We want to dedicate this work to some outstanding individuals who encouraged us, directly or indirectly, and are no longer with us. They were colleagues and close friends, and their friendship will remain for years to come.

César Molina Rodríguez (1960–2015)  
Erik Arrieta Márquez (1978–2008)

Jose Ayarzagüena Sanz (1952–2011)  
Saúl Gutiérrez Eljuri (1960–2012)

Juan Rivero (1923–2014)  
Luis Scott (1948–2011)

Marco Natera Mumaw (1972–2010)
Catalogue of the amphibians of Venezuela: Illustrated and annotated species list, distribution, and conservation

César L. Barrio-Amorós, Fernando J. M. Rojas-Runjaic, and J. Celsa Señaris

Abstract.—Presented is an annotated checklist of the amphibians of Venezuela, current as of December 2018. The last comprehensive list (Barrio-Amorós 2009c) included a total of 333 species, while the current catalogue lists 387 species (370 anurans, 10 caecilians, and seven salamanders), including 28 species not yet described or properly identified. Fifty species and four genera are added to the previous list, 25 species are deleted, and 47 experienced nomenclatural changes. Eleutherodactylus terraebolivaris Rivero, 1961 is synonymized with Hylodes incertus Lutz, 1927 as Pristimantis incertus. Oreophrynella dendronastes Lathrop and MacCulloch, 2007, is considered a junior synonym of O. macconnelli (Boulenger 1895). Centrolene Jiménez de la Espada, 1872, is a feminine genus, so all species in the genus are amended. Centrolenella pulidoi Rivero, 1968 is considered a junior synonym of Hyla benitezi Rivero, 1961, as Boana benitezi. Centrolenella estevesi Rivero, 1968 is considered a junior synonym of Hyla jahni Rivero, 1961, as Hyloscirtus jahni. Illustrated herein are 300 species (77.5% of the total). Lastly, the distributions for all species are revised, species that possibly occur within Venezuela are suggested, and comments are provided on nomenclature and conservation issues.

Keywords. Biogeography, checklist, Anura, Urodela, Gymnophiona, management

Resumen.—Se presenta una lista anotada de los anfibios de Venezuela, actualizada hasta diciembre de 2018. La última lista comprensiva (Barrio-Amorós 2009c) incluyó un total de 333 especies, mientras que la lista actual contiene 387 especies (370 anuros, 10 caecílios y siete salamandras), incluyendo 28 especies aún no descritas o identificadas propiamente. 50 especies y cuatro géneros se añaden a la lista previa, 25 especies se eliminan y 47 de ellas han experimentado cambios nomenclaturales. Eleutherodactylus terraebolivaris Rivero, 1961 se sinonimiza con Hylodes incertus Lutz, 1927 como Pristimantis incertus. Oreophrynella dendronastes Lathrop y MacCulloch, 2007, se considera sinónimo de O. macconnelli (Boulenger 1895). Centrolene Jiménez de la Espada, 1872, es un género femenino, así que se eliminan todos los nombres acorde. Centrolenella pulidoi Rivero, 1968 es considerado sinónimo de Hyla benitezi Rivero, 1961, como Boana benitezi. Centrolenella estevesi Rivero, 1968, se considera sinónimo de Hyla jahni Rivero, 1961, como Hyloscirtus jahni. Se presentan fotografías de 300 especies (77.5% del total). Por último, la distribución de todas las especies es revisada, se sugieren especies que podrían estar presentes en Venezuela y se presentan comentarios sobre nomenclatura y conservación.

Palabras clave. Anura, biogeografía, Gymnophiona, lista, manejo, Urodela

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Introduction

In consideration of the findings presented herein, Venezuela (387 species) will be the seventh-most diverse country in the world with respect to amphibian diversity, after Brazil (1,026 species; http://br.herpeto.org/anfibios/), Colombia (813; https://www.batrachia.com), Peru (657; http://research.amnh.org/vz/herpetology/amphibia/index.php?content/search?taxon=&subtree=&subtree_id=&english_na

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Catalogue of the amphibians of Venezuela

Many were deleted from the list due to synonymy or misidentification. The suprageneric systematics are still in flux and subject to numerous, and sometimes shocking, changes as well as errors (see Heinicke et al. 2009; Pyron and Wiens 2011; De Sá et al. 2012, 2014; Padial et al. 2014; Duellman et al. 2016). For a relatively stable listing in the face of significant taxonomic changes, the reader is advised to consult Frost (2019). This publication focuses on concerns with taxonomic and nomenclatural issues relevant to Venezuelan amphibians and not on major, broad changes in species relationships or names.

Material and Methods

Several methods were used to clarify how the determination of the taxonomic status was made for some taxa. The majority of species are listed by their generic and specific names, under the Family level. Not used are unranked taxa uniting families (Arboranae, Terraranae), which can facilitate classification uses in some cases (Hedges et al. 2008; Duellman et al. 2016). Rather, families are placed in alphabetical order. Where there are doubts regarding specific identity, three disclaimers are used. The first is the placement of aff. (for affinis, from the Latin for closely related or akin, but not identical to) between the generic and specific names. This is used to identify taxa for which evidence indicates existing differences from a named, very similar taxon, but for which this difference has not yet been further evaluated. Thus, a species may be presented under a name, and a second entry may be made for the species name with aff.

Fig. 1. Number of amphibian species known in Venezuela since 1927.
inserted. A second disclaimer is *cf.* (for confer, from the Latin for compare with), used in cases where there is insufficient evidence to connect the form to an existing name, or to determine whether a close affinity exists. The last disclaimer is the addition of the term “sp.” to only the generic name, for forms with no current specific name which may represent undescribed or uninvestigated species.

This update is produced with a cut-off date of 1 January 2019, based on the earlier lists by Barrio-Amorós (2009c, 2013). Six appendices complete the information as follows: Appendix 1: Species known to inhabit Venezuela, but not yet described or correctly identified; Appendix 2: Taxonomic checklist of the amphibians of Venezuela; Appendix 3: List of amphibian species of Venezuela by biogeographic areas; Appendix 4: Additions of new species for Venezuela between 2009–2018; Appendix 5: Species deleted here from previous lists or reported after and deleted herein; and Appendix 6: Taxonomic changes at the generic and specific levels, with emendations that occurred since Barrio-Amorós’ (2009c) last systematic list, including changes to new species added in the previous list. For each species, the holotype, type locality, overall distributions, and Venezuelan distributions (as the biogeographic regions and generic or specific localities are noted) are referenced, but extensive locality lists are not provided. New localities are added when determined to be valid and useful. For a more complete listing of locality data see Barrio-Amorós (1998) and Gorzula and Señaris (1998). Taxonomic or biogeographic comments are added (under Remarks). Relevant new localities or noteworthy shifts in the reported distribution are noted in the Distribution section of the accounts, listing vouchers when possible. An asterisk after the species authority indicates that the species is endemic to Venezuela. To avoid repeating the work by Frost (2019), synonymsies are not provided under each species, but rather the reader can direct their attention to an extensive online database (http://research.amnh.org/vz/herpetology/amphibia/index.php). The current conservation status of each species can be checked in both the general (http://www.iucnredlist.org) and local Red Lists (http://animalesamenazados.provita.org.ve/) that are constantly being updated. In alphabetical order, selected relevant literature dealing only with Venezuelan species added in the previous list. For each species, the holotype, type locality, overall distributions, and Venezuelan distributions (as the biogeographic regions and generic or specific localities are noted) are referenced, but extensive locality lists are not provided. New localities are added when determined to be valid and useful. For a more complete listing of locality data see Barrio-Amorós (1998) and Gorzula and Señaris (1998). Taxonomic or biogeographic comments are added (under Remarks). Relevant new localities or noteworthy shifts in the reported distribution are noted in the Distribution section of the accounts, listing vouchers when possible. An asterisk after the species authority indicates that the species is endemic to Venezuela. To avoid repeating the work by Frost (2019), synonymsies are not provided under each species, but rather the reader can direct their attention to an extensive online database (http://research.amnh.org/vz/herpetology/amphibia/index.php). The current conservation status of each species can be checked in both the general (http://www.iucnredlist.org) and local Red Lists (http://animalesamenazados.provita.org.ve/) that are constantly being updated. In alphabetical order, selected relevant literature dealing only with Venezuelan taxa follows each account. References dealing with the majority of species (e.g., La Marca 1992; Barrio-Amorós 1998, 2004; Frost 2019) are not repeated in each account. Acronyms follow Barrio-Amorós (1998, 2004), Frost (1985, 2016), and Sabaj (2016) with the addition of MBLUZ (Museo de Biología, La Universidad del Zulia, Maracaibo, Venezuela), IRSNB (Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium), and MUSM (Museo de Historia Natural Universidad San Marcos, Lima, Peru). The International Code on Zoological Nomenclature (ICZN) [http://www.iczn.org/iczn/index.jsp] is hereafter referred to as the Code.

**Biogeography**

Rivero (1961) was the first to present a zoogeography of Venezuelan amphibians. His approach was insightful, especially considering the level of knowledge at the time and lack of Internet resources, and it has only changed in detail over time. Barrio-Amorós (1998) excluded the Falcon Region as it has not been reported as having biogeographic importance for amphibians (though it is important for reptiles; see Rivas et al. 2012). Péfaur and Rivero (2000) presented a biogeographic scenario encompassing both amphibians and reptiles, and in so doing included coastal and island ranges, and returned to consider a Falcon-Lara xerophytic region. Señaris and Rojas-Runjaic (2009) analyzed and commented on the distribution and biogeography of Venezuelan amphibians without further changes.

Barrio-Amorós (1998, 2013) and Molina et al. (2009) presented the biogeographic patterns of Venezuela (mainly based on Rivero 1961) adapted for amphibians, with seven major bioregions, including the Andes; the Cordillera de la Costa (coastal mountain range); the Llanos (the great plains); the Amazonian Region (including the eastern versant of the Andes); the Venezuelan and Guayanana including the Pantepui (the Venezuelan part of the Guiana Shield); the Orinoco Delta; and the Maracaibo Lake Basin. This arrangement is followed herein with one significant change: the Orinoco Delta is not considered a standalone region any longer, since it actually represents an assembly fed by the herpetofauna from the Llanos, the Amazonian Region, and the Guiana Shield, with no significance for amphibians on its own. Not a single species is known to inhabit only the Orinoco Delta or to be endemic there (Barrio-Amorós 2004). Gorzula and Señaris (1998) also included the Delta of the Orinoco as a part of the Venezuelan Guayana. The Guayana Esequiba, a territory administered by Guyana and historically claimed by Venezuela, is not considered herein.

Venezuela is located on the northern coast of South America, between the Equator and 12° North, and the Western Meridians 60° and 74°. It is delimited in the north by the Caribbean Sea and in the northeast by the Atlantic Ocean; it borders Brazil to the south, Guyana to the east, and Colombia to the west. It has a landmass area of 916,445 km² and a coastline of 4.261 km (Barrio-Amorós 1998) [Fig. 2].

**Venezuela’s Bioregions**

1. The Andes

The great Andean mountain range extends into Venezuela for about 450 km. Within the borders of the country it has a maximum width of about 100 km, and peaks reach a maximum elevation of almost 5,000 m. Only two small glaciers still exist, although their sizes have diminished.
in recent years. Several habitats provide excellent conditions for amphibians (Barrio-Amorós 1998), especially the sub-Andean forest, deciduous forest, and cloud forest that collectively extend from 600–3,000 m, and the páramos that range from about 2,400 m to over 4,600 m (Rivero 1961). A dry-climate depression in Táchira State (Depresión del Táchira) at elevations as low as 600 m acts as a natural barrier to dispersal of high-Andean species between the Cordillera Oriental de Colombia (of which the only part in Venezuela is the massif of Tamá) and the Cordillera de Mérida.

The Sierra, or Serranía de Perijá, in the northwestern corner of Venezuela, is also part of this montane environment. It is about 240 km long and 35 km wide, with a maximum elevation of 3,750 m. The Venezuelan Andes lie entirely within the states of Barinas, Lara, Mérida, Táchira, Trujillo, and Zulia, with only a small area in Apure State.

Currently, 128 species of amphibians are known from the Venezuelan Andes (120 anurans, two caecilians, and six salamanders) that account for 32.9% of the total number of species in Venezuela. Of these Andean species, 78 (61%) are endemic to Venezuela with known localities only in the Andes. This is the greatest amphibian endemicity for any biogeographic region in Venezuela.

2. The Coastal Range

The furthest outreaches of the Andes form the Coastal Range or “Cordillera de la Costa” (Rivero 1964a) that runs west-to-east across the entire northern part of the country, from Falcón and Yaracuy States to the westernmost state of Sucre (and ultimately continuing onto the continental-shelf island of Trinidad). The Coastal Range has two distinct physiographic formations separated by the valley of the Unare River, which cuts across the mountain range and allows penetration of the eastern Llanos ecosystem and herpetofauna towards the Caribbean (Barrio-Amorós 1998). The western part of the Coastal Range lies in the states of Falcón, Yaracuy,
Carabobo, Aragua, Miranda, and Guárico, including the Capital District around the capital city, Caracas. The eastern part lies mainly in the states of Anzoátegui, Monagas, and Sucre, forming the mountains of the Turimiquire Massif and the Serranía de Paria (Kaiser et al. 2015). The typical vegetation is evergreen cloud forest at elevations over 900 m. Maximum elevation is slightly above 2,500 m (e.g., Naiguatá 2,765 m; Turimiquire 2,630 m), although it never snows there. The amphibian fauna includes 89 species (86 frogs, two caecilians, and one salamander) and accounts for 23.2% of Venezuela’s batrachofauna. Fifty-three (60%) of the Coastal Range species are endemic to Venezuela and 61 (68.9%) occur only in the Coastal Range.

3. The Llanos

The Llanos of Venezuela occupy an area of more than 180,000 km². The main characteristic of the landscape is the predominance of extensive savannahs irrigated by large, seasonally-fluctuating rivers. The climate is distinctive, encompassing two markedly different seasons (dry and wet). The change from a dry season in January-April to an extremely rainy one in May-November markedly alters the living conditions of the biota. The floods of the rainy season change the landscape dramatically, from green savannah to a seemingly endless lake. The temperature averages about 24 °C (ranging from 19–35 °C during the day) but commonly stays above 23 °C even at night. The biotopes are gallery forests fringing the watercourses, savannahs of diverse vegetation with temporary and/or permanent ponds, palm fields known as morichales, as well as rivers and lagoons (Rivero-Blanco and Dixon 1979).

Three major landscapes can be distinguished in the Llanos. The upper Llanos situated to the West are forested and connected with the Amazon biotope through the Andean piedmont. The lower Llanos are endless savannahs with scattered trees and gallery forest only along rivers. The eastern Llanos are primarily covered in shrubby vegetation. Included in the Llanos are the savannahs located in the states of Apure, Anzoátegui, Barinas, Cojedes, Guárico, Monagas, northern Amazonas, and northern Bolivar. The fauna of the Llanos is less-diverse than that of the other Venezuelan bioregions, although population densities of individual species can be extremely high. In total, there are 30 species of amphibians (29 frogs and one caecilian) constituting 7.8% of the total Venezuelan amphibian fauna. None of them is endemic either to the Llanos or to Venezuela.

4. The Amazonian Region

The vast Amazon Basin extends into Venezuela as lowlands (up to 200 m in elevation) through the Casiquiare canal, a natural connection between the Amazon and Orinoco Basins that flows southwards from the Orinoco and reaches as far north as the Sipapo and Autana Rivers. The Amazonian Region (as a bioregion) must not be confused with Amazonas State, which is a political unit comprising the Amazonian Region, but also part of other bioregions; the Amazon Region occupies a third of the Amazonas State while the rest is of Orinoquinian origin (Gorzula and Señaris 1998). The region is characterized by a perennially humid forest that is funnelled by a complex net of caños and tributaries to the Orinoco and Rio Negro (Barrio-Amorós 1998).

As in the Llanos, two seasons are distinguishable; the rainy season causes floods in the lowlands, and even during the so-called dry season there are frequent rains. The climate is hot and humid, with an annual mean temperature varying from 24–27 °C (Lizot 1988). The Amazonian Region is an extremely favorable biotope for amphibians, though it does not constitute a center of speciation in Venezuela. There are only 70 known amphibian species recognized from the region (66 frogs and four caecilians) that constitute 18.4% of the total Venezuelan amphibian fauna; none are endemic to Venezuela. The Amazonian Region is a known corridor for the expansion of amphibians into other biomes. Amazonian herpetofaunal elements have penetrated the eastern versant of the Venezuelan Andes (Barrio-Amorós 1998) as indicated by the presence of a variety of typical Amazonian species, such as Bolitoglossa aff. altamazonica (but see Barrio-Amorós et al. (2015a)), Boana boa, Scinax wandae, Lithodytes lineatus, and Rhaebon glaberrimus (Barrio et al. 1999, 2002; Barrio-Amorós 1999a, 2001b; Chacón et al. 2000; Barrio and Chacón 2002; Schargel and Rivas 2003). Although previous authors have used the term “Orinoco Delta” to define a distinct bioregion, this concept is inadequate since the fauna there is primarily composed of elements from the Amazonian and the Llanos Regions, with some Guiana Shield influences.

5. The Venezuelan Guayana

The Venezuelan part of the Guiana Shield is considered here as following the concept developed by Hoogmoed (1979), Barrio-Amorós (1998), and Duellman (1999), but it is not in complete agreement with the definition used by Gorzula and Señaris (1998), who extended it to the southern section of the state of Sucre. Herein, the Venezuelan Guayana is delimited by the northern part of the Orinoco Delta. This area is the most extensive bioregion of Venezuela and the most ecologically complex. It is one of the oldest geological regions on Earth, dating back to the Precambrian (Aubrecht et al. 2012). Geographically, it includes Delta Amacuro, Bolívar, and Amazonas States, except for the savannahs in the north that border the southern shore of the Orinoco River and which are considered part of the Llanos, and the lowland rainforest west of the Parima-Tapirapé mountain chain, which are typically Amazonian Region.
elements. The Gran Sabana, a savannah-covered plateau, encompasses elevations from 800–1,400 m, and is included in the Venezuelan Guayana as it is not linked geographically to the similar savannahs in the north of Bolívar and Amazonas States. Characteristic of the Venezuelan Guayana are high tabletop mountains known as tepuis, composed of Precambrian sandstone. Some of the more famous tepuis include Cerro La Neblina (elevation 3,014 m), Monte Duida (2,480 m), Roraima (2,810 m), Sarisaritama (2,100 m), and Auyántepui (2,460 m). Approximately 100 tepuis occur in Venezuela and there are additional tepuis in Guyana, Suriname, and northern Brazil (Brewer-Carías 1988). Surrounding these “insular” habitats is a wide variety of biotopes. The most extensive ones are evergreen rainforest, similar to the forests of the Amazonian Region, and cloud forest on the slopes of each tepui (from 600–1,500 m elevation). The climate is divided into two seasons, dry (December-May) and rainy (June- November). Temperatures in the lowlands oscillate between 24 °C and 27 °C. An introduction to the region and an overview of the tepui biota was provided by Aubrecht et al. (2012). Señaris et al. (2014) provided a useful guide to the amphibians of the Gran Sabana Region. The amphibian fauna of the Venezuelan Guayana includes 163 species (156 frogs and seven caecilians) that account for 42.8% of the amphibian species in the country. Sixty-five species (17.1% of the total and 39.8% of the bioregion) are endemic to the tepuis.

6. The Maracaibo Lake Basin

The basin of Lake Maracaibo occupies parts of the states of Zulía and Trujillo, and the northern parts of Mérida and Táchira in northwestern Venezuela, as well as the western versant of the Serranía de Siruma in Falcón State. The basin contains xerophilous vegetation in the coastal areas of the North (Barrio-Amorós 1998; InfanteRivero 2009). Toward the south this formation grades into original pluvial forest and swamps along a gradient of increasing humidity and more forested conditions. However, the area is currently being deforested and more pastures are being established, resembling those established in the Llanos Region. In addition, extensive plantations of banana and African Oil Palm now replace part of the natural landscape. This region contrasts with the Andes (with the Cordillera de Mérida to the east and the Serranía de Perijá to the west) that surround it above an elevation of 250 m. Lake Maracaibo, the largest natural lake in South America, is fed mainly by rivers from the Sierra de Perijá and from the Andes in the states of Mérida and Trujillo. There are 24 known species of amphibians (23 frogs and one caecilian) that account for 6.3% of the amphibian species in the country, with no endemics.

SYSTEMATIC ACCOUNTS

Class AMPHIBIA Linnaeus, 1758
Order ANURA Fischer von Waldheim, 1813

Family Allophrynidae Gaige, 1926


Genus Allophryne Gaige, 1926

Type species: Allophryne ruthveni Gaige, 1926, by original designation.

Allophryne ruthveni Gaige, 1926

Holotype: UMMZ 63419.

Type locality: “Tukeit Hill, below Kaiteur Falls, British Guiana.”

Distribution: Widely distributed in the Amazonian Region of Venezuela, Guyana, and Suriname into central Brazil. Regions 4 and 5. In Venezuela, known from several localities south of the Orinoco River, in states Amazonas (Surumoni) and Bolívar (upper Caura River, upper Paragua River, Sierra de Imataca, San Martín de Turumbán, Cuyuni, upper Uey River). See Duellman (1997); Barrio-Amorós (1998); Señaris and Rivas (2008), and Señaris et al. (2009).

Remarks: Until recently, Allophryne was considered a monotypic genus, containing only A. ruthveni. Two additional species have been described: A. resplendens from the upper Amazon in Peru (Castroviejo-Fisher et al. 2012) and A. relicta from the Mata Atlantica Forest in Brazil (Caramaschi et al. 2013).

Selected references: Lynch and Freeman (1966); Hoogmoed (1969); Rivero et al. (1986); Duellman (1997); Caldwell and Hoogmoed (1998); Fabrezi and Langone (2000); Señaris and Rivas (2008); Señaris et al. (2009); Castroviejo-Fisher et al. (2012); Caramaschi et al. (2013).

Family Bufonidae Gray, 1825

Remarks: Frost et al. (2006) proposed a monophyletic taxonomy for several bufonid clades, such as Rhaebo for the Bufo guttatus species group, Rhinella for the Bufo margaritifer species group, and Chaunus for a number of other South American species groups of Bufo. Chaparro et al. (2007) embedded the genus Chaunus within Rhinella. Bufo nasicus shown to be basal to Rhaebo by implication; however, implication is not a resolution, but merely implicates the need for elucidation and further evidence. Barrio-Amorós (2009) supposed Bufo
Remarks: (2013). Danto, Cuao River, Amazonas State (Rojas-Runjaic et al. 2005). The last sighting of a live specimen was in September 2010 and November 2011, but found no adult specimens. A visit to the type locality in January 2016 by FRR also failed to detect any adult individuals.

Selected references: Rivero (1972, 1980); Dole and Durant (1974); Durant and Dole (1974a, b); La Marca (1984a, 1992); Rodríguez and Rojas-Suárez (1995, 1999); Lötters (1996); La Marca and Lötters (1997); Torres and Barrio-Amorós (2001); Barrio-Amorós (2001c, 2013); Rueda-Almonacid et al. (2005); Barrio-Amorós and Torres (2010).

*Atelopus chrysocorallus* La Marca, 1994*

Holotype: ULABG 1814.

Type locality: Venezuela: Estado Trujillo: Distrito Boconó: La Aguada, a stream flowing to Quebrada El Molino (a tributary of río Burate), nearly 2.5 km South of Niquitao, 2,200 m.

Distribution: Region 1. Known only from type locality.

Remarks: García-Pérez et al. (2013) reported several hundred tadpoles in creeks in the type locality between September 2010 and November 2011, but found no adult specimens. A visit to the type locality in January 2016 by FRR also failed to detect any adult individuals.

Selected references: La Marca (1994d); La Marca and Lötters (1997); Barrio-Amorós (2001, 2013); Rueda-Almonacid et al. (2005); García-Pérez et al. (2013).

*Atelopus cruciger* (Lichtenstein and von Martens 1856)*

Neotype: ZSM 93/1947/10

Type locality: Veragua, Panamá (error); corrected to the locality of the neotype: “vicinity of Rancho Grande on the road from Maracay to Ocumare de la Costa (ca. 1,000 m above sea level), Estado Aragua, Venezuela” (Lötters and La Marca 2001).

Distribution: Region 2. Known from at least 30 historical localities in the Cordillera de la Costa, from Aragua, Carabobo, Cojedes, Miranda, Vargas, and Yaracuy States, as well as the Distrito Capital (Manzanilla and La Marca 2004). Currently, considered extinct at all localities except for two populations in Aragua State (Rodríguez-Contreras et al. 2008). A third surviving population was mentioned by Rodriguez and Rojas-Suárez (2008); its current status is unknown.

Remarks: The nomenclatural history of the species was detailed by Lötters et al. (1998) and Lötters and La Marca (2001). Lampo et al. (2011) provided data on the current status of populations. González et al. (2010) studied the diet in museum specimens. *Atelopus cruciger* is a species complex (JCS, FRR, and CBA, unpub. data).

Selected references: Lichtenstein (1856); Günther (1858); Lutz (1927); Müller (1935); Sexton (1958); Ginés (1959); Rohl (1959); Rivero (1961, 1972).
Images. The task of gathering photos of all possible species of amphibians from Venezuela for a project like this began some time ago. We conducted an exhaustive search, asking many collaborators for permission to use their photos. Many species are already extinct or believed to be (such as all Atelopus except A. cruciger); for some other species the photos presented herein are the only published so far (for example, Metaphryniscus sosae, Oreophrynella huberi, Hyalinobatrachium guairarepanensis, Pristimantis marahuaka, Dendropsophus varacuyanus, Scinax baumgardneri), and for many other species they are the first reproduced in color. For some species a picture taken in Venezuela could not be found, so a decision was made to either show the same species from other close countries, or show specimens from Venezuela and also from other countries for comparison.

Finally, we illustrate with preserved material some species that remain problematic or were never photographed alive (such as Atelopus vogli, Dendropsophus battersbyi, Dischidodactylus colonnelloi, Pristimantis longicorpus, Stefania breweri, and Boana sp. cf. rufitela).

1A. Allophryne ruthveni. Female, Cuyuni, Bolivar. Photo: César Barrio-Amorós.

1B. Allophryne ruthveni. Male, Sierra de Imataca, Delta Amacuro. Photo: César Barrio-Amorós.


1964a); Tello (1968); La Marca et al. (1989); Cocroft et al. (1990); La Marca (1992, 1995a,c); Rodríguez and Rojas-Suárez (1995, 1999); Barrio (1996b); Lötters (1996); La Marca and Lötters (1997); Lötters et al. (1998, 2004); Rivas (1998); Barrio-Amorós (2001, 2006c, 2013); Lötters and La Marca (2001); Bonaccorso et al. (2003); Manzanilla and La Marca (2004); Rueda-Almonacid et al. (2005); Rodríguez-Contreras et al. (2008); Barrio-Amorós and Torres (2010); González et al. (2010); Lampo et al. (2011).

**Atelopus mucubajensis** Rivero, 1972 *

**Holotype:** BM 1971.763.

**Type locality:** “Región de Mucubají, Santo Domingo, 3,100 m, Estado Mérida, Venezuela.”

**Distribution:** Region 1. Surroundings of the type locality, páramo and subpáramo, 2,800–3,500 m asl.

**Remarks:** In September 2004, the last known individual was delivered to CBA (Barrio-Amorós 2004). Soon afterwards a project was begun to search for the species (Barrio-Amorós 2009a), but unfortunately this effort yielded no positive results despite an intensive search effort. The female individual died a few weeks after being received and tested weakly positive for the presence of the fungus *Batrachochytrium dendrobatidis* (Bd; Lampo et al. 2007).

**Selected references:** Rivero (1972, 1980); La Marca et al. (1989); La Marca (1994, 1992, 1995a,c); Rodríguez and Rojas-Suárez (1995, 1999); Barrio (1996b); Durant and Díaz (1996); Lötters (1996); La Marca and Lötters (1997); Barrio-Amorós (2001, 2004, 2009a); Rueda-Almonacid et al. (2005); Lampo et al. (2007); Barrio-Amorós and Torres (2010).

**Atelopus oxyrhynchus** Boulenger, 1903 *

**Lectotype:** BM 1947.2.14.66. designated by Rivero (1972).

**Type locality (of the lectotype):** Río Albarregas, La Culata, Sierra Nevada de Mérida, Venezuela (elevation 3,330 m).

**Distribution:** Region 1. Sierra de la Culata, Mérida State.

**Remarks:** Apparently extinct, and not seen alive since 1994 (Lötters and La Marca 1997).

**Selected references:** Boulenger (1903); Ginés (1959); Rivero (1961, 1963b, 1964d, 1972); La Marca et al. (1989); Durant (1993); Piñero and Durant (1993); La Marca (1994, 1992, 1995a,c); Rodríguez and Rojas-Suárez (1995, 1999); Lötters (1996); La Marca and Lötters (1997); Barrio-Amorós (2001, 2013); Rueda-Almonacid et al. (2005).

**Atelopus pinangoi** Rivero, 1980 *

**Type:** UPRM 5354.

**Type locality:** “Piñango, 2,920 m, Estado Mérida, Venezuela.”

**Distribution:** Region 1. Surroundings of the type locality.

**Remarks:** Last seen *in situ* in 1997 (Barrio-Amorós 2013). García-Pérez et al. (2013) reported finding a postmetamorph at the type locality in December 2008, but several searches (2010–2013) found no additional individuals.

**Selected references:** Rivero (1980); La Marca et al. (1989); Rodríguez and Rojas-Suárez (1995, 1999); Lötters (1996); La Marca and Lötters (1997); Barrio-Amorós (2001, 2013); Rueda-Almonacid et al. (2005); García-Pérez et al. (2013).

**Atelopus sorianoii** La Marca, 1983 *

**Holotype:** CVULA IV-2783.

**Type locality:** “Bosque nublado 10 km SSE de Tovar, 2,718 m, Estado Mérida, Venezuela.”

**Distribution:** Region 1. Initially thought restricted to the type locality, but photographs of a specimen shown to T.R. Kahn by E. La Marca in 2007 indicated a population exists outside type locality. The type locality was destroyed by a landslide (pers. comm., T.R. Kahn from E. La Marca). Further work is required to determine if this disjunct population is extant.

**Remarks:** Not seen in the type locality since 1990; possibly extinct at the type locality, but also possibly extant at a disjunct valley not far from the type locality.

**Selected references:** La Marca (1983, 1992, 1995a,c); La Marca et al. (1989); Rodríguez and Rojas-Suárez (1995, 1999); Barrio (1996b); Lötters (1996); La Marca and Lötters (1997); Barrio-Amorós (2001, 2013); Rueda-Almonacid et al. (2005).

**Atelopus tamaense** La Marca, Pérez and Renjifo, 1989 *

**Holotype:** ULABG 1820.

**Type locality:** “Estado Apure, Distrito Páez, Cercanías del “Boquerón del río Órìa,” Páramo de Tamá, Parque Nacional El Tamá, aproximadamente 7°25’N, 72°23’W, elevation 2,950 m.”

**Distribution:** Region 1. Only known from the type locality, in Venezuela and probably ranging into nearby Colombia in Tamá National Park.

**Remarks:** Population status unknown, but not seen since its description.

**Selected references:** La Marca et al. (1989); La Marca (1992, 1995c); Rodríguez and Rojas-Suárez (1995, 1999); Lötters (1996); La Marca and Lötters (1997); Barrio-Amorós (2001, 2013); Rueda-Almonacid et al. (2005).

**Atelopus vogli** Müller, 1934 *

**Holotype:** ZSM 3/1933.


**Remarks:** Lötters et al. (2004) elevated *Atelopus cruciger vogli* to a full species. Currently considered the only Venezuelan amphibian verified as extinct (Rodríguez and Rojas-Suárez 2008; La Marca and Señaris 2015).

**Selected references:** Müller (1935); Lötters et al. (2004); Rueda-Almonacid et al. (2005); Rodríguez and Rojas-Suárez (2008); Barrio-Amorós and Rojas-Runjaic

**Type locality:** “Cascadas superiores del Río Güey, en la región llamada Las Peñas, cerca de la Hacienda de la Trinidad, Maracay, 700 m,” Aragua State, Venezuela.

**Distribution:** Region 2. Known from two localities, the type locality and a record reported by Barrio-Amorós and Rojas-Runjaic (2009) in Montalbán (Carabobo State); last specimen known was collected in 1957.
Genus *Metaphryniscus*
Señaris, Ayarzagüena and Gorzula, 1994

**Type species**: *Metaphryniscus sosai* Señaris et al., 1994, by original designation.

*Metaphryniscus sosae*
Señaris, Ayarzagüena and Gorzula, 1994*

Holotype: MHNLS 12347.
Type locality: “Tepuy Marahuaca-Sur, Estado Amazonas, Venezuela (3°40’N, 65°27’W), 2,600 m snm.”
Distribution: Region 5. Known from the base of Roraima (type locality) and Maringma-tepui in Guyana (Kok 2009). It has been surmised to occur in the Venezuelan foothills surrounding the base of Mt. Roraima (Rivero 1961; La Marca 1992; Barrio-Amorós 1998). To date there are no vouchers from Venezuela in any known scientific collection.
Remarks: It is not possible to designate the exact type locality or determine whether it is in Venezuela or Guyana, since Boulenger (1900) listed it as “the base of Mt. Roraima, 3,500 ft (ca. 1,066 m),” which could be in either Guyana, Venezuela or Brazil. Barrio-Amorós (1998) considered Boulenger’s type locality to be in Venezuela without explanation. He also incorrectly stated that the type material in the BMNH was lost. Kok (2009) assumed the type specimen was collected on the Guyanan side of Roraima, as the title of Boulenger’s article states, but provided no further information or evidence. The journey made by F.V. McConnell and J.J. Quelech in 1898, during which the specimen was collected, originated in Guyana, but the only access to the summit of Roraima by foot is on the Venezuelan side. The exact route by which the two collectors walked around the base of Roraima follows the Mazaruni-Cakokorupar Rivers to reach the foot of Roraima. Here, only one place at the Aruparu River seems to be at 1,066 m (5°15’10.93”N, 60°42’28.57”W), while still seeing the tepui from its base. Therefore, we restrict the type locality to be in Guyana. But see a different conclusion by Kok et al. (2018) for *Pristimantis marmoratus*.

We are unable to distinguish *Oreophrynella macconnelli* from *O. dendronastes* Lathrop and MacCulloch, 2007. The only listed difference is the shape of the snout, reported as truncated for *O. macconnelli* and pointed or acuminate for *O. dendronastes*. Kok (2009) had examined a larger set of specimens of *O. macconnelli* and noted variation in this character, but snout shape alone may be insufficient evidence to distinguish between these taxa. The larger size of *O. dendronastes*, with a female of 37.3 mm SVL (as opposed to an SVL of 22.7 mm in males of *O. macconnelli*, for which females are unknown) seems significant, but could be attributed to maturity and/or dimorphism. Furthermore, Kok et al. (2012) found insufficient genetic differentiation to support the recognition of *O. dendronastes*. We therefore suggest considering *O. dendronastes* Lathrop and MacCulloch, 2007 as a junior synonym of *O. macconnelli* (Boulenger 1895). Barrio-Amorós (1998, 2004, 2009) incorrectly


Oreophrynella nigra
Señaris, Ayarzagüena and Gorzula, 1994

Holotype: MHNLS 10583.
Type locality: Kukenan-tepui I, Bolívar State, Venezuela (9°51'N, 60°48'W), 2,500 m asl.
Distribution: Region 5. Endemic to Kukenan and Yuruani Tepuis in Bolívar State.
Remarks: Kok et al. (2012) implied that O. nigra could be a synonym of O. quelchii due to the low genetic divergence between these forms. However, inhabiting different tepuis means reproductive isolation (allopatry), and having a different color pattern could be sufficient reason at the moment to maintain it as a valid species.


Oreophrynella quelchii (Boulenger 1895)

Syntypes: BM 95.4.19.1–5; 99.3.25.7–13; UK 126081–82; ZFMK, MCZ 3500–02.
Type locality: “Summit of Mt. Roraima, between British Guiana and Venezuela, at an altitude (elevation) of 8,500 feet.”
Distribution: Region 5. Known from the summit of Mt. Roraima, a tepui extending across three countries: Venezuela, Guyana, and Brazil.

Selected references: Boulenger (1895a,b; 1900); Ginés (1959); Rivero (1961, 1964b); McDaidarmid (1971); Hoogmoed and Gorzula (1979); Rivero et al. (1964b); Duellman and Lathrop (2007); Kok (2009); Kok et al. (2018).

Genus Rhaebo Cope, 1862

Type species: Bufo haematiticus Cope, 1862, by monotypy.

Rhaebo glaberrimus (Günther 1869)

Holotype: BM 1947.2.20.56. (formerly 68.3.4.9).
Type locality: “Bogota” (Bogotá), Cundinamarca, Colombia (in error: Mueses-Cisneros et al. (2012) regard Bogotá as the origin of shipment, not the locality where the type specimen was collected).


Selected references: Chacón et al. (2000, 2001); Mueses-Cisneros et al. (2012).

Rhaebo guttatus (Schneider 1799)

Holotype: ZMB 3517.
Type locality: “India Orientali.” In error; Rivero (1961) clarifies that the label of the holotype states the type specimen was collected in Suriname.

Distribution: Regions 4, 5. Typical Guyano-Amazonian element, present in Bolivia, Peru, Ecuador, Colombia, Venezuela, Suriname, French Guiana, Guyana, and Brazil. In Venezuela, widespread in Amazonas and Bolívar States, also occurs in one disjunct area of Apure State (Barrio et al. 2001).

Remarks: Bufo anderssoni Melin, 1941 was shown to be a junior synonym of Rhaebo guttatus (Barrio-Amorós and Castroviejo-Fisher 2008a).

Selected references: Ginés (1959); Rivero (1961, 1964b, 1967a); Hoogmoed and Gorzula (1979); Rivero et al. (1986); La Marca (1992); Duellman (1997); Gorzula and Señaris (1998); Barrio et al. (2001, 2011b); Barrio-Amorós and Brewer-Carias (2008); Barrio-Amorós and Castroviejo-Fisher (2008a); Barrio-Amorós and Duellman (2009); Señaris et al. (2014).

Rhaebo haematiticus Cope, 1862

Syntypes: USNM 48448–49.
Type locality: “Region of the Truando (Chocó), New Grenada (Colombia).”

Distribution: Region 1. From eastern Honduras into southern Costa Rica throughout the western slopes of the Cordiller Occidental and eastern versant of Cordillera Central of Colombia, also occurring in the Chocoan Region of northwestern Ecuador and northwestern Venezuela. In Venezuela, known from scattered localities within the Sierra de Perijá, the northernmost point of the Andes on the border with Colombia and Venezuela (Barrio-Amorós 2001; Rojas-Runjaic et al. 2007; Vieira-Fernandes et al. 2016). Another single record is from Cordillera de Mérida (Vieira-Fernandes et al. 2016). Apparently, R. haematiticus is likely a complex of cryptic species (Mueses-Cisneros 2009). Venezuelan populations could be represented by an undescribed species (Mueses-

17A. *Rhaebo guttatus*. Female. Las Lajas, Sierra de Lema, Bolivar. *Photo: César Barrio-Amorós.*


Type locality: Type without locality data, restricted to “South America, probably along the Atlantic drainage” by Smith and Laurent (1950).

Distribution: Region 5. Known from eastern Venezuela and northwestern Guyana. In Venezuela it was previously known only from the La Escalera Region of Bolivar State (Barrio-Amorós 2009). Occurrence reported here from


Selected references: Barrio-Amorós (2001); Rojas-Runjaic et al. (2007); Mueses-Cisneros (2009).

*Rhaebo nasicus* (Werner 1903)

Holotype: MRHN I.G. 9422 reg. 1015.
Genus *Rhinella* Fitzinger, 1826

**Type species:** *Bufo proboscideus* Spix, 1824, by monotypy.

*Rhinella beebei* (Gallardo, 1965)

**Holotype:** AMNH 557774.

**Type locality:** Churchill-Roosevelt highway, Trinidad, Trinidad and Tobago, 30 m.

**Distribution:** Regions 3, 5, 6. Widespread in open areas throughout northern Venezuela and Trinidad. In Venezuela species is found in lowland open areas, north and south of the Orinoco River, and has also been documented on Margarita Island (Ugueto and Rivas 2010).

**Remarks:** Narvaes and Rodrigues (2009) changed the previous concept of the *R. granulosa* species group, recognizing available subspecific names as full species levels, and invalidating others. *Bufo granulosus* (Fitzinger, 1826) was considered synonyms of *R. humboldtii*. Pereyra et al. (2016) showed two parapatric populations (one on lowlands around Puerto Ayacucho, another in uplands of Gran Sabana) as monophyletic under the name *R. humboldtii*. Murphy et al. (2017) revised the name *beebi* for populations in Trinidad and northern Venezuela, noting differences in genetics and vocalizations among *R. humboldtii* (a trans-Andean species) and *R. beebei*. Notably, no specimens from the Lake Maracaibo Basin were analyzed. Further work is required to determine if that population represents *R. humboldtii*, *R. beebei*, or *R. centralis*, and/or a combination of these species living in sympatry.

**Selected references:** Some of these references are based on populations of *R. beebei* under the names *Bufo granulosus* or *Rhinella humboldtii*. Boettger (1892); Lutz (1927); Parker (1936); Ginés (1959); Rivero (1961, 1964a-c, 1967c); Roze (1964); Gallardo (1965); Tello (1968); Cochran and Goin (1970); Staton and Dixon (1977); Duellman (1979a, 1997); Hoogmoed (1979b, 1990a); Hoogmoed and Gorzula (1979); Péfaur and Díaz De Pascual (1982, 1987); Rivero et al. (1986); Ramo and Busto (1989, 1990); La Marca (1992); Manzanilla et al. (1995); Péfaur and Pérez (1995); Yúñez (1996); Murphy (1997); Gorzula and Sefaris (1998); Rivas and Barrio-Amorós (2005); Narvaez and Rodríguez (2009); Tárano (2010); Ugueto and Rivas (2010); Barrio-Amorós et al. (2011b); Pereyra et al. (2016).

**Rhinella ceratophrys** (Boulenger 1882)

**Holotype:** BM 80.12.5.151.

**Type locality:** “Ecuador.”

**Distribution:** Region 5. Widely distributed in upper Amazon Basin, from northeastern Peru, through eastern Ecuador and southeastern Colombia, into southern Venezuela. Its occurrence in Brazil was presumed (Fenolio et al. 2012) and verified by Rojas-Runjaic et al. (2017). These last authors reported new localities for this species with specimens from Venezuela at Cerro Marahuaca and at Cerro de la Nebliña, Amazonas State. Elevations 1,350–2,713 m asl.

**Remarks:** Mijares-Urrútia and Arends (2001) confused a female specimen of *Rhaebo nasicus* from La Escalera with *Rhinella ceratophrys* (CBA, personal observation). Barrio-Amorós (1998) doubted the identity of Rivero’s record (based on a single juvenile of 12 mm SVL). However, Fenolio et al. (2012) recently verified the Venezuelan specimen and confirmed its identity using morphological and morphometric data. Recent reports of this species from up- and highland western tepuis solves its distribution in Venezuela. Further sampling and analyses will determine if a species complex exists and may further be elucidated (Rojas-Runjaic et al. 2017). Fouquet et al. (2007a) removed this species from the *Rhinella margaritifera* species group.

**Selected references:** Rivero (1961, 1964b); Cochran and Goin (1970); Mijares-Urrútia and Arends (2001); Fenolio et al. (2012); Rojas-Runjaic et al. (2017).

**Rhinella horribilis** (Wiegmann 1833)

**Syntypes:** ZMB 3479 (Misantla), ZMB 3480 (no locality given), ZMB 3481 (Veracruz), ZMB 3493 (Mexico), all from Mexico, based on the original description. Lectotype: ZMB 3480, assigned by Fouquet and Dubois (2014).

**Type locality:** “In der Umgegend von Vera Cruz,” Mexico.

**Distribution:** Regions 1, 6. In Venezuela west of the Andes, including the dry valley of Chama River (Mérida State), up to 2,000 m asl (Barrio-Amorós 1998; Acevedo et al. 2016); northern Colombia and Panama north throughout Central America and into the southern United States (Frost 2018).

**Remarks:** This taxon was recently removed from synonymy with *Rhinella marina* by Acevedo et al. (2016).


Populations west of the Andes formerly referred to as *R. marina* are genetically and osteologically distinct from populations east of the Andes. The form ranging from western Venezuela through northwestern South America north into Mexico and the southern United States should be considered as *R. horribilis*.

**Selected references:** Mostly under the names *Rhinella marina* or *Bufo marinus*. Alemán (1952); Péfaur and Pérez (1995); Acevedo et al. (2016).

**Rhinella margaritifera** (Laurenti 1768)

**Neotype:** MNRJ 71538, assigned by Lavilla et al. (2013).

**Type locality:** “Brasilia.” The neotype is from Municipality Humaitá, Amazonas State, Brazil (Lavilla et al. 2013).

**Distribution:** Regions 4, 5. Widespread in the Amazonian Region. In Venezuela this species is present in rainforests and cloud forests of the Cordillera de la Costa, the Andes, and south of the Orinoco. It is absent from the Llanos Region.

**Remarks:** *Rhinella margaritifera* represents a species complex likely including several undescribed and/or misidentified taxa. At least two distinct taxa are present on the eastern versant of the Cordillera de Mérida. One from Falcon State was removed from this complex and redescribed as *Rhinella scherocephala* by Mijares-Urrúitia and Arends (2001; see account). Rivero (1964) considered specimens from Guatopo and Falcon as *Bufo typhonius alatus*. La Marca (1997) followed Rivero’s example, but the decision to use *alatus* as the name for populations in the complex north of the Orinoco River was premature and speculative. Santos et al. (2015) restricted the distribution of *R. alata* to Panama, Western Colombia, and Ecuador. La Marca (1992; 1997) included *R. acutirostris* in the amphibian fauna of Venezuela, but no populations of this species have been documented based on voucher specimens. In Venezuela south of the Orinoco River, at least four distinct populations of the *Rhinella margaritifera* species complex occur, one in western Amazonas State (CBA, unpub. data), one in the Sarisariñana foothills (Barrio-Amorós and Brewer-Carias 2008), one in El Paují, southern Gran Sabana, where females lack prominent crests, and one along the northern versant of the Serranía de Lema (Barrio-Amorós et al. 2011b). Pending formal identification, this last population could correspond to *Rhinella martyi* (Fouquet et al. 2007), a taxon so far not reported from Venezuela.

