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The Gesneriaceae of Ecuador

Laurence E. Skog

Department of Botany, NHB-166, Smithsonian Institution, Washington, DC 20560-0001, USA, tel (+1) 202-357-2569, fax (+1) 202-786-2563, email skog.larry@nmnh.si.edu

Lars P. Kvist

Unit of Forestry, Department of Economics and Natural Resources, The Royal Veterinary and Agricultural University, DK-1871 Frederiksberg C., Copenhagen, Denmark, tel (+45) 35-282-292, fax (+45) 35-357-833

Abstract

The flowering plant family Gesneriaceae is represented in Ecuador by 29 genera and more than 200 species. Over 40% of the Ecuadorian species belong to genera that have been recently revised. Additional new species await description and study as revisions of the genera are completed. Most species of Gesneriaceae are found in montane rain or cloud forests, with few in the Amazon basin except along the foothills of the Andes. In Ecuador plants may be shrubs, subshrubs, lianas, or herbs, and either terrestrial or epiphytic. A key to the genera is presented along with a brief discussion of each genus as known in Ecuador.

Resumen

La familia Gesneriaceae está representada en el Ecuador por 29 géneros y más de 200 especies. Más de 40% de las especies ecuatorianas pertenecen a géneros que han sido revisados recientemente. Se espera la descripción y estudio de nuevas especies cuando se complete la revisión de todos los géneros del Ecuador. La mayoría de las especies de Gesneriaceae se localizan en el bosque montano lluvioso o nublado, observándose pocas especies en la cuenca amazónica, con excepción del pie de monte andino. En el Ecuador las Gesneriaceae pueden ser arbustivas, sub-arbustivas; lianas o hierbas terrestres como epífitas. Se presenta la clave de los géneros conocidos en el Ecuador con una breve discusión para cada género.

Introduction

Plants of the Gesneriaceae (Skog 1979, Wiehler 1983) make up a sizable and often colorful component of the Ecuadorian montane rain and cloud forests. In Ecuador, approximately 29 genera and 210 species of the family are known, second only to Colombia in the number of species resident in a South American country. Revisions of several genera of the Gesneriaceae that occur in Ecuador have recently been completed: *Columnea*, with 57 species of ca. 180 in the genus (Kvist & Skog 1993); *Cremosperma*, 10 of 23 species in the genus (Kvist & Skog 1988); *Heppiella*, three of four species (Kvist 1990);

