower surface dark purple, sparsely puberulent and pilose to villous at veins, the secondary veins ca. 6 per side; petioles 1–2 cm long. Inflorescences sessile in leaf axils, of 1 or 2 flowers; pedicels 1.5–4 cm long, pilose; bracts 1 or 2, ovate-lanceolate to triangular, 0.5–1.0 cm long, the margin fimbriate. Flowers pendent; calyx green, glabrescent to pilose, the



lobes subequal to unequal, ovate-lanceolate, 2.5–3.5 × 0.3–1.2 cm, the margin with fimbrials to 1.0 cm long and ca. 0.3 mm wide, each with some trichomes, especially apically; corolla 4.2–5.4 cm long, a basal blunt spur on lower side 7–9 mm long, the tube 3.2–3.8 cm long, diam. 4–6 mm for the basal $\frac{2}{3}$, then widening to 10–13 mm in the throat, light yellow to bright yellow, outside pilose to villous, inside glabrous, the limb lobes subequal, rotund to acute with obtuse apex, 2–3 × 3–5 mm, the upper lobe erect, the lateral and basal lobes reflexed, yellow and glandular-hairy inside; stamens 4, the filaments 3.0–3.5 cm long, glabrous, connate at base and adnate to corolla tube base for 6–8 mm, the anthers included, coherent by their apices, ca. 2.5 × 1.5 mm; nectary a lobed dorsal gland ca. 2 mm high; ovary sericeous, the style 2.5–3.0 cm long, glabrous, the stigma crateriform-capitate. Capsule ca. 1.5 × 1 cm, probably dehiscent with 2 longitudinal slits; seeds numerous, ellipsoid, ca. 0.8 × 0.3 mm, yellow-brown, longitudinally striate.

Representative specimens examined: COLOMBIA. Nariño: Río Puelmambi, tributary of Río San Juan, 1540 m, *Ewan 16040* (AAU, US); Tuquerres, Barbaocoas, *Karsten s.n.* (W); Ricáurte, 1300 m. *Sneidern s.n.* (S).

ECUADOR. Carchi: Maldonado, 1500 m, *Balslev 1991* (AAU, US); Chical, *Gentry & Shupp 26403* (AAU); 3–4 km NW of Maldonado, 1500 m, *Harling & Andersson 12271* (GB); Chical, *Kvist et al. 48591* (AAU); Chical, 1°04'N, 78°17'W, 1200 m, *Madison et al. 4655* (AAU, F). Imbabura: Intag, *Acosta Solis 8498* (F); Garcia Moreno, 1350 m, *Drew E-532* (US). Pichincha: Mindo, *André 3314* (K–2 sheets); between Nono and Mindo, *Fagerlind & Wibom s.n.* (S); 11 km W of Tandápi, along Río Chictoa, tributary of Río Pilatón, 1350–1550 m, *Gentry et al. 12076* (US); Nanegal–Nanegalito road, 1200–1500 m, *Harling & Andersson 11579* (GB); old Quito–Santo Domingo road, 12 km from Río Pilatón, Estación los Faisanes, *Harling & Andersson 23099* (GB); Nanagalito–Pacto road, 5 km W of Tulipe, *Holm-Nielsen et al. 24534* (AAU); Pacto–Nuevo Azuay, 5 km N of La Esperanza, *Holm-Nielsen et al. 24544* (AAU); El Paraiso–Saguangal road, km 11, *Øllgaard et al. 37608* (AAU), *37627* (AAU); El Paraiso–Saguangal road, km 3, *Øllgaard et al. 37837* (AAU); Can-

ton Quito, Parroquia Nanegal, 1 km NW of Santa Marianitas, 0°08'N, 78°39'W, 1200 m, *Webster et al. 28685* (DAV, US); Canton Quito, Parroquia Nanegal, Río Umachaca near Hacienda El Carmen, 0°07–7.5'N, 78°38'W, 1250 m, *Webster et al. 28775* (DAV, US); Quito–Aloag–Santo Domingo road, Pampas Argentinas, *Zak & Jaramillo 3456* (MO).

Distribution: *Alloplectus purpureus* is restricted to the western Andean slopes of northern Ecuador and adjacent Colombia. All collections have been made between 1000 and 1600 meters elevation, except for the Acosta Solís collection from Imbabura in Ecuador that was found at 2800 meters (the specimen is sterile but is similar in all aspects to the other collections).