**Selected references:** Spix (1824); Ginés (1959); Rivero (1961, 1964a,b,d, 1967a, 1971a); Yústiz (1976a, 1996); Hoogmoed (1977, 1986, 1989, 1990); Péfaur and Díaz De Pascual (1982, 1987); Hoogmoed and Gruber (1983); Rivero et al. (1986); Hass et al. (1995); Vélez (1995); Gorzula and Señaris (1998); Rivas and Barrio-Amorós (2005); Barrio-Amorós and Brewer-Carias (2008); Barrio-Amorós (2010a); Barrio-Amorós et al. (2011b); Señaris et al. (2014); Santos et al. (2015).

**Rhinella marina** (Linnaeus 1758)

**Holotype:** Not identified (originally in the collection of Albertus Seba).

**Type locality:** “America.” Restricted to Suriname by Müller and Hellmich (1936).

**Distribution:** Regions 3, 4, 5. After the partition of *Rhinella marina* into two species (Acevedo et al. 2016), the name *marina* is now applied to populations occurring east of the Andes in Venezuela and Colombia, south to central Brazil to Bolivia. This species has been introduced onto several islands and into countries in the Caribbean, Pacific, and Indian Oceans (Zug and Zug 1979), although distinction between *R. marina* and *R. horribilis* invasive populations has yet to be determined.

**Remarks:** All populations sampled west of the Andes are currently recognized as *Rhinella horribilis* (Acevedo et al. 2016). These authors, however, did not include in their analysis samples of *R. marina* from the majority of Venezuela. The current authors have observed important morphological and acoustic differences in populations east of the Andes, at least in Venezuela. A wider sample should be analyzed to properly assess the complex taxonomy and nomenclature of these species and/or species complex.

**Selected references:** Lichtenstein and von Martens (1856); Lutz (1927); Ginés (1959); Rohl (1959); Rivero (1961, 1964a–d, 1967a); Heatwole et al. (1965); Tello (1968); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Rivero-Blanco and Dixon (1979); Zull and Zug (1979); Péfaur and Díaz De Pascual (1982, 1987); Hoogmoed and Gruber (1983); Gremonet et al. (1986); Rivero et al. (1986); Hoogmoed (1989); La Marca (1992); Manzanilla et al. (1995); Evans and Lampo (1996); Duellman (1997); Gorzula and Señaris (1998); Barrio-Amorós and Brewer-Carias (2008); Barrio-Amorós (2010a); Uguedo and Rivas-Fuenmayor (2010); Barrio-Amorós et al. (2011b); Señaris et al. (2014); Acevedo et al. (2016).

**Rhinella merianae** (Gallardo 1965)

**Holotype:** AMNH 46531.

**Type locality:** “Head falls of Essequibo River, British Guiana (= Guyana).”

**Distribution:** Regions 5, 6. Brazil, Suriname, Guyana, French Guiana, and Venezuela. In Venezuela, known from the Orinoco River, Gran Sabana (Bolívar State), and a disjunct record in Zulia State (Narvaes and Rodrigues 2009). Obviously, the last record is likely in error. It may be *R. beebei* or another species within the *granulosus* species group.

**Remarks:** A member of the *Rhinella granulosa* species group. Even though Narvaes and Rodrigues (2009) stated examining voucher specimens, the biogeography is not evident to the current authors. There are specimens from Puerto Ayacucho, Gran Sabana, the Orinoco River,


and Zulia State. The authors consider particularly the Zulia State specimen doubtful, and believe it is more likely to be *R. beebei* or *R. centralis* (the last would be a first record for Venezuela). However, if the distribution is valid, then that of *R. merianae* would overlap with that of *R. beebei* along the Orinoco River and with that of *R. nattereri* in the Gran Sabana Region.

**Selected references:** Narvaes and Rodrigues (2009); Señarís et al. (2014); Pereyra et al. (2016).

*Rhinella nattereri* (Bokermann 1967)

**Holotype:** MZUSP 73715.

**Type locality:** Cachoeira Urunduque, Mau River, Roraima, Brazil.

**Distribution:** Region 5. Brazil, Guyana, and Venezuela. In Venezuela this species is known only from the Gran Sabana Region in Bolivar State (Narvaes and Rodrigues 2009).

**Remarks:** A member of the *Rhinella granulosa* species group; little is known about this species in Venezuela. Pereyra et al. (2016) could not obtain genetic samples to test its phylogenetic relationships. The morphological characteristics of this form should be more carefully compared with *R. beebei* and *R. merianae* to determine and support species-level validity.

**Selected references:** Narvaes and Rodrigues (2009); Señarís et al. (2014); Pereyra et al. (2016).

*Rhinella sclerocephala*

(Mijares-Urrutía and Arends 2001)*

**Holotype:** EBRG 3415.

**Type locality:** “1.5 km (by road) from Curimagua to Cerro Galicia, municipio Petit, Sierra de San Luis, Estado Falcón, Venezuela (about 11°10’N, 69°41’W), about 1,150 m.”

**Distribution:** Region 2. Apparently endemic to the cloud forests at Sierra de San Luis, Falcón State. No additional specimens of this species have been collected in the last 25 or so years, according to material preserved in Venezuelan museums. Other than the series by Mijares-Urrutía and Arends (2001) no other specimens are known in the scientific collections examined.

**Selected references:** Mijares-Urrutía and Arends (2001).

*Rhinella sternosignata*

(Günther 1858)

**Syntypes:** BM 1947.2.21.68–69; 1947.2.21.70; 1947.2.21.87; 1947.2.21.88.

**Type locality:** “Venezuela;” “Puerto Cabello;” “Córdova;” “México;” restricted to Puerto Cabello by Cochran and Goin (1970).

**Distribution:** Regions 1, 2. The eastern versant of the Cordillera Oriental of Colombia and Venezuela. In Venezuela the species is distributed in cloud and rainforests of the Cordillera de la Costa and in the eastern Andean versant, or so-called Andean Piedmont.

**Remarks:** Pereyra et al. (2016) found *Rhinella sternosignata* closely related to the *R. margaritifera* and *R. veraguensis* species groups.

**Selected references:** Boulenger (1882); Boettger (1892); Lutz (1927); Ginés (1959); Rivero (1961, 1964a,d); Cochran and Goin (1970); Hoogmoed (1990); La Marca (1992); Manzanilla et al. (1995); La Marca and Mijares (1996); Yústiz (1996); La Marca and Manzanilla (1997); Vélez (1999); Pereyra et al. (2016).

**Family Centrolenidae Jiménez de la Espada, 1872**

**Remarks:** We follow the taxonomic arrangement proposed by Guayasamin et al. (2009).

**Subfamily Centroleninae Taylor, 1951**

**Genus Centrolene** Jiménez de la Espada, 1872

**Type species:** *Centrolene geckoideum* Jiménez de la Espada, 1872, by monotypy.

**Remarks:** The generic name *Centrolene* is feminine, not neuter as Myers and Donnelly (1997) interpreted. Jimenez de la Espada (1872) described *Centrolene* without indicating a gender and associated the name with a neuter species name (*geckoideum*) in error. Following the Code it must be corrected (M.A. Alonso de Zarazaga, pers. comm.), as *Centrolene* is feminine from the Greek nouns (kéntron -sting, spur- and ōlénē -elbow-, thus feminine in Greek), so, the emendations proposed by Myers and Donnelly (1997) require revision. Following Article 30.1.2 of the Code, the species names are amended to feminine when determined to require correction according to the Code (ICZN 1999). The amended *Centrolene* follows, as feminine: *Centrolene altitudinalis* (Rivero 1968), *Centrolene antoquistensis* (Noble 1920), *Centrolene bacata* Wild, 1994, *Centrolene daidalea* (Ruiz-Carranza and Lynch 1991), *Centrolene geckoidea* Jiménez de la Espada, 1872, *Centrolene gemmata* (Flores 1985), *Centrolene hesperia* (Cadle and McDiarmid 1990), *Centrolene hulinesis* Ruiz-Carranza and Lynch, 1995, *Centrolene lemniscata* Duellman and Schulte, 1993, *Centrolene notosticta* Ruiz-Carranza and Lynch, 1991, *Centrolene peristicta* (Lynch and Duellman 1973), *Centrolene pipilata* (Lynch and Duellman 1973), and *Centrolene venezuelensis* (Rivero 1968). The species not mentioned remain as previously published.

*Centrolene altitudinalis* (Rivero 1968)*

**Holotype:** MCZ 72500.

**Type locality:** “Quebrada cerca de Río Albarregas, 2,400 m. Estado Mérida, Venezuela.”

**Distribution:** Region 1. Andes of Mérida State. Known from five localities, including (1) the type locality; (2) Monte Zerpa, N of the city of Mérida; (3) La Joya, NE of
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23E. Rhinella margaritifera. Male. Triunfo, Bolivar. This population could represent *R. martyi*. Photo: César Barrio-Amorós.


24B. Rhinella marina. Female. Santa María de Erebato, Caura river basin, Bolivar. Photo: César Barrio-Amorós.


Type locality: Granja Infantil del Padre Luna, Albán Municipality, Cundinamarca, Departmento, western slopes of the Cordillera Oriental, Colombia (4°45'56"N, 74°26', 2,060 m).

Distribution: Region 1. Colombia and Venezuela. In Venezuela, known from eight localities on the eastern versant of the Sierra de Perijá, 800–1,832 m asl.

Selected references: Rojas-Runjaic et al. (2010).

Mérida; (4) Altos de San Luis and El Chorotal, towards Mérida to La Azulita; and (5) Altos de San Luis.

Selected references: Rivero (1968b); Señaris and Ayarzagüena (2005).

Centrolene daidalea (Ruiz-Carranza and Lynch 1991)

Holotype: ICN 18008.
**Centrolene notosticta** Ruiz-Carranza and Lynch, 1991

**Holotype:** ICN 12632.  
**Type locality:** “Departamento de Santander, vertiente occidental de la Cordillera Oriental, municipio de Charalá, Virolín (= Inspección de Policía de Cañaveales), sitio “El Encino” ca. cabeceras Río Luisito, Latitud 6°13′N, 73°05′W de Greenwich, 1,750 m,” Colombia.  
**Distribution:** Region 1. Colombia and Venezuela. In Venezuela, known from only one locality (Campamento Guacharaca, 1,660 m asl) in the eastern versant of the Sierra de Perijá, Zulia State (Rojas-Runjaic et al. 2012).  
**Selected references:** Rojas-Runjaic et al. (2012).

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**Centrolene venezuelensis** (Rivero 1968)*

**Holotype:** MCZ 77503.  
**Type locality:** “Valle de la Culata, bosque a 2,700 m, Estado Mérida, Venezuela.”  
**Distribution:** Region 1. Occurrs throughout the Venezuelan Andes, from Táchira to Mérida States, and in the Sierra de Perijá (Zulia State), 2,100–3,050 m asl. *Centrolene venezuelensis* is speculated to occur in Colombia, yet has not been documented.  
**Remarks:** Myers and Donnelly (1997) elevated *Centrolene buckleyi venezuelensis* to species level, as *C. venezuelense*, without explanation. This decision was supported by Señaris and Ayarzagüena (2005). Guayasamín et al. (2009) validated this species elevation.  
**Selected references:** Ginés (1959); Rivero (1961, 1963b, 1964a, 1968b); Péfaur and Díaz De Pascual (1982); Gremone et al. (1986); La Marca (1991b “1994,” 1996c); Ruiz-Carranza and Lynch (1991); Ayarzagüena (1992); Myers and Donnelly (1997); Señaris and Ayarzagüena (2005); Rojas-Runjaic et al. (2012).  

Genus *Cochranella* Taylor, 1951

**Type species:** *Centrolenella granulosa* Taylor, 1949, by original designation.  
**Remarks:** The species *riveroi* and *duidaeana* were not evaluated by Guayasamín et al. (2009) in their phylogeny of Centrolenidae. They are left as taxa *incertae sedis* within *Cochranella sensu lato*, until more data becomes available.

**Cochranella duidaiana** (Ayarzagüena 1992)*

**Holotype:** MHNLS 12000.  
**Type locality:** Region 5. “Cumbre sur del Monte Duida. Territorio Federal Amazonas. Venezuela. (3°19′N, 65°38′W), 2,140 m snm.”  
**Distribution:** Endemic to Cerro Duida, a tepui in Amazonas State.  
**Selected references:** Ayarzagüena (1992); Ayarzagüena and Señaris (1996); Señaris and Ayarzagüena (2005); Guayasamin et al. (2009).

Genus *Espadarana* Guayasamin, Castroviejo-Fisher, Trueb, Ayarzagüena, Rada and Vilà, 2009

**Type species:** *Centrolenella andina* Rivero, 1968, by original designation.

**Espadarana andina** (Rivero 1968)

**Holotype:** MCZ 72502.  
**Type locality:** “La Azulita, 1,050 m, Estado Mérida, Venezuela.”  
**Distribution:** Region 1. Colombia and Venezuela. Widely distributed throughout the Cordillera de Mérida and the Sierra de Perijá, in Mérida, Táchira, and Zulia States, 505–2,200 m asl.  
**Selected references:** Rivero (1968b, 1985); Mijares-Urrúa (1990a); La Marca (1994c); Ruíz-Carranza and Lynch (1995); Guayasamin and Barrio-Amorós (2005); Señaris and Ayarzagüena (2005); Guayasamin et al. (2009); Rojas-Runjaic et al. (2012).  

Genus *Vitreorana* Guayasamin, Castroviejo-Fisher, Trueb, Ayarzagüena, Rada and Vilà, 2009

**Type species:** *Centrolenella antisthenesi* Goin, 1963, by original designation.

**Vitreorana antisthenesi** (Goin 1963)*

**Holotype:** MBUCV 4033.  
**Type locality:** “Parque Nacional de Rancho Grande, Aragua, Venezuela.”  
**Distribution:** Region 2. Cordillera de la Costa, 220–1,200 m asl.  
**Selected references:** Goin (1963); Rivero (1968b); Cannatella and Lamar (1986); Manzanilla et al. (1995); Señaris and Ayarzagüena (2005); Barrio-Amorós (2006c); Guayasamin et al. (2009).

**Vitreorana castroviejoi** Ayarzagüena and Señaris, 1997*

**Holotype:** MHNLS 13356.  
**Type locality:** “Cerro El Humo, Península de Paria, Estado Sucre, Venezuela. (10°42′N-62°37′W). 750 m snm.”


**Distribution**: Region 2. Endemic on the Península de Paria, Sucre State, 750–800 m asl.

**Selected references**: Ayarzagüena and Señaris (1997); Señaris and Ayarzagüena (2005); Guayasamin et al. (2009).

**Vitreorana gorzulae** (Ayarzagüena 1992)

**Holotype**: MHNLS 11221.

**Type locality**: “Cerro Auyantepuy-Centro. Edo. Bolívar. Venezuela. (5°56′N-62°34′W). 1,850 m smn.”

**Distribution**: Region 5. Widespread in the Guiana Shield (Venezuela and Guyana), 430–1,850 m asl. In Venezuela, known from several localities in the Sierra de Lema, the Gran Sabana, and Auyan-tepui.

**Remarks**: Duellman and Señaris (2003) place *Centrolenella auyantepuiana* (Ayarzagüena 1992) (reported as *Hyalinobatrachium auyantepuianum* by
Barrio-Amorós et al. (1998), in synonymy with *Centrolene gorzulae* based on its trilobate liver and a small humeral spine not reported before in this taxon. Kok and Castroviejo-Fisher (2008) synonymized *Centrolene papillahallicum* Noonan and Harvey, 2000 with what they called *V. gorzulai*. Later, using integrative taxonomy, Castroviejo-Fisher et al. (2009) placed *Centrolene lema* into synonymy with *V. gorzulae*. Though the name *gorzulae* is a masculine patronym (honoring Stefan Gorzula) that seems to be correctly emended to *gorzulai*, this is not the case according to Article 31.1.1 of the Code (ICZN 1999).

**Selected references:** Ayarzagüena (1992); Duellman (1997); Gorzula and Señaris (1998); ICZN (1999); Duellman and Señaris (2003); Señaris and Ayarzagüena (2005); Kok and Castroviejo-Fisher (2008); Kok and Kalamandeen (2008); Myers and Donnelly (2008); Barrio-Amorós and Duellman (2009); Castroviejo-Fisher et al. (2009); Guayasamin et al. (2009); Señaris et al. (2014).

**Vitreorana helenae** (Ayarzagüena 1992)

**Holotype:** MHNLS 9431.

**Type locality:** “Quebrada Jaspe, San Ignacio de Yuruani, Edo. Bolívar. Venezuela.”

**Distribution:** Region 5. Venezuela and Guyana. In Venezuela the species is known from several localities in the Gran Sabana Region.

**Remarks:** Señaris (1997) reported *Cochranella oyampiensis* from Salto Karuay, a locality in the Gran Sabana Region, Bolivar State. Kok and Castroviejo-Fisher (2008) demonstrated that those specimens correspond to *Vitreorana helenae*. Purported differences between both taxa listed by Señaris and Ayarzagüena (2005) were interpreted as intraspecific variation.

**Selected references:** Ayarzagüena (1992); Duellman (1993); Señaris (1997); Señaris and Ayarzagüena (2005); Kok and Castroviejo-Fisher (2008); Kok and Kalamandeen (2008); Guayasamin et al. (2009); Señaris et al. (2014).

**Subfamily Hyalinobatrachinae**

**Guayasamin, Castroviejo-Fisher, Trueb, Ayarzagüena, Rada and Vilà, 2009**

Genus *Celsiella* Guayasamin, Castroviejo-Fisher, Trueb, Ayarzagüena, Rada and Vilà, 2009

**Type species:** *Centrolenella revocata* Rivero, 1985, by original designation.

*Celsiella revocata* (Rivero 1985)*

**Holotype:** UPR-M 5295.

**Type locality:** Colonia Tovar, 1,800 m, D.F., Venezuela.

**Distribution:** Region 2. Southern versant of the Cordillera Litoral and the western sector of the Cordillera de la Costa, 1,200–1,800 m asl.

**Selected references:** Rivero (1985); Ruiz-Carranza and Lynch (1991, 1998); Myers and Donnelly (1997); Señaris and Ayarzagüena (2005); Guayasamin et al. (2009).

*Celsiella vozmedianoi* (Ayarzagüena and Señaris 1997)*

**Holotype:** MHNLS 13355.

**Type locality:** “Cerro El Humo, Península de Paria, Estado Sucre, Venezuela. (10°42’N-62°37’W), 750 m snm.”

**Distribution:** Region 2. Endemic on the Península de Paria, Sucre State.

**Selected references:** Ayarzagüena and Señaris (1997); Señaris and Ayarzagüena (2005); Guayasamin et al. (2009).

**Genus Hyalinobatrachium**

Ruiz-Carranza and Lynch, 1991

**Type species:** *Hylella fleischmannii* Boettger, 1893, by original designation.

**Hyalinobatrachium cappellei** (van Lidth de Jeude 1904)

**Holotype:** RMNH 4463.

**Type locality:** River Saramacca and neighboring areas, Suriname.

**Distribution:** Region 5. Brazil, Venezuela, Guyana, Suriname, and French Guiana. Widespread in the Venezuelan Guayana (Amazonas and Bolivar States).

**Remarks:** Many references to this species are found under the names: *Hyalinobatrachium crurifasciatum* Myers and Donnelly, 1997, *H. eccentricum* Myers and Donnelly, 2001, *H. ignioculus* Noonan and Bonett, 2003 and *H. taylori*. Barrio-Amorós and Castroviejo-Fisher (2008b) commented on variation, vocalization and several morphological traits (under *H. ignioculus*). Castroviejo-Fisher et al. (2011) placed the three previous names into the synonymy of *H. cappellei* and identified many published records of *H. taylori* as *H. cappellei*.

**Selected references:** Goin (1964); Señaris and Ayarzagüena (1994, 2005); Myers and Donnelly (1997, 2001); Duellman and Señaris (2003); Barrio-Amorós and Castroviejo-Fisher (2008b); Kok and Kalamandeen (2008); Barrio-Amorós and Duellman (2009); Guayasamin et al. (2009); Castroviejo-Fisher et al. (2011); Señaris et al. (2014).

**Hyalinobatrachium duranti** (Rivero 1985)*

**Holotype:** UPR-M 5811.

**Type locality:** La Mucuy, 2,172 m, Estado Mérida, Venezuela (also type locality of synonyms *H.
31A. *Centrolene venezuelensis*. Female. Páramo Tétari, Sierra de Perijá, Zulia. *Photo: Fernando Rojas-Runjaic.*

31B. *Centrolene venezuelensis*. Male. La Motús, Mérida. *Photo: César Barrio-Amorós.*


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Hyalinobatrachium fragile (Rivero 1985)*

**Type:** UPR-M 5938.

**Type locality:** “Mundo Nuevo, entre Manrique y La Sierra, 396 m, Estado Cojedes, Venezuela.”

**Distribution:** Region 2. Western and central sectors of the Cordillera de la Costa, 100–1,200 m asl.

**Remarks:** *Hyalinobatrachium fleischmanni* has been listed as occurring in Venezuela until recently, but is no
longer considered part of the Venezuelan herpetofauna. Most of the older records were misidentifications between *H. fragile* and *H. guairarepanense*.

**Selected references:** Rivero (1985); Señaris and Ayarzagüena (2005); Barrio-Amorós (2006c).

**Hyalinobatrachium guairarepanense** Señaris, 1999*

- **Holotype:** MHNLS 13731.
- **Type locality:** “Quebrada Chacaito, Parque Nacional El Ávila, (10°30’36"N, 66°51’44"W), 980 m, Distrito Federal, Venezuela.”
- **Distribution:** Region 2. Known only from the central sector of Cordillera Litoral, in Cordillera de la Costa, 720–1,200 m asl.
- **Remarks:** *Hyalinobatrachium fleischmanni* was listed as occurring in northern Venezuela in error (Rivero 1961). Most records were misidentifications of *H. fragile* and *H. guairarepanense*. The image presented here (Image 41) is of an individual from near the type locality (but at around 1,200 m; J. Vieira, pers. comm.), where it had not been seen since its original description. Considered Endangered under Venezuelan Red Book criteria (Señaris et al. 2015a). Here the ending of the original species name *guairarepanensis* is emended as *guairarepanense*, as *Hyalinobatrachium* is a neuter genus (Ruiz-Carranza and Lynch 1991), following the Code’s article 30.1.2. (ICZN 1999).

- **Selected references:** Ginés (1959); Rivero (1961, 1964a,b); Goin (1964); Tello (1968); Cannatella and Lamar (1986); Manzanilla et al. (1995); Myers and Donnelly (1997); ICZN (1999); Señaris (1999); Barrio-Amorós (2013); Señaris et al. (2015).

**Hyalinobatrachium iaspidiense** (Ayarzagüena 1992)

- **Holotype:** EBD 28803.
- **Type locality:** “Quebrada Jaspe, San Ignacio de Yuruaní, Edo. Bolívar. Venezuela.”
- **Distribution:** Region 5. Considered until recently endemic to the Venezuelan Gran Sabana. For several years, reports of this species have come from French Guiana, Surinam, Brazil, Ecuador, and Peru (Guayasamin and North 2009; Yáñez-Muñoz et al. 2009), showing one of the widest distributions among centrolenid frogs. In Venezuela, however, only known from the southeastern sector (east of the Parima-Maigualida mountain chain).

- **Selected references:** Ayarzagüena (1992); Señaris and Ayarzagüena (2004, 2005); Guayasamín and North (2009); Yáñez-Muñoz et al. (2009); Castroviejo-Fisher et al. (2011); Señaris et al. (2014).

**Hyalinobatrachium mesai**

- **Barrio-Amorós and Brewer-Carias, 2008***

- **Holotype:** EBRG 4644.
- **Type locality:** Southern slope of Sarisariñama-tepui, Bolivar State, Venezuela (4°25’N, 64°7’W), elevation 420 m.
- **Distribution:** Region 5. Only known from the type locality.
- **Remarks:** Guayasamin and North (2009) believe that due to the similarity with *Hyalinobatrachium iaspidiense*, *H. mesai* is likely a synonym. However, CBA field notes clearly note green bones as the main distinguishing character (Barrio-Amorós and Brewer-Carias 2008).

- **Selected references:** Barrio-Amorós and Brewer-Carias (2008); Guayasamin and North (2009); Castroviejo-Fisher et al. (2011).

**Hyalinobatrachium mondolfii**

- **Ayarzagüena and Señaris, 2001***

- **Holotype:** MHNLS 12710.
- **Type locality:** “Primer raudal del Caño Acoima, afluente del Río Grande (8°22’N, 61°32’W), 15 m snm, estribaciones de la serranía de Imataca, Estado Delta Amacuro.”
- **Distribution:** Regions 4, 5, 6. Widespread in lowlands of Amazonia in southern Venezuela and the Guianas, and from Colombia and Brazil into Bolivia. In Venezuela, only known from Delta Amacuro State.


**Hyalinobatrachium orientale** (Rivero 1968)

- **Holotype:** MCZ 72497.
- **Type locality:** “Cerro Turumiquire, 1,200 m, Estados Sucre-Monagas, Venezuela.”
- **Distribution:** Region 2. Tobago and northeastern Venezuela. In Venezuela, restricted to the eastern part of Cordillera de la Costa (Serranía de Paria and Macizo de Turimiquire), in Monagas and Sucre States.
- **Remarks:** *Hyalinobatrachium orientale* was believed to be a species complex including *H. orocostale* (Cannatella and Lamar 1986). Castroviejo-Fisher et al. (2008) demonstrated that *H. orocostale* may be differentiated, as *H. orientale* remains only known from NE Venezuela and Tobago (Hardy 1984b; Jowers et al. 2014). The genetic distance between Venezuelan and Tobagoan populations is low enough that Jowers et al. (2014) did not elevate subspecies *tobagoensis* to species status. However, a biogeographic rationale could support its elevation, but would require further investigation. CBA and G. Rivas collected *H. orientale* in Macuro (Península de Pariá) at near sea level (elevation 5 m; specimens at CVULA), extending the elevational range from 5–1,200 m.

- **Selected references:** Rivero (1968b); Hardy (1984b); Cannatella and Lamar (1986); Ruiz-Carranza and Lynch (1991); Señaris and Ayarzagüena (1993, 2005); Manzanilla et al. (1995); Ayarzagüena and Señaris (1996); Duellman (1997); Gorzula and Señaris (1998); Castroviejo-Fisher et al. (2008); Jowers et al. (2014).
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35B. *Vitreorana gorzulae*. Female. Las Lajas, Sierra de Lema, Bolivar. *Photo: César Barrio-Amorós.*


38C. *Hyalinobatrachium cappellei*. Detail of the iris. La Laja, Sierra de Lema, Bolivar. Photo: Charles Brewer-Carias.


42. *Hyalinobatrachium iaspidiense*. Salto Río Lindo, Sierra de Imataca, Delta Amacuro. Photo: César Barrio-Amorós.

**Hyalinobatrachium orocostale** (Rivero 1968)*

**Holotype:** MCZ 47501

**Type locality:** “Cerro Platillón (Hacienda Picachitos), Cordillera del Interior, 1,200 m, Estado Guárico, Venezuela.”

**Distribution:** Region 2. Apparently restricted to humid mountainous forests of Serranía del Interior, a small mountain chain parallel to the Serranía del Litoral, both within the central sector of Cordillera de la Costa in Venezuela.

**Remarks:** Erected from synonymy with *Hyalinobatrachium orientale* by Castroviejo-Fisher et al. (2008).

**Selected references:** Rivero (1968); Señaris and Ayarzagüena (2005); Castroviejo-Fisher et al. (2008).
**Hyalinobatrachium pallidum** (Rivero 1985)*

**Holotype:** UPR-M 4554.

**Type locality:** “Guacharaquita, entre La Grita y Páramo de La Negra, 1,768 m, Edo Táchira, Venezuela.”

**Distribution:** Region 1. Cordillera de Mérida in its western, southern, and eastern versants (Mérida, Táchira, and Barinas States), and Sierra de Perijá (Zulia State).

**Remarks:** This species has a wider distribution than previously known. Formerly only known from its type locality until Señaris and Ayarzagüena (2005) redescribed the species based on new topotypic specimens. Later, Guayasamin et al. (2009) assigned a population from the eastern versant of the Andes, reported as *Hyalinobatrachium ibama* by Barrio-Amorós (2006d) to *H. cf. pallidum*. Based on molecular work (Guayasamin et al. 2009 and unpub.), it is doubtful that *H. ibama* is the species occupying the eastern versant of the Cordillera de Mérida (Barrio-Amorós 2006d), but is more likely *H. pallidum* (Image 47A). Actually, this implies that *H. ibama* from Colombia could be a junior synonym of *H. pallidum*. Another population from Quebrada La Rana, near La Macana, Mérida, is morphologically slightly different from the *H. pallidum* population at San Isidro, Barinas (Image 47B). More research is needed to resolve the status of *H. pallidum* in the Venezuelan Andes. More recently, Rojas-Runjaic et al. (2012) reported four additional localities, along the eastern versant of the Sierra de Perijá, at elevations 1,132–1,832 m asl.

**Selected references:** Rivero (1985); Señaris and Ayarzagüena (2005); Barrio-Amorós (2006d); Guayasamin et al. (2009); Rojas-Runjaic et al. (2012).

**Hyalinobatrachium tatayoi**

Castroviejo-Fisher, Ayarzagüena and Vilà, 2007

**Holotype:** MHNLS 17174.

**Type locality:** “Stream near Tokuko (09°50’30.6”N, 72°49’13.6”W; 301 m asl.), Estado Zulia, Venezuela.”

**Distribution:** Regions 1, 6. Known from four localities in lowlands and uplands of the eastern versant of Sierra de Perijá, Zulia State (Rojas-Runjaic et al. 2012). CBA and Erik Arrieta also collected this species at Río Frío (CVULA 8201–09) at 40 m, in a small stream flowing from Cordillera de Mérida through the lowlands facing Lake Maracaibo, Mérida State. Elevation range 40–512 m asl.

**Remarks:** Castroviejo-Fisher et al. (2009) showed that *Hyalinobatrachium tatayoi* is embedded in a clade of specimens of *H. fleischmanni* and these two species could be conspecific. If *H. fleischmanni* is a species complex it requires further taxonomic and nomenclatural revision.

**Selected references:** Castroviejo-Fisher et al. (2007, 2009); Rojas-Runjaic et al. (2012).

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**Hyalinobatrachium taylori** (Goin 1968)

**Holotype:** BM 1939.1.1.65.

**Type locality:** “750 ft. (228 m) along the New River, Guyana”

**Distribution:** Region 5. Venezuela, Guyana, Suriname, and French Guyana. Widespread in the Venezuelan Guayanas. Elevational distribution in Venezuela from 450 m (La Laja, Sierra de Lema) to 1,850 on Auyan-tepui (Señaris and Ayarzagüena 1994). Lower elevations are known in Guyana, French Guiana, and Suriname (Kok and Castroviejo-Fisher 2008). Amazonas state reports (Señaris and Ayarzagüena 2005) are doubtful and must be verified.

**Remarks:** *Hyalinobatrachium taylori* has a long history of misidentifications. The type series contained three different species, and many published records refer to *H. cappellei* (Castroviejo-Fisher et al. 2011).

**Selected references:** Goin (1968); Ruiz-Carranza and Lynch (1991); Ayarzagüena (1992); Señaris and Ayarzagüena (1993, 2005); Gorzula and Señaris (1998); Lescure and Marty (2000); Noonan and Bonet (2003); Kok and Castroviejo-Fisher (2008); Kok and Kalamande (2008); Barrio-Amorós and Duellman (2009); Castroviejo-Fisher et al. (2011); Señaris et al. (2014).

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**Family Ceratophryidae** Tschudi, 1838


**Selected references:** Frost (2006); Faivovich et al. (2014).

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**Genus Ceratophrys** Wied-Neuwied, 1824

**Type species:** *Ceratophrys varius* Wied-Neuwied, 1824 (=*Bufo auritus* Raddi, 1823), by subsequent designation of Fitzinger (1843).

**Remarks:** *Ceratophrys cornuta* (Linnaeus 1758) was considered to occur in Venezuela (Rivero 1961; Lynch 1982). This was accepted by many subsequent authors until Barrio-Amorós (2004) deleted it from the Venezuelan checklist for lack of any voucher or photographs of the species in the country.

**Ceratophrys calcarata** Boulenger, 1890

**Holotype:** BMNH 1947.2.17.28 (formerly 89.12.16.168).

**Type locality:** “Colombia.”

**Distribution:** Region 3, 6. Caribbean lowlands of Colombia and Venezuela. In Venezuela, distribution is in the northwestern portion of the country (Maracaibo Lake Basin, Falcón and Lara States), with a disjunct population


47B. *Hyalinobatrachium pallidum*. Male. Quebrada La Rana, south of Santa Cruz de Mora, Mérida. *Photo: César Barrio-Amorós.*


Remarks: Includes Pristimantinae *sensu* Padial et al. (2014), including Ceuthomantinae Heinicke et al. (2009), in the surroundings of Puerto Ayacucho, southeast of the Orinoco River in Amazonas State.

Selected references: Boulenger (1890); Lutz (1927); Ginés (1959); Rivero (1961, 1964b); Lynch (1982); La Marca (1986, 1995a); Mijares-Urrúa and Arends (1993); Frost et al. (2006); Faivovich et al. (2014).

Family Ceuthomantidae

Heinicke, Duellman, Trueb, Means, MacCulloch and Hedges, 2009

Remarks: Includes Pristimantinae *sensu* Padial et al. (2014), including Ceuthomantinae Heinicke et al. (2009),

Genus *Ceuthomantis* Heinicke, Duellman, Trueb, Means, MacCulloch and Hedges, 2009

**Type species:** *Ceuthomantis smaragdinus* Heinicke, Duellman, Trueb, Means, MacCulloch, and Hedges, 2009, by original designation.

*Ceuthomantis aracamuni* (Barrio-Amorós and Molina 2006)*

**Holotype:** MHNLS 17042.

**Type locality:** Summit of Cerro Aracamuni (01°28’36”N, 65°50’7”W), elevation 1,493 m, Amazonas State, Venezuela.

**Distribution:** Region 5. Endemic to Cerro Aracamuni, a granitic mountain in Amazonas State, southern Venezuela.

**Remarks:** Described originally in genus *Eleutherodactylus* (Barrio-Amorós and Molina 2006), subsequently transferred to *Pristimantis* based on Heinicke et al. (2007), and finally transferred to *Ceuthomantis* by Heinicke et al. (2009).

**Selected references:** Barrio-Amorós and Molina (2006); Heinicke et al. (2009); Barrio-Amorós (2010c).

*Ceuthomantis cavernibardus* (Myers and Donnelly 1997)

**Holotype:** AMNH 131537.

**Type locality:** “North base of Pico Tamacuari, 1,160–1,200 m elevation. Sierra Tapirapecó, Amazonas, Venezuela (1°13’N, 64°42’W).”

**Distribution:** Region 5. Restricted to the Sierra Tapirapecó, in the extreme south of Amazonas State in Venezuela along the northern border of Brazil.

**Remarks:** Described originally as a member of genus *Eleutherodactylus* (Myers and Donnelly 1997), and considered a member of *Pristimantis* by Barrio-Amorós and Brewer-Carias (2008), before being transferred to *Ceuthomantis* by Heinicke et al. (2009).

**Selected references:** Myers and Donnelly (1997); Caramaschi and Niemeyer (2005); Barrio-Amorós and Brewer-Carias (2008); Heinicke et al. (2009); Barrio-Amorós (2010c).

*Ceuthomantis duellmani* Barrio-Amorós, 2010*

**Holotype:** EBRG 4676.

**Type locality:** Edge of Sima Mayor, Sarisaríañama-tepui (1°28’36”N, 65°50’7”W), elevation 1,350 m, Bolívar State, Venezuela.

**Distribution:** Region 5. Endemic to Cerro Sarisaríañama-tepui in Bolívar State; southeastern Venezuela.

**Selected references:** Barrio-Amorós and Brewer-Carias (2008); Barrio-Amorós (2010c).

Family *Craugastoridae* Hedges, Duellman and Heinicke, 2008

**Remarks:** This very diverse group of Terraranas is still under revision (e.g., Padial et al. 2014; Heinicke et al. 2015, 2018). Pyron and Wiens (2011) found Craugastoridae embedded in Strabomantidae. Padial et al. (2014) validated a monophyletic Craugastoridae including subfamily Ceuthomantinae Heinicke et al., 2009. Heinicke et al. (2018) showed Strabomantidae monophyletic with respect to Craugastoridae, a view shared here. Heinicke et al. (2015) did not allow unequivocal placement of *Tachiramantis* into a subfamily, however, Heinicke et al. (2018) placed it into Craugastoridae.

Genus *Tachiramantis* Heinicke, Barrio-Amorós and Hedges, 2015

**Type species:** *Eleutherodactylus prolixodiscus* Lynch, 1978, by original designation.

**Remarks:** Recently erected by Heinicke et al. (2015) to accommodate a clade of terraranan frogs deeply divergent from *Pristimantis*. More species currently in *Pristimantis* will probably be shown to be members of *Tachiramantis*, such as *P. melanoproctus*, *P. mondolfii* and *P. tayrona* (due to its similarity to *P. prolixodiscus*).

*Tachiramantis lentiginosus* (Rivero 1984)*

**Holotype:** UPR-M 6060.

**Type locality:** “Guacharquita, 1,768 m, entre La Grita y Páramo de La Negra, Edo. Táchira, Venezuela.”

**Distribution:** Region 1. Known from scattered localities in cloud forests of Táchira and Mérida States.

**Selected references:** Rivero (1982c).

*Tachiramantis prolixodiscus* (Lynch 1978)

**Holotype:** KU 132726.

**Type locality:** “30 km ENE Bucaramanga, road to Cúcuta, Departamento Santander, Colombia, 2,485 m.”

**Distribution:** Region 1. Cordillera Oriental in Colombia and Venezuela. In Venezuela, present in the Cordillera de Mérida and the Sierra de Perijá. Barrio-Amorós (2010a) reported it from Calderas, Barinas State, and Barrio-Amorós et al. (2010i) from Perijá; Camargo et al. (2014) provided first report from Lara State.

**Remarks:** According to Lynch (2003), *Eleutherodactylus chlorosoma* Rivero, 1984 is a junior synonym. Heinicke et al. (2015) assigned *prolixodiscus* to *Tachiramantis* as its type species.

**Selected references:** Lynch (1978, 2004); Rivero (1982); Barrio-Amorós (2010a); Barrio-Amorós et al. (2010);
Catologue of the amphibians of Venezuela

51. Ceuthomantis duellmani. Sarisariñama tepui, Bolivar. Photo: Javier Mesa.


53. Tachiramantis prolixodiscus. Los Alcaravanes, Calderas; Barinas. Photo: César Barrio-Amorós.


Camargo et al. (2014); Heinicke et al. (2015).

Family Dendrobatidae Cope, 1865

Remarks: Herein, family Dendrobatidae is treated to include subfamilies Aromobatinae and Dendrobatinae, which does not follow Grant’s et al. (2006, 2017) classification as two separate families.

Subfamily Aromobatinae Grant, Frost, Caldwell, Gagliardo, Haddad, Kok, Means, Noonan, Schargel and Wheeler, 2006

Remarks: Grant et al. (2006) erected family Aromobatidae for dendrobatoid frogs without alkaloids. Santos et al. (2009) returned to a comprehensive Dendrobatidae with Aromobatinae as a subfamily, which
is followed here. Pyron and Wiens (2011) opined that there was not a need for subfamilies in Dendrobatidae. Grant’s et al. (2017) claim against Santos (2009) and Barrio-Amorós et al. (2010b) opinions.

**Genus Prostherapis Cope, 1868**

**Type species:** *Prostherapis inguinalis* Cope, 1868, by original designation.

*Prostherapis dunnii* (Rivero 1961)*

**Holotype:** FMNH 35987.

**Type locality:** “above Caracas, Distrito Federal, Venezuela.”

**Distribution:** Region 2. Only found in the Caracas Region.

**Remarks:** Little is known about this frog. Grant et al. (2006) did not include this species in their molecular analysis, and its morphological characteristics prevent clear assignment to an established genus. Until molecular data become available, it should remain in the genus to which it was originally assigned, which is not currently used for any other dendrobatid species. Its unknown phylogenetic relationships (La Marca 2004; Grant et al. 2006) require more data to determine its proper place among dendrobatids. It has likely suffered a dramatic decline in populations due to habitat destruction in the Caracas area (La Marca 2004). Recent surveys by FRR and collaborators in June, July, and December 2015 failed to detect any individuals. It is currently considered Critically Endangered in the Venezuelan Red Book (Rojas-Runjaic and Señaris 2015a) but could be already extinct.

**Selected references:** Grant et al. (2010b) opinions.

Nothing is known of this species beyond the original description and some natural history notes by Dixon and Rivero Blanco (1985). It appears to be quite rare, difficult to observe and collect, or it may have suffered a severe decline.

**Selected references:** Test (1956); Ginés (1959); Rivero (1961, 1964a, 1988); Dixon and Rivero Blanco (1985); Myers et al. (1991); Manzanilla et al. (1995); La Marca and Mijares-Urrutía (1997); Barrio and Fuentes (1999a); Barrio-Amorós (2006c).

**Allobates caribe**

(Barrio-Amorós, Rivas and Kaiser 2006)*

**Holotype:** MHNLS 17462.

**Type locality:** “Southern slope of Cerro El Humo, Península de Paria, Estado Sucre, Venezuela (10°41’094"N, 62°37’147"W), elevation 1,050 m.”

**Distribution:** Region 2. Only known from type locality.

**Remarks:** Described as *Colostethus caribe*, it was transferred to *Allobates* by Lötters et al. (2007: 55) a shift agreeable to the current authors, but later (mistakenly) transferred to *Anomaloglossus* (Lötters et al. 2007: 60) without explanation. Frost (2018) used *Allobates* for this species by implication. Several recent attempts to secure more specimens in the same general area failed (G. Rivas, pers. comm.).

**Selected references:** Barrio-Amorós et al. (2006a); Lötters et al. (2007).

**Allobates femoralis** (Boulenger 1884)


**Type locality:** “Yurimaguas, Huallaga River, (Departamento Loreto), Northern Peru.”

**Distribution:** Widely distributed in the Amazonian Region (Colombia, Peru, Ecuador, Bolivia, Brazil, Venezuela, Guyana, Suriname, and French Guiana). In Venezuela, only known from two localities in the extreme east of Bolivar State.

**Remarks:** *Allobates femoralis* was reported for Venezuela by Duellman (1997) based on one specimen (KU 167335), which was confused with *Ameerega picta* (see explanation in Barrio-Amorós 2004 and Barrio-
Amorós and Santos 2009). Nevertheless, its presence in the country was shown by Barrio-Amorós and Santos (2009) using two different recorded calls; voucher specimens from Venezuela are still lacking.

**Selected references:** Duellman (1997); Barrio-Amorós and Santos (2009).

**Allobates humilis** (Rivero 1980)*

**Holotype:** UPR-M 3526.
**Type locality:** “Boconó (Laguneta artificial del Ministerio de Agricultura), Edo. Trujillo, Venezuela, 1,470 m.”

**Distribution:** Region 1. Eastern slopes of Venezuelan Andes, in Trujillo and Barinas States, 1,100–1,470 m asl.

**Remarks:** Misidentified specimens of *Allobates humilis* reported by Barrio-Amorós and García Porta (2003) from Táchira State actually represent *A. algorei* (Barrio-Amorós and Santos 2009).

**Selected references:** La Rivero (1980, 1988); Myers et al. (1991); Marca et al. (2002); Barrio-Amorós and García Porta (2003); Barrio-Amorós (2010a).

**Allobates mandelorum** (Schmidt 1932)*

**Holotype:** FMNH 17788.
**Type locality:** “Camp at altitude of 8,000 feet (2,630 m) on Mount Turumquire, (Estados Sucre and Monagas), Venezuela.”

**Distribution:** Region 2. Endemic to Macizo de Turimiqui, a mountain in the Cordillera de la Costa Oriental, between Monagas and Sucre states. Known only from type locality and from Elvecia in Sucre State (La Marca 1993).

**Remarks:** Despite the taxonomic revision of La Marca (La Marca, Manzanilla and Mijares-Urrutia 2004)*, where it was not closely related to *Mannophryne* or the *Colostethus alboguttatus* group (currently *Aromobates*), its status remains unsolved. It was allocated to *Allobates* by Grant et al. (2006) without any substantiation. The relationships within Aromobatinae remain unknown and it has not been collected since 1932.

**Selected references:** Schmidt (1932); Ginés (1959); Rivero (1961, 1982a, 1988); Hardy (1984a); Myers et al. (1991); La Marca (1993); Grant et al. (2006).

**Allobates pittieri**

(La Marca, Manzanilla and Mijares-Urrutia 2004)*

**Holotype:** ULABG 5564.
**Type locality:** “Venezuela: Estado Aragua: Municipio Ocumare de la Costa de Oro (antes Municipio Mario Briceño Iragorri): quebrada afluente del Río La Trilla, 170 m snm. entre la Estación Biológica de Rancho Grande y Ocumare de la Costa, vertiente Norte del Parque Nacional Henri Pittier (10°22’52”N, 67°44’67”W)”

**Distribution:** Region 2. Distributed throughout the western Cordillera de la Costa (including Aragua, Carabobo, and Falcón States) towards the northeasternmost sector of the Andes (Lara State), 150–1,700 m asl.

**Selected references:** La Marca et al. (2004).

**Allobates sanmartini**

(Rivero, Langone and Prigioni 1986)*

**Holotype:** MHN M 540.
**Type locality:** “Las Majadas, río Orinoco, Estado Bolivar, Venezuela.”

**Distribution:** Region 5. Known only from the type locality.

**Remarks:** Known only from the type series (two females). Despite several attempts (by CBA, J.C. Santos, and FRR) no additional individuals have been located. The type locality, Las Majadas, could be either where the expedition gathered to send the specimens, or the last campsite where collected material was processed (P. Langone, pers. comm.). In the authors’ opinion, this area is unsuitable for dendrobatid frogs, as it is dry forest similar to that in the Llanos which is devoid of dendrobatoids. Most likely, the specimens came from the Campamento Cecilia Magdalena, upper Caura River, where most of the other amphibian specimens were collected (Rivero et al. 1986). A recently metamorphosed (CVULA 7860) was collected by CBA in Santa Maria de Erebató, Upper Caura River area, in the same main area of Campamento Cecilia Magdalena, which might be an individual of this species. However, its small size, and absence of molecular data, prevent a positive identification.

**Selected references:** Rivero et al. (1986); Rivero (1988); Myers et al. (1991); La Marca (1997); Grant et al. (2006).

**Allobates undulatus** (Myers and Donnelly 2001)*

**Holotype:** EBRG 3021.
**Type locality:** “Forest stream on Cerro Yutajé, 1,750 m (5°46’N, 66°8’W), Amazonas, Venezuela.”