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- 2. Corollas white with yellow or reddish spots inside, in modified cymes (lacking peduncles); stems not obviously succulent *Reldia*
- 1. Leaves opposite, whorled, or in a rosette; plants terrestrial or epiphytic.
- 3. Plants with ebracteate inflorescences.
 - 4. Fruit a dry capsule *Anetanthus*
 - 4. Fruit a fleshy capsule (at maturity) or berry.
 - 5. Calyx lobes connate for nearly half their length; plants low-growing, rarely over 20 cm tall; corollas white or yellow *Creмосperma*
 - 5. Calyx lobes nearly free; plants subshrubs or shrubs, often much more than 20 cm tall; corollas usually orange or red, seldom yellow or white.
 - 6. Leaves with lower surface having stomata clustered; nectariferous disc usually reduced to a dorsal gland; fruit a fleshy capsule *Gasteranthus*
 - 6. Leaves with lower surface having stomata scattered; nectariferous disc annular or semiannular; fruits berries *Besleria*
- 3. Plants with bracteate inflorescences.
 - 7. Fruits either fleshy capsules or berries.
 - 8. Anthers sagittate and dehiscent by basal pores; plants usually epiphytic herbs or lianas, or rarely terrestrial (e.g., *Drymonia turrialvae*, *D. urceolata*) *Drymonia*
 - 8. Anthers various, not sagittate, dehiscent by longitudinal slits usually or pores (apical pores in *Codonanthe*); plants epiphytic or terrestrial.
 - 9. Extra-floral nectaries produced as red dots on upper and/or lower leaf surfaces, at the nodes, and at the sinuses of the calyx lobes; plants epiphytic and often growing from ant's nests; anthers dehiscent by apical pores *Codonanthe*
 - 9. Extra-floral nectaries lacking from leaf surfaces, but occasionally present at nodes or sinuses of calyx lobes; plants epiphytic or terrestrial, not growing from ant's nests (except in *Codonanthopsis*, but then leaves strongly unequal and xeromorphic); anthers usually dehiscent by longitudinal slits.
 - 10. Fruits fleshy capsules.
 - 11. Leaves extremely unequal in opposite leaf pairs or in rosettes, the smaller leaf often stipule-like or much reduced; plants mostly epiphytic.
 - 12. Leaves usually in a rosette and not particularly xeromorphic, or if a liana then leaves often clustered at shortened nodes, not growing from ant's nest *Paradrymonia*
 - 12. Leaves scattered along stem, extremely xeromorphic, and not usually clustered at the nodes; plants growing from ant's nests *Codonanthopsis*
 - 11. Leaves opposite, equal to subequal; plants usually terrestrial or scandent.
 - 13. Corolla more or less infundibular or cylindrical; stems watery or succulent; plants occasionally bearing tubers.
 - 14. Calyx lobes connate for at least 3/4 of their length; corolla deep yellow *Chrysothemis*
 - 14. Calyx lobes free nearly to base; corolla usually white or yellow, or rarely reddish *Nautilocalyx*
 - 13. Corolla usually inflated at the middle or above, seldom cylindrical; stems not watery, usually herbaceous to sometimes somewhat woody at the base; plants lacking tubers, rarely with any underground stem (occasional stolons or rhizomes in *Pearcea*).
 - 15. Corollas conspicuously bent downward from just above the base; terrestrial herbs *Pearcea*
 - 15. Corollas usually curved upward well above the base, if at all; terrestrial subshrubs or shrubs, or lianas, rarely herbs *Alloplectus*

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- like, lobed or of separate glands; leaves opposite, or sometimes whorled.
- 28. Disc of 5 separate glands, or some connate; corolla tube red, yellow, or orange *Kohleria*
 - 28. Disc annular, rarely lobed; corolla tube red.
 - 29. Corolla funnelform with a broad limb *Achimenes pedunculata*
 - 29. Corolla broadly tubular with a narrow limb.
 - 30. Anthers free, the filaments not coiling after anthesis; corolla throat not glandular *Heppiella*
 - 30. Anthers coherent, the filaments coiling after anthesis; corolla throat glandular *Gloxinia sylvatica*

A summary of the genera of Gesneriaceae in Ecuador

Achimenes

A genus of rhizomatous herbs with dry capsular fruits, *Achimenes* is mostly found in Mexico and Central America, where ca. 25 species occur. A single species, *Achimenes pedunculata*, has been collected once in Ecuador from Cotopaxi province. The plant may have escaped from cultivation, since the otherwise nearest known occurrence of *Achimenes* is northwestern Colombia, and many species, including *A. pedunculata*, are widely cultivated. The species is herbaceous with reddish flowers. → sp. nov. acc. to Wulfer + another sp. nov. ?

Alloplectus

About 20 of the 60 species of *Alloplectus* occur in Ecuador. The genus is poorly known throughout its range from Central America to Bolivia. The species in Ecuador are all non-rhizomatous, and mostly erect, terrestrial or epiphytic shrubs (a few are climbing) or large herbs with red or yellow flowers. *Alloplectus* occurs from near sea level to above 3000 m. The fruits are bi-valved, fleshy capsules.

Anetanthus

This rarely collected, herbaceous, non-rhizomatous genus of two species is distributed from Peru to Colombia. The single species in Ecuador, *A. gracilis*, is only known from Morona-Santiago and Zamora-Chinchipec provinces. It has white flowers and dry capsular fruits.