The most similar and probably most closely related species is *Alloplectus sprucei* (Kuntze) Wiehler. The calyx of this later species is also deeply fimbriate but has, in contrast to *A. purpureus*, a conspicuous villous, yellow-brown indumentum of long trichomes. *Alloplectus sprucei* also differs by having ovate (rather than lanceolate), usually much larger leaves (to ca. 20 × 15 cm) with a dense pilose indumentum and a green (rather than deep purple) lower surface. *Alloplectus purpureus* and *A. sprucei* are apparently both restricted to northwestern Ecuador and the Department of Nariño in adjacent Colombia. *Alloplectus sprucei* occurs mostly at lower elevations and is locally common in lowland rain forest, but the species has been collected up to 1,500 meters elevation.

Two other species, *Alloplectus savannarum* C. Morton and *A. weirii* (Kuntze) Wiehler, often also have deeply fimbriate calyx lobes but are probably not closely related to *A. purpureus*. Both species differ from *A. purpureus* by having less than 3 (rather than 4–5) cm long, somewhat urceolate corollas and by having climbing shoots that, for the most part, grow closely appressed to tree trunks. Neither of them are sympatric with *A. purpureus*; *A. savannarum* occurs mainly north of the Amazon

FIG. 1. *Alloplectus purpureus*. A. Habit. B. Calyx. C. Flower. D. Corolla opened to show stamens. E. Pistil and dorsal gland, showing detail of stigma. F. Young fruit. G. Seeds. (A from *Øllgaard et al. 37673*; B, F, G from *Balslev 1991*; C–E from *Madison et al. 4655*.)



FIG. 2. *Columnea nematoloba*. A. Habit. B. Calyx. C. Corolla. D. Corolla opened to show stamens. E. Pistil with 2-lobed gland. F. Pistil with 3-lobed gland. (A, C, F from *García-Barriga 17634*; B, D, E from *Cuatrecasas 16626*.)

basin and *A. weirii* is found in the montane forests along the eastern slopes of the Andes.

All plants observed in populations of *Alloplectus purpureus* in the Ecuadorian province of Carchi near the small village of Chical (Kvist *et al.* 48591) apparently were terrestrial, suffrutescent herbs mostly 50 to 100 cm tall. According to some label information, however, *A. purpureus* can also be epiphytic (Madison *et al.* 4655) as well as climbing (Gentry *et al.* 12076).

***Columnea nematoloba* Kvist & L. E. Skog, sp. nov. (Fig. 2)**

TYPE: COLOMBIA. Valle: Bajo Calima, between Buenaventura and Río Calima, forest concession of Cartón de Colombia, 6.3 km N of Frente La Brea, 4°02'N, 77°03'W, 50 m, 7 Jul 1986, *T. B. Croat 61310* (HOLOTYPE: CUVC—n.v.; ISOTYPES: AAU—n.v., MO, US).

A Columnea incredibili Kvist & L. E. Skog habitu herbaceo plerumque epiphytico, calycis lobis filiformibus villosis, corollaeque flavae lobis 6–11 mm longis differt.

Epiphytic or terrestrial herbs, the shoots up to 1 m long, strongly dorsiventral, glabrescent at the base to villous toward the apex, the internodes 2–3 cm long, to 7 mm diam. Leaves strongly anisophyllous, the blade of the larger leaf in each pair oblanceolate, 12–27 × 3–6 cm, the apex acuminate, the base cuneate, the upper surface dull green, sparsely pilose, the lower surface light green with sericeous veins, usually with 1 conspicuous translucent red-purple spot ca. ¾ of the distance from the base to the apex, rarely nearly entirely red-purple, but then still only the usual area translucent, the secondary veins ca. 7 per side; petioles 0.3–1.5 cm long; the blade of the smaller leaf in a pair lanceolate to subulate, to 1.5 cm long. Inflorescences in axils of the larger leaf of each pair, of 1 or 2 sessile flowers; bracts 1 or 2, lanceolate, to 1.5 cm long, caducous. Calyx yellow-green, villous, the lobes subequal, 2–3 cm long, filiform and lacinate, villous; corolla tube subventricose, basally and dorsally gibbous, 2.2–3 cm long (apart from corolla lobes), 2–3 mm diam. at base, widened medially to 4–6 mm, 3–4 mm diam.