**Distribution:** Region 5. Endemic to Yutajé, a tepui in the north of Amazonas State.

**Selected references:** Myers and Donnelly (2001); Grant et al. (2006).

**Genus Anomaloglossus**

Grant, Frost, Caldwell, Gagliardo, Haddad, Kok, Means, Noonan, Schargel and Wheeler, 2006

**Type species:** *Colostethus bebebi* Noble, 1923, by original designation.

**Remarks:** Genus *Anomaloglossus*, recognized by the presence of a median lingual process (MLP), was described by Grant et al. (1997). Currently 28 species are known from the Guiana Shield and northern Amazon (Frost 2018). The seven trans-Andean species with MLP now belong to *Ectopoglossus* Grant, Rada, Anganoy-


Criollo, Batista, Dias, Jeckel, Machado and Rueda-Almonacid, 2017.

*Anomaloglossus ayarzaguenai* (La Marca 1997)*

**Holotype:** MHNLS 12949.

**Type locality:** “Sector central de Cerro Jaua, Estado Bolivar (4°49'55"N, 64°25'54"W).”


**Distribution:** Region 5. Known only from type locality, a tepui in Bolivar State.

**Selected references:** La Marca (1997a).

*Anomaloglossus breweri* (Barrio-Amorós 2006)*

**Holotype:** MHNLS 17044.

**Type locality:** “Entry of Cueva del Fantasma,


*Anomaloglossus guanayensis* (La Marca 1997)*

**Holotype:** MHNLS 10708.

**Type locality:** “Alto río Parguaza, Serranía de Guanay (5°55’N y 66°27’W), Estado Amazonas.” Type locality is actually in Bolívar State.

northwestern slope of Aprada tepui, 05°27’N, 62°27’W, 660 m above sea level, Estado Bolívar, Venezuela.”

**Distribution:** Region 5. Apparently endemic to Aprada-tepui.

**Selected references:** Barrio-Amorós (2006a, 2013); Señaris et al. (2014).
**Anomaloglossus moffetti**  
Barrio-Amorós and Brewer-Carias, 2008

**Holotype:** EBRG 4645.  
**Type locality:** Southern slope of Sarisariñama-tepui, Camp IV, Estado Bolívar, Venezuela (4°29'N, 64°8'W), elevation 1,108 m.  
**Distribution:** Region 5. Known only from Sarisariñama, a tepui in Bolívar State.  
**Remarks:** It should be compared to *Anomaloglossus ayarzaguenai*, as both are from neighboring tepuis, and could represent the same taxon.  
**Selected references:** Barrio-Amorós and Brewer-Carias (2008).

**Anomaloglossus murisipanensis** (La Marca 1997)*

**Holotype:** MHNLS 11385.  
**Type locality:** “Murisipan-tepui (05°53'N y 62°04'W), Estado Bolívar, Venezuela, 2,350 m snm.”  
**Distribution:** Region 5. Known only from Murisipan, a tepui in Bolívar State.  
**Remarks:** Listed as Vulnerable (VU) in the current Venezuelan Red Book (Rojas-Runjaic and Señaris 2015b).  
**Selected references:** La Marca (1997a); Gorzula and Señaris (1998); Señaris et al. (2014); Rojas-Runjaic and Señaris (2015b).

**Anomaloglossus parimae** (La Marca 1997)*

**Holotype:** ULABG 4221.  
**Type locality:** “Pista Constitución (02°13’49’’N, 63’20’00’’W) en las cercanías del Cerro Delgado Chalbaud, (Amazonas State, Venezuela), 670 m snm.”  
**Distribution:** Region 5. Known only from type locality.  
**Remarks:** It should be compared to *Anomaloglossus tamacuarensis*, as both are from the same mountain range, and could represent the same taxon.  
**Selected references:** La Marca (1997a); Gorzula and Señaris (1998); Señaris et al. (2014); Rojas-Runjaic and Señaris (2015b).

**Anomaloglossus parkerae**  
(Meinhardt and Parmelee 1996)*

**Holotype:** KU 167332.  
**Type locality:** “km 112, El Dorado-Santa Elena de Uaírén road (06°01’N, 61°24’W; 860 m), Estado Bolívar, Venezuela.”  
**Distribution:** Region 5. La Escalera Region, Sierra de Lema; probably extended through the Gran Sabana Region to El Paují (Bolívar State).  
**Remarks:** Key species for understanding the phylogenetic relationships of *Anomaloglossus*, as it was the first species described from Bolívar State, where the majority of *Anomaloglossus* species were discovered afterwards. It inhabits the northern versant of the Sierra de Lema, especially in the sector known as La Escalera. Many expeditions to that area from 2006–2011 failed to find the species, even in pristine zones. Two putative populations, one from Kavanayen (EBRG 5729–32, 5775–78) and another from El Paují (CBA, unpub. data) could demonstrate its survivorship. However, molecular data for *parkerae* (from the type locality) have been never been generated, which prevents determination of its affinities.  
**Selected references:** Meinhardt and Parmelee (1996); Duellman (1997); La Marca (1997a); Gorzula and Señaris (1998); Señaris et al. (2014); Fouquet et al. (2015); Barrio-Amorós (2016).

**Anomaloglossus praderioi** (La Marca 1997)

**Holotype:** ULABG 4196.  
**Type locality:** “Monte Roraima, tercera quebrada a partir de la base (5°10’N y 60°47’W). Parque Nacional Canaima, sector Oriental (Gran Sabana), Estado Bolívar, Venezuela. 1,950 m snm.”  
**Distribution:** Region 5. Eastern Gran Sabana in Bolívar State, and adjacent Guyana, 1,310–1,850 m asl. Known in Venezuela from Roraima and Sierra de Lema (Kok 2010).  
**Remarks:** The original description (La Marca 1996e) was based on two adult males. Kok (2010) redescribed the species with fresh material.  
**Selected references:** La Marca (1997a); Grant et al. (2006); Kok (2010); Cole et al. (2013); Señaris et al. (2014).

**Anomaloglossus rufulus** (Gorzula 1990)*

**Holotype:** MHNLS 10361.  
**Type locality:** “Porción central de Murey Tepui de la Lema, 1860–2,700 m asl.”  
**Distribution:** Region 5. La Escalera Region, Sierra de Lema; probably extended through the Gran Sabana Region to El Paují (Bolívar State).  
**Remarks:** Key species for understanding the phylogenetic relationships of *Anomaloglossus*, as it was the first species described from Bolívar State, where the majority of *Anomaloglossus* species were discovered afterwards. It inhabits the northern versant of the Sierra de Lema, especially in the sector known as La Escalera. Many expeditions to that area from 2006–2011 failed to find the species, even in pristine zones. Two putative populations, one from Kavanayen (EBRG 5729–32, 5775–78) and another from El Paují (CBA, unpub. data) could demonstrate its survivorship. However, molecular data for *parkerae* (from the type locality) have been never been generated, which prevents determination of its affinities.  
**Selected references:** Meinhardt and Parmelee (1996); Duellman (1997); La Marca (1997a); Gorzula and Señaris (1998); Señaris et al. (2014); Fouquet et al. (2015); Barrio-Amorós (2016).


71A. *Aromobates ericksonae*. Olinda, La Azulita, Mérida. Photo: César Barrio-Amorós.

71B. *Aromobates ericksonae*. Olinda, La Azulita, Mérida. Photo: César Barrio-Amorós.

en el Macizo de Chimantá (CHIMANTA XVIII) 05°22’N-62°05’W. 2,600 m, Estado Bolívar, Venezuela.”

**Distribution:** Region 5. Endemic to Chimantá, a tepui in Bolivar State.

**Remarks:** Described originally as *Dendrobates rufulus*, its the generic allocation changed to *Epipedobates* (Walsh 1994; Myers 1997) and *Allobates* (Jungfer and Böhme 2004) until Barrio-Amorós and Santos (2011) allocated it to its current genus based on the presence of an MLP and (unpub.) genetic data.

**Selected references:** Gorzula (1988, 1992); Walsh (1994); Myers (1997); Barrio and Fuentes (1999a, 2012); Barrio-Amorós (2001c); Barrio-Amorós and Santos (2011); Señaris et al. (2014).

*Anomaloglossus shrevei* (Rivero 1961)*
Anomaloglossus tamacuarensis
(Myers and Donnelly 1997)

Holotype: AMNH 131347.
Type locality: “North base of Pico Tamacuari, 1,160–1,200 m elevation. Sierra Tapirapecó, Amazonas, Venezuela.”
Distribution: Region 5. Known at type locality in Venezuela (1°13’N, 64°42’W).”
Remarks: Little is known about this species beyond its original description. An additional specimen was reported by Rivero (1964b), and a male was described by La Marca (1997).

Anomaloglossus tepuyensis (La Marca 1997)*

Holotype: ULABG 2557.
Type locality: “Entre Danto y Piñón (= Peñón), a casi una hora caminando desde Danto, en el trayecto desde Kamarata hasta las laderas del Auyán-tepui, Estado Bolívar, Venezuela, 1,650 m smn.”
Remarks: Myers and Donnelly (2008) comprehensively redescribed this species. The Anomaloglossus “tepuyensis” cited from Guyana (Grant et al. 2006; MacCulloch and Lathrop 2009), is actually a similar species, A. megacephalus Kok, MacCulloch, Lathrop, Billaert and Bossuyt, 2010. This taxon could be a synonym of A. parkerae (P. Kok, pers. comm.).
Selected references: Grant et al. (1997, 2006); La Marca (1997a); La Marca et al. (2002); Barrio-Amorós and Brewer-Carías (2008); Myers and Donnelly (2008); MacCulloch and Lathrop (2009); Señaris et al. (2014).

Anomaloglossus triunfo
(Barrio-Amorós, Fuentes and Rivas 2004)*

Holotype: EBRG 4756.
Type locality: “Summit of Cerro Santa Rosa, Serranía del Supamo, 685 m above sea level. 6°40’39”N, 62°24’26”W, Estado Bolívar.”
Distribution: Region 5. Only known from two localities, 350–680 m asl, at the northwestern slopes of Sierra de Lema, Bolivar State.
Remarks: This name could be a synonym of A. parkerae (P. Kok, pers. comm.).
Selected references: Barrio-Amorós et al. (2004, 2011b); Myers and Donnelly (2008); Kok et al. (2013).

Anomaloglossus verbeeksnyderorum
Barrio-Amorós, Santos and Jovanovic, 2010*

Holotype: MHNLS 1649.
Type locality: “Tobogán de la Selva, Municipio Atures, Estado Amazonas, Venezuela, 5°23’N, 67°34’W, 56 m asl., 5.4109°N, 67.6197°W.”
Distribution: Region 5. Tobogán de la Selva and nearby granitic domes around Puerto Ayacucho area in NW Amazonas State; also at Serranía de los Pijiguaoa, Bolívar State (Camargo et al. 2014).
Remarks: Kok et al. (2012) showed that Anomaloglossus verbeeksnyderorum and A. wothuja are not genetically differentiated. There are subtle morphological differences among these species (noted in Barrio-Amorós et al. 2011), but more detailed work is necessary to assess its proper identity.
Selected references: Barrio-Amorós et al. (2010); Camargo et al. (2014).

Anomaloglossus wothuja
(Barrio-Amorós, Fuentes and Rivas 2004)*

Holotype: MBUCV 6689.
Type locality: “Base of Cerro Sipapo, Tobogán del Cuao, 150 m above sea level, 5°05’09”N, 67°27’07”W, Estado Amazonas, Venezuela.”
Distribution: Region 5. Apparently endemic from the uplands of the Cuao Massif; probably occurring more extensively throughout similar granitic areas in Amazonas State.
Remarks: Frost (2016) erroneously used acronym EBRG (instead of MBUCV) for the catalog number of the holotype of Anomaloglossus wothuja. See other remarks for this species under A. verbeeksnyderorum.
Selected references: Barrio-Amorós et al. (2004); Frost (2016).

Genus Aromobates
Myers, Paolillo and Daly, 1991

Type species: Aromobates nocturnus Myers, Paolillo and Daly, 1991 by original designation.
Remarks: Aromobates was known from a single species, A. nocturnus until Grant et al. (2006) moved species in the Colostethus albeguttatus group (sensu Rivero 1988) and Nephelobates (sensu La Marca 1994) to Aromobates, increasing the number to the current 18 species. The current authors recover A. inflexus from synonymy (see below in its own account). More species await description from the Venezuelan Andes and beyond. Barrio-Amorós and Santos (2012) provided a phylogeny and a list with current threats for all species of the genus (except A.
**Aromobates alboguttatus** (Boulenger 1903)*

**Holotype:** BM 1947.2.13.88.

**Type locality:** “Mérida, Estado Mérida, Venezuela, a 1,600 m.”

**Distribution:** Region 1. Andes of Estado Mérida.

**Remarks:** The species appears to have vanished in the wild (Barrio-Amorós and Santos 2012). Rivero (1982a) included *Colostehus inflexus* Rivero, 1978 in the synonymy of *C. alboguttatus*. La Marca (1997) recovered the species as *Nepheleobates inflexus*, without explanation. Barrio-Amorós and Santos (2012) consider this species different from *A. alboguttatus* and valid, but awaiting proper attention and a redescription.

**Selected references:** Boulenger (1903); Ginés (1959); Rivero (1961, 1963b, 1978, 1988); Péfaur (1985); Myers et al. (1991); La Marca (1992, 1994); Piñero and La Marca (1996); Mijares and La Marca (1997); Barrio and Fuentes (1999a); Barrio-Amorós and Santos (2012); Barrio-Amorós (2013).

**Aromobates cannatellai** Barrio-Amorós and Santos, 2012*

**Holotype:** CVULA 8327.

**Type locality:** “Parque Cascada de la Escalera, at the entrance of Mesa de Pérez, Municipio Uriabante, Estado Táchira, Venezuela (8.0031N, 71.7316W), elevation 1,140 m.”

**Distribution:** Region 1. Only known from its type locality.

**Remarks:** Some populations of *Aromobates saltuensis* reported from Colombia should probably be compared to *A. cannatellai* (Barrio-Amorós and Santos 2012). Acevedo et al. (2018) report *A. cannatellai* from Norte de Santander, Colombia.

**Selected references:** Barrio-Amorós and Santos (2012).

**Aromobates capurinensis** (Péfaur 1993)*

**Holotype:** CVULA IV.1063.

**Type locality:** “Páramo El Molino, via Canaguá, Sierra Nevada, 2,420m, Distrito Arzobispo Chacón, Municipio Libertad, Estado Mérida, Venezuela.”

**Distribution:** Region 1. Known only from type locality. Has been not observed since the year of its collection.

**Selected references:** Péfaur (1993); Barrio-Amorós and Santos (2012).

**Aromobates duranti** (Péfaur 1985)*

**Holotype:** CVULA IV.1608.

**Type locality:** “Páramo de La Cucuta, Distrito Libertador, Estado Mérida, Venezuela, 2,880 m.”

**Distribution:** Region 1. Surroundings of type locality, in streams of páramo and subpáramo 2,600–3,000 m asl.

**Selected references:** Péfaur (1985); Rivero (1988); Myers et al. (1991); Mijares and La Marca (1997); Barrio-Amorós and Santos (2012).

**Aromobates ericksonae**

Barrio-Amorós and Santos, 2012*

**Holotype:** CVULA 8309.

**Type locality:** “Los Ranchos, Santa Cruz de Mora, Estado Mérida, Venezuela (8.3989N, 71.6801W), elevation 1,193 m.”

**Distribution:** Known from five localities on the western versant of Cordillera de Mérida, at both sides of the Chama River Valley, 676–1,193 m asl.

**Selected references:** Barrio-Amorós and Santos (2012).

**Aromobates haydeeae** (Rivero 1978)*

**Holotype:** UPRM 4706.

**Type locality:** “El Vivero, entre Páramo El Zumbador y Mesa del Aura, 2,570 m, Estado Táchira, Venezuela.”

**Distribution:** Region 1. Cloud forests of the Andes of Táchira state.

**Remarks:** No recent data available; this species could be affected by declines (Barrio-Amorós and Santos 2012).

**Selected references:** Rivero (1978, 1988); Myers et al. (1991); La Marca (1994); Mijares and La Marca (1997); Barrio-Amorós and Santos (2012).

**Aromobates inflexus** (Rivero 1980)*

**Holotype:** UPRM 4696.

**Type locality:** “El Almogral, entre Boca de Monte y el cruce La Grita-Bailadores, Carr. De Pregonero, Estado Táchira, Venezuela, 3,075 m.”

**Distribution:** Region 1. Surroundings of type locality.

**Remarks:** Here recovered from synonymy with *Aromobates alboguttatus*, based on the considerations by Barrio-Amorós and Santos (2012). See comment under *A. alboguttatus*. The relationships between it and *A. orostoma* must be evaluated.

**Selected references:** Rivero (1978, 1980, 1988); Myers et al. (1991); La Marca (1994); Mijares and La Marca (1997); Barrio-Amorós and Santos (2012).

**Aromobates leopardalis** (Rivero 1978)*

**Holotype:** UPRM 5157.

**Type locality:** “Mucubají, 3,300 m, Edo. Mérida, Estado Mérida, Venezuela, a subpáramo 2,600–3,000 m asl.”

**Distribution:** Region 1. Surroundings of type locality, in streams of páramo and subpáramo 2,600–3,000 m asl.

**Selected references:** Péfaur (1985); Rivero (1988); Myers et al. (1991); Mijares and La Marca (1997); Barrio-Amorós and Santos (2012).


state that 1995 was the last year it was seen.

**Selected references:** Rivero (1978, 1988); La Marca (1991b); Mijares-Urrúitia (1991); Myers et al. (1991); Barrio-Amorós (2001c, 2013); Barrio-Amorós and Santos (2012).

*Aromobates mayorgai* (Rivero 1980)*

*Holotype:* UPRM 5160.

**Type locality:** “El Chorotal (El Sirenal), Carretera Mérida a La Azulita, 1,800 m, Edo. Mérida, Venezuela.”

**Distribution:** Region 1. Western Sierra de la Culata, Mérida, 1,800 m, Edo. Mérida, Venezuela.”

**Remarks:** La Marca and Otero (2012) redescribed the species.

*Selected references:* Rivero (1980, 1988); La Marca and Mijares (1988); Myers et al. (1991); La Marca (1994); Mijares and La Marca (1997); Barrio-Amorós (2001c); Barrio-Amorós and Santos (2012); La Marca and Otero (2012).

*Aromobates meridensis* (Dole and Durant 1972)*

*Holotype:* MBUCV 6168.

**Type locality:** “Chorotal, 15 km. al SE de La Azulita, 1,880 m, Estado Mérida, Venezuela.”

**Distribution:** Region 1. Southwestern Sierra de la Culata, Mérida, 1,800 to 3,300 m asl. Recently reported along the way from Mérida to El Morro (Image 74B).

**Remarks:** This species has received some attention (Barrio-Amorós et al. 2010; La Marca and Otero 2012). The first authors reported a surviving population of around 56 to 129 adults in 2006, and redescribed the species from topotypic material. That population had a high presence of fungal pathogen *Batrachochytrium dendrobatidis* (Lampo et al. 2008; Barrio-Amorós and Lampo 2009). La Marca and Otero (2012) also redescribed the species based on the holotype and clarified the confusion regarding the catalog data of the type series and commented on its conservation status.

*Selected references:* Dole and Durant (1972); Rivero (1988); La Marca (1991a “1994”); Myers et al. (1991); Mijares and La Marca (1997); Barrio-Amorós (2001c); Lampo et al. (2008); Barrio-Amorós and Lampo (2009); Barrio-Amorós et al. (2010g); Barrio-Amorós and Santos (2012); La Marca and Otero (2012).

*Aromobates molinarii* (La Marca 1985)*

*Holotype:* CVULA 2820.

**Type locality:** “Las Playitas, 2,270 m, near Bailadores (8°15’N, 71°50’W), Estado Mérida, Venezuela.”

**Distribution:** Region 1. Surroundings of type locality and road to Estanques, Mérida State.

*Selected references:* La Marca (1985, 1991a “1994”); Rivero (1988); Myers et al. (1991); Mijares and La Marca (1997); Barrio and Fuentes (1999); Barrio-Amorós and Santos (2012).

*Aromobates nocturnus* Myers, Paolillo and Daly, 1991*

*Holotype:* AMNH 130005.

**Type locality:** “Cloud forest at 2,250 m elevation, about 2 km. Airline ESE Agua de Obispos, Estado Trujillo, Venezuela (9°42’N, 70°05’W).”

**Distribution:** Region 1. Known only from type locality.

**Remarks:** Apparently highly endangered, not found in type locality since its original discovery. Several parties have failed to find the species (La Marca 2005; Barrio-Amorós et al. 2011). Considered as Critically Endangered (CR) by the current Venezuelan Red Book (La Marca 2015a) but could be extinct.

*Selected references:* Myers et al. (1991); Barrio and Fuentes (1999a); Barrio-Amorós (2001c, 2013, 2016); Grant et al. (2006); Barrio-Amorós and Santos (2012); La Marca (2015a).

*Aromobates ornatissimus*

Barrio-Amorós, Rivero and Santos, 2011*

*Holotype:* EBRG 5292

**Type locality:** Las Palmas, Municipio Carache, Estado Trujillo, Venezuela, 09°41’47”N, 70°08’24”W (9,696 N–70.1400 W); elevation 2,350 m

**Distribution:** Region 1. Apparently endemic from type locality and surroundings.

**Remarks:** In the phylogenies recovered by Grant et al. (2006; as Nephelobates sp. 1321 and ULABG 4445) and Barrio-Amorós and Santos (2012) this species appears as the sister taxon of all other Aromobates.

*Selected references:* Barrio-Amorós et al. (2011a); Barrio-Amorós and Santos (2012).

*Aromobates orostoma* (Rivero 1978)*

*Holotype:* UPRM 4509.

**Type locality:** “Boca del Monte, Camino del Pregonero, 2,615 m, Estado Táchira, Venezuela.”

**Distribution:** Region 1. Known from the type locality.

**Remarks:** The species needs taxonomic attention.


*Aromobates saltuensis* (Rivero 1978)*

*Holotype:* UPRM 5147.

**Type locality:** “de la Fría a Michelena, Edo. Táchira, Venezuela, 830 m.”

**Distribution:** Region 1. The species is known from the southwestern extreme of the Cordillera de Mérida and northeastern Cordillera Oriental de Colombia in its Venezuelan side. Mentioned from Colombia by Grant et al. (2006) and Anganoy-Criollo (2012) from...


Departamentos of Norte de Santander, Boyacá and Cesar, respectively.

**Remarks:** Redescribed by Barrio-Amorós and Santos (2012). Data presented by Barrio-Amorós and Santos (2012) show Colombian populations are more closely related with *Aromobates cannatellai* than with *A. saltuensis*, or could represent new species. See Barrio-Amorós and Santos (2012) for detailed account of the Colombian records of *A. cf. saltuensis*.

**Selected references:** Rivero (1978, 1988); Péfaur (1985); Myers et al. (1991); Grant et al. (2006, 2017); Barrio-Amorós and Santos (2012).
**Aromobates serranus** (Péfaur 1985)*

**Holotype:** CVULA: IV-2847.

**Type locality:** “El Morro, Distrito Libertador, Estado Mérida, Venezuela, 2,300 m.”

**Distribution:** Region 1. Surroundings of type locality.

**Remarks:** Not seen or reported in a long time (Barrio-Amorós and Santos 2012). Very likely extinct.

**Selected references:** Péfaur (1985); Rivero (1988); Myers et al. (1991); Mijares and La Marca (1997); Barrio-Amorós and Santos (2012).

**Aromobates tokuko**
Rojas-Ruńjaic, Infante and Barrio-Amorós, 2011*

**Holotype:** MHNLS 18479.

**Type locality:** “Surroundings of Ipika, Yukpa indigenous community, Río Tokuko Basin, Municipio Machiques de Perijá, Sierra de Perijá, Estado Zulia, Venezuela (09°52'N, 72°51'W; elevation 595 m).”

**Distribution:** Region 1. Known from four nearby localities in the central-eastern sector of the Sierra de Perijá.

**Remarks:** Only member of this genus present in Perijá. More species are expected in such unexplored Sierra. Considered as Critically Endangered by the Venezuelan Red Book (Rojas-Runjaic and Señaris 2015c).

**Selected references:** Rojas-Runjaic et al. (2011); Barrio-Amorós and Santos (2012); Rojas-Runjaic and Señaris (2015c).

**Aromobates walterarpi**
La Marca and Otero, 2012*

**Holotype:** ULABG 2087.

**Type locality:** “Stream at about 500 m away from ‘Plaza Bolívar’ of Piñango, close to the cemetery, on the road from Piñango to Pico El Águila 2,325 m (9°01'59.8’’N, 70°53'02.5’’W), Estado Mérida, Venezuela.”

**Distribution:** Region 1. Known only from type locality.

**Selected references:** La Marca and Otero (2012).

**Aromobates zippeli**
Barrio-Amorós and Santos, 2011*

**Holotype:** CVULA 8329.

**Type locality:** “Surroundings of Mucuchíes, Estado Mérida, Venezuela, 8.75N, 70.8833W, elevation 2,970 m.”

**Distribution:** Region 1. Apparently restricted to surroundings of type locality.

**Selected references:** Barrio-Amorós and Santos (2012).

**Genus Mannophryne** La Marca, 1992

**Type species:** Colostethus yustizi La Marca, 1989 by original designation.

**Mannophryne caquetio** Mijares and Arends, 1999*

**Holotype:** EBRG 3570.

**Type locality:** “Toma de agua de Maparari, Municipio Federación, Sierra de Churuguara, Estado Falcón, Venezuela (aprox. 10° 47’N, 69° 25’W), 800 m.”

**Distribution:** Region 2. Apparently endemic from Sierra de Churuguara, Estado Falcón.

**Selected references:** Mijares and Arends (1999b); Barrio-Amorós et al. (2010b); Mijares-Urrúa and La Marca (2015a).

**Mannophryne collaris** (Boulenger 1912)*

**Lectotype:** BM 1947.2.14.42.

**Type locality:** “Mérida, 5,200 feet, and Río Albireggas (Albarregas), 11,300 feet, Venezuela.”

**Distribution:** Region 1. Once believed widespread along the Venezuelan Andes. Today restricted to the Chama River Valley and its tributaries (río Mocotíes), between 195–1,900 m by Barrio-Amorós et al. (2010b).

**Remarks:** This species is vicariant of Mannophryne auticans (Barrio-Amorós et al. 2010b).

**Selected references:** Boulenger (1912); Ginés (1959); Rohl (1959); Rivero (1961, 1963b, 1988); Dole and Durant (1974b); Durant and Dole (1975); Péfaur and Díaz De Pascual (1982, 1987); Péfaur (1987); La Marca (1991c “1994,” 1992, 1994a, 1995a,b); Myers et al. (1991); Barrio (1996a); Barrio and Fuentes (1999a); Barrio-Amorós et al. (2010b); Barrio-Amorós (2013).

**Mannophryne cordilleriana**
La Marca, 1994*

**Holotype:** ULABG 763.

**Type locality:** “Presa Hidráulica Jose Antonio Páez, 1,600 m, near La Mitusúis on road Santo Domingo-Barinas, Estado Mérida, Venezuela.”

**Distribution:** Region 1. Once believed to only inhabit the type locality and its surroundings, recent evidence (Barrio-Amorós et al. 2010b) shows that it is widespread along the Eastern versant of the Cordillera de Mérida in states Mérida and Barinas (Barrio-Amorós 2010), 200 to at least 1,950 m asl, and still quite abundant.

**Remarks:** This is the vicariant species of Mannophryne orellana from Táchira state (J.C. Santos and CBA, unpub. data).

**Selected references:** La Marca (1994a, 1995b); Barrio-Amorós (2010a); Barrio-Amorós et al. (2010b).

**Mannophryne herminae** (Boettger 1893)*

**Syntypes:** SMF. Presumably SMF 7286 is a Lectotype by designation, fide Edwards, 1974.

**Type locality:** “Puerto Cabello in Venezuela.”

**Distribution:** Region 2. Central Cordillera de la Costa (to be better determined).

**Remarks:** The name herminae has long been associated with the abundant populations found in the Cordillera de la Costa. Unpublished genetic data


(by J.C. Santos) indicates some of these populations belong to an undescribed species. *Mannophryne herminae* sensu stricto apparently is found only in San Esteban (Carabobo state) and surrounding areas, near Puerto Cabello. The identity of other populations from Cordillera de la Costa traditionally determined as *M. herminae* need confirmation. Rojas-Runjaic et al. (2018) redefined *M. herminae* and restricts *Mannophryne herminae sensu stricto* to the northern slope of Cordillera de la Costa between Carabobo and Aragua states. In the *Mannophryne collaris* species group (Manzanilla et al. 2007; Grant et al. 2017).

**Selected references:** Boettger (1893); Stejneger (1901); Lutz (1927); Schmidt (1932); Alemán (1952); Mertens (1957b); Ginés (1959); Sexton (1960); Rivero (1961, 1964a, 1988); Test (1962); Gremone et al. (1986); La Marca (1991c “1994,” 1992, 1994a, 1995b); Myers et al. (1991); Manzanilla et al. (1995); Barrio-Amorós (2006c); Barrio-Amorós et al. (2010b); Rojas-Runjaic et al. (2018).

**Mannophryne lamarcai** Mijares and Arends, 1999*

*Holotype:* EBRG 3281.
*Type locality:* “Cerro Sopocó, 30 km SW de Guajiro, Municipio Mauroa, Estado Falcón, Venezuela (10° 28’N, 70° 48’W), 1,250 m.”
*Distribution:* Region 2. Only known from type locality and four additional localities at Serranía de Ziruma (Moran et al. 2016).

**Selected references:** Barrio and Fuentes (1999a); Mijares and Arends (1999a); Mijares-Urrútia and La Marca (2015b), Moran et al. (2016).

**Mannophryne larandina** (Yústiz 1991)*

*Holotype:* UCLA 0087.
*Type locality:* “Hato Arriba, Distrito Morán, Sierra de Barbacoas, 1,800 m snm.” Estado Lara, Venezuela.
*Distribution:* Region 1. Surroundings of type locality.
*Remarks:* Based on genetic and morphological evidence this species is very similar of *Mannophryne yustizi* and could be a synonym of it.

**Selected references:** Yústiz (1991); Mijares and Arends (1999).

**Mannophryne leonardi** Manzanilla, La Marca, Jowers, Sánchez, and García-París, 2007*

*Holotype:* EBRG 4899
*Type locality:* “Caserío El Toyano, Parroquia Pozuelos, Municipio Sotillo, Estado Anzoátegui, Venezuela, 10° 37’ 30.7”N, 64° 29’ 35.7”W, 875 m”.
*Distribution:* Region 2. Distributed along the Turimiquire massif, among Anzoátegui, Sucre and Monagas states.
*Remarks:* Considered as Endangered by the current Venezuelan Red Book (Rojas-Runjaic and Señaris 2015d).

**Selected references:** Yústiz (1991); Mijares and Arends (1999); Manzanilla et al. (2007b); Barrio-Amorós et al. (2010b); Rojas-Runjaic and Señaris (2015d).

**Mannophryne molinaei**
Rojas-Runjaic, Matta-Pereira and La Marca, 2018*

*Holotype:* MHNLs 21355.
*Type locality:* “Quebrada La Rondona, Sierra de Aroa, Sucre municipality, Yaracuy state, Venezuela (10° 19’ 20.8”N, 68° 52’ 24.0”W; 1,180 m asl).”
*Distribution:* Endemic of the Sierra de Aroa and only known from type locality at the southeastern slope of this mountain chain. Other populations known from northeastern and western foothills of Sierra de Aroa should be evaluated to determine if they correspond to this new species.

**Remarks:** Apparently pertaining to the species group of *Mannophryne collaris* (Manzanilla et al. 2007, and Grant et al. 2017) and closely related to *M. herminae*, though easily distinguished by the advertisement call (Rojas-Runjaic et al. 2018). Its phylogenetic position and relationships into the genus remain unevaluated. Conservation status has not been evaluated by the IUCN, but based on restricted distribution and loss of habitat Rojas-Runjaic et al. (2018) proposed to classify it as VU (vulnerable).

**Selected references:** Grant et al. (2017), Rojas-Runjaic et al. (2018).

**Mannophryne neblina** (Test 1956)*

*Holotype:* UMMZ 113001.
*Type locality:* “Portachuelo Pass, Rancho Grande, Estado Aragua, Venezuela.”
*Distribution:* Region 2. Known only from type locality and surroundings, 900–1,100 m asl.
*Remarks:* Despite numerous searches in the type locality and surroundings during recent decades, no other specimens have been found since its description. At least a local extinction is presumned. Lotzkat (2007) apparently found *M. neblina* at Macizo de Nirgua (Yaracuy State). However, vouchers are not mentioned and the specimens were identified by J. Manzanilla by checking photos. Considered as Critically Endangered (CR) by the current Venezuelan Red Book (La Marca 2015b).

**Selected references:** Ginés (1959); Rivero (1961, 1964a, 1988); La Marca (1991c “1994,” 1994a, 1995b, 2015b); Myers et al. (1991); Manzanilla et al. (1995); Rodríguez and Rojas-Suárez (2008); Barrio-Amorós (2010b).

**Mannophryne oblitterata** (Rivero 1984)*

*Holotype:* UPR-M 3492.
*Type locality:* “Carretera de Sta. Teresa a Higuerote, 10 km hacia abajo del cruce Santa Teresa-Altagracia, 150 m,


**Mannophryne orellana**
Barrio-Amorós, Molina and Santos, 2010*

Holotype: CVULA 7165.

Type locality: “Road from Pregonero to La Trampa, Edo. Miranda, Venezuela.”

**Distribution**: Region 2. Endemic to Guatopo, in the Interior Coastal Range.

**Remarks**: The description of *Colostethus guatopoensis* Dixon and Rivero-Blanco, 1985 (a current synonym of *M. oblitterata* fide Rivero, 1988), and the redescription of La Marca (1994a) are more comprehensive than Rivero’s description.

Catalogue of the amphibians of Venezuela

Estado Táchira, Venezuela (08°01’N, 71°43’W), elevation 1,192 m.

**Distribution**: Region 1. Southwestern edge of Cordillera de Mérida in Uribante Valley, and northeastern side of Cordillera Oriental de Colombia in its Venezuelan side. Probably present in Colombia.

**Remarks**: Vicariant of *Mannophryne cordilleriana* (Barrio-Amorós et al. 2010b).

**Selected references**: Barrio-Amorós et al. (2010b).

*Mannophryne riveroi*

(Donoso-Barros 1964)*

**Holotype**: MZUC 8566 (Colección de Donoso Barros V-307; see Barrio-Amorós and Ortiz 2015).

**Type locality**: “Cerro Azul, Macuro,” Estado Sucre, Venezuela.

**Distribution**: Region 2. Endemic of Peninsula de Paria, Sucre state.

**Remarks**: Barrio-Amorós et al. (2010b) reported natural history, variation, and malformations. Barrio-Amorós and Ortiz (2015) assign the proper number to the holotype in the collection of the Universidad de Concepción in Chile. Considered as Endangered by the current Venezuelan Red Book (Rojas-Runjaic and Señaris 2015e).

**Selected references**: Donoso-Barros (1964); Rivero (1967c, 1968a, 1988); La Marca (1991c “1994,” 1994a, 1995b); Myers et al. (1991); Barrio-Amorós et al. (2010b,c); Barrio-Amorós and Ortíz (2015); Rojas-Runjaic and Señaris (2015e).

*Mannophryne speeri*

La Marca, 2009*

**Holotype**: ULABG 5393.

**Type locality**: “Approximately 1 km NNE from Laguneta, 960 m asl., 65.9 km on the road from the crossroads Guanare-Suruguapo heading to Villanueva, Sierra de Portuguesa, Municipio Morán, Estado Lara, Venezuela.”

**Distribution**: Region 1. Currently known only from type locality and nearby.

**Selected references**: La Marca (2009); Barrio-Amorós et al. (2010b).

*Mannophryne trujillensis*

Vargas and La Marca, 2007*

**Holotype**: ULABG 1160.

**Type locality**: “Paseo Los Illustres, Quebrada Los Cedros, 840 m elevation, 9°21’46.0”N, 70°26’41.8”W, Trujillo, Estado Trujillo, Venezuela.”

**Distribution**: Region 1. Currently known only from type locality and nearby.

**Selected references**: Vargas and La Marca (2007); Barrio-Amorós et al. (2010b).

*Mannophryne urticans*

Barrio-Amorós, Molina and Santos, 2010*

**Holotype**: CVULA 7224.

**Type locality**: Río Frio, northwestern slope of the Cordillera de Mérida, Estado Mérida, Venezuela (08°51’N, 71°17’W), 676 m asl.

**Distribution**: Region 1. Known only from type locality, possibly more widespread along similar habitats in the western piedmont of the Cordillera de Mérida.

**Remarks**: Vicariant of *Mannophryne collaris* (Barrio-Amorós et al. 2010b).

**Selected references**: Barrio-Amorós et al. (2010b).

*Mannophryne yustizi* (La Marca 1989)*

**Holotype**: CVULA IV-2842.

**Type locality**: “14 km. SSE Sanare, on stream along road Sanare-Parque Nacional Yacambú, 1,475 m, (ca. 9°43’N, 69°39’W), Distrito Jiménez, Estado Lara, Venezuela.”

**Distribution**: Region 1. Extended throughout the eastern versant of Cordillera de Mérida in Lara state.

**Selected references**: La Marca (1989, 1992, 1994a, 1995b); Myers et al. (1991); Yústiz (1996); Barrio-Amorós et al. (2010b).

*Mannophryne venezuelensis*

Manzanilla, Jowers, La Marca and García-París, 2007*

**Holotype**: EBRG 4924.

**Type locality**: “From approximately 4.0 km east of San Juan de Las Galdonas, Municipio Arismendi, Estado Sucre, Venezuela, 10°43’N, 62°48’W, altitude 180 m.”

**Distribution**: Region 2. Distributed along the Península de Paria, 0–1,000 m asl.

**Remarks**: Many populations of *Mannophryne* from Coastal Range were previously assigned to *Mannophryne trinitatis* (including *M. venezuelensis*) until Barrio-Amorós et al. (2006b) based on previously published evidence (Rivero 1961; La Marca 1994; Kaiser et al. 2003) restricted its distribution to Trinidad. First species of the genus defined based on an integrative approach with morphological, genetic, and bioacoustic evidence (Manzanilla et al. 2007b).

**Selected references**: Barrio-Amorós et al. (2006b; 2010b); Manzanilla et al. (2007a, 2009).

*Mannophryne vulcano*

Barrio-Amorós, Molina and Santos, 2010*

**Holotype**: CVULA 7170.

**Type locality**: Northern slope of Cerro El Volcán, Baruta, Estado Miranda, Venezuela, collected by Charles Brewer on 30 June, 2007 (10°25’N, 66°51’W), 1,064 m asl.

**Distribution**: Region 2. Valley of Caracas.

**Remarks**: Previous mentions of *Mannophryne trinitatis* and *M. herminae* from area around Caracas should be


Ameerega picta (Tschudi 1838)

*Holotype:* MNHN 4910

*Type locality:* Santa Cruz, Bolivia.

*Distribution:* Region 5. Widely distributed in Amazon Region lowlands, through Colombia, Peru, Bolivia, Paraguay, Brazil, and Venezuela. In Venezuela, only known from Northeastern Bolivar and adjacent Delta Amacuro States.

*Remarks:* Barrio-Amorós (2004) treated the Guayanan

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**Subfamily Dendrobatinae Cope, 1865**

Genus *Ameerega* Bauer, 1986

Type species: *Hyla trivittata* Spix, 1824 by original designation.
populations of this taxon as *Epipedobates guayanensis*, following Schulte (1999) without arguing about the change. *Ameerega guayanensis* (Heatwole, Solano and Heatwole 1965; type locality: forest between Rancho Alegre and base of Altiplanicie (de Nuria), on trail to Quebrada Cabeza de Burro, 5 km east of Las Chicharras, 47 km north of Tumeremo; Altiplanicie de Nuria, 100–250 m, Estado Bolívar, Venezuela) would be the proper name of Guianan populations if demonstrated to be genetically different from *A. picta* from the type locality. The southwestern Amazonian population is separated from the Guiana population by at least 3,000 km in a straight line (Lötters et al. 2007). However, J.C. Santos (unpub. data) preliminary results do not indicate a clear genetic separation and thus, until more data are published, we consider *guayanensis* under *picta*. As we do not use subspecies, the name must be regarded in its synonymy. See also comment by Avila Pires et al. (2010).

**Selected references:** Heatwole et al. (1965); Silverstone (1976); Gremone et al. (1986); Walsh (1994); Duellman (1997); Gorzula and Señaris (1998); Barrio and Fuentes (1999a); Schulte (1999); Señaris and Ayarzagüena (2004 “2002”); Grant et al. (2006); Lötters et al. (2007); Barrio-Amorós and Torres (2010); Barrio-Amorós et al. (2016); Señaris et al. (2014); Molina-Rodríguez and Kahn (2016).

**Type species:** *Dendrobates steyermarki* Rivero, 1971 by original designation.

**Minyobates steyermarki** (Rivero 1971)*

**Holotype:** UPR-M 3399.

**Type locality:** “Cerro Yapacana, 1,200 m Territorio Federal Amazonas, Venezuela.”

**Distribution:** Region 5. Endemic to Yapacana, a tepui in Amazonas State.

**Remarks:** See considerations about conservation in Barrio-Amorós and Fuentes (1999a), Rodriguez and Rojas-Suárez (2009), Barrio-Amorós and Torres (2010), and La Marca (2016). Accounts on morphology and natural history by Lotters et al. (2007) and La Marca (2016).

**Selected references:** Rivero (1971c); Silverstone (1975); Gremone et al. (1986); Myers (1987); Walsh (1994); Rodríguez and Rojas-Suárez (1995); Duellman (1997); Fuentes and Rodríguez-Acosta (1997); Barrio and Fuentes (1998, 1999a); Gorzula and Señaris (1998); Señaris and Ayarzagüena (2004 “2002”); Lötters et al. (2007); Barrio-Amorós (2016).

**Genus Minyobates** Myers, 1987

**Type species:** *Dendrobates steyermarki* Rivero, 1971 by original designation.

**Minyobates steyermarki** (Rivero 1971)*

**Holotype:** UPR-M 3399.

**Type locality:** “Cerro Yapacana, 1,200 m Territorio Federal Amazonas, Venezuela.”

**Distribution:** Region 5. Endemic to Yapacana, a tepui in Amazonas State.

**Remarks:** See considerations about conservation in Barrio-Amorós and Fuentes (1999a), Rodriguez and Rojas-Suárez (2009), Barrio-Amorós and Torres (2010), and La Marca (2016). Accounts on morphology and natural history by Lotters et al. (2007) and La Marca (2016).

**Selected references:** Rivero (1971c); Silverstone (1975); Gremone et al. (1986); Myers (1987); Walsh (1994); Rodríguez and Rojas-Suárez (1995); Duellman (1997); Fuentes and Rodríguez-Acosta (1997); Barrio and Fuentes (1998, 1999a); Gorzula and Señaris (1998); Señaris and Ayarzagüena (2004 “2002”); Lötters et al. (2007); Barrio-Amorós (2016).

**Genus Dendrobates** Wagler, 1830

**Type species:** *Rana tinctoria* Cuvier, 1797 by subsequent designation by Duméril and Bibron, 1841.

**Dendrobates leucomelas** Steindachner, 1864

**Holotype:** NHMW 19188.

**Type locality:** “Colombia.”

**Distribution:** Regions 4, 5. Widespread south of the Orinoco (see map in Barrio and Fuentes (1999), Lötters et al. (2007), and Molina-Rodríguez and Kahn (2016)). Much more common in Venezuela south of the Orinoco (in Amazonas, Bolivar, and Delta Amacuro States), also present but scattered in southeastern Colombia, northern Brazil, and western Guyana.

**Remarks:** Different morphs recognized, but so far, not of taxonomic importance. The “sapito minero” has a key importance in some ethnic mythologies like the Ye’kwana (Barrio-Amorós and Brewer-Carias 2008).

**Selected references:** Steindachner (1864); Ginés (1959); Rivero (1961, 1964b,d, 1967a); Heatwole et al. (1965); Silverstone (1975); Paolillo (1977); Hoogmoed and Gorzula (1979); Gremone et al. (1986); Rivero et al. (1986); Walsh (1994); Rodríguez and Rojas-Suárez (1995); Duellman (1997); Fuentes and Rodríguez-Acosta (1997); Barrio and Fuentes (1998, 1999a); Gorzula and Señaris (1998); Señaris and Ayarzagüena (2004 “2002”); Grant et al. (2006); Lötters et al. (2007); Barrio-Amorós and Brewer-Carias (2008); Barrio-Amorós et al. (2011b); Señaris et al. (2014); Molina-Rodríguez and Kahn (2016).

**Genus Minyobates** Myers, 1987

**Type species:** *Dendrobates steyermarki* Rivero, 1971 by original designation.

**Minyobates steyermarki** (Rivero 1971)*

**Holotype:** UPR-M 3399.

**Type locality:** “Cerro Yapacana, 1,200 m Territorio Federal Amazonas, Venezuela.”

**Distribution:** Region 5. Endemic to Yapacana, a tepui in Amazonas State.

**Remarks:** See considerations about conservation in Barrio-Amorós and Fuentes (1999a), Rodriguez and Rojas-Suárez (2009), Barrio-Amorós and Torres (2010), and La Marca (2016). Accounts on morphology and natural history by Lotters et al. (2007) and La Marca (2016).

**Selected references:** Rivero (1971c); Silverstone (1975); Gremone et al. (1986); Myers (1987); Walsh (1994); Rodríguez and Rojas-Suárez (1995); Duellman (1997); Fuentes and Rodríguez-Acosta (1997); Barrio and Fuentes (1998, 1999a); Vences et al. (2000, 2003); Grant et al. (2006); Lötters et al. (2007); Barrio-Amorós and Torres (2010); Barrio-Amorós (2016); La Marca (2016).

**Family Eleutherodactylidae Lutz, 1954**

**Subfamily Eleutherodactylinae Lutz, 1954**

**Genus Adelophryne** Hoogmoed and Lescure, 1984

**Type species:** *Adelophryne adiastola* Hoogmoed and Lescure, 1984, by original designation.

**Adelophryne gutturosa** Hoogmoed and Lescure, 1984

**Type:** BM 1983.1139.

**Type locality:** “Between camp IV and V, northern slopes of Mount Roraima, Guyana (60°46’W, 5°17’N) 3,000 feet (914 m).”

**Distribution:** Region 5. Known from a few localities in Sierra de Lema and Gran Sabana, eastern Venezuela.


Genus *Eleutherodactylus* Dumeril and Bibron, 1841.