Anodiscus

A mainly Peruvian genus, *Anodiscus* has a single species, *A. xanthophyllus*, with two collections from Chimborazo and Morona-Santiago provinces in Ecuador. Plants are large, woody-based herbs with white flowers. There are no rhizomes, and dry capsules are found in this genus.

species, and the largest genus of Gesneriaceae in Ecuador, with ca. 60 species (Kvist & Skog 1993, 1994). It has about the same number of species in Ecuador as in all of Mexico and Central America, but fewer than in Colombia, where there are probably more than 80 species. Most of the species are epiphytic herbs or shrubs with berry fruits. The most abundant group of *Columnnea* species in Ecuador, *Columnnea* section *Collandra*, has dorsiventral shoots, extremely anisophyllous leaf pairs, and mostly with conspicuous red patterns on the lower leaf surfaces. *Columnnea* has probably co-evolved with pollinating hummingbirds.

Corytoplectus

3 spp.

A genus of about eight species from the Andean countries of South America. *Corytoplectus* is represented by a single species, *C. speciosus*, on the eastern Andean slopes in Ecuador. Plants are non-rhizomatous, erect herbs, with translucent, fleshy capsules and black seeds.

Creмосperma

A genus probably centered on the Pacific coast of Colombia but extending to Panama and Peru (Kvist & Skog 1988). *Creмосperma* has 10 species in Ecuador of a total of ca. 23. Three species that in Ecuador are only known from the same ridge at ca. 1000 m elevation in Carchi Province near the Colombian border, also occur northward in Pacific Colombia. *Creмосperma* has pedunculate inflorescences without bracts and the plants are non-rhizomatous low growing herbs growing in damp shady locations.

Diastema

A poorly known genus, perhaps centered in Ecuador, where more than five species may occur. *Diastema* is rhizomatous, herbaceous, and has dry, capsular fruits. Populations of *Diastema* are often found near waterfalls.

Drymonia

A common genus of ca. 100 species of mainly lianas. *Drymonia* is widespread from Mexico to Bolivia and Brazil, with ca. 20 species in Ecuador. The genus is characterized by sagittate, basally-pored anthers, and fleshy, capsular fruits. A few *Drymonia* species are terrestrial herbs, with very large and often purplish leaves, found in extremely humid places on both slopes of the Andes. One lianoid species, *Drymonia serrulata*, may be the most commonly collected species of New World Gesneriaceae.

Monopyle

A genus of terrestrial, rhizomatous plants, characterized by having oblique leaf bases, anisophyllous leaves, and dry capsules splitting with a longitudinal slit. *Monopyle* is centered in Peru and Ecuador. In Ecuador four species occur, of a total of ca. 15 species that have been described. All are poorly collected and poorly known throughout the Central America to Peru range. 8-9)

Napeanthus

Poorly known and rarely collected, but widespread in the neotropics, *Napeanthus* plants are low growing herbs with usually white, or sometime bluish corollas and dry capsule fruits. *Napeanthus* is usually present in humid and shady forested ravines. In Ecuador, there may occur four species out of a total of ca. 16 in the genus.

Nautilocalyx

A genus of probably more than 40 species in the lowland neotropics. *Nautilocalyx* has three named species in Ecuador, but additional specimens have been collected and await names. Tubers may be produced occasionally. Stems are usually erect and watery, and the corollas are often white, yellowish, or rarely reddish. It is likely that the closely-related *Episcia* occurs in eastern Ecuador, since it is found in the Amazon region of Peru and Colombia. *Episcia* differs from *Nautilocalyx* by having stolons.

Neomortonia

A genus of two species, both found in Ecuador. *Neomortonia* is epiphytic with thin, wiry stems and orange berries; *N. nummularia* has red urceolate corollas and *N. rosea* has infundibuliform, whitish-roseate corollas with purplish dots.

Paradrymonia

A genus of more than 15 species of large, succulent, epiphytic or terrestrial herbs, with unequal often lanceolate leaves in a pair. *Paradrymonia* has been found from Central America to Brazil. At least six species occur in Ecuador.

Pearcea

A genus originally described from and centered in Ecuador (Kvist & Skog 1996), that now has 12 species known from this country. All species occur on or near the eastern slopes of the Andes, mostly in deep shade, but the most common species, *P. sprucei*, has been collected a few times on the western slopes. Occasional rhizomes or stolons are produced and the fruits are fleshy capsules.

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