in throat, outside yellow, villous, inside glabrous, the lower ⅓–½ of corolla papillate, the limb subequal, the lobes 6–11 mm long, villous, with short and glabrous appendages at the base of the lobes on the inside as in *C. fililoba*; filaments 1.8–2.2 cm long, with sparse glandular hairs, connate for ca. 6 mm at base and adnate to corolla tube base for ca. 2 mm, the anthers included, coherent, ca. 2 × 1.5 mm; nectary a 2- or 3-lobed dorsal gland, 1.5–2 mm high; ovary villous, the style 1.5–2.0 cm long, glabrous, the stigma bilabiate. Berry and seeds not seen.

Representative specimens examined: COLOMBIA. Antioquia: Chigorodó, road to Turbo, 100–200 m, *García-Barriga 17634* (US). Valle: Río Calima, La Trojita, 5–50 m, *Cuatrecasas 16626* (US); Río Calima, between La Trojita and Guadualito, 0–5 m, *Cuatrecasas 16864-B* (VALLE); Bajo Calima Agricultural Station, 30–50 m, *Folsom 10905* (US); Bajo Calima, ca. 6 km N of Buenaventura, Cartón de Colombia concession, 40–60 m, *Gentry 35650* (MO); 10–15 km E of Buenaventura, near sea level, *Killip 34950* (US); Buenaventura–Cali road, near sea level, *Killip & Cuatrecasas 39019* (US); Bajo Calima, Concession Pulpapel/Buenaventura, 100 m, *Monsalve 1255* (MO, US).

Distribution: *Columnea nematoloba* is known from the Colombian Departments of Antioquia and Valle, but not yet from the intervening Department of Chocó. The eight collections from Valle come from a small area west and north of Buenaventura, while the single collection from Antioquia was made ca. 400 km farther to the north (i.e., ca. 30 km south of the Gulf of Uruba). *Columnea nematoloba* has only been collected in rain forests below 200 meters elevation where the annual precipitation exceeds 5000 mm.

Columnea nematoloba belongs to a small, but distinct group of species within *Columnea* section *Collandra* that is restricted to the rain forests of western Colombia and northwestern Ecuador and that also includes *C. incredibilis* Kvist & L. E. Skog and *C. fililoba* Kvist & L. E. Skog. These three species are easily set apart from all other *Columnea* species by filiform corolla lobes 8 to 38 mm long, rather than mostly rotund lobes never much longer than wide, and by translucent red-purple spots near the primary vein of the lamina. The two other species differ from *C. nematoloba* by 25 to 38

mm rather than 8 to 10 mm long corolla lobes and pectinate rather than filiform calyx lobes, and in addition they seem to be terrestrial while plants of *C. nematoloba* are mostly epiphytic. *Columnea incredibilis* and *C. fililoba* occur farther to the south, the former in the Department of Cauca (Kvist & Skog, 1988) and the latter in the Department of Nariño and the province of Carchi in adjacent Ecuador (Kvist & Skog, in press, a). *Columnea incredibilis* differs from *C. fililoba* and *C. nematoloba* by its red corollas, and *C. fililoba* differs from the new species by occurring in lower montane rather than lowland forests.

The lower leaf surfaces of one collection (*Cuatrecasas 16864-B*) are nearly entirely red-purple, while collections from Valle have the translucent red-purple area only toward the apex.

Acknowledgments

We are grateful to Alice Tangerini for the preparation of the illustrations, to Thomas Croat (MO) and Jorge Ramos (CUVC) for locating additional specimens of the type of *Columnea nematoloba*, and to the curators of herbaria (AAU, DAV, F, GB, K, MO, S, US, VALLE, W) for lending their specimens for this study.

Literature Cited

- Kvist, L. P. 1990. Revision of *Heppiella* (Gesneriaceae). *Syst. Bot.* 15: 720-735.
——— & L. E. Skog. 1988. *Columnea incredibilis* and *Cremosperma filicifolium*—two remarkable new Gesneriaceae from western Colombia. *Nord. J. Bot.* 8: 253-257.
——— & ———. In press, a. The genus *Columnea* (Gesneriaceae) in Ecuador. *Allertonia* 6: 327-397.
——— & ———. In press, b. Revision of *Kohleria* (Gesneriaceae). *Smithsonian Contr. Bot.* 79.