**Type species:** *Hylodes martinicensis* Tschudi, 1838, by monotypy.

**Remarks:** After taxonomic rearrangement of Terraranans

**Selected references:** Ayarzagüena and Diego-Aransay (1985); Duellman (1997); MacCulloch et al. (2008); Barrio-Amorós and Duellman (2009); Señaris et al. (2014).
based on molecular phylogeny by Heinicke et al. (2007) Eleutherodactylus was restricted to the Caribbean clade of direct developing frogs. The only Eleutherodactylus based on molecular phylogeny by Heinicke et al. (2007) new to science, has been heard calling in the canopy, possibly Península de Paria, Sucre State, a Gastrotheca (2007); Barrio-Amorós (2013).

**Eleutherodactylus johnstonei** Barbour, 1914

**Syntypes:** MCZ 2759 (two specimens).

**Type locality:** St. George Parish, Grenada.

**Distribution:** Region 2. Introduced populations in different cities with variable success. Likely originally from Sta. Lucía or the Antigua and Barbuda bank (Frost 2016). Currently established in most of Lesser Antilles, several countries in Central America and northern South America (Panamá, Colombia, Venezuela, Guyana, Suriname, and French Guiana). In Venezuela, established populations reported in several cities and towns (e.g., Caracas, Cumaná, Irapa, Maracay, Valencia). See a resumé in Kaiser et al. (2002). Despite being introduced, not reported to affect any autochthonous species, and only known from anthropogenic sites like gardens and parks.

**Selected references:** Hardy and Harris (1979); Rada (1981b); Gorzula (1989); La Marca (1992); Gorzula and Señaris (1998); Kaiser et al. (2002); Rojas-Runjaic et al. (2007); Barrio-Amorós (2013).

**Family Hemiphractidae Peters, 1862**

**Remarks:** Long considered a subfamily of Hylidae. Darst and Cannatella (2004) suggested this group is not monophyletic nor related to Hylidae. For an account of subsequent changes in phylogenetic relationships and taxonomy see Frost (2018). See Duellman (2015) for a thorough review of genera and species included. Recently Castroviejo et al. (2015) inferred a new family phylogeny based on total evidence, recovering it (all six genera) as monophyletic, and sister of Athesphatanura. Several species of *Stefania* await description. In Península de Paria, Sucre State, a *Gastrotheca*, possibly new to science, has been heard calling in the canopy during rainy days and nights.

**Subfamily Cryptobatrachinae Frost, Grant, Faivovich, Bain, Haas, Haddad, de Sá, Channing, Wilkinson, Donnellan, Raxworthy, Campbell, Blotto, Moler, Drewes, Nussbaum, Lynch, Green and Wheeler, 2006**

**Genus Cryptobatrachus** Ruthven, 1916

**Type species:** Cryptobatrachus boulengeri Ruthven, 1916, by original designation.

**Remarks:** Cryptobatrachus nicefori Cochran and Goin, 1970 from Colombia was excluded from the genus by Infante-Rivero et al. (2009), despite Lynch’s (2008) contrary opinion, and placed into *Hyla incertae sedis*. In their recent phylogenetic analysis Castroviejo et al. (2015) inferred Cryptobatrachus as sister of Flectonotus and included these two genera in Cryptobatrachinae.

**Cryptobatrachus remotus** Infante-Rivero, Rojas-Runjaic and Barrio-Amorós, 2009

**Holotype:** MHNLS 17661.

**Type locality:** “Fundo ‘El Progreso,’ cuenca alta del río Socuy, sierra de Perijá, Municipio Jesús Enrique Losada, Estado Zulia, Venezuela (10°43’13,30”N, 72°29’16,60”O; ± 845 m).”

**Distribution:** Region 1. Eastern versant of Sierra de Perijá, Zulia State, Venezuela; very probably in adjacent Colombia.

**Remarks:** While the description of this species was in press, another work dealing with *Cryptobatrachus* (Lynch 2008) provided the description of *C. pedroruizi*, a species from the Colombian side of Perijá relatively near the known distribution area of *C. remotus*. Comparing both sets of type material (both morphologically and genetically) is imperative to discern if they represent one or two species. *Cryptobatrachus remotus* is considered Endangered (EN) under criteria of the Venezuelan Red Book (Rojas-Runjaic 2015).

**Selected references:** Infante-Rivero et al. (2008), Lynch (2008); Duellman (2015); Rojas-Runjaic et al. (2015).

**Genus Flectonotus** Miranda-Ribeiro, 1920

**Type species:** Nototrema pygmaeum, Boettger, 1893, by original designation.

**Remarks:** In their recent phylogenetic analysis Castroviejo et al. (2015) inferred Flectonotus as sister of Cryptobatrachus including both genera in Cryptobatrachinae.

**Flectonotus fitzgeraldi** (Parker 1933)

**Holotype:** BM 1947.2.22.41.

**Type locality:** “Mt. Tucuche, Trinidad.”

**Distribution:** Region 2. Northern range of Trinidad (Trinidad and Tobago), and Venezuela, where restricted to the Península de Paria.

**Selected references:** Duellman and Maness (1980); Duellman and Gray (1983); Duellman et al. (1988, 2011).

**Flectonotus pygmaeus** (Boettger 1893)

**Lectotype:** SMF 2679.

**Type locality:** “Puerto Cabello, Estado Carabobo, Venezuela.”

**Distribution:** Regions 1, 2. Venezuela and Colombia. In Venezuela, on both sides of the Andes (Cordillera de Mérida) below 1,500 m asl, and Cordillera de la Costa, above 800 m asl.


105B. *Cryptobatrachus remotus*. Female with eggs. Cerro Las Antenas, Sierra de Perijá, Zulia. *Photo: Fernando Rojas-Runjaic*.

105C. *Cryptobatrachus remotus*. Female with recently hatched froglets. Cerro Las Antenas, Sierra de Perijá, Zulia. *Photo: Fernando Rojas-Runjaic*.

106A. *Flectonotus fitzgeraldi*. Las Melenas, Península de Paria, Sucre. *Photo: César Barrio-Amorós*.

106B. *Flectonotus fitzgeraldi*. Macuro, Península de Paria, Sucre. *Photo: Diego A. Flores*.

**Remarks**: Populations from Cordillera de la Costa and Andes are indistinguishable genetically (D. Blackburn and W.E. Duellman, pers. comm.).

**Selected references**: Boettger (1893); Lutz (1927); Rivero (1961, 1964a, 1971a); Mertens (1967); Duellman and Maness (1980); Duellman and Gray (1983); Péfaur and Díaz De Pascual (1987); Duellman et al. (1988, 2011); Mijares-Urrutía and Arends (1993); Manzanilla et al. (1995); Yústiz (1996); Rivas and Barrio-Amorós (2005); Barrio-Amorós (2006c, 2010a).
Subfamily Hemiphractinae Peters, 1862

**Genus Gastrotheca** Fitzinger, 1843

**Type species:** *Hyla marsupiata* Duméril and Bibron, 1841, by original designation.

**Remarks:** In the recent phylogeny of hemiphractids by Castroviejo et al. (2015) none of the taxonomies historically proposed for *Gastrotheca* were found monophyletic (including some subgenera proposed by Duellman 2015). Consequently, they proposed a new infrageneric taxonomy based on four species groups (*fissipes*, *longipes*, *marsupiata*, and *microdiscus*).

**Gastrotheca helena**e Dunn, 1944

**Holotype:** MLS 268.

**Type locality:** Páramo de Tamá, Departamento Norte de Santander, Colombia.

**Distribution:** Region 1. Endemic of páramo de Tamá, between Colombia and Venezuela.

**Remarks:** Acevedo et al. (2011) presented natural history data on this rare species. In subgenus *Amphignathodon* by Duellman (2015), or in the *Gastrotheca longipes* species group *sensu* Castroviejo-Fisher et al. (2015).

**Selected references:** Duellman (1980, 1989b, 2015); Duellman and Ruiz-Carranza (1986); Duellman et al. (1988); Acevedo et al. (2011); Castroviejo-Fisher et al. (2015).

**Gastrotheca nicefori** Gaige, 1933

**Holotype:** UMMZ 73242.

**Type locality:** Pensilvania, Departamento Caldas, Colombia.

**Distribution:** Region 1. Panama, Colombia, and Venezuela. In Venezuela, distributed throughout the Cordillera de Mérida. Very likely present in Sierra de Perijá.

**Remarks:** Duellman (1989b) synonymized *Gastrotheca yacambuensis* Yústiz, 1976 with *G. nicefori*, without explanation. La Marca (1992) recognized the synonymy, but Barrio-Amorós (1998, 2004, 2009) was reluctant to do so as it was done without providing any comparison. Duellman (2015) presented arguments for the synonymy (see below), but molecular evidence (Castroviejo et al. 2015) indicated *G. yacambuensis* could be a valid species, different from *G. nicefori*. Further evidence is necessary to assess this issue adequately. The species is included in the subgenus *Duellmania* (Duellman 2015) and in the *Gastrotheca marsupiata* species group *sensu* Castroviejo-Fisher et al. (2015).


**Gastrotheca ovifera** (Lichtenstein and Weinland 1854)*

**Holotype:** ZMB 3073.

**Type locality:** Puerto Cabello, Carabobo, Venezuela.

**Distribution:** Region 2. Cordillera de la Costa in states Aragua, Cojedes, Miranda, Distrito Federal, Carabobo, and Yaracuy, 890–2,060 m asl.

**Remarks:** Reported from the Delta of the Orinoco River (MNLS 2942) by Valera-Leal et al. (2011) without further comment; but current authors believe this is an error as no *Gastrotheca* specimen has ever been reported from that area. Included in subgenus *Opisthodelphys* (Duellman 2015) or in the *Gastrotheca marsupiata* species group *sensu* Castroviejo-Fisher et al. (2015). Despite a 646 man-hour effort, Valera-Leal et al. (2011) failed to locate any surviving population in the Henri Pittier National Park in 2006–2007. Barrio-Amorós (1998) reported it very abundant at Galipán in March 1997, while CBA has heard the species in Cerro Volcán, Caracas, Miranda, as recently as 2009.

**Selected references:** Lutz (1927); Mertens (1957a,b, 1967); Ginés (1959); Rivero (1961, 1964a,d); Tello (1968); Duellman (1980, 2015); Duellman et al. (1988); La Marca (1995a); Manzanilla et al. (1995); Barrio (1999b); Barrio-Amorós (2001, 2006c, 2013); Schmidt et al. (2002); Manzanilla and Sánchez (2003); Rivas and Barrio-Amorós (2005); Valera-Leal et al. (2011); Castroviejo-Fisher et al. (2015).

**Gastrotheca walkerii** Duellman, 1980*

**Holotype:** UMMZ 117177.

**Type locality:** “From between the Estación Biológica Rancho Grande and Paso Portachuelo, Estado de Aragua, Venezuela,” 1,100 m.

**Distribution:** Region 2. Cordillera de la Costa in states Aragua, Cojedes, D.F., Carabobo, and Yaracuy.

**Remarks:** Duellman (2015) stated that no call is associated to this species, but the current authors find it commonly heard from high bromeliads in Coastal cloud forest (e.g., in Rancho Grande, Estado Aragua; see Barrio-Amorós 2006c). In *Gastrotheca longipes* species group *sensu* Castroviejo-Fisher et al. (2015) or in subgenus *Cryptotheca* by Duellman (2015).

**Selected references:** Duellman (1980, 2015); Duellman et al. (1988); Manzanilla et al. (1995); Barrio (1999c); Rivas and Barrio-Amorós (2005); Barrio-Amorós (2006c).

**Gastrotheca williamsoni** Gaige, 1922*

**Holotype:** UMMZ 55559.

**Type locality:** San Esteban, Carabobo, Venezuela.

**Distribution:** Region 2. Known only from type locality.

**Remarks:** Not collected since original description. Either extremely rare, or extinct, or *Gastrotheca walkerii* could be a junior synonym. A review of this species is needed to clarify its taxonomy and conservation status. Duellman
(2015) distinguished *G. williamsoni* from *G. walker* based on four morphological characters (absence of supraciliaries processes — vs present in *walker*—, fingers ½ webbed — vs ¼ webbed in *walker*—, first finger longer than second — shorter in *walker*—, and granular tympanic annulus — smooth in *walker*. The only known locality of *G. williamsoni* lies within the distribution of *G. walker*, and no additional specimen obtained for almost a century. As both species share a unique character among marsupial frogs (paired retroperitoneal brood pouches), have overlapping geographic distributions, and only differ in morphological traits prone to preservation artifacts, makes us doubt the validity of *G. walker*; assessing their taxonomic status requires further investigation. Included in subgenus *Cryptotheca* by Duellman (2015) or in *Gastrotheca longipes* species group *sensu* Castroviejo-Fisher et al. (2015).

**Selected references:** Gaige (1922); Lutz (1927); Ginés
Gastrotheca yacambuensis Yústiz, 1976*

Holotype: MBUCO 6015.
Type locality: “Quebrada El Cedral, Parque Nacional Yacambú, ladera Sur de Sierra Portuguesa, Estado Lara, Venezuela, 1,700 m.”
Distribution: Region 1. Parque Nacional Yacambú, Lara State, and probably all Cordillera de Mérida in the Venezuelan Andes.
Remarks: Duellman (1989b) synonymized Gastrotheca yacambuensis with G. nicefori without providing any argument. Barrio-Amorós (1998, 2004, 2013) and Barrio-Amorós et al. (2009) did not follow the synonymy, waiting for additional evidence. Duellman (2015) compared overall external similarities among names he synonymized (Duellman 1989b) to support his previous statement. Castroviejo et al. (2015) showed that topotypical specimens of G. nicefori are significantly different genetically from specimens from the Venezuelan Andes; so, G. yacambuensis could be the name for populations previously referred to G. nicefori in the Venezuelan Andes. The current authors consider G. yacambuensis as a valid species, at least for central Andean populations, while awaiting a comprehensive review of the Andean populations of Gastrotheca nicefori.

Selected references: Yústiz (1976a,b, 1996); Duellman (1989b); Castroviejo et al. (2015).

Genus Stefania Rivero, 1968

Type species: Hyla evansi Boulenger, 1904, by original designation.
Remarks: Infrafusche groups in Stefania (S. evansi and S. goini species group) are no longer recognized, since Kok et al. (2012) and Castroviejo-Fisher et al. (2015) inferred these two groups as non-monophyletic.

Stefania breweri Barrio-Amorós and Fuentes, 2003*

Holotype: MBUCV 6574.
Type locality: “Summit of Cerro Autana (Wahari Kuaway), near the north ridge (4°52’N, 67°27’W), 1,250 m elevation, Municipio Atures, Estado Amazonas, Venezuela.”
Distribution: Region 5. Endemic to Autana, a tepui in Estado Amazonas.
Remarks: Not seen during two expeditions to the top of Autana after the collection of the only known specimen in 1971. Autana has an extremely small surface of 1.9 km², so this is one of the most geographically restricted frog species in the world. However, it is only DD by IUCN (Stuart 2006) and Rodriguez and Rojas-Suárez (2008) keep it under IUCN category VU/D2; it is not even mentioned in the last edition of the Venezuelan Red Book (Rodriguez et al. 2015). We argue that the species (known from a single specimen, not seen during two expeditions with herpetologists in 1972 and 2001, and restricted to an area of 1.9 km²) should be classified CR B2a.

Selected references: Barrio-Amorós and Fuentes (2003); Stuart (2006); Rodriguez and Rojas-Suárez (2008); Barrio-Amorós and Torres (2010); Barrio-Amorós (2013).

Stefania ginesi Rivero, 1968*

Holotype: FMNH 74041.
Type locality: “Chimanta-tepui, Venezuela, rock outcrops near E. branch of headwater Río Tirica, 7,300 ft. (2,225 m).”
Distribution: Region 5. Endemic to Chimantá massif in Estado Bolívar. Restricted to Chimantá-tepui (type locality) by Kok et al. (2016).

Stefania goini Rivero, 1968*

Holotype: AMNH 23193.
Type locality: “Vegas Falls, Mte. Duida, Amazonas, Venezuela, 4,600 ft.”
Distribution: Region 5. Endemic to Duida and Huachamakari, tepuis in Estado Amazonas.
Selected references: Rivero (1966, 1967c, 1970); Duellman and Hoogmoed (1984); Señaris et al. (1996); Barrio-Amorós and Fuentes (2003); McDiarmid and Donnelly (2005).

Stefania marahuaquensis (Rivero 1961)*

Holotype: MCZ 285566.
Type locality: Caño Cajú, Cerro Marahuaca, Estado Amazonas, Venezuela, 120 m.
Distribution: Region 5. Endemic to Duida and Marahuaka, tepuis in Amazonas State.

Stefania oculosa Señaris, Ayarzaguena and Gorzula, 1997*

Holotype: MHNLS 12961.
Type locality: “Tepuy Jaupuy, Estado Bolivar, Venezuela


**Stefania percristata**
Señaris, Ayarzagüena and Gorzula, 1997*

**Holotype:** MHNLS 12952.
**Type locality:** “Tepuy Jaua, Estado Bolivar, Venezuela (04°49’55”N, 64°25’59”W), 1,600 m snm.”

**Distribution:** Region 5. Endemic to Jaua, a tepui in Bolivar State.
**Selected references:** Señaris et al. (1996); Barrio-Amorós and Fuentes (2003).

**Stefania riae** Duellman and Hoogmoed, 1984*

**Holotype:** KU 174688.
**Type locality:** “Cerro Sarisariñama, 1,400 m, Estado Bolivar, Venezuela.”
**Distribution:** Region 5. Endemic to Sarisariñama, a tepui in Bolivar State.
Remarks: Barrio-Amorós and Brewer-Carías (2008) present variation of the species not previously noted.

Selected references: Duellman and Hoogmoed (1984); Señaris et al. (1997); Barrio-Amorós and Fuentes (2003); McDiarmid and Donnelly (2005); Barrio-Amorós and Brewer-Carías (2008); Kok et al. (2017).

_Stefania riveroi_

Señaris, Ayarzagüena and Gorzula, 1997*

Holotype: MHLNS 10413.

Type locality: Yuruaní-tepui, Estado Bolívar, Venezuela (05°24’N, 62°27’W), 2,500 m snm.

Distribution: Region 5. Endemic to Yuruaní, a tepui in Bolívar State.

Selected references: Señaris et al. (1996, 2014); Gorzula and Señaris (1998); Barrio-Amorós and Fuentes (2003); Sinsch and Juraske (2006); Kok et al. (2017).

_Stefania satelles_

Señaris, Ayarzagüena and Gorzula, 1997*

Holotype: MHLNS 10433.

Type locality: “Aprada-tepui I, Estado Bolívar, Venezuela (05°24’N, 62°27’W), 2,500 m snm.”

Distribution: Region 5. Described as endemic to several small tepuis in Estado Bolívar: Aprada-tepui, Angasima-tepui (Adanta), and Upiuima-tepui (El Castillo) sensu Señaris et al. (1996). Kok et al. (2016) restricted it to Aprada tepui, its type locality, while the rest of Stefania on other tepuis formerly identified as satelles are confirmed as candidate species (see Appendix 1).


_Stefania scalae_

Rivero, 1970

Holotype: MCZ 64373.

Type locality: “La Escalera, road between El Dorado and Sta. Elena de Uairén, around 1,200 m, Edo. Bolivar, Venezuela.”

Distribution: Region 5. Widespread in uplands of eastern Estado Bolívar.

Remarks: Stefania evansi was considered part of the Venezuelan batrachofauna after S. scalae was synonymized with S. evansi by Duellman and Hoogmoed (1984). MacCulloch and Lathrop (2002) found further evidence to distinguish between S. evansi and S. scalae. Barrio-Amoros and Fuentes (2003) pointed out, after the resurrection of S. scalae by Señaris et al. (1997), that there is no record of S. evansi from Venezuela, although its presence is likely.

Selected References: Rivero (1970); Gorzula et al. (1983); Duellman and Hoogmoed (1984); Señaris et al. (1996, 2014); Duellman (1997); Gorzula and Señaris (1999); MacCulloch and Lathrop (2002); Barrio-Amorós and Fuentes (2003); McDiarmid and Donnelly (2005); Sinsch and Juraske (2006); Barrio-Amorós and Duellman (2009); Barrio-Amorós et al. (2011b).

_Stefania schuberti_

Señaris, Ayarzagüena and Gorzula, 1997*

Holotype: MHNLS 12917.

Type locality: Sector este, cima del Auyan-tepui, Estado Bolívar, Venezuela (05°53’36”N, 62°29’12”W), 1,750 m asl.

Distribution: Region 5. Endemic to the summit of Auyan-tepui, Bolívar State.


_Stefania tamacuarina_

Myers and Donnelly, 1997

Holotype: AMNH 131428.

Type locality: “Camp on ridge north Pico Tamacuari, 1,270 m elevation, Sierra Tapirapecó, Amazonas, Venezuela (1°13’N, 64°42’W).”

Distribution: Region 5. Only known from type locality in Venezuela and one nearby locality on the Brazilian side of Tapirapecó (Caramaschi and Niemeyer 2005b).

Selected references: Myers and Donnelly (1997); Barrio-Amorós and Fuentes (2003); Caramaschi and Niemeyer (2005b); McDiarmid and Donnelly (2005).

Family Hylidae Rafinesque, 1815

Remarks: We follow Duellman’s et al. (2016) recent revision, where Phyllomedusinae was raised to family level (Phyllomedusidae, see below). Five subfamilies are considered under the family rank in Venezuela: Cophomantinae, Dendropsophinae, Lophyohylinae, Pseudinae, and Scinaxinae. Dubois (2017) argues that Boana Gray, 1825 has priority over Hypsiboas.

Subfamily Cophomantinae Hoffmann, 1878

Remarks: After Duellman et al. (2016), this subfamily contains six genera: Aplastodiscus, Bokermannohyla, Colomascirtus (described by them to accommodate species previously assigned to Hyloscirtus larinopygion and H. armatus species groups), Hyloscirtus, Hypsiboas (now Boana), and Myersiohyla. However, based on molecular evidence, Rojas-Runjaic et al. (2018), synonymized Colomascirtus with Hyloscirtus.

Genus Boana Gray, 1825

Type species: Rana boans Linnaeus, 1758, by monotypy. Coined as subgenus of Hyla according to Dubois (2017).


115B. Stefania riveroi. Summit of Yuruani-tepui, Bolivar. Photo: Philippe Kok.


117A. Stefania scalae. Plain morph. Lowlands of Cuyuni river, Bolivar. Photo: César Barrio-Amorós.

Remarks: Faivovich et al. (2005) assigned Centrolenella pulidoi Rivero, 1968 to the Boana benitezi group. We agree that description of holotype corresponds to a juvenile B. benitezi. Faivovich et al. (2005) examined the holotype (MCZ 72499) but was not sure if it was an adult female or a juvenile. According to our combined field experience, only juveniles of the B. benitezi group (B. benitezi, B. lemai, and B. tepuianus at least) have reddish eyes, as Rivero (1968) reported in pulidoi. In Cerro Duida the only known species of the Boana benitezi group is B. benitezi. We here consider Centrolenella pulidoi Rivero, 1968 (recognized currently as Boana pulidoi by Frost 2018) as a junior synonym of Hyla benitezi (Rivero 1961), as Boana benitezi. Recently Dubois (2017) defended the use of Boana for the clade preoccupied by Hypsiboas, arguing nomenclatural precedence.
other specimens have been assigned with accuracy to this taxon. Taxonomic status unclear since the species description was based on two old and poorly preserved specimens from disparate bioregions (holotype from Cagua in Cordillera de La Costa, and paratype from Kunana in Sierra de Perija) and probably not conspecific. Rivero (1964) said this species is narrowly related to *Hyla granosa* (= *Boana cinerascens*) and recognized that the two species only can be differentiated by the dorsal spots and the inclination of the loreal region. La Marca (1992) said *B. alemani* and *B. punctata* are probably synonyms, but *B. punctata* is not known from extreme northern Venezuela. Juveniles of *B. xerophylla* and *H. pugnax* are also green and somewhat similar to *B. punctata*. Based on a preliminary examination of the type series (by FRR) we also suspect *B. alemani* could be conspecific with *B. punctata*, and the paratype (MHNLS 187) could be a juvenile *B. xerophylla*. Specimens assigned to *B. alemani* MHNLS 150 (also from Kunana) and MHNLS 407 (from Caracas) probably also correspond to juvenile *B. xerophylla*. We provisionally consider this name valid, but its taxonomic status should be confirmed, as well as the identity of additional records from Cojedes and Falcón (Manzanilla et al. 2000), Guárico (Camargo et al. 2014), and the tadpole description (Mijares-Urrutia

*Boana alemani* (Rivero 1964)*

**Holotype:** MHNLS 238.
**Type locality:** Cagua, Estado Aragua, Venezuela.
**Distribution:** Regions 1, 2. Cagua (Aragua State) Kunana, Sierra de Perija (Zulia State), and Hato Los Arrecifes (Guárico State); Cojedes and Falcón States.
**Remarks:** Currently in *Boana punctata* species group (Faivovich et al. 2005). After original description no
Type: MCZ 28564.
Type locality: Caño Wanadi, Cerro Marahuaca, Estado Amazonas, Venezuela.
Distribution: Region 5. Western Guayana uplands and highlands, and northernmost Roraima State in Brazil.

Boana benitezii (Rivero 1961)
Boana boans (Linnaeus 1758)

**Lectotype:** ZIUU 27; designated by implication (Mertens 1940).

**Type locality:** “America.”

**Distribution:** Regions 1, 2, 3, 4, 5. Widely distributed in northern South America, in the Darien and Chocó Regions, and Magdalena, Orinoco, and Amazon Basins (Panama, Colombia, Ecuador, Venezuela, Brazil, Guianas, and Trinidad). Common riparian element in the lowlands of southern Venezuela (Amazonas, Bolivar, and Delta Amacuro to as far north as Peninsula de Paria). Also, in the eastern piedmont of the Venezuelan Andes (Barinas and Táchira).

**Remarks:** The Andean piedmont population (Barrio-Amorós 1999g, 2001a) is continuous from the eastern versant of the Cordillera Oriental de Colombia and thus from the Upper Amazon, fitting the Amazonian distribution pattern for western Venezuela suggested by Barrio-Amorós (1998). However, the Barinas and Táchira populations are much smaller and with a different pattern from those from the south of the Orinoco. Chacón-Ortiz et al. (2005) probably confused by such difference, reported *B. rosenbergi*, a Central American and Chocoan species, from Táchira State, and the same specimens mentioned by Chacón-Ortiz et al. (2005) were previously reported correctly as *B. boans* (Barrio-Amorós 1999, 2001a). Specimens from throughout the whole species distribution should be compared using molecular and bioacoustic data, as they may be a species complex. In the *Boana semilineata* species group (Faivovich et al. 2005). Some specimens are still confused in collections with the very similar *B. wavrini* (Hoogmoed 1990b).

**Selected references:** Ginés (1959); Rivero (1961, 1964b, 1967a); Heatwole et al. (1965); Duellman (1971a, 1997); Gremon et al. (1986); Hoogmoed (1990b); Donnelly and Myers (1991); Magdeauf et al. (1991); Gorzula and Señaris (1998); Barrio-Amorós (1999, 2001a); Arrington and Arrington (2000); Lynch and Suárez-Mayorga (2001); Chacón et al. (2005); Barrio-Amorós and Brewer-Carias (2008); Barrio-Amorós et al. (2011b); Mendoza (2014); Señaris et al. (2014).

**Boana calcarata** (Troschel 1848)

**Holotype:** Not designated and probably lost.

**Type locality:** “British Guiana.”

**Distribution:** Venezuela, Brazil, Colombia, Ecuador, Bolivia, Guyana, and French Guiana. Widespread in Southern Venezuela, in Amazonas, Bolivar, and Delta Amacuro.

**Remarks:** Regions 4, 5. Caminer and Ron (2014) reviewed the species and allies from the Upper Amazon, especially Ecuador. They doubted the identity of Colombian and Venezuelan samples despite the fact they were well documented (Barrio-Amorós 1998; Señaris and Barrio 2002). In the *Boana albopunctata* species group (Faivovich et al. 2005).

**Selected references:** Duellman (1973); Donnelly and Myers (1991); Señaris and Barrio (2002); Señaris and Ayarzagüena (2004 “2002”); Barrio-Amorós et al. (2011b).

**Boana cinerascens** (Spix 1824)

**Syntypes:** ZSM 2498/0 (2 specimens), destroyed.

**Type locality:** “Ecgá prope flumen Teffe” (= Ega, Tefé), Amazonas, Brazil.

**Distribution:** Regions 4, 5. Widely distributed in the Amazon Region (Colombia, Ecuador, Peru, Bolivia, Brazil, Venezuela, Guyana, Suriname, and French Guiana). Widespread in Southern Venezuela, in Amazonas, Bolivar, and Delta Amacuro States.

**Remarks:** In the *Boana punctata* species group (Faivovich et al. 2005). In Venezuela two species are confused under this name, one from rainforest habitat (Image 125A) and another from open areas (Image 125B). The nomen *cinerascens* hides a complex of species, with several taxa undescribed in the upper Amazon (D. Pareja, pers. comm.). Hoogmoed and Gruber (1983) suggested the use of *B. granosa* (Boulenger 1882) instead of *B. cinerascens* (Spix 1824) to stabilize the use of *granosa*. Barrio-Amorós (2004) used the name *cinerascens*, overlooking Hoogmoed and Gruber’s suggestion. Current situation is complicated, with types of *B. cinerascens* from Tefé apparently representing a different species than lectotype of *B. granosa* from Canelos, Ecuador (P. Kok, pers. comm.).

**Selected references:** Spix (1824); Boulenger (1882); Rivero (1961, 1964b,d, 1967c, 1971b); Duellman (1974a, 1997); Hoogmoed (1979a); Hoogmoed and Gruber (1983); Gorzula and Señaris (1998); Frost (2004); Kok and Kalamandeen (2008); Barrio-Amorós et al. (2011b); Señaris et al. (2014).

**Boana geographic** (Spix 1824)

**Holotype:** Not designated. ZSM 35/0 is part of the type series but is currently lost.

**Type locality:** Rio Tefé, Amazonas, Brazil.

**Distribution:** Region 4, 5. Widespread in tropical South America, east of Andes, including Trinidad. Widely distributed in southern and eastern Venezuela (Amazonas, Bolivar, and Delta Amacuro States).

**Remarks:** Fouquet et al. (2016) show a wider variation of
both *Boana geographica* and *B. semilineata*. They described *B. diabolica* from the eastern Guiana Shield. A detailed review should be done with Venezuelan populations. In the *Boana semilineata* species group (Faivovich et al. 2005).

**Selected references:** Spix (1824); Günther (1858); Lutz (1927); Rivero (1961); Duellman (1971a, 1973, 1997); Hoogmoed and Gorzula (1979); Lynch (1979b); Gremone et al. (1986); Azevedo-Ramos (1995); Gorzula and Señaris (1998); Barrio-Amorós et al. (2011b); Señaris et al. (2014); Fouquet et al. (2016).

**Boana hobbsi** (Cochran and Goin 1970)

**Holotype:** MCZ 28052.

**Type locality:** “Cano Goacayá, a tributary of the Rio Apaporis, in Amazonas, Colombia.”

**Distribution:** Region 4. Colombia and Venezuela. In Venezuela known from a single record from the base of Cerro Neblina in extreme southern Amazonas State.

**Remarks:** In the *Boana punctata* species group (Faivovich et al. 2005).

**Selected references:** Cochran and Goin (1970);
Boana punctata

Probably a member of tepui. Expected in Guyana.

Boana albopunctata

Type locality: Quebrada Ataperé, headwater of the Cucurital River (05°43’17.7’’N, 62°34’21.1’’W), 970 m, Canaima National Park, Bolivar State, Venezuela

Distribution: Region 5. Endemic to Venezuela, restricted to the uplands of Gran Sabana and the summit of Auyantepui. Expected in Guyana.

Remarks: Probably a member of Boana punctata species group (Señaris and Ayarzagüena 2006).


Boana jimenezii

(Señaris and Ayarzagüena 2006)*

Holotype: MHNLS 16070.

Type locality: Quebrada Ataperé, headwater of the Cucurital River (05°43’17.7’’N, 62°34’21.1’’W), 970 m, Canaima National Park, Bolivar State, Venezuela

Distribution: Region 5. Endemic to Venezuela, restricted to the uplands of Gran Sabana and the summit of Auyantepui. Expected in Guyana.

Remarks: Probably a member of Boana punctata species group (Señaris and Ayarzagüena 2006).

Selected references: Cochran and Goin (1970); Duellman (1974a); McDiarmid and Paolillo (1988); Señaris et al. (2014).

Boana lanciformis (Cope 1871)

Holotype: Not designed. Type series unknown.

Type locality: “Pebas, Ecuador.”

Distribution: Regions 1, 2, 3, 4. Amazonia, eastern slopes of the Andes, southern slopes of Cordillera de la Costa, Península de Paria.

Remarks: In the Boana albopunctata species group (Faivovich et al. 2005). Hyla lanciformis guerreroi was described by Rivero (1971) for the Venezuelan form. Discussing with colleagues (L.F. Toledo, A. Chacón), some differences are clear (including morphological and osteological) and B. lanciformis could hide a species complex. If so, the distinctiveness of the Venezuelan form should be demonstrated by an integrative taxonomic approach.

Selected references: Duellman (1971a, 1973); Rivero (1971a); Péfaur and Díaz De Pascual (1987); Gorzula and Señaris (1998); Barrio et al. (1999); Barrio-Amorós (2010a).

Boana lemai* (Rivero 1971)

Holotype: UPR-M 3179.

Type locality: “Paso del Danto, La Escalera, entre El Dorado y Santa Elena de Uairen, 1,300–1,400 m, Serranía de Lema, Estado Bolívar, Venezuela.”

Distribution: Region 5. Eastern Guayana uplands (Venezuela and Guyana). In Venezuela, known from Sierra de Lema and some localities in the Gran Sabana.


Selected references: Rivero (1971b); Duellman (1997); MacCulloch and Lathrop (2005); Myers and Donnelly (2008); Barrio-Amorós and Duellman (2009); Señaris et al. (2009, 2014).

Boana multiviscusiata (Günther 1859)

Holotype: BM 1947.2.23.6

Type locality: “Para,” Brazil.


Remarks: In Boana albopunctata species group (Faivovich et al. 2005).

Selected references: Rivero (1961, 1964a, 1967a); Hoogmoed and Gonzula (1979); Duellman (1997); Gorzula and Señaris (1998); Señaris and Ayarzagüena (2004); Señaris et al. (2014).

Boana ornatissima (Noble 1923)

Holotype: AMNH 13491.

Type locality: “Meamu, Mazaruni River, Guyana.”

Distribution: Region 5. Known in Venezuela from two localities; one in the Gran Sabana (salto Karuay), and another from middle Amazonas State. A picture was shown to CBA of a B. ornatissima from Surumoni, near La Esmeralda (Amazonas State), taken by the Austrian Surumoni team from University of Vienna in 1998. This locality fills the gap between the Gran Sabana locality and that from Guainia, eastern Colombia (Lynch and Vargas-Ramírez 2000).

Remarks: In Boana punctata species group (Faivovich et al. 2005).

Selected references: Hoogmoed (1979a); Señaris and Vernet (1997); Lynch and Vargas-Ramírez (2000); Señaris et al. (2014).

Boana pugnax (Schmidt 1857)

Holotype: KM 1009.

Type locality: “Chiriquí, Flusse unneit Bocca (sic!) del Toro.” Köhler (2011) is wrong stating the type locality as “Neugranada.”

Distribution: Regions 1, 3, 6. Panama, Colombia, and Venezuela. In Venezuela, widely distributed in open lowlands of Maracaibo Lake Basin and Los Llanos Region (Escalona et al. 2017).

Remarks: In Boana faber species group (Faivovich et al. 2005). Many specimens in the Venezuelan collections erroneously identified as Hyla or Hyspsiboa crepitans (FRR and CBA, personal observation: now Boana xerophylla); Escalona et al. (2017) distinguished among B. pugnax and B. xerophylla in four Venezuelan museums, expanding the previous known localities.

Selected references: La Marca (1996a); Chacón (2001); Lynch and Suárez-Mayorga (2001); Tárano (2010); Mendoza (2014); Infante-Rivero and Velozo (2015); Escalona et al. (2017).
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130A. Boana lemai. Cuyuni river, Bolivar. Photo: César Barrio-Amorós.

130B. Boana lemai. Quebrada de Jaspe, Gran Sabana, Bolivar. Photo: César Barrio-Amorós.


**Boana punctata** (Schneider 1799)

**Syntypes:** NHM 155 (two individuals)

**Type locality:** “Surinam.”

**Distribution:** Regions 3, 5. Widespread in South America (Colombia, Venezuela, Ecuador, Peru, Bolivia, Paraguay, Argentina, Brazil, Guyana, Suriname, French Guiana, and Trinidad). Present in the open lowlands of Venezuela, except in Maracaibo Lake Basin.

**Remarks:** In *Boana punctata* species group (Faivovich et al. 2005).

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**Selected references:** Duellman (1974a); Hoogmoed (1979a); Gorzula and Señaris (1998); Barrio et al. (2000); Señaris et al. (2014).

**Boana roraima** (Duellman and Hoogmoed 1992)

**Holotype:** BMNH 1979.560

**Type locality:** “North slope of Mt. Roraima (05°38′N, 60°44′W, elevation 1,480 m), Rupununi District, Guyana.”

**Distribution:** Region 5. Guyana and Venezuela. In
Venezuela, restricted to the Eastern half of Bolivar State (Barrio-Amorós et al. 2011).


Selected references: Duellman and Hoogmoed (1992); MacCulloch and Lathrop (2005); Myers and Donnelly (2008); Barrio-Amorós and Duellman (2009); Barrio-Amorós et al. (2011c); Barrio-Amorós and Fuentes (2012); Señaris et al. (2014).

Boana rhythmica (Señaris and Ayarzagüena 2002)*

Holotype: MHNLS 12957.
Boana benitezi

Type locality: “Cerro Jaua, Parque nacional Jaua-Sarisaríñama, Bolívar State, Venezuela (4°49’55”N, 64°25’54”W), 1,600 m.”
Distribution: Region 5. Endemic to Venezuela. Known only from Cerro Jaua in Bolivar State.
Remarks: In Boana benitezi species group (Faivovich et al. 2005).
Selected references: Señaris and Ayarzagüena (2002); Barrio-Amorós (2013).

Boana sibleszi (Rivero 1972)

Holotype: UPRM 3177.
Type locality: “Paso del Danto, La Escalera, entre El Dorado y Santa Elena de Uairén, 1,300–1,400 m, Serranía de Lema, Estado Bolívar, Venezuela.”
Selected references: Rivero (1972); Hoogmoed (1979a); Gorzula (1992); Duellant (1997); Gorzula and Señaris (1998); MacCulloch and Lathrop (2005); Barrio-Amorós and Duellant (2009); Señaris et al. (2014).

Boana tepuiana
(Barrio-Amorós and Brewer-Carias 2008)

Holotype: EBRG 4653.
Type locality: “Southern slope of Sarisariñama-tepui, Locality VI, Estado Bolivar, Venezuela (4°25’N, 64°7’W), elevation 420 m.”
Distribution: Region 5. Eastern Guayana uplands.
Remarks: Must be in the Boana benitezii species group (sensu Faivovich et al. 2005) by implication as it was confused previously with B. benitezii, as it was already observed by Frost (2019). See additional comments under B. benitezii.
Selected references: Gorzula and Señaris (1998); Barrio-Amorós and Brewer-Carias (2008); Señaris et al. (2014).

Boana wavrini (Parker 1936)

Type: IRSNB 1028.
Type locality: “Upper Orinoco, in the province of Amazonas, Venezuela.”
Distribution: Region 4. Colombia, Venezuela and Brazil. In Venezuela, restricted to the upper Orinoco, in southern portion of Venezuelan Amazonas State.
Remarks: In Boana semilineata species group (Faivovich et al. 2005).
Selected references: Parker (1936); Ginés (1959); Rivero (1961, 1967a,c); Hoogmoed (1990); La Marca (1992); Gorzula and Señaris (1998).

Boana xerophylla (Duméril and Bibron 1841)

Lectotype: MNHN 652.
Type locality: Cayenne, French Guiana.
Distribution: Regions 1, 2, 3, 4, 5, 6. Panama, Colombia, Venezuela, Guyana, Suriname, French Guiana, and northern Brazil. Widespread in Venezuela in open and disturbed areas, 0–2,300 m asl.
Remarks: In Boana faber species group (Faivovich et al. 2005) by implication. Recently recovered from synonymy of B. crepitans by Orrico et al. (2017). Several authors gave evidence that B. crepitans was a complex (Kluge 1979; Lynch and Suarez-Mayorga 2001; Gorzula and Señaris 1999; Martins et al. 2009). The resurrection of B. xerophylla as the northern South American representative of the crepitans complex does not change the panorama much. As reported previously by Barrio-Amorós (2004), at least four different taxa were under the name B. crepitans only in Venezuela. Now, all of them pass automatically to be named B. xerophylla. However, only the southeastern population (a blue morph from rainforest lowlands in eastern Venezuela; Barrio-Amorós et al. 2011b) should be known as B. xerophylla sensu stricto, as it is conspecific with the French Guiana population (Lescuré and Marty 2000). All other populations from Northern Venezuela, Colombia, and Panama deserve further attention. So, in Venezuela three more populations now being B. xerophylla represent different taxa. One is from the Coastal Range and Andes up to 2,300 m plus the upper Llanos; another is from the western piedmont of the Cordillera de Mérida towards the Maracaibo Lake Basin; another is a green morph from the Gran Sabana (mentioned already as different by Duellman 1997).
Selected references: Günther (1858); Boettger (1892, 1893, 1896); Boulenger (1903); Lutz (1927); Alemán (1952, 1953); Ginés (1959); Rohl (1959); Rivero (1961, 1963c, 1964a-d, 1967a, 1971a); Heatwole et al. (1965); Tello (1968); Rivero and Esteves (1969); Donoso-Barros and León-Ochoa (1972); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Rivero-Blanco and Dixon (1979); Rada (1981); Péfau and Díaz De Pascual (1987); Ramo and Busto (1989, 1990); La Marca (1991b “1994,” 1992, 1996a); Magdefrau et al. (1991); Manzanilla et al. (1995); Péfau and Pérez (1995); Barrio (1996a); Yüstiz (1996); Duellant (1997); Gorzula and Señaris (1998); Lynch and Suárez-Mayorga (2001); Barrio-Amorós (2006c); Barrio-Amorós and Brewer-Carias (2008); Barrio-Amorós et al. (2011b); Mendoza (2014); Señaris et al. (2014); Orrico et al. (2017).

Genus Hyloscirtus Peters, 1882

Type species: Hyloscirtus bogotensis Peters, 1882.
Remarks: Centrolenella estevesi Rivero, 1968 was described from a creek close to Río Albarregas north of Merida city, at 2,400 m asl. This name was used as


135B. *Boana roraima*. Female. La Laja, Sierra de Lema, Bolívar. *Photo: César Barrio-Amorós.*


*Hyalinobatrachium* by La Marca (1997), but more recently Faivovich et al. (2005) revised the holotype (MCZ 72498), reidentified the specimen as a juvenile *Hyloscirtus*, and considered it as *Hyloscirtus estevesi* (Frost 2018). Two species are reported from the same area, both in the *H. bogotensis* group: *H. jahni* and *H. platydactylus*.

From photographs of the holotype of *Centrolenella estevesi*, the authors suspect it is a juvenile *H. jahni*, due to snout shape projecting beyond the lip in ventral view and absence of melanophores on fingers I and II. *Centrolenella estevesi* Rivero, 1968 is thus considered a junior synonym of *Hyla jahni* Rivero, 1961.

*Hyloscirtus jahni* (Rivero 1961)*

**Holotype:** UMMZ 46465.

**Type locality:** El Escorial, Mérida State, Venezuela.

**Distribution:** Endemic of cloud forest of Cordillera de Mérida (Andes), Mérida State.
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Remarks: Formerly in *Hyloscirtus bogotensis* species group (Faivovich et al. 2005). Recently, Rojas-Runjaic et al. (2018) recovered this species in his molecular phylogeny as sister to all other *Hyloscirtus*. To promote taxonomic stability and maintain taxonomy based on monophyletic groups, they excluded *H. jahni* from the *H. bogotensis* species group and created the monospecific *H. jahni* species group, which is morphologically defined by the presence of dermal spicules in adult males, and by the high number of tooth rows in the larval oral disc.


*Hyloscirtus japeria* Rojas-Runjaic, Infante-Rivero, Salerno et Meza-Joya, 2018

Holotype: MHNLS 19236.

Type locality: “Guacharaca Camp, Tetari Kopejoacha creek, Rio Negro Basin, Sierra de Perijá, Machiques de Perijá municipality, Zulia State, Venezuela (10°04’21.9N,


139E. *Boana xerophylla*. Day color. La Azulita, Mérida. Photo: César Barrio-Amorós.

139F. *Boana xerophylla*. Night color. La Azulita, Mérida. Photo: César Barrio-Amorós.


72°51’16.7W; elevation 1,661 m asl.).”

**Distribution:** Known only from several localities on the Venezuelan (Zulia State) and Colombian (Guajira Department) slopes of the Sierra de Perijá.

**Remarks:** In the *Hyloscirtus bogotensis* species group (Rojas-Runjaic et al. 2018).

**Selected references:** Rojas-Runjaic et al. (2018).
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Hyloscirtus lascinius (Rivero 1969)

Holotype: MCZ 65901.
Type locality: “Tabor, above de Delicias, paramo of Tamá, Táchira, Venezuela.”
Distribution: Region 1. Andes of Colombia (Norte de Santander Department) and Venezuela (Táchira and Mérida States). Recently reported from Sierra de Perijá in Zulia State (Rojas-Runjaic et al. 2016).
Remarks: In Hyloscirtus bogotensis species group (Faivovich et al. 2005).
Selected references: Rivero (1969d); Duellman (1989a); Rojas-Runjaic et al. (2016).

Hyloscirtus platydactylus (Boulenger 1905)

Type locality: “Merida, Andes of Venezuela.”
Distribution: Region 1. Andes of Colombia (Norte de Santander Department) and Venezuela (Cordillera de Mérida and Sierra de Perijá).
Remarks: In Hyloscirtus bogotensis species group (Faivovich et al. 2005).
Selected references: Boulenger (1905); Ginés (1959); Rivero (1961, 1963b, 1969d); Duellman (1972a, 1979b, 1989a); La Marca (1985a, 1994b); Péfaur and Díaz De Pascual (1987); Barrio-Amorós (2010a).

Genus Myersiohyla Faivovich, Haddad, García, Frost, Campbell and Wheleer, 2005

Type species: Myersiohyla neblinaria Faivovich, McDiarmid and Myers, 2013. Faivovich et al. (2013) stated the original type species of Myersohyla was Hyla inparquesi, Ayarzagüena and Señaris, 1994 due to a misidentified specimen of M. “inparquesi” from Neblina, which is now correctly identified as M. neblinaria.

Myersiohyla aromaticata
(Ayarzagüena and Señaris 1994)*

Holotype: MHNLS 12510
Type locality: “Cumbre del Tepuy Huachamacari, Estado Amazonas, Venezuela (03°50’N, 65°45’O) 1,700 m snm.”
Distribution: Region 5. Endemic to Huachamacari, a tepui in Amazonas State.
Selected references: Ayarzagüena and Señaris (1993); McDiarmid and Donnelly (2005); Faivovich et al. (2013).

Myersiohyla chamaeleo
Faivovich, McDiarmid and Myers, 2013*

Holotype: AMNH A-131173
Type locality: Venezuela: Departamento Amazonas: Cerro de la Neblina: Camp I, 1,820–1,880 m.
Distribution: Region 5. Known from type locality and surroundings at Cerro de la Neblina in the southern border of Amazonas State.
Selected references: Faivovich et al. (2013).

Myersiohyla inparquesi
(Ayarzagüena and Señaris 1994)*

Holotype: MHNLS 12338.
Type locality: “Cumbre del Tepuy Marahuaca Sur, Estado Amazonas, Venezuela (3°40’N, 65°27’O) 2,600 m snm.”
Distribution: Region 5. Endemic to Marahuaka, a tepui in central Estado Amazonas.
Selected references: Ayarzagüena and Señaris (1994); McDiarmid and Donnelly (2005).

Myersiohyla loveridgei (Rivero 1961)*

Holotype: MCZ 28565.
Type locality: Pico Culebra, Cerro Duida, Amazonas State, Venezuela.
Distribution: Known only from type locality.
Remarks: Region 5. Faivovich et al. (2013) noted the similarity between Myersiohyla loveridgei and M. aromaticata, suggesting the possible synonymy of the latter.
Selected references: Rivero (1961, 1963d, 1964b, 1971b); La Marca and Smith (1982b); Faivovich et al. (2013).

Myersiohyla neblinaria
Faivovich, McDiarmid and Myers, 2013*

Holotype: USNM 562071
Type locality: “Venezuela: Departamento Amazonas: Cerro de la Neblina: Camp VII, 1,730 m.”
Distribution: Region 5. Known from type locality and surroundings at Cerro de la Neblina, in southern border of Amazonas State. Probably also on the Brazilian side.
Selected references: Faivovich et al. (2013).

Subfamily Dendropsophinae Fitzinger, 1843

Genus Dendropsophus Fitzinger, 1843

Type species: Hyla frontalis Daudin, 1800 (= Rana leucophyllata Beireis, 1783), by original designation.
Remarks: The genus was resurrected by Faivovich et al. (2005) to comprise Hyla species that have or are suspected to have 30 chromosomes. Duellman et al. (2016) included two genera in the subfamily Dendropsophinae, only one being present in Venezuela: Dendropsophus.

Dendropsophus amicorum (Mijares-Urrútia 1998)*

Holotype: USNM 216677.
Type locality: Cerro Socopó, 84 km al NO de Carora,


146A. *Dendropsophus meridensis*. Male calling. los Suarez, way from Mérida to la Azulita, Mérida. *Photo: César Barrio-Amorós.*

Estado Falcón, Venezuela (10°28’N, 70°48’O).

**Distribution**: Region 2. Known from type locality.

**Remarks**: Known only by holotype. No additional specimens collected after it in 1968. Faivovich et al. (2005) assigned this species to *Dendropsophus* but not to any species group. Assessing this apparently rare species is important, as it could be confused with a common species like “*Dendropsophus aff. minutus*,” which would have implications for conservation. Currently considered Critically Endangered by the Venezuelan Red Book (Mijares-Urrútia et al. 2015).

**Selected references**: Mijares-Urrútia (1998); Faivovich et al. (2005); Mijares-Urrútia et al. (2015).

*Dendropsophus battersbyi* (Rivero 1961)*

**Holotype**: BM 53.2.4.165.

**Type locality**: Caracas, Venezuela.
**Dendropsophus luteocellatus** (Roux 1927)*

*Lectotype*: NHMB 3900.

*Type locality*: “El Mene, Provincia Falcón, Venezuela.”

*Distribution*: Regions 1, 2. Endemic to both sides of Cordillera de Mérida and Cordillera de la Costa.

*Remarks*: In the *Dendropsophus parviceps* species group *sensu* Faivovich et al. (2005).

*Selected references*: Roux (1927); Ginés (1959); Rivero (1961, 1963c, 1969c, 1971a); Duellman and Crump (1974); Yústiz (1996); Barrio-Amorós (2010a); Barrio-Amorós and Molina (2010).

**Dendropsophus marmoratus** (Laurenti 1768)

*Type*: Unknown.

*Type locality*: “Surinam.”

*Distribution*: Regions 4, 5. Amazonian lowlands of Colombia, Ecuador, Peru, Bolivia, Brazil, Venezuela, Guyana, Suriname, and French Guiana. In Venezuela, known from a few localities in Amazonas and Bolivar States, south of the Orinoco River.

*Remarks*: In the *Dendropsophus marmoratus* species group *sensu* Faivovich et al. (2005).

*Selected references*: Rivero (1961, 1964b); Bokermann (1964).

**Dendropsophus meridensis** (Rivero 1961)*

*Holotype*: MCZ 2527.

*Type locality*: “Mérida, 1,630 m.”

*Distribution*: Region 1. Cordillera de Mérida (Venezuelan Andes) in Mérida and Táchira States (see current map by Armesto et al. 2015).

*Remarks*: So far, differences between *Dendropsophus meridensis* and *D. pelidnus* are almost nonexistent or insignificant. *Dendropsophus meridensis* is known to inhabit stagnant waters, but specimens of *D. pelidnus* that Duellman (1989) obtained in Tachira were from a stream. Guarnizo et al. (2012) found a maximum genetic distance of 0.9% between central Cordillera de Mérida specimens and others from near the type locality of *D. pelidnus*, which is not significant. Aside from this molecular evidence, calls and morphology should be compared between these populations before proposing a synonymy. Armesto et al. (2015) provide an updated distribution map and model of potential distribution in the Venezuelan Andes. If *D. pelidnus* is a junior synonym of *D. meridensis*, then the latter would be present in Colombia.


**Dendropsophus microcephalus** (Cope 1886)

*Syntypes*: USNM 13473 (two specimens, lost).

*Type locality*: “Chiriqui,” Panamá.

*Distribution*: Regions 3, 6. Widespread from southeastern Mexico to northern South America (Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, and Trinidad). In Venezuela, widely distributed in open lowlands.

*Remarks*: *Hyla misera* Werner, 1903 from Caracas, Venezuela (holotype IRSNB 4549) (as *Dendropsophus miserus*) would be the name for Venezuelan populations if, as Duellman (1970) suggested, the subspecies currently recognized (as *D. microcephalus miserus* for the Venezuelan and northern Colombian populations) is proved to be a full species. Fouquette (1968), Duellman (1970), and Savage (2002) already recognized the differences among Central American and South American populations. Molecular work is needed to assess its final taxonomic identity. In the *Dendropsophus microcephalus* species group *sensu* Faivovich et al. (2005).

*Selected references*: Lutz (1927); Rivero (1961, 1963c, 1964d); Heatwole et al. (1965); Duellman and Fouquette (1968); Fouquette (1968); Duellman (1970, 1974a, 1997); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Rivero-Blanco and Dixon (1979); Rada (1981); Yústiz (1996); Gorzula and Señaris (1998); Savage (2002); Tárano (2010); Barrio-Amorós et al. (2011b).

**Dendropsophus minusculus** (Rivero 1971)

*Holotype*: UPR-M 3377.

*Type locality*: Nirgua, Yaracuy State, Venezuela.

*Distribution*: Regions 2, 3, 4, 5. Colombia, Venezuela, Brazil, Guiana, Suriname, and French Guiana. Widespread in Venezuela, from northern lowlands of Cordillera de la Costa, throughout Los Llanos, to Orinocuan lowlands.

*Remarks*: In the *Dendropsophus microcephalus* species...
146B. Dendropsophus meridensis. Los Suarez, way from Mérida to la Azulita, Mérida. Photo: César Barrio-Amorós.


Venezuela, with populations from the Coastal chain, the Andes, the Amazon, and Guiana Shield.

Remarks: Gehara et al. (2014) shows this name hides a complex of species, with at least four putative species in Venezuela. The name Hyla goughi Boulenger, 1911 was mentioned to be available for populations clustered together with Trinidadian populations. However, CBA examined the type of Hyla goughi (BMNH 1947.2.13.12) and it is considered to be conspecific with Hyla microcephala Cope, 1886. A cotype of H. goughi, BMNH 1947.2.13.83, is a subadult Dendropsophus aff. minutus. The status of other populations once attributed

Dendropsophus minutus (Peters 1872)

Syntypes: ZMB 7456.
Type locality: Nova Friburgo, Rio de Janeiro, Brazil.
Distribution: Regions 1, 2, 4, 5. Widespread in group sensu Faivovich et al. (2005).

Selected references: Rivero (1971a); Hoogmoed and Gorzula (1979); Rivero-Blanco and Dixon (1979); Ramo and Busto (1989, 1990); Duellman (1997); Gorzula and Señaris (1998); Tárano (2010); Barrio-Amorós et al. (2011b); Señaris et al. (2014).


**Holotype:** BM 1947.2.13.51

**Type locality:** “Sarayacu,” Provincia Pastaza, Ecuador.

**Distribution:** Region 4, 5. Widely distributed in Amazon Basin: Colombia, Ecuador, Peru, Bolivia, Brazil, and Venezuela. In Venezuela, only known from three localities: lower Casiquiare (McDiarmid and Paolillo 1988), Surumoni in Amazonas State (MHNLS 20906–20910), and Guaquinima-tepui in Bolívar State (Schlüter and Mägdefrau 1991).

**Remarks:** In *Dendropsophus parviceps* species group (Faivovich et al. 2005).

**Selected references:** McDiarmid and Paolillo (1988); Heatwole et al. (1965); Rivero and Esteves (1969); Hoogmoed and Gorzula (1979); Donnelly and Myers (1991); Magdefrau et al. (1991); Duellman (1997); Gorzula and Señaris (1998); Barrio-Amorós and Duellman (2009); Barrio-Amorós (2010a); Barrio-Amorós et al. (2011b); Gehara et al. (2014); Señaris et al. (2014).
Dendropsophus pelidnus (Duellman 1989)

Holotype: KU 181109.
Type locality: “Betania (07°30'N, 72°27'W, 2,220 m), Estado Táchira, Venezuela.”
Distribution: Region 1. Departments of Santander and Boyacá in Colombia, and Táchira State in Venezuela, 2,200–3,000 m asl.
Remarks: See comments under Dendropsophus meridensis. If D. pelidnus is shown to be a junior synonym of D. meridensis, then distribution of latter would reach Colombia. The specific name ending is amended to be consistent with the masculine genus, from Greek adjective pelidnos (Duellman 1989a). In Dendropsophus labialis species group (Duellman 1989a; Faivovich et al. 2005).
Selected references: Duellman (1989a); Guarnizo et al. (2012); Armesto et al. (2014).

Dendropsophus sarayacuensis (Shreve 1935)

Holotype: MCZ 19729.
Type locality: Sarayacu, Provincia Pastaza, Ecuador.
Remarks: In Dendropsophus leucophyllatus species group (Faivovich et al. 2005).

Dendropsophus yaracuyanus
(Mijares-Urrútia and Rivero 2000)*

Holotype: EBRG 3311.
Type locality: “Los Bacos, Municipio Bolívar, Sierra de Aroa, Estado Yaracuy, Venezuela.”
Distribution: Region 2. Endemic to Sierra de Aroa in Yaracuy State.
Remarks: Not previously assigned to any species group (Faivovich et al. 2005), herein assigned to D. parviceps group, due to overall similarity with the other species in this group.
Selected references: Mijares-Urrútia and Rivero (2000).

Subfamily Lophyohylinae Miranda-Ribeiro, 1926


Genus Aparasphenodon Miranda-Ribeiro, 1920

Type species: Aparasphenodon brunoi Miranda Ribeiro, 1920, by monotypy.

Aparasphenodon venezolanus (Mertens 1950)

Holotype: SMF 22168.
Type locality: San Fernando de Atabapo, Amazonas State, Venezuela.
Distribution: Region 4. Amazonian lowlands of Venezuela and nearby Colombia.
Selected references: Mertens (1950, 1967); Ginés (1959); Rivero (1961, 1964b); Paolillo and Cerda (1981); Lynch and Vargas-Ramírez (2000).

Genus Osteocephalus Steindachner, 1862

Type species: Osteocephalus taurinus Steindachner, 1862, by subsequent designation of Kellogg (1932).

Osteocephalus helena (Ruthven 1919)

Holotype: UMMZ 52681.
Type locality: Valley of the Demerara River, Dunoon, Guyana.
Distribution: Region 5. Widely distributed in lowlands of Amazon Region (Bolivia, Peru, Colombia, Brazil, Colombia, Venezuela, Guyana, and French Guiana). In Venezuela, known from several localities in Bolivar and Delta Amacuro States (Barrio-Amorós 1998, Señaris and Ayarzagüena 2004).
Remarks: Osteocephalus helena is the name that must apply to southern Venezuela’s green, tuberculated, medium-sized Osteocephalus. Specimens of this species in this region have been known under two names: Osteocephalus buckleyi (Boulenger 1882) with distribution now restricted to Upper Amazon in Peru, Colombia, and Ecuador (Jungfer et al. 2013); and Osteocephalus cabrerai (Cochran and Goin 1970), first reported from Venezuela by Gorzula and Señaris (1998). All specimens examined by Jungfer et al. (2013) from the Guiana Shield fall in the same clade, and only name O. helena is applicable. In Osteocephalus buckleyi species group (Jungfer et al. 2013).
Selected references: Cochran and Goin (1970); Trueb and Duellman (1971); Duellman and Mendelson (1995); Gorzula and Señaris (1998); Señaris and Ayarzagüena (2004); Jungfer et al. (2013).

Osteocephalus leprieurii (Dumeril and Bibron 1841)

Holotype: MNHN 4629.
Type locality: “Cayenne,” French Guiana.
Distribution: Regions 4, 5. Widely distributed in Guiana Shield (Brazil, Venezuela, Guyana, Suriname, and French Guiana). In Venezuela, known from several localities in
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Amazonas and Bolivar States.

**Remarks:** In *Osteocephalus leprieurii* species group (Jungfer et al. 2013). *Osteocephalus ayarzaguenai* Gorzula and Señaris, 1997 is a junior synonym (Jungfer and Hödl 2002).

**Selected references:** Rivero (1971a); Trueb and Duellman (1971); Gorzula and Señaris (1996, 1998); Duellman (1997); Barrio and Fuentes (2000a); Jüngfer and Hödl (2002); Señaris et al. (2009, 2014); Jüngfer et al. (2013).

**Osteocephalus taurinus** Steindachner, 1862

**Type:** NHMW 16492.

**Type locality:** Barra do Rio Negro, Manaos, Amazonas, Brazil.

**Distribution:** Region 5. Amazonian species, distributed in southern, central, and upper Amazon in Brazil, Peru, Ecuador, Bolivia, Colombia, and the Guianas. In Venezuela all populations known as *O. taurinus* must be revised. Jüngfer et al. (2013) identified two candidate
species under this name from Venezuela, one in NW Amazonas State, and another from the extreme south Amazonas State (Appendix 1). Jungfer et al. (2013) restricts the presence of *O. taurinus sensu stricto* out of Venezuela. However, populations of *O. “taurinus”* from southeastern Venezuela would remain without identification. For now, authors restrict distribution of *O. aff. taurinus* to the lowlands and uplands of Bolivar State.

**Remarks:** A well-recognized species complex. In Venezuela at least three putative species are reported under this name (Jungfer et al. 2013; Appendix 1).

**Selected references:** Ginés (1959); Rivero (1961, 1964b); Trueb and Duellman (1971); Donnelly and Myers (1991); Duellman (1997); Gorzula and Señaris (1998); Lynch and Vargas-Ramírez (2000); Barrio-Amorós and Brewer-Carías (2008); Barrio-Amorós et al. (2011b); Jungfer et al. (2013); Señaris et al. (2014).

**Genus Phytotriades** Jowers, Downie and Cohen, 2008

**Type species:** *Amphodus auratus* Boulenger, 1917, by original designation.

**Phytotriades auratus** (Boulenger 1917)

**Type:** BMNH 1917.9.27.39–41

**Type locality:** “Mount Tucutche, a little above 3,000 feet altitude,” Trinidad.

**Distribution:** Region 2. Only known from Trinidad island and Cerro El Humo in Península de Paria (northwestern Venezuela), Sucre State. Probably in other localities of Paria over 1,000 m where the giant bromeliad *Glomeropitcairnia erectiflora* (its microhabitat) is present.

**Remarks:** Considered as Critically Endangered by current Venezuelan Red Book (De Freitas and Rivas 2015).

**Selected references:** Faivovich et al. (2005); Jowers et al. (2009); De Freitas and Rivas (2015); Rivas and De Freitas (2015).

**Genus Tepuihyla** Ayarzagüena, Señaris and Gorzula, 1993

**Type species:** *Hyla rodriguezi* Rivero, 1968, by original designation.

**Remarks:** The modern concept of *Tepuihyla* includes several species ranging from the Upper Amazon (*Tepuihyla shushupe* and *T. tuberculosa*) to the Guiana Shield (Ron et al. 2016), some only occurring at the tepui summits, and few others from uplands to lowlands. Several new phylogenetic studies suggest that tepui dwellers evolved quite recently from a common ancestor, and not a long time ago as usually suspected for endemics of high tepuis (Kok et al. 2012; Salerno et al. 2012). Although Ayarzagüena et al. (1993) defined the genus *Tepuihyla* as masculine, Myers and Stothers (2006) clarified that *Hyla* is feminine so, *Tepuihyla* cannot be assumed as masculine.

**Tepuihyla aecii**

(Ayarzagüena, Señaris and Gorzula 1993)*

**Holotype:** MHNLS 12014.

**Type locality:** “Cumbre Sur del Monte Duida, Estado Amazonas. Venezuela (3°19’N, 65°38’W). 2,150 m snm.”

**Distribution:** Region 5. Endemic to Cerro Duida, Amazonas State, Venezuela.

**Selected references:** Ayarzagüena et al. (1993a,b).

**Tepuihyla edelcae**

(Ayarzagüena, Señaris and Gorzula 1993)*

**Holotype:** MHNLS 10626.

**Type locality:** “Auyan-tepuy, 10.8 km al este del Salto Angel. Estado Bolivar. Venezuela (5° 58’N, 62° 29’W). 1,970 m snm.”

**Distribution:** Region 5. Endemic to Auyan-tepui, Bolivar State, Venezuela.

**Remarks:** Specimens referred as *Tepuihyla edelcae* from the Chimanta massif correspond to *T. obscura* (Kok et al. 2015).

**Selected references:** Ayarzagüena et al. (1992a,b); Gorzula (1992); Gorzula and Señaris (1998); McDiarmid and Donnelly (2005); Barrio-Amorós and Fuentes (2012); Kok et al. (2012, 2015); Salerno et al. (2012, 2014); Señaris et al. (2014).

**Tepuihyla exophthalma** (Smith and Noonan 2001)

**Holotype:** UG-CSBD HA-722.

**Type locality:** 30 km SE Imbaimadai, Mazaruni-Potaro District, Guyana, ca. 585 m.

**Distribution:** Region 5. Venezuela and Guyana. In Venezuela, only from high sector of Sierra de Lema.

**Remarks:** Described as *Osteocephalus exophthalmus* by Smith and Noonan (2001) from Mazaruni-Potaro district in Guyana. Later Kok and Kalamandeen (2008) reported a second population from Kaieteur National Park also in Guyana. Barrio-Amorós et al. (2010h) reported the first Venezuelan specimens from the upper sector of La Escalera in Sierra de Lema, Bolivar. Jungfer et al. (2013) passed the species to *Tepuihyla* based on genetic data, though this eliminated one of the most characteristic morphological synapomorphies of *Tepuihyla*: the absence of webbing between toes I and II. *Osteocephalus phasmatus* MacCulloch and Lathrop, 2005 is a junior synonym of *T. exophthalma* according to Jungfer et al. (2013).

**Selected references:** MacCulloch and Lathrop (2005); Kok and Kalamandeen (2008); Barrio-Amorós et al. (2010h); Jungfer et al. (2013); Señaris et al. (2014).


158. Phytotriades auratus. Península de Paria, Sucre. Photo: Gilson Rivas.


Tepuihyla luteolabris
(Ayarzagüena, Señaris and Gorzula 1993)*

Holotype: MHNLS 9376.

Type locality: “Tepuy Marahuaca Norte, Estado Amazonas, Venezuela. (3° 45’N, 65° 30’W). 2,550 m.”

Distribution: Region 5. Endemic to Cerro Marahuaka, a tepui in Amazonas State, Venezuela.

Remarks: Tepuihyla celsoae was described from Cerro Galicia in Falcón State by Mijares-Urrútia et al. (1999). Jugfer et al. (2013) synonymized it with T. luteolabris, based on communication by colleagues, but not a formal comparison of type material. However, current authors agree with that decision.

Selected references: Ayarzagüena et al. (1993a,b); Mijares et al. (1999); Jugfer et al. (2013).

Tepuihyla obscura
Kok, Ratz, Tagelaar, Aubret and Means, 2015*

Holotype: IRSNB 4192.

Type locality: “Summit of Chimantá-tepui (5°19’27”N, 62°12’10”W, 2,224 m asl.)”

Distribution: Region 5. Widespread in Chimantá massif
(Bolivar State), on Abakapá, Akopán, Amuri, Apakará, Chimantá, and Churi tepuis, 1,800–2,600 m asl.

**Remarks:** *Tepuihyla edelcae* was described from Auyán-tepui and referred to date also to Chimantá massif (Ayarzagüena et al. 1992a), but these two populations were recognized as a different species by Kok et al. (2012) and Salerno et al. (2012, 2014).

**Selected references:** Salerno et al. (2014); Kok et al. (2015).

*Tepuihyla rodriguezi* (Rivero 1968)

**Holotype:** MCZ 64740.

**Type locality:** Holotype was described from El Dorado and Santa Elena de Uairén, 1,300–1,400 m, Serranía de Lema, Estado Bolívar, Venezuela.

**Distribution:** Region 5. With synonymizing of Serranía de Lema, Estado Bolívar, Venezuela. Between El Dorado and Santa Elena de Uairén, 1,300–1,400 m, (2015).

**Selected references:** (2012) and Salerno et al. (2012, 2014).

**Remarks:** These two populations were recognized as a different species by Kok et al. (2012) and Salerno et al. (2012, 2014).

**Selected references:** Salerno et al. (2014); Kok et al. (2015).

**Trachycephalus typhonius** (Linnaeus 1758)

**Holotype:** UMMZ 134.

**Type locality:** “America.”

**Distribution:** Regions 1, 2, 3, 4, 5, 6. Widespread from Mexico through Central America and South America to Paraguay and Northern Argentina; also, in Trinidad and Tobago. Widespread in lowland Venezuela, even in disturbed areas.

**Remarks:** This taxon recently changed genus and species. Most commonly known as *Phrynohyas venulosa*, until Faivovich et al. (2005) transferred it to the genus *Trachycephalus*, as *T. venulosus*. Then Lavilla et al. (2010) elucidated the long controversial nomen *typhonius* (used for a complex of bufonids as *Bufo typhonius*, and for an Asian ranoid) to be applied as *Trachycephalus typhonius*.

**Selected references:** Lutz (1927); Duellman (1956, 1971b, 1997); Rohl (1959); Rivero (1961, 1964a–d); Tello (1968); Rivero and Esteves (1969); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Rivero-Blanco and Dixon (1979); Ramo and Busto (1989, 1990); Barrio (1996a); Yústiz (1996); Lavilla et al. (2010); Tárano (2010); Barrio-Amorós et al. (2011).

**Subfamily Pseudinae Fitzinger, 1843**


**Genus *Pseudis* Wagler, 1830**

**Type species:** *Rana paradoxa* Linnaeus, 1758, by monotypy.

**Pseudis paradoxa** (Linnaeus 1758)

**Syntypes:** MHRM 114–148.

**Type locality:** Surinam.

**Distribution:** Regions 2, 3, 4, 5, 6. Widely distributed from northern South America (Colombia, Venezuela, Trinidad, Guyana, Suriname, French Guiana) through Brazil to Peru and Bolivia. In Venezuela, in lowlands of Maracaibo Lake Basin, Llanos, Guayana, and Delta of the Orinoco.


**Remarks:** Gallardo (1961) described different taxa (subspecies) of *P. paradoxa* based mainly on chromatic and biogeographic characters. None of them are regarded currently as valid (Garda et al. 2010).

**Selected references:** Lutz (1927); Ginés (1959); Gallardo (1961); Rivero (1961, 1964a); Heatwole et al. (1965); Rivero and Esteves (1969); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Gremone et al. (1986); Ramo and Busto (1989, 1990); Barrio (1996a); Gorzula and Señaris (1998); Rojas-Runjaic et al. (2005); Aguiar et al. (2007); Garda et al. (2010); Tárano (2010).

Genus *Scarthyla* Duellman and de Sá, 1988

**Type species:** *Scarthyla ostinodactyla* (= *Hyla goinorum* Bokermann, 1962), by original designation.
Scarthyla vigilans (Solano 1971)

Type: MBUCV IV-6163

Type locality: “De la carretera entre Colónico y El Vigía (a los 20 km), Estado Zulia (sic!= Estado Táchira), Venezuela.”

Distribution: Regions 1, 2, 3, 6. Colombia (Magdalena Basin and Llanos), Venezuela and Trinidad (Smith et al. 2011). In Venezuela, apparent disjunct distribution in lowlands of Maracaibo Lake Basin, high Llanos, Falcón State (Barrio-Amorós et al. 2006), northern Coastal Range, and Delta of the Orinoco (Rojas-Runjaic et al. 2008). The type locality was situated in Zulia State by Solano (1971), wrongly corrected to Mérida State by La Marca (1992) and here corrected to Táchira State.

Remarks: Hyla vigilans was regarded as incertae sedis by Faivovich et al. (2005). Based on osteology and external morphology, Barrio-Amorós et al. (2006c) proposed to assign H. vigilans to Scarthyla Duellman and de Sá, 1988 despite differences between the tadpoles of both species. Lynch and Suárez-Mayorga (2011) assigned vigilans to Pseudis, as P. vigilans, but that proposal was never considered (Frost 2019). Despite the controversial supraspecific position of this species, molecular evidence indicates a close relationship between S. goinorum and S. vigilans (B. Noonan and CBA, unpub.).

Selected references: Solano (1971); Duellman and de Sá (1988); La Marca (1992); Mijares and Hero (1997); Barrio-Amorós (1998, 2004); Suárez-Mayorga and Lynch (2001); Barrio-Amorós et al. (2006c); Rojas-Runjaic et al. (2007, 2008); Lynch and Suárez-Mayorga (2011); Smith et al. (2011); Frost (2016).

Subfamily Scinaxinae

Duellman, Marion and Hedges, 2016

Remarks: Duellman et al. (2016) erected this new subfamily for two of four genera (Scinax and Sphaenorhynchus) present in Venezuela.

Genus Scinax Wagler, 1830

Type species: Hyla aurata Wied-Neuwied, 1821, by subsequent designation of Stejneger (1907).

Scinax baumgardneri (Rivero 1961)*

Holotype: MCZ 28563.

Type locality: “Casa de Julián, entre Tapara y Caño Chana, 609 m, Estado Amazonas, Venezuela”.

Distribution: Region 4. Known from type locality and two other localities (La Culebra and Puerto Ayacucho) in Venezuelan Amazonia.

Remarks: In the Scinax ruber clade, but not assigned to any species group (Faivovich et al. 2005). Scinax lindsayi Pyburn, 1992 from Vaupes River between Brazil and Colombia seems similar to S. baumgardneri, and could be a synonym. Fresh material of both and direct comparison with types could corroborate this supposition.

Selected references: Rivero (1961, 1964b); Fouquette and Delahoussaye (1977); Duellman and Wiens (1992); Duellman (1997); Barrio-Amorós et al. (2004).

Scinax boesemani (Goin 1966)

Holotype: RMNH 12601.

Type locality: Zanderij, Suriname District, Suriname.

Distribution: Region 5. Venezuela, Guyana, Suriname, French Guiana, and northern Brazil. In Venezuela, several localities in Amazonas and Bolivar States.

Remarks: In Scinax ruber clade, but not assigned to any species group (Faivovich et al. 2005).

Selected references: Goin (1966); Rivero (1971b); Duellman (1986, 1997); Duellman and Wiens (1992); Gorzula and Señaris (1998); Barrio-Amorós et al. (2004, 2011b); Señaris et al. (2014).

Scinax danae (Duellman 1986)*

Holotype: KU 167073.

Type locality: “km 127 on El Dorado-Santa Elena de Uairén Road in the Gran Sabana, Estado Bolívar, Venezuela, 1,250 m (05°57’N, 61°27’W).”

Distribution: Region 5. Apparently endemic to type locality and surroundings in the high Sierra de Lema, Bolivar State, Eastern Venezuela. Possibly also present in Guyana.

Remarks: In Scinax ruber clade, but not assigned to any species group (Faivovich et al. 2005).

Selected references: Duellman (1986, 1997); Duellman and Wiens (1992); Pyburn (1992); Gorzula and Señaris (1998); Barrio-Amorós et al. (2004); Señaris et al. (2014).

Scinax exigua (Duellman 1986)*

Holotype: KU 167094.

Type locality: “km 144 on the El Dorado-Santa Elena de Uairén Road in the Gran Sabana, Estado Bolívar, Venezuela, 1,210 m (05°53’N, 61°23’W).”

Distribution: Region 5. Endemic to Gran Sabana in Bolivar State. Possibly also present in Guyana and northern Brazil.

Remarks: In Scinax ruber clade, but not assigned to any species group (Faivovich et al. 2005).

Selected references: Duellman (1986, 1997); Duellman and Wiens (1992); Pyburn (1992); Gorzula and Señaris (1998); Barrio-Amorós et al. (2004); Señaris et al. (2014).

Scinax fuscomarginatus (Lutz 1925)

Lectotype: AL-MN 845 designated by Cardoso and Pombal (2010).

Type locality: “Sao Paulo et Bello Horizonte,” Brazil;


Restricted to Belo Horizonte, Minas Gerais, Brazil.

**Distribution**: Region 5. Wide distribution area, from southern Brazil, Argentina and Paraguay to Venezuela, Guyana, and Suriname. In Venezuela, several localities in Bolivar State, from lowlands north of Sierra de Lema to uplands in the Gran Sabana.


**Selected references**: Literature refers to *S. trilineatus* in Venezuela. Hoogmoed and Gorzula (1979); Duellman (1986); Duellman and Wiens (1992); Gorzula and Señaris (1998); Martins (1998); Barrio-Amorós et al. (2004); Cardoso and Pombal (2010); Brusquetti et al. (2014); Señaris et al. (2014).

*Scinax garbei* (Miranda-Ribeiro 1926)

**Holotype**: MZUSP 277.

**Type locality**: Eirunepé, rio Juruá, Amazonas, Brazil.


170B. *Scinax exiguus*. Female. North of Santa Elena de Uairén, Bolivar. Photo: César Barrio-Amorós.


Distribution: Region 4. Llanos of Colombia and Amazonas State in Venezuela.

Remarks: In *Scinax rostratus* species group (Faivovich et al. 2005). Only locality known in Venezuela is Puerto Ayacucho (Amazonas State), based on the specimens UPR-M 132–137 collected by Juan Rivero and referred by him to *Hyla boulengeri* (Rivero 1961) but retrospectively reidentified by Pyburn (1973) as *S. kennedyi* (La Marca 1992). Despite many herpetologists working for years around Puerto Ayacucho, it has never been reported again in Venezuela.

Selected references: Pyburn (1973); Duellman and

Gaitán, Departamento Meta, Colombia.

Distribution: Region 4. Llanos of Colombia and Amazonas State in Venezuela.

Remarks: In *Scinax rostratus* species group (Faivovich et al. 2005). Only locality known in Venezuela is Puerto Ayacucho (Amazonas State), based on the specimens UPR-M 132–137 collected by Juan Rivero and referred by him to *Hyla boulengeri* (Rivero 1961) but retrospectively reidentified by Pyburn (1973) as *S. kennedyi* (La Marca 1992). Despite many herpetologists working for years around Puerto Ayacucho, it has never been reported again in Venezuela.

Selected references: Pyburn (1973); Duellman and


**Scinax manriquei**

Barrio-Amorós, Orellana and Chacón, 2004

**Holotype**: CVULA IV-1094.

**Type locality**: “Mesa Quintero, Guaraque, Estado Mérida, Venezuela, 1,700 m, 08°07’N, 71°36’W.”

**Distribution**: Region 1. Andes of Venezuela (States Mérida and Táchira) and adjacent Colombia (departamento Norte de Santander).

**Remarks**: *Scinax flavidus* La Marca, 2004 is a junior synonym of *S. manriquei* (Barrio-Amorós et al. 2010d). In *Scinax ruber* clade, but not assigned to any species group (Faivovich et al. 2005).


**Scinax nebulosus** (Spix 1824)

**Neotype**: MNRJ 4055 (holotype of *Hyla egléri* Lutz, 1968).

**Type locality**: “In sylvis prope flumen Teffé,” Amazonas, Brazil. Neotype from Pirarucu pond of the Museu Goeldi in Belem do Para, Pará, Brazil (Hoogmoed and Gruber 1983).

**Distribution**: Region 5. Bolivia, Brazil, Venezuela, Guyana, Suriname, and French Guiana. In Venezuela, several localities in Bolívar State (Imataca, Cuyuni, Tríunfo).

**Remarks**: In *Scinax rostratus* species group (Faivovich et al. 2005). Some reports by Rivero (1961) as *Hyla boulengeri* (especially those south of the Orinoco) can be
nebulosus, garbei, or kennedyi.

Selected references: Hoogmoed and Gruber (1983); Duellman and Wiens (1992); Duellman (1997); Barrio-Amorós et al. (2004, 2011b); Barrio-Amorós and Duellman (2009); Señaris et al. (2009).

Scinax rostratus (Peters 1863)

Holotype: ZMB 3175.
Type locality: Caracas, Venezuela.
Distribution: Regions 2, 3, 4, 6. Widely distributed in northern South America, from Panama and throughout Colombia, Venezuela, and Guyana to northern Brazil. Widespread in the lowlands of Venezuela.
Remarks: In Scinax rostratus species group (Faivovich et al. 2005). Rivero (1961) reported several specimens as Hyla boulengeri. A complex of species, involving at least two different taxa only in Venezuela (CBA, unpub. data). A major review is needed to clarify its taxonomic status and the whole S. rostratus species group. In northwestern Venezuela, specimens of S. rostratus should be compared with Scinax boulengeri (Cope 1887).
Selected references: Ginés (1959); Rivero (1961, 1964a, b, 1967a, 1968g); Tello (1968); Duellman (1970, 1972b, 1997); Fouquet and Delahoussaye (1977); Duellman and Wiens (1992); Hero and Mijares (1995); Yústiz (1996); Señaris et al. (2014).

Scinax ruber (Laureanti 1768)

Neotype: RMNH 15922B.
Type locality: “America.” Neotype from Paramaribo, Surinam.
Distribution: Regions 2, 5. Widely distributed through the Guiana Shield Basin (northeastern Brazil, south and eastern Venezuela, Guyana, Suriname, French Guiana), Trinidad and Tobago, and St. Lucia in the Lesser Antilles. Introduced in Puerto Rico. In Venezuela, eastern and SE parts, from Peninsula de Paria (type locality of Hyla roberssimoni, a synonym) to the northern versant of Sierra de Lema. Not known from the uplands of Gran Sabana.
Remarks: Distribution and specimens of this species historically confused in Venezuela with those of Scinax x-signatus. Fouquet et al. (2007) showed at least six cryptic species could be hidden under that name. All previously mentioned S. ruber from Amazonian Brazil, Colombia, Ecuador, Peru, and Bolivia, as well as Trans-Andean, are representatives of other, undescribed taxa. Since neotype locality is Surinam, Scinax ruber sensu stricto occurs from eastern Venezuela and Trinidad to northeastern Brazil through the Guianas, being a Guianan endemic (Hoogmoed 1979b). In Scinax ruber clade (Faivovich et al. 2005). Barrio-Amorós and Ortiz (2015) comment on type material of the synonym Hyla roberssimoni Donoso-Barros, 1966.
Selected references: Daudin (1803); Günther (1858); Ginés (1959); Rivero (1961, 1964a, b, 1967c, 1968g, 1969a); Heatwole et al. (1965); Donoso-Barros (1966); Duellman (1972b, 1979a, 1986, 1997); Fouquette and Delahoussaye (1977); Hoogmoed and Gorzula (1979); Hoogmoed and Gruber (1983); Gorzula (1985a); Duellman and Wiens (1992); Barrio-Amorós et al. (2004, 2011b); Fouquet et al. (2007); Señaris et al. (2014); Barrio-Amorós and Ortiz (2015).

Scinax wandae (Pyburn and Fouquette 1971)

Holotype: USNM 192305.
Type locality: “12 km NNE of Villavicencio, Meta, Colombia, elevation about 580 m.”
Distribution: Regions 1, 3. Llanos of Colombia, and Amazonian lowlands, eastern slopes of Andes and Upper Llanos of Venezuela (Amazonas, Bolivar, Apure, and Barinas States).
Remarks: In Scinax ruber clade, but not assigned to any species group (Faivovich et al. 2005).
Selected references: Pyburn and Fouquette (1971); Lynch and Vargas-Ramirez (2000); Barrio and Fuentes (2003); Barrio and Chacón-Ortiz (2004); Barrio-Amorós et al. (2004).

Scinax x-signatus (Spix 1824)

Holotype: ZSM 2494/0 (lost).
Type locality: Bahia, Brazil.
Distribution: Regions 2, 3, 4, 5, 6. Eastern, southeastern, and southern Brazil, Colombia, Venezuela, Guyana, and Suriname. There are at least five species in Venezuela under this name [not three as Barrio-Amorós (2004) referred]. All inhabit non-heavily forested habitats, i.e., temporarily flooded savannas and dry forests to rainforests. Each of the five found in distinct locations: Maracaibo Lake Basin; Coastal Range; the Llanos region; Gran Sabana Region; and Isla de Margarita (Ugueto and Rivas Fuenmayor 2010).
Remarks: The type of Scinax x-signatus is lost (Hoogmoed and Gruber 1983), so it is not possible to review the x-signatus group until a neotype is designated.
Selected references: Spix (1824); Rivero (1969a); León-Ochoa (1975); Fouquette and Delahoussaye (1977); Hoogmoed and Gorzula (1979); Rada (1981); Hoogmoed and Gruber (1983); Duellman (1986, 1997); Ramo and Busto (1989, 1990); Duellman and Wiens (1992); Gorzula and Señaris (1998); Barrio-Amorós et al. (2004, 2011b); Tárano (2010); Ugueto and Rivas Fuenmayor (2010); Señaris et al. (2014).

Genus Sphaenorhynchus Tschudi, 1838

Type species: Hyla lactea Daudin, 1802, by original designation.

Sphaenorhynchus lacteus (Daudin 1800)


179A. *Scinax x-signatus*. Parque Los Caobos, Caracas. Photo: César Barrio-Amorós.


179D. *Scinax x-signatus*. Santa Elena de Uairén, Bolívar. Photo: César Barrio-Amorós.
Family Leptodactylidae Werner, 1896 (1838)

Genus *Adenomera* Fitzinger, 1867

**Type species:** *Adenomera marmorata* Steindachner, 1867, by monotypy.

**Remarks:** Frost et al. (2006) synonymized *Adenomera* with *Leptodactylus*, which was not widely followed. Pyron and Wiens (2011) recognized *Adenomera* and *Lithodytes* as separate genera.

*Adenomera andreae* (Müller 1923)

**Holotype:** ZSM 136/1911.

**Type locality:** “Peixeboi (a.d. Bragançabahn), Staat Pará, Brasilien.”

**Distribution:** Regions 4, 5. Widely distributed in lowlands east of the Andes, including Colombia, Venezuela, Ecuador, Peru, Bolivia, Brazil, Guyana, Suriname, and French Guiana. In Venezuela, common in lowlands south of Orinoco River.

**Remarks:** Many of these apply to *L. bolivianus* complex, adscribing the northern Venezuelan specimens to *L. insularum* (as did Rivero 1967a, c), and Barrio-Amorós (1998, 2004, 2009). In the *Leptodactylus latrans* species group of De Sá et al. (2014).

**Selected references:** Many of these apply to *L. insularum* senso Heyer and De Sá, 2011. Alemán (1952); Ginés (1959); Rivero (1961, 1964a–d, 1967a); Heatwole et al. (1965); Tello (1968); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Rivero et al. (1986); Yústiz (1996); Duellman (1997); Heyer and De Sá (2011); Barrio-Amorós et al. (2014).

Genus *Leptodactylus* Fitzinger, 1826

**Type species:** *Rana typhonia* Latreille, in Sonnini and Latreille, 1801 (= *Rana fuscus* Schneider, 1799), by subsequent designation by Fitzinger (1843).

**Remarks:** Following De Sá et al. (2014), the old phenetic groups of *Leptodactylus* established by Heyer are no longer stable. All species now under *L. fuscus*, *L. latrans*, *L. melanotus*, and *L. pentadactylus* species groups.

**Leptodactylus bolivianus**

Boulenger, 1898

**Lectotype:** MSNG 28875A.

**Type locality:** Barraca, Rio Madidi, Bolivia (by designation of the Lectotype).

**Distribution:** Region 4. Widely distributed in Amazon Region, including Venezuela, Colombia, Peru, Bolivia, and NW Brazil. In Venezuela, lowlands south of Orinoco River.

**Remarks:** Heyer and De Sá (2011) reviewed the *L. bolivianus* complex, adscribing the northern Venezuelan specimens to *L. insularum* (as did Rivero 1967a, c), and Barrio-Amorós (1998, 2004, 2009). In the *Leptodactylus latrans* species group of De Sá et al. (2014).

**Selected references:** Many of these apply to *L. insularum* sensu Heyer and De Sá, 2011. Alemán (1952); Ginés (1959); Rivero (1961, 1964a–d, 1967a); Heatwole et al. (1965); Tello (1968); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Rivero et al. (1986); Yústiz (1996); Duellman (1997); Heyer and De Sá (2011); De Sá et al. (2014).

Genus *Adenomera* Fitzinger, 1867

**Holotype:** ZMNH 4871.

**Type locality:** Brazil.

**Distribution:** Region 5. Orinoco and Amazon Basins (Colombia, Ecuador, Bolivia, Brazil, Venezuela, Guyana, Suriname, French Guiana), and on the island of Trinidad (Trinidad and Tobago). In Venezuela, only a few localities in the south and east (Amazonas, Bolivar, Delta Amacuro, Monagas, and Sucre states).

**Selected references:** Rivero (1961, 1969b); Hoogmoed and Gorzula (1979); Duellman and Lynch (1981); Duellman (1997); Barrio and Rivero (1999b); Barrio-Amorós et al. (2011b).

**Remarks:** This family has undergone a massive change of its member taxa since the widespread use of molecular data. Prior to 2004, the nomenclature was quite stable, but Darst and Cannatella (2004) demonstrated *Leptodactylidae* to be paraphyletic. After several revisions of the major clades of Amphibia (Frost et al. 2006; Grant et al. 2006; Pyron and Wiens 2011), it is now mostly restricted to the old Leptodactylinae plus Leiuperinae and Paratelmatobiinae.

Subfamily Leptodactylinae Werner, 1896 (1838)

*Leptodactylus* Werner, 1896 (1838)

Type species: *Rana typhonia* Latreille, in Sonnini and Latreille, 1801 (= *Rana fuscus* Schneider, 1799), by subsequent designation by Fitzinger (1843).

**Remarks:** Following De Sá et al. (2014), the old phenetic groups of *Leptodactylus* established by Heyer are no longer stable. All species now under *L. fuscus*, *L. latrans*, *L. melanotus*, and *L. pentadactylus* species groups.

**Leptodactylus colombiensis**

Heyer, 1994

**Holotype:** ICN 7409.

**Type locality:** “Charalá, Virolín (= Inspección Policía Cañaveral), confluencia del río Cañaveral con el río Guíllemo, vertiente occidental, 1,600–1,700 m, 6°13’N, 73°05’W,” Santander Department, Colombia.

**Distribution:** Region 1. Colombia and Venezuela. In Venezuela, eastern Andean slopes of Táchira State.

**Remarks:** De Sá et al. (2014) doubt Venezuelan records (Barrio and Chacón 2001) without explanation. Specimens

**Selected references:** Heyer (1994a); Barrio and Chacón (2001); De Sá et al. (2014).

**Leptodactylus diedrus** Heyer, 1994

**Holotype:** UTA A–3726.

**Type locality:** “Colombia, Vaupés, 1/2 mi NE Timbó, 1°06′N, 70°01′W.”

**Distribution:** Regions 4, 5. Western Amazonia (Colombia, Venezuela, Peru, and Brazil). In Venezuela, only from extreme south of Amazonas (Neblina) and Bolívar (Sarisariñama) States.

**Remarks:** *Vanzolinius discodactylus* (Boulenger 1884) reported by McDiarmid and Paolillo (1988) from base of Neblina, but specimen later assigned to *Leptodactylus diedrus* (Heyer 1997). In *Leptodactylus melanonotus* species group of De Sá et al. (2014).

**Selected references:** McDiarmid and Paolillo (1988); Heyer (1994a, 1998); Barrio-Amorós and Brewer-Carias (2008); Barrio-Amorós et al. (2011b); De Sá et al. (2014).
**Leptodactylus fragilis** (Brocchi 1877)

*Type:* MNHN 6316.

*Type locality:* “Tehuantepec,” Oaxaca, Mexico.

*Distribution:* Regions 3, 4, 6. Widely distributed: southern USA (Texas), Central America to northern Colombia and Venezuela. In Venezuela, lowlands north of Orinoco River.


*Selected References:* Staton and Dixon (1977); Heyer (1978, 2002); Ramo and Busto (1989, 1990); Dubois and Heyer (1992); Tárano (2010); De Sá et al. (2014).

**Leptodactylus fuscus** (Schneider 1799)

*Neotype:* MNHN 680.

*Type locality:* Not designated. Neotype from “Surinam.”

*Distribution:* Regions 2, 3, 4, 5, 6. Widespread in lowlands from Panama through South America to east of Andes (Colombia, Venezuela, Trinidad and Tobago, Guyana, Suriname, French Guiana, Brazil, Bolivia, Paraguay, and northern extreme of Argentina). In Venezuela, widely distributed in lowlands throughout country, including Margarita Island.


*Selected references:* Ginés (1959); Rivero (1964a-d, 1967a); Heatwole et al. (1965); Tello (1968); Bogart (1974); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Péfaur and Díaz De Pascual (1987); Solano (1987a,b); Ramo and Busto (1989, 1990); Magdefrau et al. (1991); Manzanilla et al. (1995); Duellman (1997); Gorzula and Señaris (1998); Barrio-Amorós (2010a); Tárano (2010); Ugueto and Rivas-Fuenmayor (2010); Barrio-Amorós et al. (2011b); De Sá et al. (2014); Señaris et al. (2014).

**Leptodactylus guianensis** Heyer and de Sá, 2011

*Holotype:* USNM 531509.

*Type locality:* “Guyana; Rupunini, Iwokrama Forest Reserve, Sipuruni River, Pakatau Camp, 4°45’17”N, 59°01’28”W, 85 m.”

*Distribution:* Region 5. Lowlands and uplands of Guiana Shield in Venezuela, Guyana, Suriname, and Brazil. In Venezuela, only from eastern Bolivar State.

*Remarks:* Records from eastern part of Venezuelan Guayana previously assigned to *Leptodactylus bolivianus* are actually *L. guianensis* (e.g., Barrio-Amorós et al. (2011b) from Triunfo). In *Leptodactylus latrans* species group of De Sá et al. (2014).

*Selected references:* Rivero et al. (1986); Barrio-Amorós et al. (2011b); De Sá et al. (2014); Señaris et al. (2014).

**Leptodactylus insularum** Barbour, 1906

*Lectotype:* MCZ 2424.

*Type locality:* “Saboga island,” Bahía de Panamá, Panamá.

*Distribution:* Regions 2, 3, 4, 6. From Costa Rica in Central America through Panamá and Colombia (incl. San Andrés Island) to Venezuela and Trinidad and Tobago. In Venezuela, common in lowlands north of Orinoco River.

*Remarks:* Considered a synonym of *Leptodactylus bolivianus* by Heyer (1968) and Savage (2002); Rivero (1967a,c) found important differences, e.g., one spine on thumb in *L. bolivianus*, vs. two in *L. insularum*. Barrio-Amorós (1998, 2004) differentiated between *insularum* north of Orinoco and *bolivianus* to the south. Heyer and De Sá (2011) resolved the question. In *Leptodactylus latrans* species group of De Sá et al. (2014).

*Selected references:* Sexton (1962); Rivero (1967a,c); Heyer (1968); Bogart (1974); Rivero et al. (1986); Manzanilla et al. (1995); Savage (2002); Tárano (2010); Barrio-Amorós et al. (2011b); Heyer and De Sá (2011); De Sá et al. (2014).

**Leptodactylus knudseni** Heyer, 1972

*Holotype:* LACM 72117.

*Type locality:* “Limoncocha, 0°24’S, 76°37’W, Provincia de Napo, Ecuador.”

*Distribution:* Regions 4, 5. Widely distributed in Amazon Basin, incl. Bolivia, Peru, Ecuador, Colombia, Brazil, Venezuela Guyana, Suriname, French Guiana, and Trinidad and Tobago. In Venezuela, widespread south of Orinoco River.

*Remarks:* In *Leptodactylus pentadactylus* species group of De Sá et al. (2014).

*Selected references:* Heyer (1972, 1979, 2005); Hero and Galatti (1990); Barrio (1996a); Gorzula and Señaris (1998); Barrio-Amorós et al. (2011b); De Sá et al. (2014); Señaris et al. (2014).

**Leptodactylus leptodactyloides** (Andersson 1945)

*Type:* NHRM 1945.

*Type locality:* “Rio Pastaza,” eastern Ecuador.

*Distribution:* Region 5. Amazon Basin (Colombia, Ecuador, Peru, Bolivia, Brazil, Venezuela, Guyana, Suriname, and French Guiana). Only single locality in Venezuela: Rio Cuyuni, km 69 on road to Santa Elena de Uairén, Bolivar State. Probably widespread in southeastern lowlands.


*Selected references:* Heyer (1994); Duellman (1997); De Sá et al. (2014).


188. *Pseudopaludicola pusilla*. Barrancabermeja, Santander, Colombia. Photo: Juan S. Mendoza.


*Leptodactylus litholaetus* Heyer, 1995

**Holotype:** AMNH. 100656.

**Type locality:** “Venezuela: Amazonas, SW sector Cerro Yapacana, 600 m, 3° 57’N, 67° 00’W.”

**Distribution:** Regions 4, 5. Western Guiana Shield (Colombia and Venezuela). In Venezuela, restricted to rocky outcrops of extreme southeastern Apar State, Amazonas, and northwestern Bolívar State.


**Selected references:** Donnelly and Myers (1991); Heyer (1995); Lynch and Vargas-Ramírez (2000); Heyer and Heyer (2001); Heyer and Barrio-Amorós (2009); De Sá et al. (2014).

*Leptodactylus longirostris* Boulenger, 1882

**Lectotype:** BM 76.5.26.4.

**Type locality:** “Santarem,” Pará, Brazil.

**Distribution:** Regions 4, 5. Widespread in Guiana Shield of Colombia, Venezuela, Guyana, Suriname, and northern Brazil. In Venezuela, restricted to the south of the Orinoco River.

**Remarks:** In *Leptodactylus fuscus* species group of De Sá et al. (2014).

**Selected references:** Rivero (1971a); Heyer (1978);
Remarks: Despite recent efforts to find it, *Region 2. Known only from type locality. Distribution: Falcón, Venezuela, cerca de 1,250 m. Carretera) al SO de Guajiro, Municipio Mauroa, Estado Terra typica: “Cerro Socopó, cerca de 30 km (por Holotype: EBRG 3284. Terra typica: “Cerro Socopó, cerca de 30 km (por carretera) al SO de Guajiro, Municipio Mauroa, Estado Falcón, Venezuela, cerca de 1,250 m.”

**Leptodactylus magistris**
*Mijares-Urrútia, 1997*

**Holotype:** EBRG 3284.
**Terra typica:** “Cerro Socopó, cerca de 30 km (por carretera) al SO de Guajiro, Municipio Mauroa, Estado Falcón, Venezuela, cerca de 1,250 m.”

**Distribution:** Region 2. Known only from type locality.
**Remarks:** Despite recent efforts to find it, *Leptodactylus magistris* seems to have suffered a severe decline. No new information since its description. Considered Critically Endangered by the Venezuelan Red Book (La Marca et al. 2015). In *Leptodactylus melanonotus* species group of De Sá et al. (2014).

**Selected references:** Mijares-Urrútia (1997); De Sá et al. (2014); La Marca et al. (2015).

**Leptodactylus mystaceus** *(Spix 1824)*

**Lectotype:** ZSM 2504/0.
**Type locality:** Restricted to “Solimões,” Brazil, by lectotype designation.

**Distribution:** Regions 4, 5. Widely distributed in Amazon Basin and northern portion of the Atlantic Forest in Brazil, Colombia, Venezuela, Guyana, Suriname, and French Guiana. In Venezuela, widespread south of Orinoco River. Localities north of Orinoco must be reviewed, probably a new species.

**Remarks:** In *Leptodactylus fuscus* species group of De Sá et al. (2014).

**Selected references:** Ginés (1959); Rivero (1961, 1964b, 1968e); Roze (1964); Heatwole et al. (1965); Bogart (1974); Heyer (1978, 1983); Rivero et al. (1986); La Marca (1992); Duellman (1997); Gorzula and Señaris (1998); De Sá et al. (2014); Señaris et al. (2014).

**Leptodactylus pentadactylus** *(Laurenti 1768)*

**Neotype:** RMNH 29559.
**Type locality:** “Suriname, Marowijne, Lelygebergtje, Suralckokamp.”

**Distribution:** Region 4, 5. Widespread in Amazon Region of Venezuela, Colombia, Ecuador, Peru, Bolivia, Brazil, Guyana, Suriname, and French Guiana. In Venezuela, in lowland forest south of Orinoco River.

**Remarks:** Vouchers absent from Venezuelan museums; all *pentadactylus*-like frogs from southern Venezuela identified as *Leptodactylus knudseni*. Heyer’s (2005) review of the *pentadactylus* species group does not mention any voucher from Venezuela. Removed from previous lists by Barrio-Amorós (2009) without explanation. De Sá et al. (2014) show four Venezuelan localities in a distribution map, but without vouchers. In *Leptodactylus pentadactylus* species group of De Sá et al. (2014). May be distinguished from *L. knudseni* by absence of chest spines in reproductive males of *L. pentadactylus* (present in *L. knudseni*).

**Selected references:** Rivero (1964b,d, 1969a); Heatwole et al. (1965); Bogart (1974); Muedeking and Heyer (1976); Heyer (1979, 2005); Hero and Galatti (1990); Duellman (1997); Gorzula and Señaris (1998); De Sá et al. (2014).

**Leptodactylus petersii** *(Steindachner 1864)*

**Holotype:** Lost; formerly in the NMW.
**Type locality:** “Marabitanas,” Amazonas, Brazil.

**Distribution:** Regions 4, 5. Widely distributed in Amazon Region (Venezuela, Colombia, Peru, Bolivia, Brazil, Guyana, Suriname, and French Guiana) south to the Cerrado in central Brazil. Two recent confirmed records for Venezuela in southern part of Amazonas State and eastern border of Bolivar State.

**Remarks:** In *Leptodactylus melanonotus* species group sensu De Sá et al. (2014). Sister taxon of *L. leptodactyloides*. Records of specimens in Venezuelan museum indicates widespread in lowlands of almost all the country, but many specimens could be other species of *Leptodactylus melanonotus* group; species identification in this group is very challenging. The map in De Sá et al. (2014) is misplaced with that of *Leptodactylus pascoensis* and only shows two localities in southern Venezuela.

**Selected references:** Ginés (1959); Rivero (1963c, 1964a-d, 1971b); Heatwole et al. (1965); Heyer (1994); Duellman (1997); Tárano (2010); De Sá et al. (2014); Señaris et al. (2014).

**Leptodactylus poecilochilus** *(Cope 1862)*

**Syntype:** USNM 4347.
**Type locality:** “Near Turbo,” Antioquia, Colombia.

**Distribution:** Regions 2, 3, 6. From Pacific lowlands of northwestern Costa Rica through Panama and northern Colombia to northwestern Venezuela.

**Remarks:** In *Leptodactylus fuscus* species group of De Sá et al. (2014).

**Selected references:** Rivero (1961, 1963a,c, 1964a, 1971a); Rivero and Esteves (1969); Heyer (1978); La Marca (1992); Yústiz (1996); De Sá et al. (2014).

**Leptodactylus rhodomystax** Boulenger, 1884

**Lectotype:** BMNH 1947.12.17.81.
**Type locality:** “Yurimaguas, Huallaga River, (Loreto Northern Peru.”

**Distribution:** Region 5. Amazonian Region of Colombia, Ecuador, Peru, Bolivia, Guyana, Suriname, French Guiana, and Brazil. In Venezuela, only La Escalera,


Bolivar State (Camargo et al. 2014).

**Remarks:** First mention in Venezuela is by Rivero (1961), who was not sure if it was a new species (Rivero 1968e), but decided to use this name. Later Heyer and Pyburn (1983) described the taxon referred by Rivero (1968e) as a new species (*Leptodactylus riveroi*). Gorzula and Señaris (1998) confused a large specimen of *L. guianensis* (as *L. bolivianus*) with *L. rhodomystax*. De Sá et al. (2014) indicate a locality in Venezuela, but no voucher or locality data are mentioned. Camargo et al. (2014) provide the first voucher for the country. In *Leptodactylus pentadactylus* species group of De Sá et al. (2014).

**Selected references:** Rivero (1968e); Heyer (1979, 2005); Heyer and Pyburn (1983); Gorzula and Señaris (1998); Camargo et al. (2014); De Sá et al. (2014).

**Leptodactylus riveroi** Heyer and Pyburn, 1983

**Holotype:** USNM 232400.

**Type locality:** “Colombia, Vaupés, Timbó, 01°06’S, 70°01’W, elevation 170 m.”

**Distribution:** Region 4. Colombia, Venezuela, and northern Brazil. In Venezuela, riverine lowlands of Amazonas State.

**Remarks:** *Leptodactylus rhodomystax* was erroneously reported from Venezuela (Rivero 1961, 1968e) based on specimens of *L. riveroi*. In *Leptodactylus melanotus* species group of De Sá et al. (2014).

**Selected references:** Rivero (1968e); Heyer and Pyburn (1983); Lima (1992); Gorzula and Señaris (1998); Lynch and Vargas-Ramírez (2000); Barrio-Amorós and Brewer-Carias (2008); De Sá et al. (2014).

**Leptodactylus rugosus** Noble, 1923

**Holotype:** AMNH 1169.

**Type locality:** “near Kaieteur Falls, British Guiana.”

**Distribution:** Region 5. Venezuela and Guyana. In Venezuela, in lowlands and uplands of eastern Guiana shield (Bolívar State) including summits of some tepuis.

**Remarks:** In *Leptodactylus pentadactylus* species group of De Sá et al. (2014).

**Selected references:** Ginés (1959); Rivero (1961, 1964a-d, 1968d); Heatwole et al. (1965); Heyer (1979, 1995); Hoogmoed and Gorzula (1979); Donnelly and Myers (1991); Magdefrau et al. (1991); Duellman (1997); Gorzula and Señaris (1998);Heyer and Thompson (2000); Barrio-Amorós and Duellman (2009); Heyer and Barrio-Amorós (2009); De Sá et al. (2014); Señaris et al. (2014).

**Leptodactylus sabanensis** Heyer, 1994*

**Holotype:** KU 166559.

**Type locality:** “Venezuela; Bolívar; km 127, El Dorado-Santa Elena de Uairen road, 1,250 m, 6°00’N, 61°30’W.”

**Distribution:** Region 5. Gran Sabana in eastern Venezuela and adjacent Lavrado in Roraima, Brazil.

**Remarks:** In the *Leptodactylus melanotus* species group of De Sá et al. (2014).

**Selected references:** Heyer (1994); Duellman (1997); Gorzula and Señaris (1998); De Sá et al. (2014); Señaris et al. (2014).

**Leptodactylus turimiquensis** Heyer, 2005

**Holotype:** AMNH 70667

**Type locality:** “Caripito, Monagas, Venezuela, ~ 100 m, 10°08’N, 63°06’W.”

**Distribution:** Region 2. Endemic from northeastern Venezuela, from Macizo de Turimiquire (Anzoátegui, Monagas and Sucre States) to Península de Paria.

**Remarks:** Heyer (2005) described this species based on a population previously assigned to *Leptodactylus labyrinthicus*. In *pentadactylus* species group of De Sá et al. (2014).

**Selected references:** Spix (1824); Günther (1858); Heyer (1979); Péfaur and Sierra (1995); Gorzula and Señaris (1998).

**Leptodactylus validus** Garman, 1888

** Lectotype:** MCZ A-71920.

**Type locality:** “Kingston, St. Vincent,” Lesser Antilles.

**Distribution:** Regions, 2, 3, 4, 5, 6. Lesser Antilles, Trinidad and Tobago, Venezuela, Guyana, Suriname, and French Guiana. Widely distributed in lowland Venezuela, north and south of Orinoco River.

**Remarks:** Includes all previous references for *Leptodactylus podicipinus*, *L. wagneri*, and *L. pallidirostris* from Venezuela. Synonymy by Yanek et al. (2006). In *melanonotus* species group of De Sá et al. (2014).

**Selected references:** Ginés (1959); Rivero (1961, 1963c, 1964a-d, 1968e); Heatwole et al. (1965); Rivero and Esteves (1969); Bogart (1974); Hoogmoed and Gorzula (1979); Rivero et al. (1986); Donnelly and Myers (1991); Heyer (1994); Gorzula and Señaris (1998); Yanek et al. (2006); Camargo et al. (2009); De Sá et al. (2014).

**Genus Lithodytes** Fitzinger, 1843

**Type species:** *Hylodes lineatus* Duméril and Bibron, 1841 (= *Rana lineata* Schneider, 1799), by original designation.

**Remarks:** Frost et al. (2006) synonymized *Lithodytes* within *Leptodactylus*, but not widely followed. Pyron and Wiens (2011) and de Sá et al. (2014) recognize *Adenomera* and *Lithodytes* as valid genera.

**Lithodytes lineatus** (Schneider 1799)

**Holotype(s):** “Musei Lampiani” (= the “collection de


209. Leptodactylus turimiquensis. Las Melenas, Península de Paria, Sucre. Photo: César Barrio-Amorós.


211A. Leptodactylus sp. 1. Lagunillas, Mérida. Photo: César Barrio-Amorós.

Lampi” according to Daudin 1802: 105, and Daudin 1803, 8: 188).

Type locality: Not stated.

Distribution: Regions 1, 4, 5, 6. East of Andes from northwestern Venezuela through Guyana, Suriname, French Guiana, Brazil, Colombia, Ecuador, and Peru to northern Bolivia. In Venezuela, disjunct populations south of Orinoco River, eastern slopes of Andes and Maracaibo Basin (west of Andes).

Remarks: Fouquet et al. (2007) found genetic divergence in two populations of Lithodytes from Brazil and Peru. Disjunct populations of Lithodytes in Venezuela may represent undescribed species.

Selected references: Ginès (1959); Rivero (1961, 1964b); Lynch (1979b); Barrio-Amorós (1999d); Barros and Barrio (2001); Señaris et al. (2009, 2014); Barrio-Amorós et al. (2011b).

Subfamily Leiuperinae Bonaparte, 1850

Remarks: Grant et al. (2006) placed several genera into
family Leiuperidae, from a Leptodactylidae sensu lato. Pyron and Wiens (2011) ranked the taxon as a subfamily, which is supported by Faivovich et al. (2012).

Genus *Engystomops* Jiménez de la Espada, 1872

**Type species:** *Engystomops petersi* Jiménez de la Espada, 1872, by monotypy.

*Engystomops pustulosus* (Cope 1864)

**Holotype:** USNM 4339 (lost).
**Type locality:** “New Grenada, on the River Truando,” Colombia.
**Distribution:** Regions 1, 2, 3, 4, 5, 6. From Mexico through Central America to Colombia, Venezuela, Trinidad and Tobago, and Guyana in northern South America. Widespread in lowlands in northern Venezuela.

**Remarks:** May hide a complex of species (Wynn and Heyer 2002). At least two clear clades distinguishable, one from Southern Mexico to Costa Rica, another from Panama to northern South America (Weigt et al. 2005). Call has been studied in many localities (Ryan et al. 2007).

**Selected references:** Lutz (1927); Ginés (1959); Rivero (1961, 1963a, 1964a,c,d); Heatwole et al. (1965); Tello (1968); Rivero and Esteves (1969); Lynch (1970); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Cannatella and Duellman (1984); Yústiz (1996); Duellman (1997); Gorzula and Señaris (1998); Nascimento et al. (2005); Weigt et al. (2005); Ryan et al. (2007); Tárano (2010).

Genus *Physalaemus* Fitzinger, 1826

**Type species:** *Physalaemus cuvieri* Fitzinger, 1826, by monotypy.

**Remarks:** A major review of this genus in Venezuela is needed.

*Physalaemus cuvieri* Fitzinger, 1826

**Type:** Not stated.
**Type locality:** Brazil.
**Distribution:** Region 5. Venezuela, Brazil, Paraguay, and Argentina. In Venezuela, only from one locality in Bolivar State: Hato Terecay, 16 km N of El Manteco (savannah). Herein a second population is reported from Reserva Forestal Rio Grande, Sierra de Imataca, Delta Amacuro State (MHNLNS 20220–20223).

**Remarks:** In *Physalaemus cuvieri* species group of Lourenço et al. (2015). These authors noted this name represents a complex of species. Gorzula and Señaris (1999) indicated specimens referred for Venezuela as *Physalaemus cuvieri* may be a related but undescribed species.

**Selected references:** Gorzula and Señaris (1999); Lourenço et al. (2015).

*Physalaemus ephippifer* (Steindachner 1864)

**Holotype:** NHMW; not traced.
**Type locality:** Restricted to Belém, Pará State, Brazil, by Bokerman (1966).
**Distribution:** Region 5. Venezuela, Guyana, Suriname, French Guiana, and northeastern Brazil. In Venezuela, only from a few localities in Bolivar State: Calceta de Perro (rainforest), Las Claritas, and Santa Elena de Uairen. Confused with *P. fischeri* and probably most references to *Physalaemus fischeri* from eastern Venezuela correspond to *P. ephippifer*.

**Remarks:** In *Physalaemus cuvieri* species group of Nascimento et al. (2005).

**Selected references:** Gorzula and Señaris (1998); Nascimento et al. (2005).

*Physalaemus fischeri* (Boulenger 1890)

**Holotype:** BMNH 1947.2.18.28.
**Type locality:** “Venezuela.”
**Distribution:** Regions 1, 2, 3, 4, 5. Llanos of Colombia and Venezuela. Widespread in Northern Venezuela (Cojedes, Guárico, Barinas, and Apure States), and scattered to south of Orinoco River (Amazonas and Bolivar States).

**Remarks:** *Physalaemus enesefae* Heatwole, Solano and Heatwole, 1965 is a junior synonym of *P. fischeri*. However, *P. fischeri* lacks a specific type locality and is likely a species complex (Tárano and Ryan 2002; Lourenço et al. 2015). Its complex call is well-studied (Tárano 2001, 2002, 2010; Tárano and Herrera 2003; Tárano and Ryan 2002). In *Physalaemus cuvieri* species group of Lourenço et al. (2015).

**Selected references:** Boulenger (1890); Parker (1927); Rivero (1961, 1967a); Heatwole et al. (1965); La Marca (1992); Duellman (1997); Gorzula and Señaris (1998); Tárano (2002, 2003, 2010); Barrio-Amorós et al. (2011b); Señaris et al. (2014).

Genus *Pleurodema* Tschudi, 1838

**Type species:** *Pleurodema bibroni* Tschudi, 1838, by monotypy.

*Pleurodema brachyops* (Cope 1869)

**Syntypes:** ANSP 2260–2264.
**Type locality:** “Magdalene River, New Grenada” (= Colombia).
**Distribution:** Regions 2, 3, 6. From Panama in Central America through northern Colombia, Venezuela, and Guyana to northern Brazil, plus Margarita Island and the Netherlands Antilles (Curaçao, Aruba, and Bonaire). In Venezuela, widespread in lowlands north of Orinoco River, northern Amazonas State, and eastern Bolivar State south of Orinoco.
211B. *Leptodactylus* sp. 1. El Tao, La Azulita, Mérida. *Photo: César Barrio-Amorós.*


**Genus Pseudopaludicola** Miranda-Ribeiro, 1926

**Type species:** *Liuperus falcipes* Hensel, 1867, by monotypy.

_Pseudopaludicola boliviana_ Parker, 1927

**Holotype:** BMNH 1927.8.1.1.

**Type locality:** “Sta. Cruz, Bolivia.”

**Distribution:** Region 4. Colombia, Venezuela, Guyana, Suriname, Brazil, Bolivia, Paraguay, and Argentina. In Venezuela, south of Orinoco, but few precise localities known. Besides Castillos de Guayana, Delta Amacuro State (Gorzula and Señaris 1998), herein reported from Capihuara, Casiquiare, Amazonas State, where it was very abundant on river sand beaches in December 1998.

**Selected references:** Lutz (1927); Ginés (1959); Rivero (1961, 1963a, c, 1964b,d, 1969a); Roze (1964); Tello (1968); León-Ochoa and Donoso-Barros (1970); Duellman and Veloso (1977); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Ramo and Busto (1989, 1990); Barrio (1996a); Yústiz (1996); Gorzula and Señaris (1998); Molina (2004 “2002”); Tárano (2010); Ugueto and Rivas Fuenmayor (2010); Faivovich et al. (2012).
Barrio-Amorós et al.

**Remarks:** This species has a disjunct distribution, widely separated by the Amazon Basin. De la Riva et al. (2000) suggested this greatly disjunct distribution likely indicates at least two distinct species. Myers and Donnelly (2001) presumed that Venezuelan populations correspond to two species. In *Pseudopaludicola pusilla* species group of Lynch (1989).

**Selected references:** Lynch (1989); Gorzula and Señaris (1998); Lynch and Vargas-Ramírez (2000); Myers and Donnelly (2001).

*Pseudopaludicola llanera* Lynch, 1989

**Holotype:** ICN 13576.
**Type locality:** “Puerto Gaitán, Departamento Meta, Colombia.”

**Distribution:** Region 4. Northeastern Colombia and southern Venezuela (Amazonas and Bolívar States); eastern slopes of Andes in Mérida State.

**Remarks:** In *Pseudopaludicola pusilla* species group of Lynch (1989).

**Selected references:** Lynch (1989); Gorzula and Señaris (1998); Lynch and Vargas-Ramírez (2000); Myers and Donnelly (2001); Barrio and Chacón (2002).

*Pseudopaludicola pusilla* (Ruthven 1916)

**Holotype:** UMMZ 48305.
**Type locality:** “Fundación, (Sierra de Santa Marta), Colombia.”

**Distribution:** Region 6. Magdalena River Valley and Caribbean lowlands of Colombia, and Maracaibo Lake Basin in Venezuela.

**Remarks:** In *Pseudopaludicola pusilla* species group of Lynch (1989).

**Selected references:** Ginés (1959); Rivero (1961, 1963a, 1964b,d); Lynch (1989).

**Family Microhylidae Günther, 1858**

**Remarks:** Two recent phylogenetic systematics papers on Microhylidae (De Sá et al. 2012; Peloso et al. 2016) resulted in substantial changes in the taxonomy of the group, both at subfamily and generic ranks. Both authors found well resolved Gastrophryninae and Otophryninae; the latter erected a new subfamily (Adelastinae). Most generic changes proposed by De Sá et al. (2012) were corroborated by later authors, except for the arrangement of *Syncope* and *Chiasmocleis*. De Sá et al. (2012) transferred several species of *Chiasmocleis* to Syncope, whereas Peloso et al. (2014) placed *Syncope* in synonymy of *Chiasmocleis*.

**Subfamily Adelastinae Peloso, Frost, Richards, Rodrigues, Donnellan, Matsui, Raxworthy, Bíju, Lemmon, Lemmon and Wheeler, 2016**

**Genus Adelastes Zweifel, 1986**

**Type species:** *Adelastes hylonomos* Zweifel, 1986, by original designation.

*Adelastes hylonomos* Zweifel, 1986

**Holotype:** AMNH 123696.
**Type locality:** “Near the Neblina Base Camp on the Rio Baria, 140 m elevation, 00°49′50″N, 66°09′40″W, Rio Negro Department, Amazonas Federal Territory, Venezuela.”

**Distribution:** Region 4. Venezuela, Brazil, and Guyana. Known from type locality at the southern border of Venezuelan Amazonas, from the proximity of Rio Darahá, tributary of the Rio Negro, municipality of Santa Isabel do Rio Negro, State of Amazonas, northern Brazil (0°23′57.58″S, 064°47′12.98″W), and from Guyana, at plateau above Meamu River.

**Remarks:** Peloso et al. (2016) place *Adelastes* in its own subfamily Adelastinae. However, we believe it should be relegated as part of Otophryninae, being clustered basally with this last subfamily (Peloso et al. 2016: 136). Call was recently described by De Almeida et al. (2014) based on a single male.

**Selected references:** Zweifel (1986); McDermid and Paolillo (1988); De Almeida et al. (2014); Peloso et al. (2016).

**Subfamily Gastrophryninae Fitzinger, 1843**

**Genus Chiasmocleis Méhely, 1904**

**Type species:** *Engystoma albopunctatum* Boettger, 1885, by monotypy.

*Chiasmocleis hudsoni* Parker, 1940

**Type:** BMNH 1939.1.1.3.
**Type locality:** “New River, British Guiana (750 feet).”

**Distribution:** Region 4. Colombia, Brazil, Venezuela, Guyana, Suriname, and French Guiana. In Venezuela, southern half of Amazonas State.

**Remarks:** Briefly transferred to *Syncope* by de Sá et al. (2012) but again transferred to *Chiasmocleis* by Peloso et al. (2014).

**Selected references:** Zweifel (1986); Barrio-Amorós and Schargel (2003); De Sá et al. (2012); Peloso et al. (2014, 2016).

**Genus Ctenophryne Mocquard, 1904**

**Type species:** *Glossostoma aterrimum* Günther, 1900, by monotypy.
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*Ctenophryne geayi* Mocquard, 1904

**Holotype:** MNHNJP 1903.84.  
**Type locality:** “La rivière Sarare en Colombie.”  
**Distribution:** Region 4. Northern South America, to east of Andes, in Colombia, Ecuador, Peru, Brazil, Venezuela, Guyana, and Suriname. In Venezuela, two localities in eastern Venezuela: km 13 Cuyuni, Bolivar State (Duellman 1997), and Sierra de Imataca, Delta Amacuro State (MHNLS 20230, reported herein).  
**Remarks:** The type locality is “Riviere Sarare en Colombie” (= Sarare River, Colombia). This river is born in eastern side of Cordillera Oriental de Colombia and flows through cloud forest and foothill rainforest with Amazonian elements to Los Llanos Region. Though Mocquard did not establish exact locality, current authors estimate it must be in immediate forested foothills of the Andes, where many Amazonian elements are known, both in Colombia and Venezuela. However, it is strange that no additional specimens have been reported from that area in Venezuela and Colombia (in Colombia mostly because of public order problems in the upper Llanos). Lynch (2006) mentions its occurrence from Villavicencio area in Colombia, but without voucher specimens.  
**Selected references:** Carvalho (1954); Zweifel and Myers (1989); Duellman (1997); Lynch (2006).

**Genus Elachistocleis** Parker, 1927

**Type species:** Not clearly stated: either *Rana gibbosa* Linnaeus, by original designation, or *Rana ovalis* Schneider, 1799, by subsequent designation of Duméril
and Bibron, 1841 (*sensu* Frost 2019).

**Remarks:** Review of the genus is needed to clarify chaotic taxonomic status of several populations throughout its distribution. Duellman (1997) assigned to *Elachistocleis bicolor* all forms with an immaculate venter, whereas Lavilla et al. (2003) restricted *E. bicolor* to southern South America. Similarly, *E. ovalis* is not the species with spotted venter, as Schneider (1799) clearly states, but one with “*inferne flavidus*” (yellow belly). De Sá et al. (2012) placed *Relictivomer* into *Elachistocleis*.

**Elachistocleis ovalis** (Schneider 1799)

**Type:** Unknown.

**Type locality:** Not assigned.

**Distribution:** Regions 2, 3. Name *Elachistocleis ovalis* historically applied to populations from Panama, Brazil, Colombia, Venezuela, Ecuador, Peru, and Bolivia. In Venezuela, present north of the Orinoco in open lowlands.

**Remarks:** Name *Elachistocleis ovalis* long-applied to the *Elachistocleis* with a uniform yellow or orange ventral pattern in northern Venezuela. Caramaschi (2010) considered this name a *nomen dubium* (name of unknown or doubtful application), and *species inquirenda* (species of doubtful identity needing further investigation). Current authors agree that a complex of species is hidden under that name, and even knowing that the *nomen ovalis* is not valid, but must be used while awaiting a definitive solution and new available names for this long-standing taxonomic conundrum.

**Selected references:** Lutz (1927); Carvalho (1954); Ginés (1959); Rivero (1961, 1964b-d); Bogart and Nelson (1976); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Rada (1981a); Gremonne et al. (1986); Ramo and Busto (1989, 1990); Yústiz (1996); Gorzula and Señaris (1998); Barrio and Durant (2000); Lavilla et al. (2003); Caramaschi (2010); Tárano (2010).

**Elachistocleis pearsei** (Ruthven 1914)

**Holotype:** UMMZ 45571.

**Type locality:** “vicinity of Fundación, (Sierra de Santa Marta), Colombia.”

**Distribution:** Panamá, northern Colombia, and Maracaibo Lake Basin in Venezuela, in open areas.

**Remarks:** Previously in monotypic genus *Relictivomer* Carvalho, 1954, which was synonymized with *Elachistocleis* by De Sá et al. (2012) based on its phylogenetic position.

**Selected references:** Lutz (1927); Carvalho (1954); Ginés (1959); Rivero (1961, 1964b-d); Bogart and Nelson (1976); Staton and Dixon (1977); Hoogmoed and Gorzula (1979); Rada (1981a); Gremonne et al. (1986); Ramo and Busto (1989, 1990); Yústiz (1996); Gorzula and Señaris (1998); Barrio and Durant (2000); Lavilla et al. (2003); Infante-Rivero et al. (2006b); De Sá et al. (2012).

**Elachistocleis surinamensis** (Daudin 1802)

**Type:** Unknown.

**Type locality:** “Surinam.”

**Distribution:** Regions 4, 5. Venezuela, Trinidad, Guyana, Suriname, and French Guiana. In Venezuela, present south of Orinoco River, including Orinoco Delta, usually in open areas.

**Remarks:** All populations of *Elachistocleis* in Venezuela with a gray venter, and orange or yellow spots, are assigned to this species, although it must be a species complex (Lavilla et al. 2003). A comprehensive review of the genus and populations currently assigned to *E. surinamensis* is needed to clarify taxonomic status of Venezuelan populations.

**Selected references:** Rivero et al. (1986); Gorzula and Señaris (1999); Señaris et al. (2014).

**Genus Hamptophryne** Carvalho, 1954

**Type species:** *Chiasmocleis boliviana* Parker, 1927, by original designation.

**Hamptophryne boliviana** (Parker 1927)

**Type:** BMNH 1927.8.1.1.

**Type locality:** “Buena Vista, Santa Cruz, Bolivia.”

**Distribution:** Region 5. North and western portions of Amazon Basin, in Venezuela, Colombia, Ecuador, Peru, Bolivia, Brazil, Guyana, Suriname, and French Guiana. Known to date from single locality in Venezuela: Reserva Forestal Río Grande, between Río Grande and El Palmar, Estado Bolivar (Paolillo 1986).


**Selected references:** Carvalho (1954); Bogart and Nelson (1976); Paolillo (1986).

**Subfamily Otophryninae**

Wassersug and Pyburn, 1987

**Remarks:** Status of subfamily discussed in Wild (1995). De Sá et al. (2012) and Peloso et al. (2016) reviewed the taxonomy of Microhylidae and both recognize a monophyletic Otophryninae containing *Otophryne* and *Synapturanus*. De Sá et al. (2012) found Otophryninae well embedded into the family whereas Peloso et al. (2016) found support for a sister taxon relationship of Otophryninae, Gastrophryninae, and Adelastinae, thus providing evidence for the monophyly of New World microhylids. Current authors believe *Adelastes* (currently in Adelastinae) should be considered as in Otophryninae.

**Genus Otophryne** Boulenger, 1900
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Type species: Otophryne robusta Boulenger, 1900, by original designation.

Otophryne pyburni Campbell and Clarke, 1998

Holotype: UTA-A3814.
Type locality: “Rainforest at 213 m elevation at Wacará, Vaupés, Colombia (...) 01°09'N, 69°55'W.”
Selected references: Rivero (1967a); Nelson (1971); Campbell and Clarke (1998); Barrio (1999e).

Otophryne robusta Boulenger, 1900

Type: BMNH 1899.3.25.18.
Type locality: “Foot on Mt. Roraima, 3,500 ft,” Guyana.
Distribution: Region 5. Gran Sabana, Bolívar State, in eastern Venezuela, as well as Western Guyana.
Remarks: Boulenger (1900) stated specimens he described from Roraima collected by Quelch and Macconnell, were implicitly from Guyana. See further comments on same type locality under accounts of Oreophrynella macconnelli and Pristimantis marmoratus. Could be in Venezuela, according to Kok et al. (2018).
Selected references: Boulenger (1900); Carvalho...
Barrio-Amorós et al.

Otophryne steyermarki Rivero, 1967

**Holotype:** FMNH 74031.

**Type locality:** “Forest along río Tirica..., 5,900 ft, falls below summit camp, Chimantá tepui massif, Venezuela.”

**Distribution:** Region 5. Known from three different tepuis in Venezuela: Chimantá, Roraima, and Jaua (Bolívar State), and Mount Ayanganna in Guyana.

**Remarks:** Previously considered endemic of the Chimantá massif in the Venezuelan Guayana. Barrio (1999f) and Gorzula and Señaris (1999) reported additional localities in Venezuela, whereas MacCulloch et al. (2008) provided records from Guyana, suggesting a wider distribution. See redescription and data on morphological variation in MacCulloch et al. (2008).

**Selected references:** Rivero (1967b); Gorzula (1985b, 1992); Campbell and Clarke (1998); Gorzula and Señaris (1998); MacCulloch et al. (2008); Señaris et al. (2014).

Genus Synapturanus Carvalho, 1954

**Type species:** Synapturanus mirandaribeiroi Nelson and Lescure, 1975

**Holotype:** MZUSP 49981.

**Type locality:** “Kanashen (a Waïwai Indian village and mission) in the Upper Essiquibo River, Rupununi District, Guayana.”

**Distribution:** Region 5. Colombia, Venezuela, Guyana, Suriname, French Guiana, and Brazil. Only two localities in Venezuela: Eastern slopes of Cerro Santa Rosa, Serranía del Supamo (Barrio and Brewer-Carías 1999) and Piedra de la Virgen, northern slopes of La Escalera, Sierra de Lema, Bolívar (Image 222).

**Selected references:** Nelson and Lescure (1975); Pyburn (1975); Barrio and Brewer-Carías (1999); Barrio-Amorós et al. (2011b).

**Synapturanus mirandaribeiroi**

**Holotype:** UTA A–4011.

**Type locality:** “Timbó, Vaupés,” Colombia.

**Distribution:** Regions 4, 5. Colombia, Venezuela, Guyana, and Brazil. In Venezuela, only two localities at northern and southern parts of Amazonas State.

**Selected references:** Pyburn (1975); Zweifel (1986); McDiarmid and Paolillo (1988); Señaris et al. (2003, 2014).

**Family Phyllomedusidae Günther, 1859 “1858”**

**Remarks:** Recently elevated from subfamily to family level by Duellman et al. (2016).

Genus Agalychnis Cope, 1864

**Type species:** Agalychnis callidryas Cope, 1862, by original designation.

**Remarks:** Faivovich et al. (2005) passed the Phyllomedusa buckleyi group sensu Cannatella (1980) to Hylomantis, until Faivovich et al. (2010) extended the definition of Agalychnis in order to include Hylomantis + Pachymedusa.

**Agalychnis medinae** (Funkhouser 1962)*

**Holotype:** EBRG 37.

**Type locality:** “The biological station ‘Henri Pittier’,” Estado Aragua, Venezuela.

**Distribution:** Region 2. Endemic to Venezuela. Known only from four localities (Rancho Grande in Aragua, near Bejuma in Carabobo, Cerro Zapatero, and Sierra de Aróa in Yaracuy) in the Coastal Range of Venezuela, but apparently extinct from type locality.

**Remarks:** Named medinae (as in original description) but later emended to medinai (since described after a masculine patronym, and thereafter ended in -i). However, article 31.1.1 of the Code admit a genitive ending in -ae even for masculine names if they end in -a (as Medina). Considered as Endangered by the current Venezuelan Red Book (Rojas-Runjaic and Señaris 2015f). See distribution map in Rojas-Runjaic et al. (2014).

**Selected references:** Funkhouser (1962); Rivero (1967c); Duellman (1968, 1969, 1979b); Cannatella (1980); Manzanilla et al. (1995); Proy (2000); Barrio-Amorós (2001c, 2006c, 2009b, 2013); Lotzkat et al. (2007); Barrio-Amorós and Torres (2010); Rojas-Runjaic et al. (2014); Rojas-Runjaic and Señaris (2015f).

Genus Callimedusa Duellman, Marion and Hedges, 2016

**Type species:** Phyllomedusa perinesos Duellman, 1973.

**Remarks:** Genus created by Duellman et al. (2016) to accommodate the former Phyllomedusa perinesos group plus P. atelopoides and P. tomoderma.

**Callimedusa tomoderma** (Cope 1868)

**Syntypes:** USNM 6651 (two specimens; lost).

**Type locality:** “Rio Napo, or Upper Amazon, below the mouth of the former,” Departamento Loreto, Perú.

**Distribution:** Regions 4, 5. Colombia, Ecuador, Peru,
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Remarks: Divergence among samples of this species from the upper Amazon and Guianas suggest at least two species may be hidden within the name *Callimedusa tomopterna* (Faivovich et al. 2010), but a thorough revision is needed to assess this hypothesis.

Selected references: Funkhouser (1957); Duellman (1968, 1974b, 1997); Cannatella (1980); Barrio and Rivero (1999a); Barrio-Amorós (2009b); Faivovich et al. (2010).

Genus *Pithecopus* Cope, 1866

Type species: *Phyllomedusa azurea* Cope, 1862, by original designation.

Remarks: Genus recently resurrected of the synonymy of *Phyllomedusa* by Duellman et al. (2016) to content the old *Phyllomedusa hypochondrialis* group.
**Pithecopus hypochondrialis** (Daudin 1800)

**Holotype:** Unknown (but see Frost 2015).
**Type locality:** “Surinam.”
**Distribution:** Regions 3, 4, 5. Colombia, Brazil, Venezuela, Guyana, Suriname, and French Guiana. Widespread in lowland Venezuela in open areas, north and south of Orinoco River. See list of localities and distribution map in Barrio-Amorós (2009b).
**Remarks:** In *Phyllomedusa hypochondrialis* group of Faivovich et al. (2010).
**Selected references:** Funkhouser (1957); Rivero (1961, 1964b); Heatwole et al. (1965); Duellman (1968, 1974b, 1997); Pyburn and Glidewell (1971); Hoogmoed and Gorzula (1979); Rivero-Blanco and Dixon (1979); Ramo and Busto (1989, 1990); Gorzula and Señarís (1998); Rivas and Manzanilla (1999); Barrio-Amorós (2009b); Barrio-Amorós et al. (2010, 2011b); Faivovich et al. (2010); Señarís et al. (2014).

Genus *Phyllomedusa* Wagler, 1830

**Type species:** *Rana bicolor* Boddaert, 1772 by monotypy.

**Phyllomedusa bicolor** (Boddaert 1772)

**Holotype:** Unknown.
**Type locality:** “Surinam” (*fide* Funkhouser, 1957).
**Distribution:** Regions 4, 5. Colombia, Peru, Bolivia, Brazil, Venezuela, Guyana, Suriname, and French Guiana. Widespread in southern Venezuela, Amazonas and Bolívar States. See list of localities and distribution map in Barrio-Amorós (2009b).
**Remarks:** Not assigned to any phylogenetic or phenetic group by Faivovich et al. (2010).
**Selected references:** Funkhouser (1957); Ginés (1959); Rohl (1959); Rivero (1961, 1964b); Heatwole et al. (1965); Duellman (1968, 1974b, 1997); Gorzula and Señarís (1998); Barrio-Amorós (2009b); Barrio-Amorós et al. (2010, 2011b); Faivovich et al. (2010).

**Phyllomedusa neildi** Barrio-Amorós, 2006*

**Holotype:** MBUCV 6684.
**Type locality:** “Vicinity of Murucusa, Municipio Petit (11°02′N, 69°35′W), 550 m asl., spurs of Sierra de San Luis, Estado Falcón, Venezuela.”
**Distribution:** Region 2. NW Venezuela in Falcón and Lara States.
**Remarks:** *Phyllomedusa neildi* appears as a sister species to *P. trinitatis* in Faivovich et al. (2010), suggesting it could be conspecific, despite striking morphological differences in size and call structure (Barrio-Amorós 2006b). This can be due to a clinal variation or adaptation to xeric situations. However, direct comparison of continental and Trinidadian populations of *P. trinitatis* must be done (in progress by CBA and collaborators).

**Phyllomedusa tarsius** (Cope 1868)

**Holotype:** USNM 6652; lost.
**Type locality:** “Rio Napo, or Upper Amazon, below the mouth of the former” (Loreto, Perú).
**Distribution:** Regions 1, 3. Widely distributed in Amazon Basin, in southwestern Colombia, Ecuador, Peru, Brazil, with isolated populations in Cordillera Oriental of Colombia and Venezuela. The Guyanan *Phyllomedusa tarsius* (Forlani et al. 2012) must be compared with *P. trinitatis* (see discussion in Barrio-Amorós 2009b). In Venezuela, known only from a few localities in eastern foothills of the Andes. See list of localities and distribution map in Barrio-Amorós (2009b).
**Remarks:** We really doubt presence of *Phyllomedusa tarsius sensu stricto* in Venezuela. Previous reports from southeastern Venezuela were meant to be *P. trinitatis* (Barrio-Amorós 2009b) or are very distinct from *P. tarsius sensu stricto*, as individuals from the Andean piedmont reported by La Marca (1996) and Markezich (1998) are much smaller and the iris pattern is much less reticulated than on Ecuadorian (near type locality) specimens (Image 229b). This could indicate a putative new species of the *tarsius* group in western Venezuela.
**Selected references:** Funkhouser (1957); Duellman (1968, 1974b, 1997); La Marca (1996b); Barrio-Amorós (2006b, 2009b); Señarís et al. (2014).

**Phyllomedusa trinitatis** Mertens, 1926

**Holotype:** SMF 2633.
**Type locality:** “Port of Spain,” Trinidad.
**Distribution:** Region 2. Trinidad and Venezuela. In Venezuela, distributed across north of the country, to the east of Falcón State. Not known from Los Llanos.
**Remarks:** Barrio-Amorós (2009b) compared those populations called *Phyllomedusa tarsius* from the Venezuelan Guayana (reported by Duellman and Trub 1986) with *P. tarsitus*, and found no significant morphological differences. Thus, the Guianan populations are referred as *P. tarsitis* (see contrary view in Señarís et al. 2014), pending more investigation of the Andean piedmont populations named *tarsius*. Recently reported *P. tarsius* from Guyana (Forlani et al. 2012) must be compared to *P. tarsitus*. See comments under *P. neildi* and *P. tarsius*. See list of localities and distribution map in Barrio-Amorós (2009b).
**Selected references:** Mertens (1926); Funkhouser (1957, 1962); Ginés (1959); Rivero (1961, 1964a, 1969c); Heatwole et al. (1965); Kenny (1966, 1969); Duellman (1968, 1974b); Tello (1968); Mijares-Urrutia and Arends (1993); Manzanilla et al. (1995); Barrio-Amorós (2006b,c, 2009b); Faivovich et al. (2010); Forlani et al. (2012); Señarís et al. (2014).
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**228. Phyllomedusa neildi.** Murucusa, Falcón. *Photo: César Barrio-Amorós.*

**229A. Phyllomedusa tarsius.** Caparo Forestal Reserve, Barinas. *Photo: César Barrio-Amorós.*

**229B. Phyllomedusa tarsius.** Yasuni National Park, Ecuador. *Photo: Martin Bustamante.*

**230A. Phyllomedusa trinitatis.** Cerro el Volcán, Caracas, Miranda. *Photo: César Barrio-Amorós.*

**230B. Phyllomedusa trinitatis.** Cerro el Volcán, Caracas, Miranda. *Photo: Charles Brewer-Carías.*

**230C. Phyllomedusa trinitatis.** Imataca Forestal Reserve, Delta Amacuro. *Photo: César Barrio-Amorós.*

**Phyllomedusa venusta** Duellman and Trueb, 1967

**Holotype:** KU 96150.

**Type locality:** One km west-southwest of the junction of the Río Mono and the Río Tuira, Darien Province, Panama, 130 m.

**Distribution:** Region 6. Southern Panama, and Caribbean lowlands of Colombia, entering the Magdalena River Valley; in Venezuela, known from the Maracaibo Lake Basin.

**Remarks:** Species in the *Phyllomedusa tarsius* group (sensu Barrio-Amorós 2006 and Faivovich et al. 2010) are very difficult to distinguish among them. Barrio-
Amorós (2009b) comment on the possibility that *P. venusta* is conspecific with *P. trinitatis*, as the only reliable character to differentiate them is the length of the parotoid glands, a variable character influenced by reproductive or hormonal condition.

**Selected References:** Duellman and Trueb (1967); Barrio-Amorós (2006b, 2009b); Infante-Rivero et al. (2006a); Faivovich et al. (2010).

**Family Pipidae Gray, 1825**

**Remarks:** Pyron and Wiens (2011) and Blackburn and Wake (2011) refrain from using subfamilies within Pipidae.

**Genus Pipa** Laurenti, 1768

**Type species:** *Pipa Americana* Laurenti, 1768 (= *Rana pipa* Linnaeus, 1758), by monotypy.

**Pipa arrabali** Izecksohn, 1976

**Holotype:** El 5311 (destroyed by fungus, Peixoto and Gomes 2007).

**Type locality:** “Vila Amazônia, Município de Parintins, Estado do Amazonas, Brasil.”

**Distribution:** Venezuela, Guyana, Suriname, and Brazil. In Venezuela, known only from a few localities in eastern Bolivar State.

**Remarks:** Specimens referred previously as *Pipa aspera* by La Marca (1992) are in fact *P. arrabali* (Trueb and Cannatella 1986). Both species very similar, differing only by narrow or wide separation of the nostrils *sensu* Trueb and Cannatella (1986). Both taxa are mostly sympatric, so validity of *P. arrabali* is doubtful, it could be a junior synonym of *P. aspera* despite the morphological support offered by Trueb and Masserin (2001).

**Selected references:** Trueb and Cannatella (1986); Duellman (1997); Peixoto and Gomes (2007); Barrio-Amorós and Duellman (2009); Barrio-Amorós et al. (2011b); Señaris et al. (2014).

**Pipa parva** Ruthven and Gaige, 1923

**Holotype:** UMMZ 57443.

**Type locality:** “Sabana de Mendoza (Trujillo State), Venezuela.”


**Selected references:** Barbour (1923); Ruthven and Gaige (1923); Lutz (1927); Ginés (1958); Rivero (1961); Trueb (1984); Trueb and Cannatella (1986); Barrio (1996a); Royero and Hernández (1996); Barrio and Fuentes (2000b).

**Pipa parva** (Linnaeus 1758)

**Syntypes:** Specimens figured in Seba, 1734 (see [http://linnaeus.nrm.se/zool/herp/madamp.html.en](http://linnaeus.nrm.se/zool/herp/madamp.html.en)).

**Type locality:** “Surinam.”

**Distribution:** Amazonian Region, in Colombia, Ecuador, Peru, Bolivia, Brazil, Venezuela, Trinidad, Guyana, Suriname, and French Guiana. In Venezuela, widespread in Orinoco Basin, from eastern foothills of the Andes at Barinas State, Llanos of Monagas, Delta Amacuro, Bolivar, and Amazonas.

**Selected references:** Dunn (1948); Ginés (1958); Röhl (1959); Rivero (1961); Trueb and Cannatella (1986); Péfaur and Díaz De Pascual (1987); La Marca (1992); Gorzula and Señaris (1998).

**Family Ranidae Rafinesque-Schmaltz, 1814**

**Subfamily Raninae Rafinesque-Schmaltz, 1814**

**Genus Lithobates** Fitzinger, 1843

**Type species:** *Rana palmarum* Fitzinger, 1843 (= *Rana palmarum* Spix, 1824), by designation.

**Lithobates catesbeianus** (Shaw 1802)

**Holotype:** Illustrated by Shaw (1802: 106, plate 33).

**Type locality:** “Many parts of North America… Carolina, Virginia.” Attempts to restrict type locality are not accepted by Fouquette and Dubois (2014).

**Distribution:** Southern Canada, eastern North America, and northern Mexico. Introduced in numerous countries of Americas (southern and western Mexico, Colombia, Ecuador, Venezuela, Guyana, Brazil, Paraguay, Argentina, Chile) several Caribbean islands (Cuba, Puerto Rico, Jamaica, Hispaniola), Europe (Netherlands, France, Belgium, Italy, Spain, Greece), and Asia (Malaysia, Indonesia, Japan, Thailand, Korea, and Taiwan). In Venezuela, known introduced population in the surroundings of La Carbonera, Mérida State.

**Remarks:** Since its introduction, species was the subject of a population control program by ULA (Universidad de los Andes), IVIC (Instituto Venezolano de Investigaciones Científicas), and MARN (Ministerio del Ambiente y los Recursos Naturales), without continuation or much success.

**Selected references:** Barrio-Amorós (2001c); Hanselmann et al. (2004); Lampo et al. (2004); Barrio-Amorós et al. (2011).

**Lithobates palmipes** (Spix 1824)

**Syntypes:** ZSM, including ZSM 963/0, lost.

**Type locality:** “In aquis stagnantis fluminis Amazonum” (= stagnant waters of the Amazon River), Brazil.

232. Phyllomedusa venusta. La Orchila, Sierra de Perijá, Zulia. Photo: Fernando Rojas-Runjaic.

233. Pipa arrabali. La Laja, Sierra de Lema, Bolívar. Photo: César Barrio-Amorós.


**Distribution:** Northern South America, including Colombia, Venezuela, Guyana, Suriname, Brazil, Ecuador, Peru, and Bolivia. Widespread in Venezuela except in Los Llanos.

**Remarks:** Venezuelan specimens (from Cerro de la Neblina, the southernmost point of the country) used in a phylogeny by Hillis and Wilcox (2005) stand out from Lithobates palmipes. The geographically closest available name for such populations is Ranula gollmeri Peters, 1859 (Hillis and Wilcox 2005). However, Lithobates palmipes must be a species complex, so more intensive sampling would be desired to apply that name, given that L. gollmeri is from Caracas, and few species are proven to inhabit both far north and far south Venezuela, in very different habitats. On the other hand, Lithobates vaillanti (Brocchi 1877) is known to occur on the Colombian side of Serranía de Perijá, and Venezuelan specimens from western Zulia State could be mistaken for it.

**Selected references:** Spix (1824); Lutz (1927); Ginés (1959); Röhl (1959); Rivero (1961, 1964a,b, 1967a, 1971a); Heatwole et al. (1965); Tello (1968); Hoogmoed and Gorzula (1979); Gremonet al. (1986); Rivero et
al. (1986); Hillis and De Sá (1988); Duellman (1997); Gorzula and Señaris (1998); Barrio-Amorós and Brewer-Carías (2008); Barrio-Amorós et al. (2011b); Señaris et al. (2014).

Family Strabomantidae
Hedges, Duellman and Heinicke, 2008

Incertae sedis:

Genus Dischidodactylus Lynch, 1979

Type species: Elosia duidensis Rivero, 1968, by original designation.

Remarks: Hedges et al. (2008) tentatively placed Dischidodactylus into Strabomantidae: Strabomantinae, due to only one morphological character (possession of expanded terminal disks with circumferential grooves). Because of external similarities with Ceuthomantis, Padial et al. (2014) placed Dischidodactylus in the subfamily Ceuthomantinae. However, the phylogenetic position of genus Dischidodactylus has never been evaluated using molecular data, and it differs greatly from Ceuthomantis and all other Terraranae in external morphology. Further research should clarify relationships. Meanwhile, this genus is left as incertae sedis into a comprehensive Strabomantidae.

Dischidodactylus colonelloi Ayarzagüena, 1985*

Holotype: MHNL 9378.

Type locality: “Cima del Tepui Marahuaca (Marahuaca-tepui), Estado Amazonas, Venezuela. 2,550 m.”

Distribution: Region 5. Endemic to the summit of Cerro Marahuaca, a tepui in Amazonas State, southern Venezuela.


Dischidodactylus duidensis (Rivero 1968)*

Holotype: AMNH 23190.

Type locality: “Summit at Vegas Falls, 4,600 feet (1,400 m), Mt. Duida, Venezuela.”

Distribution: Region 5. Endemic to Cerro Duida, a tepui in Amazonas State, southern Venezuela.

Selected references: Rivero (1968a, 1971b); Lynch (1979a); McDiarmid and Donnelly (2005).

Subfamily Pristimantinae Ohler and Dubois, 2012

Genus Pristimantis Jiménez de la Espada, 1870

Type species: Pristimantis galdi Jiménez de la Espada, 1870, by monotypy.

Remarks: Heinicke et al. (2007) split long-established genus Eleutherodactylus, formerly in family Leptodactylidae (Lynch 1971, 1981; Frost 1985; Duellman 1993; Lynch and Duellman 1997) and placed afterwards in family Brachycephalidae by Frost et al. (2006) containing three major genera: Eleutherodactylus for mainly Caribbean species, Craugastor Cope, 1862 for mainly Central American species, and Pristimantis for almost all South American (and some Central American) species. Hedges et al. (2008) offered a more comprehensive view of the so-called “eleutherodactylines” and erected the new unranked taxon Terraranae (emended as Terraranae by Heinicke et al. 2018) for four families (Brachycephalidae, Craugastoridae, Eleutherodactylidae, and Strabomantidae). As of this writing, the phylogenetic arrangement remains in flux. Most South American species formerly in Eleutherodactylus are now members of Pristimantis, within Craugastoridae (after Padial et al. 2014). The most recent approach (Heinicke et al. 2018) recovers Tachiramantis as part of Craugastoridae, and Pristimantis into Strabomantidae. Mucubatrachus La Marca, 2007 and Paramophrynella La Marca, 2007 are considered synonyms of Pristimantis sensu (Hedges et al. 2008; Barrio-Amorós et al. 2013; Padial et al. 2014).

Selected references: Lutz (1927); Lynch (1976); La Marca (1992); Barrio-Amorós (1998, 2004, 2009); Heinicke et al. (2007); Hedges et al. (2008); Barrio-Amorós et al. (2013); Padial et al. (2014).

Pristimantis abakapa
Rojas-Runjaic, Salerno, Señaris and Pauly, 2013*

Holotype: MHNL 20544.

Type locality: Abakapá-tepui, Macizo de Chimantá, Parque Nacional Canaima, Gran Sabana municipality, Bolívar State, Venezuela (5°11’31.2”N, 62°18’56.6”W; elevation 2,245 m).

Distribution: Region 5. Endemic to Abakapá-tepui in the Chimantá massif, Venezuelan Guayana Region.

Remarks: In non-monophyletic Pristimantis unistrigatus species group sensu Rojas-Runjaic et al. (2013). Not assigned to any species group by Padial et al. (2014).

Selected references: Rojas-Runjaic et al. (2013); Señaris et al. (2014).

Pristimantis ameliae Barrio-Amorós, 2011*

Holotype: CVULA 7118.

Type locality: San Javier del Valle, 8°56’43”N, 70°25’54”W, elevation 2,500 m, Mérida State, Venezuela.

Distribution: Region 1. Endemic to eastern versant of Sierra de la Culata of the Venezuelan Andes.

Remarks: Not assigned to any species group (Padial et al. 2014).


Pristimantis anolirex (Lynch 1983)

Holotype: KU 168626.

Type locality: “18.5 km (by road) S Chitajá,
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238. *Dischidodactylus colonnelloii*. Holotype MHNLS 9378, detail of the right side, inside right hand from below. Photo: César Barrio-Amorós.


Departamento de Norte de Santander, Colombia, 2,850 m.

**Distribution:** Region 1. Cordillera Oriental of the Colombian Andes and Páramo de Tamá, páramos in SW Táchira State in the Venezuelan Andes.

**Remarks:** La Marca (1995d) reported this species from Venezuela. In non-monophyletic *Pristimantis unistrigatus* species group *sensu* Hedges et al. (2008), but not assigned to any species group by Padial et al. (2014).

**Selected references:** Lynch (1983); La Marca (1995d).

*Pristimantis anotis* (Walker and Test 1955)*

Holotype: UMMZ 109876.

**Type locality:** Rancho Grande, 1,090 m, Aragua State, Venezuela.

**Distribution:** Region 2. Endemic to Venezuela. Apparently restricted to surroundings of type locality.

**Remarks:** A severe decline in this species is presumed, as not seen since 1974 (Barrio-Amorós 2006c). In non-monophyletic *Pristimantis unistrigatus* species group *sensu* Lynch and Duellman (1997) and Hedges et al. (2008); not assigned to any species group by Padial et al. (2014).

**Selected references:** Walker and Test (1955); Ginés (1959); Rivero (1961, 1964a); Manzanilla et al. (1995);
Barrio-Amorós (2006c); Kaiser et al. (2015).

**Pristimantis aureoventris**
Kok, Means and Bossuyt, 2011

**Holotype:** IRSNB 4152.
**Type locality:** Summit of Wei-Assiput-tepui, Cuyuni-Mazaruni District, Guyana (5°13′05″N, 60°42′15″W, 2,210 m).
**Distribution:** Region 5. Guyana Shield, in western Guyana and eastern Venezuela. In Venezuela, known from Kukenán-tepui (Jablonski et al. 2017) and here reported from summit of Mt. Roraima, Bolivar State.
**Remarks:** Listed by Señaris et al. (2014), who anticipated its presence in Venezuela (Canaima National Park) but without any voucher specimen. Jablonski et al. (2017) reports it for first time in Venezuela from the summit of Kukenán-tepui, in the eastern chain of tepuis, Bolivar State. Two vouchers are added here from the summit of Mt. Roraima (MCNC 7196 and EBRG 200), at 2,800 m. Detailed comparison fails to distinguish them from the original description of *Pristimantis aureoventris*, from a nearby tepui (Wei-Assipu-tepui) in Guyana, and the Guyanan side of Mt. Roraima. The photographs by R.W. McDiarmid and Thomas Marent (Images 243A and 243B) are almost identical to those of Kok et al. (2011; see Fig. 4C, E). Not assigned to any species group (Padial et al. 2014).
**Selected references:** Kok et al. (2011); Señaris et al. (2014); Jablonski et al. (2017).

**Pristimantis auricarens** (Myers and Donnelly 2008)*

**Holotype:** EBRG 2725.
**Type locality:** Summit of Auyan-tepui, AMNH-TERRAMAR Camp 2, 1,750 m, Bolivar State, Venezuela (5°54′N, 62°29′W).
**Distribution:** Region 5. Apparently endemic to Auyan-tepui in Venezuelan Guyana Shield.
**Remarks:** In *Pristimantis unistrigatus* species group according to original description (Myers and Donnelly 2008); not assigned to any species group by Padial et al. (2014).
**Selected references:** Myers and Donnelly (2008); Señaris et al. (2014).

**Pristimantis avius** (Myers and Donnelly 1997)*

**Holotype:** AMNH 131481.
**Type locality:** “North base of Pico Tamacuari, 1,160–1,200 m elevation. Sierra Tapirapecó, Amazonas, Venezuela (1°13′N, 64°42′W).”
**Distribution:** Region 5. Endemic to Sierra Tapirapecó, Venezuelan Amazonas. Possibly present in Brazilian side of Tapirapecó.
**Remarks:** In non-monophyletic *Pristimantis unistrigatus* species group according to Myers and Donnelly (1997) and Hedges et al. (2008); not assigned to any species group by Padial et al. (2014).
**Selected references:** Myers and Donnelly (1997).

**Pristimantis bicumulus** (Peters 1863)*

**Syntypes:** ZMB 4899 (two specimens).
**Type locality:** Caracas, Venezuela.
**Distribution:** Region 2. Cordillera de la Costa, Venezuela.
**Remarks:** Not assigned to any species group (Hedges et al. 2008; Padial et al. 2014).
**Selected references:** Lutz (1927); Ginés (1959); Rivero (1961, 1964a); Tello (1968); Lynch and La Marca (1993); Manzanilla et al. (1995); Barrio-Amorós (2006c); Señaris and Rojas-Runjaic (2015c).

**Pristimantis boconoensis** (Rivero and Mayorga 1973)*

**Type:** UPRM 4932.
**Type locality:** “Páramo Guaramacal, Boconó, Estado Trujillo, Venezuela, 9,400 feet” (2,865 m).
**Distribution:** Region 1. Subpáramo and páramo habitats in Trujillo State, Venezuelan Andes.
**Remarks:** Not assigned to any species group (Hedges et al. 2008; Padial et al. 2014).
**Selected references:** Rivero and Mayorga (1973); Lynch (1976); Duellman (1979b); Rivero (1982b); La Marca (2007).

**Pristimantis briceni** (Boulenger 1903)*

**Syntypes:** MCZ 3888 and 7601, NHMW 22871 (3 specimens); UMMZ 46471.
**Type locality:** “Merida (Mérida), Venezuela, at an altitude (elevation) of 1,600 metres.” Elevation may be in error, as it is known from 2,600 to 3,400 m; 1,600 m is the elevation of Merida, from where the specimens were shipped.
**Distribution:** Region 1. Sierra de la Culata in subpáramo and páramo habitats in Venezuelan Andes of Mérida State.
**Selected references:** Boulenger (1903); Lutz (1927); Ginés (1959); Rivero (1961, 1982c, 1983); Lynch (1976); La Marca (2007); Barrio-Amorós et al. (2013).

**Pristimantis cantitans** (Myers and Donnelly 1996)*

**Holotype:** EBRG 3005.
**Type locality:** “Summit of Auyan-tepui, 1,750 m, Bolivar State, Venezuela.”
**Distribution:** Region 5. Endemic to Cerros Yaví and Yutajé, two tepuis in northern Amazonas State.
**Remarks:** Not assigned to any species group by Padial et al. (2014).
**Selected references:** Myers and Donnelly (1996).


Myers and Donnelly (2001), and Hedges et al. (2008) not assigned to any species group by Padial et al. (2014).

**Selected references:** Myers and Donnelly (1996, 2001).

*Pristimantis colostichos* (La Marca and Smith 1982)*

**Holotype:** UMMZ 173044.

**Type locality:** “Páramo de los Conejos at the intersection of Quebrada Las Gonzales with the trail Manzano Alto-Las Gonzales, 2.5 hours on foot from the water pipeline known as “Las Canalejas,” Serranía del Norte, Estado Mérida, Venezuela.”

**Distribution:** Region 1. Known only from type locality in Sierra de la Culata, Mérida State, Venezuelan Andes.

**Remarks:** In non-monophyletic *Pristimantis unistrigatus* species group according to Hedges et al. (2008); not assigned to any species group by Padial et al. (2014).

**Selected references:** La Marca and Smith (1982).

*Pristimantis culatensis* (La Marca 2007)*
**Pristimantis conservatio**

Barrio-Amorós, Heinicke and Hedges, 2013*

**Holotype:** CVULA 7174.

**Type locality:** Cloud forest immediately above hamlet of Los Alcaravanes at Aguas Blancas, 1,640 m, 8°56'43"N, 70°25'54"W; Ramal de Calderas, Barinas State, Venezuela.

**Distribution:** Region 1. Endemic from cloud forests in Venezuelan Andes. Known only from eastern versant of Cordillera de Mérida in Barinas State. Probably also present in continuous cloud forest in Trujillo State.

**Remarks:** Not assigned to any species group Padial et al. (2014).

**Selected references:** Barrio-Amorós (2010a); Barrio-Amorós et al. (2013).

**Pristimantis fasciatus**

Barrio-Amorós, Rojas-Runjaic and Infante, 2007*

**Holotype:** MHNLS 18466.

**Type locality:** Kunana, cuenca del río Negro, Sierra de Perijá, Municipio Machiques de Perijá, Zulia State, Venezuela (10°02'N, 72°47'W; 1,094 m).

**Distribution:** Region 1. Only known from three localities at eastern versant of Sierra de Perijá, at 800–1,200 m.

**Remarks:** Considered Endangered according to Venezuelan Red Book (Rojas-Runjaic and Señaris 2015g). In nonmonophyletic Pristimantis unistrigatus group according to the original description (Kaiser et al. 2015).

**Selected references:** Rivero (1964d, 1967c, 1982b, 1983); Rivero and Mayorga (1973); Lynch (1976); La Marca (1991b “1994,” 2007); Barrio-Amorós et al. (2013).

**Pristimantis flabellidiscus** (La Marca 2007)*

**Holotype:** ULABG 2883.

**Type locality:** Los Aranguren, 2,860 m, (ca. 8°35’59”N, 70°55’28”W), southern versant of Sierra Nevada National Park, Rangel Municipality, Merida State, Venezuela.

**Distribution:** Region 1. Known only from type locality.

**Remarks:** Not assigned to any species group (Hedges et al. 2008; Padial et al. 2014).

**Selected references:** La Marca (2007).

**Pristimantis gryllus**

Barrio-Amorós, Guayasamin and Hedges, 2012

**Holotype:** CVULA 8343.

**Type locality:** “Cloud forest along the road from Estanques to Paramo la Tosta, 8.4333N, 71.5000W, 1,320 m, Estado Merida, Venezuela.”

**Distribution:** Region 1. Cloud forest and perianthropic situations in Andes of Táchira and Merida States in Venezuela, recently reported for Norte de Santander in Colombia (Acevedo-Rincón et al. 2014).

**Remarks:** In Pristimantis unistrigatus species group according to original description (Barrio-Amorós et al. 2012), but not assigned to any species group by Padial et al. (2014).

**Selected references:** Barrio-Amorós et al. (2012); Acevedo-Rincón et al. (2014).

**Pristimantis guaiquinimensis** (Schlüter and Rödder 2007)*

**Holotype:** SMNS 8004.1.

**Type locality:** Guaiquinima tepui, Bolívar State, Venezuela (5°44’N, 63°38’W, elevation 980 m).

**Distribution:** Region 5. Endemic to Guaiquinima, a


(Kok and Barrio-Amorós 2013).

Remarks: In *Pristimantis unistrigatus* species group according to original description (Schlüter and Rödder 2007) and Hedges et al. (2008), but not assigned to any species group by Padial et al. (2014). *Eleutherodactylus tepuiensis* Schlüter and Rödder, 2007 is a junior synonym tepui in Bolivar State, Venezuelan Guayana.

Selected references: Schlüter and Rödder (2007); Kok and Barrio-Amorós (2013).

*Pristimantis hoogmoedi* Kaiser, Barrio-Amorós, Rivas-Fuenmayor, Steilein and Schmidt, 2015*
Remarks: Costa in Nirgua massif, Yaracuy State, 20–1,500 m asl. Miranda, and Vargas States, and western Cordillera de la Costa in Aragua, Carabobo, Distrito Capital.

Distribution: Venezuela.

Type locality: Mamo, near La Guaira, Vargas State, Venezuela.

Holotype: IRSNB 4165.

Type locality: Summit of Ptari-tepui, Bolívar State, Venezuela.

Remarks: Not assigned to any species group according to original description (Kaiser et al. 2015). Apparently suffering some decline (G. Rivas, pers. comm.).

Selected references: Kaiser et al. (2015).

Pristimantis imthurni Kok, 2013*

Holotype: AL-MNRJ 1190.

Type locality: Mamo, near La Guaira, Vargas State, Venezuela.

Distribution: Region 2. Restricted to central Cordillera de la Costa in Aragua, Carabobo, Distrito Capital, Miranda, and Vargas States, and western Cordillera de la Costa in Nirgua massif, Yaracuy State, 20–1,500 m asl.

Remarks: Hylodes anonymus was first mentioned by Lutz (1927: 40) as a new species, but description lacked designation of a type specimen. Later in same paper, two illustrations appear on Plate 13 (Image 256A) but associated text refers to Hylodes incertus, here assumed to be a lapsus and unjustified emendation for H. anonymus. These names appear alternatively in recent checklists (La Marca 1992; Barrio-Amorós 1998, 2004, 2009), but none are identified with identifiable specimens or vouchers. Hylodes anonymus is therefore a nomen nudum under Article 12 of the Code (ICZN 1999), whereby names without illustration or diagnosis coined prior to 1931 are not valid for the purposes of nomenclature. The case of Hylodes incertus is different. Since Adolfo Lutz’s material was stored at Museum of the Universidade Federal do Rio de Janeiro, Brazil (MNRJ), the current number assigned to the holotype of H. incertus is AL-MNRJ 1190. Having received photos of the specimen thanks to Dr. José Pombal and, despite the complete fading of the color (Image 256B), it clearly belongs to a member of the Pristimantis conspicillatus species group. Members of this group are easily distinguished by finger I being equal or longer than finger II, clearly visible in Image 256C. Pristimantis terraebolivaris (Rivero 1961) is the only species in Cordillera de la Costa in the P. conspicillatus species group and is abundant in the central sector of the Cordillera de la Costa in Aragua, Carabobo, Miranda, and Yaracuy States and Distrito Capital. Mamo, near La Guaira (Vargas State), the type locality of H. incertus, is at 85 m asl. The previously known altitudinal range of P. terraebolivaris was 800–1,500 m (Barrio-Amorós 2004); at MHNLS specimens are from 20–1,500 m. Comparing the photos and illustration of Hylodes incertus with specimens and the description of Pristimantis terraebolivaris (Rivero 1961) indicate those are conspecific and Hylodes incertus Lutz, 1927 is a junior synonym of Eleutherodactylus terraebolivaris Rivero, 1961; the color pattern of H. incertus holotype corresponds with the stripped morph recognized by Barrio-Amorós (2006c). Despite the poor conservation status of the H. incertus holotype, it does match with Pristimantis terraebolivaris in having the head longer than wide; long snout (longer than eye diameter), acuminate in dorsal view; canthus rostralis straight and transversely angular; loreal region vertical, finger I equal to finger II, fingers and toes with lateral keels; tip of toe III not reaching the middle subarticular tubercle of toe IV, and tip of toe V just passing the middle subarticular tubercle of toe IV. No other Pristimantis species in the Cordillera de la Costa matches with this combination of characters. Thus, all previous references to Pristimantis terraebolivaris must be now attributed to Pristimantis incertus. In Pristimantis conspicillatus species group (Hedges et al. 2008; Padial et al. 2014). Barrio-Amorós (2006c) showed some chromatic variation of the species.

Selected references: All references mentioning Eleutherodactylus or Pristimantis terraebolivaris. Lutz (1927); Rivero (1961, 1964a,d); Heatwole (1963a); Tello (1968); Lynch (1976, 1979b); Barrio-Amorós (1996a, 2006c); Lotzkat (2007).

Pristimantis jabonensis (La Marca 2007)*

Holotype: ULABG 2813.

Type locality: “Páramo El Jabón, 3,100 m, Municipio Carache, Estado Trujillo, Venezuela.”

Distribution: Region 1. Known only from type locality.

Remarks: Not assigned to any species group (Hedges et al. 2008; Padial et al. 2014).

Selected references: La Marca (2007).

Pristimantis kareliae (La Marca 2005)*

Holotype: ULABG 3376.

Type locality: “Quebrada la Corcovada, aproximadamente 8 km de Laguna Mucubají, en via Apartaderos-Santo Domingo, 3,000 m snm., 8°48’42”N, 70°47’46”W, Municipio Cardenal Quintero, Estado Mérida, Venezuela.”

Distribution: Region 1. Apparently restricted to surroundings of type locality.

Remarks: Material assigned to this name must be

Pristimantis gryllus. Female holotype CVULA 8343. Road from Estanques to Páramo La Tosta, Mérida. Photo: César Barrio-Amorós.


Pristimantis hoogmoedi. Female, paratype CVULA 7434. Las Melenas, southern slope of Cerro El Humo, Península de Paria, Sucre. Photo: César Barrio-Amorós.

Pristimantis imthurmi. Ptari tepui, Bolívar. Photo: Philippe Kok.

Type locality: Summit of Aprada-tepui, Bolivar State, 5°24’42”N, 62°27’00”W, 2,570 m elevation.
Distribution: Region 5. Endemic to Aprada, a tepui in Bolivar State, Venezuela.
Remarks: Not assigned to any species group (Padial et al. 2014).
Selected references: Kok (2013); Señaris et al. (2014).

Pristimantis lancinii (Donoso-Barros 1965)*

Holotype: USNM 165604.

Pristimantis lancinii Kok, 2013*

Holotype: IRSNB 4160.

compared with Pristimantis paramerus, a very similar microsympatric species, as original description makes no mention of any possible similarity. In Pristimantis unistrigatus species group according to Hedges et al. (2008); not assigned to any species group by Padial et al. (2014).

Selected references: La Marca (2005).
**Type locality:** “Apartaderos, Estado Mérida,” Venezuela.

**Distribution:** Region 1. Páramos in Sierra Nevada, Mérida State.

**Remarks:** Described briefly by Donoso-Barros (1965) stating type locality as: “Venezuela … de las altas montañas de Mérida;” type locality restricted later by Donoso-Barros (1968). Frost (2019) erroneously states the species was originally described as *Eupsophus* (see Barrio-Amorós and Ortiz 2015). Not assigned to any species group by Hedges et al. (2008) or Padial et al. (2014).

**Selected references:** Donoso-Barros (1965, 1968); Rivero (1961, 1964b); Lynch (1976, 1980); Señaris et al. (2015g). In *Pristimantis unistrigatus* species group according to original description (Fuentes and Barrio-Amorós 2004) and Hedges et al. (2008), but not assigned to any species group by Padial et al. (2014).

**Selected references:** Fuentes and Barrio-Amorós (2004).

*Pristimantis lassoalcalai*

Barrio-Amorós, Rojas-Runjaic and Barros, 2010*

**Holotype:** MHNLS 18898.

**Type locality:** “Cerro Las Antenas, elevation 1,827 m, 10°19’40.0"N, 72°35’27.0"W, Sierra de Perijá, Municipio Rosario de Perijá, Estado Zulia, Venezuela.”

**Distribution:** Region 1. Known only from type locality on Venezuelan side of Sierra de Perijá, at 1,827–1,950 m asl. Probably also present on Colombian side of Sierra de Perijá.

**Remarks:** Considered Vulnerable (VU) according to Venezuelan Red Book (Rojas-Runjaic and Señaris 2015g). In *Pristimantis unistrigatus* species group according to original description (Barrio-Amorós et al. 2010), but not assigned to any species group by Padial et al. (2014).

**Selected references:** Barrio-Amorós et al. (2010i); Rojas-Runjaic and Señaris (2015g).

*Pristimantis longicorpus* Kaiser, Barrio-Amorós, Rivas-Fuenmayor, Steilein and Schmidt, 2015*

**Holotype:** CVULA 7444.

**Type locality:** “Southern slopes of Cerro Humo (10.7073°N, 62.6284°W), elevation 750 m, Estado Sucre, Venezuela.”

**Distribution:** Region 2. Known only from type locality in Peninsula de Párama, northeastern Venezuela.

**Remarks:** In *Pristimantis unistrigatus* species group according to original description (Kaiser et al. 2015).

**Selected references:** Kaiser et al. (2015).

*Pristimantis marahuaka* (Fuentes and Barrio-Amorós 2004)*

**Holotype:** MBUCV 6637.

**Type locality:** Summit of Cerro Marahuaka (03°55’N, 65°27’W), ca. 2,450 m asl, Amazonas State, Venezuela.

**Distribution:** Region 5. Known only from type locality in Venezuelan Pantepui.

**Remarks:** In *Pristimantis unistrigatus* species group according to original description (Fuentes and Barrio-Amorós 2004) and Hedges et al. (2008), but not assigned to any species group by Padial et al. (2014).

**Selected references:** Fuentes and Barrio-Amorós (2004).

*Pristimantis marmoratus* (Boulenger 1900)

**Holotype:** BMNH 1947.2.16.92.

**Type locality:** “Foot of Mt. Roraima, 3,500 feet (1,066 m),” Guyana.

**Distribution:** Region 5. Lowlands and uplands in Guayana Shield in Venezuela, Guyana, Suriname, and French Guiana. In Venezuela, restricted to Gran Sabana in eastern Bolivar State, 600–1,800 m asl.

**Remarks:** Type locality (same as for Oreophrynella macconnelli; see its account) is not clear and subject of debate. Kok et al. (2018) suggest it is in Venezuela, contrary to the opinion herein (see Remarks on *O. macconnelli*), and provide a thorough morphological description, vocalization, natural history, and phylogenetic relationships. Probably a species complex. In *Pristimantis unistrigatus* species group according to Hedges et al. (2008) and Kok et al. (2018), but not assigned to any species group by Padial et al. (2014).

**Selected references:** Boulenger (1900); Ginès (1959); Rivero (1961, 1964b); Lynch (1976, 1980); Señaris et al. (2014); Kok et al. (2018).

*Pristimantis melanoproctus* (Rivero 1984)

**Holotype:** UPR-M 4407.

**Type locality:** From km 15 Delicias a Rubio, elevation 1,800 m, Táchira State, Venezuela.

**Distribution:** Region 1. Venezuela and Colombia. In Venezuela, known only from Andean cloud forests in Táchira State.

**Remarks:** Not easily differentiated from *Pristimantis mondolfii*, and original author was unable to discriminate between them unequivocally. Acevedo et al. (2014) provided new insights to differentiate them. Not assigned to any species group by Hedges et al. (2008) or Padial et al. (2014). By its close resemblance to *Tachiramantis lentiginosus*, might be a member of genus *Tachiramantis* (Heinicke et al. 2015).

**Selected references:** Rivero (1982c); Acevedo et al. (2014).

*Pristimantis memorans* (Myers and Donnelly 1997)

**Holotype:** AMNH 131466.

**Type locality:** “Ridge N Pico Tamacuari, 1,270 m elevation, Sierra Tapirapeco, Amazonas, Venezuela (1°13’N, 64°42’W).”

**Distribution:** Region 5. Known from type locality and one additional locality, a distance of 350 m on Brazilian

256B. *Pristimantis incertus*. Dorsal view of the holotype of *Hylodes incertus*, AL-MNRJ 1190.

256C. *Pristimantis incertus*. Left hand of the holotype of *Hylodes incertus*, AL-MNRJ 1190.


*Pristimantis mondolfii* (Rivero 1984)

Holotype: UPR-M 6082.

Side of Tapirapecó (Caramaschi and Niemeyer 2005c).

**Remarks:** In *Pristimantis unistrigatus* species group according to original publication (Myers and Donnelly 1997) and by Hedges et al. (2008), but not assigned to any species group by Padial et al. (2014).

**Selected references:** Myers and Donnelly (1997); Caramaschi and Niemeyer (2005d).

*Pristimantis mondolfii* (Rivero 1984)

Type locality: Matamula, Municipio Delicias, elevation 1,120 m, Táchira State, Venezuela.

**Distribution:** Region 1. Colombia and Venezuela. In Venezuela, known only from the Andes of Táchira State.

**Remarks:** Acevedo et al. (2014) found it in Colombia and provided new morphological traits to differentiate it from *Pristimantis melanoproctus*. In *Pristimantis unistrigatus* species group according to original publication (Rivero 1984) and Hedges et al. (2008), but not assigned to any species group by Padial et al. (2014). By its close resemblance to *Tachiramantis lentiginosus*, might be a
Barrio-Amorós et al.

member of genus *Tachiramantis* (Heinicke et al. 2015).

**Selected references:** Rivero (1982c); Acevedo et al. (2014).

**Pristimantis muchimuk** Barrio-Amorós, Mesa, Brewer-Carias and McDaid, 2010*

**Holotype:** MHNLNS 19652.

**Type locality:** Northern face of Churi-tepui, 5°16´45”N, 62°00´56”W, 2,325 m asl, Bolívar State, Venezuela.

**Distribution:** Region 5. Apparently endemic on Churi-tepui since not observed on nearby tepuis such as Abakapá (Rojas-Runjaic et al. 2013).

**Remarks:** Described by Barrio-Amorós et al. (2010f) from a single specimen. Variation and an augmented diagnosis given by Rojas-Runjaic et al. (2013). Not assigned to any species group by Padial et al. (2014).

**Selected references:** McDiarmid and Donnelly (2005); Barrio-Amorós et al. (2010f); Rojas-Runjaic et al. (2013); Señaris et al. (2014).

**Pristimantis nicefori** (Cochran and Goin 1970)

**Holotype:** USNM 147012.

**Type locality:** “Páramo del Almorzadero, Santander, Colombia.”

**Distribution:** Region 1. Colombian and Venezuelan Andes. In Venezuela, known only from Páramo de Tamá, Táchira State.

**Remarks:** Lynch (1994) rediagnosed it and related it to *Phrynopus sensu lato*. In *Pristimantis unistrigatus* species group according to Lynch and Duellman (1997) and Hedges et al. (2008), but not assigned to any species group by Padial et al. (2014).

**Selected references:** Lynch (1981, 1994); La Marca (1992).

**Pristimantis nubisilva** Kaiser, Barrio-Amorós, Rivas-Fuenmayor, Steilein and Schmidt, 2015*

**Holotype:** CVULA 7430.

**Type locality:** “Southern slopes of Cerro Humo, Península de Paria, Estado Sucre, Venezuela (10.7073°N, 62.6284°W), elevation ca. 750 m.”

**Distribution:** Region 2. Endemic to Península de Paria in northeastern Venezuela.

**Remarks:** In *Pristimantis unistrigatus* species group according to original publication (Kaiser et al. 2015). More recently, removed from *P. conspicillatus* species group and left unassigned to any species group by Padial et al. (2014).

**Selected references:** La Marca (2004).

**Pristimantis pedimontanus** (La Marca 2004)*

**Holotype:** ULABG 3221.

**Type locality:** Parque Nacional Chorro del Indio, 16.5 km in road San Cristóbal-Macanilla. approx. 8 km SE of San Cristóbal, San Cristóbal municipality, Táchira State, Venezuela.

**Distribution:** Region 1. Eastern slopes of Cordillera de Mérida, Andes of Venezuela.

**Remarks:** Assigned to *Pristimantis conspicillatus* species group in original publication (La Marca 2004) and maintained in this group by Hedges et al. (2008). More recently, removed from *P. conspicillatus* species group and left unassigned to any species group by Padial et al. (2014).

**Selected references:** La Marca (2004).

**Pristimantis pleurostriatus** (Rivero 1984)*

**Holotype:** UPR-M 4971.

**Type locality:** San Eusebio, La Carbonera, 2,316 m, Mérida State, Venezuela.

**Distribution:** Region 1. Endemic to Venezuelan Cordillera de Mérida. Apparently restricted to surroundings of type locality.

**Remarks:** Barrio-Amorós et al. (2013) redescribed this previously poorly-known species using fresh material and placed it into a phylogenetic context. In *Pristimantis unistrigatus* species group according to original publication (Rivero 1984), but not assigned to any species group by Hedges et al. (2008) or Padial et al. (2014).

**Selected references:** La Marca (2004).


al. (2014).

**Selected references**: Rivero (1982c, 1983); Barrio-Amorós et al. (2013).

*Pristimantis pruinatus* (Myers and Donnelly 1996)*

**Holotype**: EBRG 3006.

**Type locality**: “Summit of cerro Yavi, 2,150 m, Amazonas, Venezuela.”

**Distribution**: Region 5. Endemic to Cerro Yavi, a tepui in northern Amazonas State.

**Remarks**: In subgenus *Pristimantis* but not assigned to any species group (Hedges et al. 2008; Myers and Donnelly 1996; Padial et al. 2014).

**Selected references**: Myers and Donnelly (1996).

*Pristimantis pulvinatus* (Rivero 1968)*

**Holotype**: MCZ 64741.

**Type locality**: “Paso del Danto, región de La Escalera around 1,400 m above San Isidro, road from El Dorado to Sta. Elena de Uairén, Estado Bolivar, Venezuela.”

**Distribution**: Region 5. Venezuela and Guyana. In Venezuela, in surroundings of La Escalera and Gran
**Pristimantis marmoratus**. Chivatón, Gran Sabana, Bolivar. Photo: César Barrio-Amorós.

**Pristimantis melanoproctus**. Tamá National Park, Norte de Santander, Colombia. Photo: Aldemar A. Acevedo.

**Pristimantis cf. mondolfii**. Matanula, Táchira. Photo: César Barrio-Amorós.

**Pristimantis mondolfii**. Tamá National Park, Norte de Santander, Colombia. Photo: Aldemar A. Acevedo.

**Pristimantis muchimuk**. Female holotype MHNLS 19652. Churi-tepui, Chimantá massif, Bolivar. Photo: Javier Mesa.

**Pristimantis muchimuk**. Churi-tepui, Chimantá massif, Bolivar. Photo: Fernando Rojas-Runjaic.

**Pristimantis reticulatus** (Walker and Test 1955)*

Holotype: UMMZ 109872.

**Type locality:** “Slope of Pico Periquito +/- 1,275 m, Rancho Grande, Estado Aragua, Venezuela.”

**Distribution:** Only known from type locality and surroundings at elevations over 1,000 m in central Cordillera de la Costa of Aragua State.


268A. *Pristimantis paramerus*. Quebrada del Padre, way to páramo Los Granates, Mérida. Photo: César Barrio-Amorós.

268B. *Pristimantis paramerus*. Quebrada del Padre, way to páramo Los Granates, Mérida. Photo: César Barrio-Amorós.

269. *Pristimantis pariagnomus*. Cerro el Humo, Peninsula de Paria, Sucre. Photo: Mayke de Freitas.

270A. *Pristimantis pleurostriatus*. Calling male. Estancia La Bravera, way from Mérida to La Azulita, 2,200 m asl, Mérida. Photo: César Barrio-Amorós.

Selected references: Walker and Test (1955); Ginés (1959); Rivero (1961, 1964a); Lynch (1976); Lynch and La Marca (1993); Barrio-Amorós (2006c).

*Pristimantis rhigophilus* (La Marca 2007)*

Holotype: ULABG 1915.
Type locality: “Páramo de Guaramacal, 3,100 m (9°13’53.9”N, 70°11’8.7”W), en la vía Laguna de los Cedros-Guaramacal, Municipio Boconó, Estado Trujillo, Venezuela.”

Distribution: Known only from type locality in Venezuelan Andes.
Remarks: In subgenus *Pristimantis* but not assigned to any species group (Hedges et al. 2008; Padial et al. 2014).

Selected references: La Marca (2007).

*Pristimantis rivasi*

Barrio-Amorós, Rojas-Runjaic and Barros, 2010

Holotype: MHNLS 18445.
Type locality: “Cerro Las Antenas, elevation 1,670 m,
10°20’N, 72°35’W, Sierra de Perijá, Municipio Rosario de Perijá, Estado Zulia, Venezuela.”

**Distribution:** Region 1. Known only from eastern (Venezuelan) versant of Sierra de Perijá, in cloud forest at 1,438–1,933 m asl. Recently reported from Colombian side of Perijá (Meza-Joya 2016).

**Remarks:** In *Pristimantis unistrigatus* species group according to original publication (Barrio-Amorós et al. 2010), but not assigned to any species group by Padial et al. (2014).

**Selected references:** Barrio-Amorós et al. (2010i); Meza-Joya (2016).

*Pristimantis riveroi* (Lynch and La Marca 1993)*

**Holotype:** AMNH 70599.
**Type locality:** “Rancho Grande, Estado Aragua, Venezuela.”

**Distribution:** Region 2. Known only from type locality in central Cordillera de la Costa in Aragua State.

**Remarks:** In *Pristimantis unistrigatus* species group according to Hedges et al. (2008), but not assigned to any species group by Padial et al. (2014).

**Selected references:** Lynch and La Marca (1993); Barrio-Amorós (2006c).

*Pristimantis rozei* (Rivero 1961)*

**Holotype:** MBUCV 2018.
**Type locality:** “Curucuruma, Estado Aragua, Venezuela.”

**Distribution:** Region 2. Known only from surroundings of type locality in central Cordillera de la Costa, Aragua State.

**Remarks:** Perhaps conspecific with *Pristimantis reticulatus*, according to Lynch and La Marca (1993). In *P. unistrigatus* species group according to Hedges et al. (2008), but not assigned to any species group by Padial et al. (2014). Reported *P. rozei* from Nirgua Massif in Yaracuy State by Lotzkat (2007) considered here to be *P. cf. stenodiscus*, due to characteristic shape of finger disks (Image 274).

**Selected references:** Rivero (1961, 1964a); Lynch (1976, 1979b); La Marca (1992); Lynch and La Marca (1993); Lotzkat (2007).

*Pristimantis sarisarinama*

Barrio-Amorós and Brewer-Carias, 2008*

**Holotype:** EBRG 4668.
**Type locality:** “Sima Mayor, Sarisariñama-tepui, Estado Bolívar, Venezuela (4°41’N, 64°13’W), elevation 1,100 m.”

**Distribution:** Region 5. Apparently endemic to Sarisariñama, a tepui in Bolivarian State, southern Venezuela.

**Remarks:** In *Pristimantis unistrigatus* species group according to original publication (Barrio-Amorós and Brewer-Carias 2008), but not assigned to any species group by Padial et al. (2014).

**Selected references:** Barrio-Amorós and Brewer-Carias (2008).

*Pristimantis stenodiscus* (Walker and Test 1955)*

**Holotype:** UMMZ 109866.
**Type locality:** “Pico Periquito, Rancho Grande, Estado Aragua, Venezuela.”

**Distribution:** Region 2. Only known from vicinity of type locality in central Cordillera de la Costa. Records from Nirgua Massif, Yaracuy State, must be confirmed.

**Remarks:** There is no recent information about the species. In subgenus *Pristimantis* but not assigned to any species group (Hedges et al. 2008; Padial et al. 2014). Sebastian Lotzkat sent photos taken in Nirgua Massif, Yaracuy (Lotzkat 2007), and the reported *P. rozei* in that thesis is herein considered to be *P. cf. stenodiscus*, due to characteristic shape of finger disks (Image 276), but should be better confirmed with voucher specimens.

**Selected references:** Walker and Test (1955); Ginés (1959); Rivero (1961); Lynch (1976); Barrio-Amorós (2006c); Lotzkat (2007).

*Pristimantis telefericus* (La Marca 2005)*

**Holotype:** ULABG 2232.
**Type locality:** From path between third and fourth stations of Teleférico de Mérida, 3,500 m, Libertador Municipality, Mérida State, Venezuela.

**Distribution:** Region 1. Apparently microendemic around type locality in Sierra Nevada de Mérida, in páramo habitat at 3,400–3,500 m asl.

**Remarks:** Appears to have suffered a decline, as intensive search by CBA in March-April 2012 (nearly 20 hours) resulted in no positive observations. In *Pristimantis unistrigatus* species group according to Hedges et al. (2008) but not assigned to any species group by Padial et al. (2014).

**References:** La Marca (2005).

*Pristimantis thyellus* (La Marca 2007)*

**Holotype:** ULABG 2137.
**Type locality:** “Páramo El Batallón, 3,125 m (aprox. 8°10′48″N, 71°54′08″W), Parque Nacional Juan Pablo Peñaloza, Municipio Guaraque, Estado Mérida, cerca del limite con el Estado Táchira, Venezuela.”

**Distribution:** Region 1. Apparently restricted to páramo El Batallón, 2,900–3,800 m asl. Expected in Táchira State due to continuous habitat.

**Remarks:** In subgenus *Pristimantis* but not assigned to any species group (Hedges et al. 2008; Padial et al. 2014).

**Selected references:** La Marca (2007).
270B. Pristimantis pleurostriatus. Juvenile. Estancia La Bravera, way from Mérida to La Azulita, 2,200 m asl, Mérida. Photo: César Barrio-Amorós.


271C. Pristimantis cf. pulvinatus. Female. La Laja, Sierra de Lema, Bolívar. Photo: Alan Highton.

272A. Pristimantis rivasi. Female holotype MHNLS 18445. Cerro Las Antenas, Sierra de Perijá, Zulia. Photo: Tito Barros.


Selected references: Rivero (1982c); Ruíz-Carranza et al. (1996); Lynch (2003).

Pristimantis tubernasus (Rivero 1984)*

Holotype: UPR-M 4349.
Type locality: “Boca de Monte, Camino a Pregonero, 2,393 m, Edo. Mérida, Venezuela.”

Pristimantis turik

Holotype: MBLUZ 155.
Type locality: Cueva del Agua (lower gallery in the Northern Wall cave), Mesa Turik, Rosario de Perijá Municipality, Sierra de Perijá, Zulia State, Venezuela (10°24’N, 72°42’W; 1,700 m asl).
Distribution: Region 1. Only known from type locality; could be present on Colombian side of Sierra de Perijá.


279A. *Pristimantis vanadisae*. Female, pattern plain. Estancia La Bravera, way from Mérida to La Azulita, 2,200 m asl, Mérida. *Photo: César Barrio-Amorós.*
279B. *Pristimantis vanadisae*. Pattern plain. Estancia La Bravera, way from Mérida to La Azulita, 2,200 m asl, Mérida. *Photo: César Barrio-Amorós.*

279C. *Pristimantis vanadisae*. Female, pattern dorsoconcolor. Estancia La Bravera, way from Mérida to La Azulita, 2,200 m asl, Mérida. *Photo: César Barrio-Amorós.*

279D. *Pristimantis vanadisae*. Juvenile, spotted pattern. Estancia La Bravera, way from Mérida to La Azulita, 2,200 m asl, Mérida. *Photo: César Barrio-Amorós.*


**Remarks:** Known only from single specimen. In *Pristimantis unistrigatus* species group according to original publication (Barrio-Amorós et al. 2007) but not assigned to any species group by Padial et al. (2014).

**Selected references:** Barrio-Amorós et al. (2007).

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*Pristimantis turumiquirensis* (Rivero 1961)*

**Holotype:** AMNH 22557.

**Type locality:** La Trinidad, Mount Turumiquire, in cave at approximate elevation of 1,830 m, between Sucre and Monagas States, Venezuela.

**Distribution:** Region 2. Apparently endemic to Turimique, a massif in eastern part of Coastal Range, northwestern Venezuela.

**Remarks:** Considered Endangered (EN) by Venezuelan Red Book (Señaris and Rojas-Runjaic 2015d). In *Pristimantis unistrigatus* species group of Hedges et al. (2008) but not assigned to any species group by Padial et al. (2014).

**Selected references:** Rivero (1961, 1964a); La Marca (1992); Señaris and Rojas-Runjaic (2015d).

*Pristimantis vanadise* (La Marca 1984)*

**Holotype:** CVULA 2805.

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**Type locality:** “Stream in cloud forest above Truchicultura La Mucuy, 2,350 m, Sierra Nevada de Mérida, Estado Mérida, Venezuela.”

**Distribution:** Region 1. In Andes of Mérida State.

**Remarks:** Barrio-Amorós et al. (2013) described four chromotypes, placed it in a phylogenetic context, and made an unjustified amendment, spelling species name as *vanadisae*. In *Pristimantis unistrigatus* species group according to original publication (La Marca 1984) and Hedges et al. (2008); not assigned to any species group by Padial et al. (2014).


**Pristimantis vilarsi** (Melin 1941)

**Syntypes:** NHMG 491 (two specimens).

**Type locality:** Taracuá, Rio Uaupés, (Amazonas State), Brazil.

**Distribution:** Regions 4, 5. Upper Amazonian Region of Brazil, Peru, Colombia, and Venezuela. In Venezuela, widespread south of Orinoco River.


**Selected references:** Melin (1941); Rivero (1961, 1964b, 1967a); Lynch (1975a, 1976, 1979b, 1980); Rivero et al. (1986); La Marca (1992); Barrio (1996a); Gorzula and Señaris (1998); Barrio-Amorós and Molina (2006); Schlüter and Rödder (2007); Heyer and Barrio-Amorós (2009); Barrio-Amorós et al. (2011b); Kok and Barrio-Amorós (2013).

**Pristimantis yaviensis** (Myers and Donnelly 1996)*

**Holotype:** ZFMK 87278.

**Type locality:** Yuruani-tepui, Gran Sabana Municipality, Bolívar State, Venezuela (5°19’31”N, 60°50’40”W; elevation 2,300 m.

**Distribution:** Region 5. Restricted to summit of Yuruani, a tepui in southeastern Bolívar State.

**Remarks:** Considered Vulnerable (VU) according to Venezueulan Red Book (Señaris and Rojas-Runjaic 2015b). Not assigned to any species group by Padial et al. (2014) or Rödder and Jungfer (2008), but considered in “unistrigatus” species group by Kok et al. (2018).

**Selected references:** Rödder and Jungfer (2008); Señaris et al. (2014); Señaris and Rojas-Runjaic (2015b).

**Pristimantis yustizii**

(Barrio-Amorós and Chacón 2004)*

**Holotype:** CVULA 2150.

**Type locality:** Cerro Alto, La Soledad, Barinas State, Venezuela, elevation 1,500 m.

**Distribution:** Region 1. Eastern slopes of Andes of Táchira, Barinas, Lara, and Portuguesa States.

**Remarks:** In *Pristimantis unistrigatus* species group of Hedges et al. (2008) but not assigned to any species group by Padial et al. (2014). Most likely actually a member of *P. conspicillatus* group (B.S. Hedges and CBA, in prep.).

**Selected references:** Barrio-Amorós and Chacón 2004; Barrio-Amorós 2010a.

**Pristimantis zeuctotylus** (Lynch and Hoogmoed 1977)

**Holotype:** RMNH 17701.

**Type locality:** “West slope, Vier Gebroeders Mountain, Sipaliwini, Nickerie District, Suriname.”

**Distribution:** Region 4. Widely distributed in Amazonia, from southern Colombia through Venezuela, Brazil, Guyana, and Suriname to French Guiana. In Venezuela, only known from a few localities in southern Amazonas State.

**Remarks:** Barrio-Amorós and Molina (2006) doubted...


286. *Pristimantis* sp. 2. Sub párámo La Motus, Mérida. Photo: César Barrio-Amorós.


the validity of this taxon, which is distinguished from *Pristimantis vilarsi* only by absence of tarsal fold (present on *P. vilarsi*) and rounded palmar tubercle (variable in *P. vilarsi*). Araujo de Oliveira et al. (2017) show a maximum likelihood tree in which *P. zeuctotylus* from Suriname is presented as sister to *P. vilarsi* from Colombia; this should be confirmed with specimens from type localities of both species. In *Pristimantis conspicillatus* species group of Hedges et al. (2008) and Padial et al. (2014).

**Selected references**: Lynch and Hoogmoed (1977); Lynch (1980); Barrio-Amorós and Molina (2006).

**Subfamily Strabomantinae**

**Hedges, Duellman and Heinicke, 2008**

*Genus Strabomantis* Cope, 1862

**Type species**: *Strabomantis biporcatus* Peters, 1863, by monotypy.

*Strabomantis biporcatus* Peters, 1863*

**Lectotype**: ZMB 3330B, assigned by Savage and Myers (2002).

**Type locality**: “Veragua,” in error for “northern Venezuela.”

**Distribution**: Region 2. Distributed throughout Cordillera de la Costa (Fig. 1 in Barrio-Amorós and Kaiser 2008).

**Remarks**: Long-known as *Eleutherodactylus cornutus*

Selected references: Boettger (1893); Lutz (1927); Ginés (1959); Rivero (1961, 1964a, d); Heatwole (1962); Mertens (1967); Lynch (1975, 1976); La Marca (1992); Manzanilla et al. (1996); Savage and Myers (2002); Rivero and Mijares (2004); Barrio-Amorós (2006c); Barrio-Amorós and Kaiser (2008).

Order Urodela Duméril, 1805


Family Plethodontidae Gray, 1850

Subfamily Hemidactyliinae Hallowell, 1856

Remarks: Herein follows most comprehensive and symmetric taxonomy by Vieites et al. (2011).

Genus Bolitoglossa Duméril, Bibron and Duméril, 1854

Type species: Salamandra platydactylus Gray, 1831, by monotypy.


Bolitoglossa borburata Trapido, 1942*

Holotype: USNM 115509.

Type locality: “Valle del Rio Borburata, Estado Carabobo, Venezuela, 1,200 m.”

Distribution: Region 2. Endemic from Venezuela. Restricted to Cordillera de la Costa (Carabobo, Aragua, and Yaracuy States).

Remarks: Probably a complex of species; specimens from Yaracuy assigned tentatively to Bolitoglossa borburata by Barrio and Fuentes (1999b) can represent a different taxon. Unfortunately, seems to have vanished, at least from central Cordillera de la Costa. In Bolitoglossa adspersa species group of Parra-Olea et al. (2004).

Selected references: Trapido (1942); Rohl (1959); Brane and Wake (1963); Hanken and Wake (1982); Manzanilla et al. (1995); Rodríguez and Rojas-Suárez (1995); Barrio (1999a); Barrio and Fuentes (1999b); Barrio-Amorós (2006c).

Bolitoglossa guaramacalensis

Schargel, García-Pérez and Smith, 2002*

Holotype: MCNG-A 2121.

Type locality: “Boconó-Guaramacal road, Quebrada el Pollo (9°13’N, 70°10’W), south slope of the Macizo de Guaramacal, 2,400 m, Trujillo, Venezuela.”

Distribution: Region 1. Endemic to Venezuela. Apparently restricted to Guaramacal massif (Trujillo State), in eastern versant of Venezuelan Andes.

Remarks: In Bolitoglossa adspersa species group according to original publication (Schargel et al. 2002) and by Parra-Olea et al. (2004).

Selected references: Schargel et al. (2002).

Bolitoglossa leANDrae

Acevedo, Wake, Márquez, Silva, Franco and Amézquita, 2013

Holotype: ULABG 1772.

Type locality: “San Antonio, Parque Nacional Natural Tamá (PNNT) (7.153092, -72.227306) 600 m elevation, Departamento de Norte de Santander, Colombia.”


Selected references: Acevedo et al. (2013); Barrio-Amorós et al. (2015).

Bolitoglossa mucuyensis

García-Gutiérrez, Escalona, Mora, Diaz de Pascual and Fermín, 2013*

Holotype: MCNUP 62.

Type locality: “Parque Nacional Sierra Nevada, La Mucuy, 2,225 m, Santos Marquina municipality, Mérida State, Venezuela.”

Distribution: Region 1. Endemic from Venezuela. Only known from type locality, La Mucuy, 1,800–2,250 m. Probably more extended through cloud forests of western versant of Sierra Nevada de Mérida.

Selected references: García-Gutiérrez et al. (2013).

Bolitoglossa orestes

Brame and Wake, 1962*

Holotype: BMNH 1905.5.31.103.

Type locality: “Culata, 9,810 feet (3,000 meters) Cordillera de Mérida, Estado de Mérida, Venezuela.”

9,810 feet corresponds to 2,990 m.

Distribution: Region 1. Sierra de la Culata in Mérida State, Venezuela. Type locality and distribution referred to Bolitoglossa spongai is summed for B. orestes. Locality “La Mucuy” in Sierra Nevada de Mérida, given in Barrio-Amorós and Fuentes Ramos (1999: 16) for B. spongai was an editorial error; currently B. orestes is only known

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from Sierra de la Culata, separated from *B. mucuyensis* by the deep valley of Chama River. Populations from La Mucuy later described as *B. mucuyensis* (García-Gutiérrez et al. 2013).

**Remarks:** Fermin et al. (2012) recently passed *Bolitoglossa spongai* Barrio-Amorós and Fuentes-Ramos, 1999 to synonymy of *B. orestes*, based on genetic and morphological data. Therefore, all data in literature for *B. spongai* (Rodriguez and Rojas-Suárez 2008; Barrio-Amorós et al. 2010e) refers now to *B. orestes*.

Two works on natural history and ecological traits of *B. orestes*: Cadenas et al. (2009) based on a population at Monte Zerpa, north of Mérida, and Barrio-Amorós et al. (2010e) under name *B. spongai*, about a population from cloud forests around Páramo El Tambor, Mérida State. The Venezuelan Red Book considers it Vulnerable (VU) [Barrio-Amorós and Rivas 2015].

**Selected references:** Brame and Wake (1962, 1963); Péfaur and Díaz de Pascual (1982); Rodríguez and Rojas-Suárez (1995, 2008); Barrio-Amorós (1998, 2004); Barrio-Amorós and Fuentes-Ramos (1999, 2004);
Barrio-Amorós et al.

Cadenas et al. (2009); Barrio-Amorós et al. (2010e); Fernín et al. (2012); Barrio-Amorós and Rivas (2015).

*Bolitoglossa tamaense* Acevedo, Wake, Márquez, Silva, Franco and Amézquita, 2013

**Holotype:** MCNUP 50.

**Terra typica:** “La Asiria de Belén, Parque Nacional Natural Tamá (PNNT) (7.319278, -72.374778) at 2,700 m elevation, Departamento de Norte de Santander, Colombia.”

**Distribution:** Region 1. Endemic from cloud forest of Tamá massif between Colombia and Venezuela. Reported from Venezuelan side by Barrio-Amorós et al. (2015).

**Selected references:** Acevedo et al. (2013); Barrio-Amorós et al. (2015).

**Order GYMNOPHIONA Müller, 1832**

**Family Caeciliidae Rafinesque, 1814**

**Genus Caecilia Linnaeus, 1758**

**Type species:** *Caecilia tentaculata* Linnaeus, 1758, by subsequent designation of Dunn, 1942.

*Caecilia flavopunctata* Roze and Solano, 1963

**Holotype:** MBUCV 5358.

**Type locality:** “Albarico, Yaracuy, Venezuela.”

**Distribution:** Region 2. Endemic to Venezuela. Known only from surroundings of type locality.

**Selected references:** Roze and Solano (1963); Taylor (1968); Nussbaum and Wilkinson (1989); Rivas (2009).

*Caecilia subnigricans* Dunn, 1942

**Holotype:** ANSP 4921 (not 4821 as given in description, *sensu* Taylor, 1968).

**Type locality:** “Magdalena River, Colombia.”

**Distribution:** Regions 1, 2. Magdalena Valley in Colombia, Andes of Venezuela (Táchira and Barinas), and Falcón State.

**Selected references:** Dunn (1942); Ginés (1959); Taylor (1968); Péfaur and Díaz de Pascual (1987); Nussbaum and Wilkinson (1989); Péfaur et al. (1992); Lynch (2000).

*Caecilia tentaculata* Linnaeus, 1758

**Type:** NHRM (lost).

**Type locality:** “America.”

**Distribution:** Regions 1, 2, 4. South America east of Andes, in Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Ecuador, and Peru. Apparently widespread in lowland Venezuela, known from Estados Amazonas, Táchira, and Yaracuy (Barrio-Amorós 1998).

**Selected references:** Dunn (1942); Taylor (1968); Péfaur et al. (1987, 1992); Nussbaum and Wilkinson (1989); Maciel and Hoogmoed (2011).
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293. Bolitoglossa mucuyensis. La Mucuy, Mérida. Photo: Ariel Espinosa-Blanco.

294A. Bolitoglossa orestes. Sierra de la Culata, Mérida. Photo: César Barrio-Amorós.

293. Bolitoglossa mucuyensis. La Mucuy, Mérida. Photo: Ariel Espinosa-Blanco.

294B. Bolitoglossa orestes. La Bravera, way from Mérida to La Azulita, Mérida, near type locality of the synonym B. spongai. Photo: César Barrio-Amorós.

294C. Bolitoglossa orestes. La Bravera, way from Mérida to La Azulita, Mérida. Photo: César Barrio-Amorós.


(1959); Taylor (1968); Péfaur and Díaz de Pascual (1982); Nussbaum and Wilkinson (1989); Péfaur et al. (1992); Lynch (1999); Maciel and Hoogmoed (2011a).

Family Tiphlonectidae Taylor, 1968

Genus Nectocaecilia Taylor, 1968

Type species: Chthonerpeton petersii Boulenger, 1882, by original designation.

Nectocaecilia petersii (Boulenger 1882)

Holotype: BMNH 1946.9.5.68.
Type locality: “Upper Amazon.”
Distribution: Region 4. Colombia, Venezuela, and Brazil. In Venezuela, southern half of Amazonas State.
Selected references: Dunn (1942); Taylor (1968); Nussbaum (1977); Nussbaum and Wilkinson (1989); Gorzula and Señaris (1998); Maciel and Hoogmoed (2011).

Genus Potomotyphlus Taylor, 1968

Type species: Caecilia kaupii Berthold, 1859, by original designation.


Potomotyphlus kaupii (Berthold 1859)

Holotype: ZFMK 27684.
Type locality: “Angostura,” Ciudad Bolívar, Venezuela.
Distribution: Regions 3, 4, 5. Orinoco and Amazons Basins, in Venezuela, Colombia, Ecuador, Peru, Brazil, and French Guiana. In Venezuela, northern Amazonas and Bolivar States, and Delta of the Orinoco (Delta Amacuro).

Remarks: CBA saw a photo of a fisherman in San Vicente, Río Apure (a major tributary of the Orinoco) which obtained one specimen fishing and used it as bait.
Selected references: Taylor (1968); Nussbaum and Wilkinson (1989); Péfaur et al. (1992); Maciel and Hoogmoed (2011a).

Genus Typhlonectes Peters, 1880

Type species: Caecilia compressicauda Duméril and Bibron, 1841, by subsequent designation of Dunn (1942).

Typhlonectes compressicauda Duméril et Bibron, 1841

Lectotype: MNHN 4269.
Type locality: “Cayenne,” French Guiana.
Distribution: Region 4. Amazon Region, in Colombia, Venezuela, Guyana, French Guiana, Brazil, and Ecuador. In Venezuela, only Puerto Ayacucho (Gorzula and Cerda, 1979; Barrio-Amorós 1998).
Selected references: Roze (1963); Roze and Solano (1963); Taylor (1968); Gorzula and Cerda (1979); Nussbaum and Wilkinson (1989); Péfaur et al. (1992); Wilkinson (1996a, 1996b); Lynch (1999); Maciel and Hoogmoed (2011a).
**Typhlonectes natans** (Fischer 1880)

**Syntypes:** ZMB 9522–23 (two specimens).

**Type locality:** “Cauca, Nebenfluss des Magdalenenstroms in Neu-Granada” = Cauca River, tributary of Magdalena River, Colombia.

**Distribution:** Region 6. Western and northern Colombia, and Maracaibo Lake Basin in northwestern Venezuela.

**Remarks:** Typhlonectes venezuelensis Fuhrmann, 1914 and Chthonerpeton haydeeeae Roze, 1963 are junior synonyms of this species.

**Selected references:** Roze (1963); Roze and Solano (1963); Taylor (1968); Lancini (1969); Nussbaum and Wilkinson (1989); Péfaur et al. (1992); Wilkinson (1996a,b); Lynch (1999).

**Species which may occur in Venezuela**

Five of the species predicted to be in the country from Barrio-Amorós (1998) first approach to the Venezuelan amphibian fauna were posteriorly reported to occur in Venezuela: *Rhaebo glaberrimus*, *Leptodactylus colombiensis*, *Phytotritades auratus*, *Elachistocleis pearsei*, and one species of *Cryptobatrachus*, *C. remotus* (Chacón-Ortiz et al. 2001; Barrio-Amorós and Chacón-Ortiz 2001; Infante-Rivero et al. 2006b, 2009; Rivas and De Freitas 2015). Some taxa predicted later by Barrio-Amorós (2004) have lasted in recent reports, like *Tepuihylla exophthalma*, *Amazophrynella minuta*, and *Phyllomedusa venusta* (Barrio-Amorós et al. 2010; Rojas-Ruiz and et al. 2013; Infante-Rivero et al. 2006a). Many more predicted species have either failed detection, or do not truly occur in Venezuela. Below are some taxa which so far remain only as “predicted” or “expected” for the Venezuelan fauna, especially those known from close localities in Guyana, Brazil, and Colombia.

**The Guiana Shield.** In Guyana, even on the other side of Roraima tepui, several described species have not yet reported from Venezuela. Among them are *Myersohyla kanaima* (Duellman and Hoogmoed 1992), *Tepuihylla warreni* (Duellman and Hoogmoed 1992), *Trachycephalus hadroceps* (Duellman and Hoogmoed 1992), *Stefania evansi* (Boulenger 1904), *S. roraima* Duellman and Hoogmoed, 1984, and *S. woodleyi* Rivero, 1968. The recently described *Boana diabolica* (Fouquet, Martinez, Zeidler, Curtois, Gaucher, Blanc, Dias-Lima, Marques-Souza, Rodrigues and Kok 2016) could also be present in southeastern Venezuela. *Adenomera lutzi* Heyer, 1975 is present along the Pakaraima mountains in Guyana, which are continuous with eastern Gran Sabana of Venezuela (Kok et al. 2007). *Chiasmocleis shudikarensis* Dunn, 1949 was described from the Upper Essequibo River, and is widely distributed in the Guianas and northern Amazonia. Other Guiana shield inhabitants that may be present in Venezuela include:

**Rhinella martyi**

Fouquet, Gaucher, Blanc and Vélez-Rodriguez, 2007

Fouquet et al. (2007) and Reynolds and MacCulloch (2012) show a locality in western Guyana (Baramita) near the Venezuelan border. As the *R. margaritifera* group requires further study, the presence of many described and undescribed species under this name would not be surprising. Avila-Pires et al. (2010) synonymized this name into *R. margaritifera*, which does not resolve the paraphyly that this name hides. Lavilla et al. (2013) considered this action premature, and Frost (2018) still counted it as valid.
Reported on different occasions from Venezuela (Lötters et al. 2007) with no vouchers or photos to sustain the claims; however, it could be present in the southern and easternmost parts of the country. Reynolds and MacCulloch (2012) report it from Baramita, Guyana, very near the Venezuelan border. Specimens from Baramita, however, should be compared with Ameerega picta (guayanensis).

_Ameerega hahneli_ (Boulenger 1884)

Known from nearby Colombia in Departamento de Guania (Lynch and Vargas-Ramírez 2000) and Guyana (Kok and Kalamandeen 2008; Jungfer et al. 2013). It is similar to _Osteocephalus taurinus_ in shape and iris coloration, but is much smaller. Examining _O. taurinus_ or _O. leprieurii_ samples in Venezuelan collections may lead to the recognition of this species in Venezuela.

 disincluded. As many colleagues have commented (see Guayasamin et al. 2006 for a resumé), the next realm for exciting discoveries is the exploration of the rainforest high canopy.

_Dendrobates nubeculosus_ Jungfer and Böhme, 2004

Only known from its type locality, on the Essequibo River, Guyana. May be an arboreal inhabitant that has been completely overlooked. As many colleagues have commented (see Guayasamin et al. 2006 for a resumé), the next realm for exciting discoveries is the exploration of the rainforest high canopy.

_Adelophryne patamona_ MacCulloch, Lathrop, Kok, Minter, Khan and Barrio-Amorós, 2008

This recently described minute species has been confused with _Adelophryne gutturosia_, a common species in Venezuela, but is only known from a few specimens and localities due to the difficulty of its collection in leaf litter.

_Leptodactylus myersi_ Heyer, 1995

Reported from rocky outcrops in French Guiana, Suriname, Guyana, and the neighboring Brazilian state of Roraima, this species seems not to be present in Venezuela, probably due to niche competition with _L. rugosus_, a similar-sized inhabitant of the same habitat from eastern Venezuela.

_Dendropsophus counani_ Fouquet, Del Orrico, Ernst, Blanc, Martínez, Vacher, Rodrigues, Ouboter, Jairam and Ron, 2015

This recently described species of the _D. parviceps_ group is known from the lowlands of the Guiana Shield, including localities in Guyana approximately 100 km from the eastern Venezuelan border, and could be present in the lowlands of the Cuyuni River Basin.

_Boana liliae_ (Kok 2006)

Reported only from Kaieteur National Park in Guyana. However, as many other species known until recently from that area of Guyana, it could also be present in Sierra de Lema or other parts of the Gran Sabana in Venezuela.

_Osteocephalus oophagus_ Jungfer and Schiesari, 1995

Recent Caramaschi (2010) described from Pacaraima in Brazil, very close to Santa Elena de Uairén and the Gran Sabana. Perhaps those _Elachistolepis_ sp. mentioned by Duellman (1997) could represent this species.

_Lysapsus laevis_ (Parker 1935)

An aquatic hylid that could be present in the southeastern region of Venezuela, close to Brazil and Guyana (Cole et al. 2013).

Furthermore, many different species of caecilians have been described and are known from Guyana (Caecilia gracilis Shaw, 1802, Caecilia pressula Taylor, 1968, Osaecilia zweifeli Taylor, 1968, Rhinatrema shiv Gower, Wilkinson, Sherratt and Kok, 2010, Caecilia iwokramae Wake and Donnelly, 2010, Microcaecilia iyob Wilkinson and Kok, 2010) (see Cole et al. 2013 and references therein). Caecilians are poorly studied amphibians and a much larger diversity could be present in Venezuela.

The Amazon. The Amazonian Region, is one of the less explored areas in Venezuela. Several widespread Amazonian species are expected to occur inside Venezuelan borders, as recently discovered with _Amaophrynella minuta_ (Rojas-Runjaic et al. 2013). Other such species include _Teratohyla midas_ (Lynch et Duellman 1973), which is distributed throughout the upper, middle, and lower Amazon from 1,000 m in the eastern piedmont of Ecuador to French Guiana. Such distribution, paralleled by _Hyalinobatrachium iaspidiense_ and _H. mondolfii_, make its presence likely in the southern or southeasternmost corners of Venezuela. _Pipa snethlageae_ Müller, 1914 has been mentioned from nearby Colombia at Departamento de Guainía by Lynch and Vargas-Ramírez (2000).

The Maracaibo Basin. Zulia state in Northwestern Venezuela is connected with northern Colombia through the adjacent lowlands and foothills of the Serranía de Perijá. Several species known from the neighboring country could be present in the Venezuelan side as well. _Scinax boulenieri_ (Cope 1887) extends from Central America to the Colombian Caribbean. It should be examined if the reported _S. rostratus_ from the Maracaibo Lake Basin does not correspond to this
species. Similarly, its presence would not be a surprise in the area of Craugastor raniformis (Boulenger 1896), Scinax elaeochrous (Cope 1876), Dendropsophus ebraccatus Cope, 1874, or Dendropsophus phlebodes Stejneger, 1906. The complex of Rhinella granulosa has been a difficult group of bufoидs to assess (Gallardo 1965; Narvaes and Rodrigues 2009; Pereyra et al. 2015). The recently described Central American (Panamanian) populations as R. centralis Narvaes and Rodrigues, 2009 can be more widely expanded through open habitats in northern Colombia and NW Venezuela. Specimens from Zulia State recognized as R. beebei should be closely compared with R. centralis. Dendrobates truncatus (Cope 1861) is known from localities in the Magdalena River Valley close to the western versant of Serrania de Perijá, and may be present in its Venezuelan counterpart. Elachistocleis panamensis (Dunn, Trapido and Evans 1948) is distributed along the Magdalena River Valley, extending to the dry areas of La Guajira, and thus could also be present in Venezuelan territory.

Conservation

Amphibians are facing an extinction crisis. Globally at least 32% of all described species are currently threatened with extinction (IUCN 2016), a number that may be underestimated because amphibian faunas are poorly-known in many regions. This percentage of threatened amphibians is noticeably higher than other vertebrate groups that have been comprehensively assessed, specifically mammals (23%) and birds (12%) [Baille et al. 2004; IUCN 2016]. The factors driving the global amphibian population declines are diverse, but are predominantly anthropogenic and intrinsically linked to human population growth (Gascon et al. 2007). Habitat loss is the number one threat to amphibians, followed by pollution. The emerging disease chytridiomycosis, caused by Batrachochytrium dendrobatidis (Bd), and climate change are also important threats, and have been linked to rapid enigmatic amphibian declines, especially in relatively cool, wet, diverse habitats in alpine, temperate, and tropical areas (Hof et al. 2011; Catenazzi 2015; Berger et al. 2016).

There have been several attempts to assess the extinction risk for Venezuelan amphibians, direct or indirectly (Vial and Saylor 1993; La Marca 1995; Rodriguez and Rojas-Suarez 1995, 1999, 2008; Barrio-Amorós 2001; Young et al. 2004; Molina et al. 2009; Barrio-Amorós and Torres 2010). More recently, Rodriguez et al. (2015) re-assessment of the extinction risk of Venezuelan fauna mentioned that 12% of the amphibian species are threatened. About half of the species of amphibians (47%) in this assessment are reported as Least Concern, 13% as Near Threatened, 12% as threatened (Vulnerable, Endangered, or Critically Endangered), and 23% as Data Deficient. Only one species is considered extinct, the harlequin toad Atelopus vogli, and about 5% of the Venezuelan amphibian fauna is still under evaluation.

Based on these results, the most threatened group of amphibians are the harlequin toads, Atelopus, followed by the aromobatines of the genera “Prostherapis, Aromobates, and Mannophrynine, and the land frogs of the genus Pristimantis. Additionally, some of the species of these groups are Near Threatened or In Evaluation, thus they will possibly become categorized as threatened in the future. Also, the high proportions of species in the Data Deficient category (23%) can significantly mask the real number of amphibians in risk, and this is especially noticeable in the families Craugastoridae, Dendrobatidae, and some Hylidae. All of these threatened amphibians are Venezuelan endemics, and in most cases, they have a small geographic distribution range in medium elevation or highlands of the Andes, Coastal Ranges, or the Pantepui.

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Appendix 1. Species known to inhabit Venezuela but not yet described or correctly identified.

Several species of amphibians known to be in Venezuela lack proper names. Some are undescribed (Atelopus sp 1, Pristimantis sp 4); some are incorrectly identified (even for a long time), e.g., Allobates aff. marchesianus, or the Osteochelus taurusin complex, with at least two different candidate species identified in Venezuela (Jungfer et al. 2013); others include a new Adenomera sp. Q (Fouquet et al. 2014), and the five new candidate species of Stefania reported by Kok et al. (2016), which all deserve proper descriptions and names. Certain taxa, like Rhinella cf. proboscidea are documented by a photograph, although without vouchers. However, those complexes with more than one taxon (for example Boana xerophylla complex, apparently with at least three or four different putative species) are not counted as individual species herein. For general purposes, this listing accounts for species included in the biodiversity of Venezuela, while acknowledging the need to properly work on them. McDiarmid and Paolillo (1988) provide a very interesting list of species collected during the Neblina expeditions (from 1983 to 1987), which are mostly in the USNM and AMNH. The importance of checking these collections is acknowledged, as many species await proper attention. Among them, this catalog does not include species without at least a recognized genus. For example, the Bufonid sp. nov. from the higher camps of Neblina could be a Metaphryniscus, but without corroborating data it is not included on this list. In the case of the many “Eleutherodactylus” from Neblina, only those with a decent number of collected specimens are counted as candidate species. Of these 33 species, some are mentioned for the first time herein; while some have been mentioned in the literature but are not correctly identified or yet described.

Family Bufonidae

Atelopus sp. 1

Distribution: Endemic to Macizo de Guaramacal, between Trujillo and Portuguesa states, Venezuelan Andes.

Remarks: Though this new Atelopus was discovered in December 1987, it has not been described yet (García-Pérez and La Marca 2015). Its population status has been mentioned several times (García-Pérez 1997, 2005; García-Pérez and La Marca 2015). It appears as Atelopus sp. 2 in Rueda-Almonacid et al. (2005). The proper description of this species is imperative.

Selected references: García-Pérez 1997; La Marca and Lötters 1997; La Marca 2004; García-Pérez 2005; La Marca et al. 2005; Lötters et al. 2005; Rueda-Almonacid et al. 2005.

Atelopus sp. 2

Distribution: Endemic to near Queniquea, estado Táchira.

Remarks: This species was collected in 1988 and is not yet described (A. Chacón and CBA, in prep.).

Rhinella cf. proboscidea (Spix, 1824)

Holotype: ZSM 1145/0

Type locality: River Solimoes, Brazil.

Distribution: Upper and middle Amazon, from Peru to Manaus. This species is referred in Venezuela through a picture by Javier Mesa taken in the middle section of La Escalera, Sierra de Lema, Bolivar state (Image 26), that was compared with similar Rhinella (proboscidea, dapsilis). At this time, we conclude that it looks more like proboscidea than any other species, pending the collection and examination of more specimens.

Family Centrolenidae

“Cochranella” sp.

Distribution: Temiche, base of Mount Marahuaka, Amazonas state.

Remarks: Rivero (1961) reported a “Cochranella sp.” from Temiche, at the base of Mount Marahuaka, a tepui in Amazonas state, Venezuela. Goin (1968) mentions it could be Hyalinobatrachium taylori, but its poor condition prevents identification. It also could be “C.” duidaeana, known from a higher altitude (2,140 m) in the same general area, or any other kind of glassfrog (or a Hylid, as Rivero proved to confuse his Centrolenella pulidoi also from Duida with Boana benitezi — Faivovich et al. 2005; this work). As this area has been not well studied, more attention must be paid for new species. Unfortunately, old specimens of glassfrogs lose their characteristics quickly if not properly preserved, such as the specimen MCZ 28569.

References: Goin 1968; Rivero 1961.

Family Dendrobatidae

Allobates aff. marchesianus (Melin, 1941)

Syntype: NHMG 509.

Type locality: “Tarácuá, Río Uaupés [Estado do Amazonas,] Brazil”.

Distribution: Reported from the foothills of Cerros Duida and Marahuaka, two neighboring tepuis in Amazonas state.
Remarks: Considered herein under one putative species name are all reports of *Allobates brunneus* and *A. marchesianus* from Venezuela, until the proper identity of such populations is resolved. They are considered aff. *marchesianus* rather than aff. *brunneus* as the *marchesianus* type locality is closer to the Venezuelan southern border and the possibility of its presence is still likely. *Allobates brunneus* is certainly not present in Venezuela, as its type locality lies south of the Amazon and, though similar, the Venezuelan material does not fall into the recent redescription of *A. brunneus* from its type locality (Lima et al. 2009).


*Allobates* “Neblina species”

Remarks: This is the *Colosthetus* sp. A in McDiarmid and Paolillo (1988) and already tested by Grant et al. (2006). It awaits formal description.

*Aromobates* sp. 1

Remarks: This species was discovered during the Calderas RAP (Barrio-Amorós 2010; Barrio-Amorós and Molina 2010) and demonstrated as a candidate species by Barrio-Amorós and Santos (2012); however, it was not described since the only materials were tadpoles and recent metamorphs.

References: Barrio-Amorós 2010a; Barrio-Amorós and Molina 2010; Barrio-Amorós and Santos 2012.

*Mannophryne* sp. 1 (aff. *herminae*)

Distribution: Santos and Barrio-Amorós (genetic unpub. data) indicate that *Mannophryne* from Bejuma and surroundings in Carabobo state, is not the same *M. herminae* that inhabits Rancho Grande. FRR, based on preliminary morphology and bioacoustics, suggests that *M. herminae* from RG is apparently conspecific to those in San Esteban valley, but differs from the population in Bejuma.

References: Barrio-Amorós 2006; Barrio-Amorós et al. 2010b.

*Mannophryne* sp. 2

Distribution: The *Mannophryne* sympatric with *M. oblitteratus* at Guatopo National Park is indeed a new species to be described (J.C. Santos and CBA; unpub. data). Barrio-Amorós and Santos refrained from describing it due to the lack of permits at the time.

Family Hemiphractidae

*Stefania* sp. 1

Distribution: Serranía de la Neblina, Amazonas state.


*Stefania* sp. 2

Distribution: Abakapá-tepui, Bolívar state.

References: Kok et al. 2016.

*Stefania* sp. 3

Distribution: Angasima-tepui, Bolívar state.

References: Kok et al. 2016.

*Stefania* sp. 4

Distribution: Upuigma-tepui, Bolívar state.

References: Kok et al. 2016.

*Stefania* sp. 5

Distribution: Amurí-tepui, Bolívar state.

References: Kok et al. 2016.

*Stefania* sp. 6

Distribution: Murisipán-tepui, Bolívar state.

References: Kok et al. 2016.
Family Hylidae

Dendropsophus aff. minutus (Peters, 1872)

**Syntypes:** ZMB 7456 (five specimens. D. minutus sensu stricto).

**Type locality:** Nova Friburgo, Rio de Janeiro, Brazil (for D. minutus sensu stricto).

**Distribution:** Based on the phylogeny of Gehara et al. (2014) the Guianan lineages are widely distributed in Venezuela (Andes, Cordillera de La Costa, Amazon, and Guiana Shield), Guiana, Suriname, French Guiana, and northern Brazil. No name is available yet for those populations that could represent more than one species.

**Remarks:** Gehara et al. (2014) showed this is a composite of species with at least four mitochondrial lineages in Venezuela that are not part of the clade of D. minutus species complex. Gehara et al. (2014) proposed to remove *Hyla goughi* Bouleneger, 1911 from the synonymy of D. minutus and allocate it in the “Guianan lineages”. However, in a recent visit to the BMNH, CBA corroborated the holotype of *Hyla goughi* from Trinidad as *Dendropsophus microcephalus*.


**Boana sp. (cf. rufitela)**

**Distribution:** A few localities along the Caribbean coastal range and Maracaibo Lake basin, also scattered in Caribbean Colombia. Those localities are widespread in the literature but there is no mention of a viable population.

**Remarks:** In all previous lists of Venezuelan amphibians this species was confused with *H. albomarginatus*, a species found in southeastern Brazil. Barrio-Amorós (2004) identified Venezuelan populations as *H. rufitelas*, apparently the closest similar congenic, known from Nicaragua through southern Central America to northern Colombia. Only one specimen collected in Maracaibo, Zulia, Venezuela (MCZ 15369; Fig. 185) looks very much like *H. albomarginatus*; all other citations are based on misidentifications of juvenile *H. crepitans* or *H. pugnax*, both in Venezuela and Colombia. Here it is concluded that: 1- the specimen MCZ 15369 from a site in Brazil was mislabeled and corresponds with *H. albomarginatus*, or 2- there is an unidentified species (not *albomarginatus* or *rufitelas*) to be collected and described in Caribbean Venezuela and Colombia.

**Selected references:** The following references are about either *H. rufitelas* or *H. albomarginatus*: Barrio-Amorós 2004, 2013; Fouquette 1968; Ginés 1959; Lutz 1927; Mendoza 2014; Rivero 1961; Spix 1824; Tello 1968.

**Osteocephalus aff. planiceps** Cope, 1874 [Ca1_Neblina411]

**Refereed specimen:** AMNH A-131254.

**Distribution:** Only known from base of Cerro de la Neblina (Base Camp, Rio Baria, Amazonas state) at southern border of Venezuela. Probably more extensive through southern Venezuela and northern Brazil.

**Remarks:** There is only a single report of this species in the country by Jungfer et al. (2013), based on specimen AMNH A-131254. In the phylogeny of *Osteocephalus* inferred by these authors, the species is recovered as sister to a clade integrated by *O. leoniae*, *O. fuscifacies*, and *O. deridens*, and not clustered with any terminal of *O. planiceps*. Based on this phylogenetic evidence, they refer it as a confirmed candidate species [Ca1_Neblina411] related to *Osteocephalus planiceps*. In the *Osteocephalus planiceps* species group (Jungfer et al. 2013). Description of this new species is pending. Other specimens collected during the 1983–1987 expedition to Neblina and deposited in AMNH, USNM and MBUCV as *O. taurinus* (McDiarmid and Paolillo 1988) probably correspond to this new taxon.

**References:** McDiarmid and Paolillo 1988; Jungfer et al. 2013.

**Osteocephalus aff. taurinus** [Ca2_Neblina410]

**Refereed specimen:** AMNH A-131245.

**Distribution:** Only known from the base of Cerro de la Neblina (Base Camp, Rio Baria, Amazonas state) at the southern border of Venezuela. Probably more extensive through southern Venezuela and northern Brazil.

**Remarks:** Jungfer et al. (2013) discovered this species from a single specimen (AMNH A-131245). In the phylogeny of *Osteocephalus* inferred by these authors it is recovered as sister to a clade integrated by *O. oophagus*, *O. taurinus*, and three other undescribed species, and is not clustered with any terminal of *O. taurinus sensu stricto*. They refer it as a confirmed candidate species [Ca2_Neblina410] related to *O. taurinus*. In the *Osteocephalus taurinus* species group (Jungfer et al. 2013). Description of this new species is pending. Other specimens collected during the 1983–1987 expedition to Neblina and deposited in AMNH, USNM and MBUCV as *O. taurinus* (McDiarmid and Paolillo 1988) probably correspond to this new taxon.

**References:** McDiarmid and Paolillo 1988; Jungfer et al. 2013.
**Osteocephalus aff. taurinus** [Ca3_AJC2959_3181]

**Referred specimens:** MHNLS 18325, 19907, 20034, and 20083.

**Distribution:** Only known from northwestern Amazonas state, southern Venezuela.

**Remarks:** In the phylogeny of *Osteocephalus* inferred by Jungfer et al. (2013) this taxon is recovered as sister to a clade integrated by *O. oophagus*, *O. taurinus*, and two other undescribed species, and is not clustered with any terminal of *O. taurinus sensu stricto*. Jungfer et al. (2013) refer it as a confirmed candidate species [Ca3_AJC2959_3181] related to *O. taurinus*. In the *Osteocephalus taurinus* species group (Jungfer et al. 2013). Description of this new species is pending. Numerous specimens deposited in MHNLS, EBRG, and MBUCV as *O. taurinus* (McDiarmid and Paolillo 1988) probably correspond to this new taxon. The identity of populations in Bolívar and Delta Amacuro previously referred as *O taurinus* (Barrio-Amorós 1998; Gorzula and Señaris 1999; Señaris and Ayarzagüena 2004) must be reevaluated.

**References:** Jungfer et al. 2013.

Family Leptodactylidae

**Adenomera sp. 1**

**Distribution:** A single sample was analyzed by Fouquet et al. (2014) from the border between Brazil, Colombia, and Venezuela.

**Remarks:** This is the *Adenomera* sp. Q of Fouquet et al. (2014).

**References:** Fouquet et al 2014.

**Adenomera cf. simonstuarti** Angulo and Icochea, 2010

**Holotype:** MHNSM 18218.

**Type locality:** “Campamento Segakiato, c. 340 m asl, Río Camisea, District of Echarate, Province of La Convención, Región de Cusco, Peru.”

**Distribution:** Recently described from the eastern versant of the Peruvian Andes. Widely distributed along the eastern Andean piedmont from Peru to Venezuela. In Venezuela, reported from Calderas, Barinas state by Barrio-Amorós (2010a) as *Adenomera* sp.

**Remarks:** Fouquet et al. (2014) found a sample from Calderas, Barinas, and embedded it into a clade with *A. simonstuarti*.

**Selected references:** Angulo and Icochea 2010; Barrio-Amorós et al. 2010a; Fouquet et al. 2014.

**Leptodactylus sp. 1**

**Distribution:** Andes of Venezuela, at least in Mérida, Trujillo, and Táchira states, around 1,000 m asl (CBA personal observation). E. La Marca restricts it to the Meseta de Mérida.

**Remarks:** Currently in description by E. La Marca, who listed it as Endangered in the fourth edition of the Venezuelan Red List (La Marca 2015).

**References:** La Marca 2015.

**Leptodactylus aff. macrosternum** Miranda-Ribeiro, 1926

**Type:** MZUSP 448.

**Type locality:** Bahia (Brazil).

**Distribution:** Venezuela north of the Orinoco river, in open areas.

**Remarks:** De Sá et al. (2014) restrict the distribution of *L. macrosternum* to its type locality in Bahia, Brazil, leaving the Venezuelan populations without a proper name to be applied. *Leptodactylus ocellatus* Girard, 1853, a previous name by which many Venezuelan populations were known, is now under synonymy of *L. latrans* (Steffen, 1815), a southern South American species. A thorough review of the *latrans* species group is needed. Heyer (2014) indicates the Venezuelan examples in his work are a different new species, compared with *L. latrans sensu lato*. In the meantime, *Leptodactylus aff. macrosternum* is used for the Venezuelan populations to be consistent with the classic literature. In the *latrans* species group of De Sá et al. (2014).

Family Strabomantidae

*Pristimantis* sp. 1

**Distribution:** Páramo Los Granates, Mérida state.
**Remarks:** The Andes harbor a surprising diversity of high mountain *Pristimantis*, all very similar in shape. Some preliminary molecular work (Barrio-Amorós et al. 2013) determined the validity of several candidate species.
**References:** Barrio-Amorós et al. 2013.

*Pristimantis* sp. 2

**Distribution:** La Motús, subparamo in Mérida Andes.
**Remarks:** A second new species, allied to *P. lancinii*, but different in some morphological and molecular traits, awaits proper attention.
**References:** Barrio-Amorós et al. 2013.

*Pristimantis* sp. 3

**Distribution:** Piñango, Mérida state.
**Remarks:** Barrio-Amorós et al. (2013) show this species as a close ally of *P. bricenii*.
**References:** Barrio-Amorós et al. 2013.

*Pristimantis* sp. 4

**Distribution:** Murisipan-tepui, 05º53’N, 62º04’W, 2,350 m asl, Estado Bolivar (MHNLS 11383).
**Remarks:** This species, collected by S. Gorzula, awaits a proper description (CBA, in prep.).

*Pristimantis* sp. 5

**Distribution:** Cerro de la Neblina, Amazonas state; camps I, III, and VII.
**Remarks:** This species corresponds to *Eleutherodactylus* “bromeliad” in McDiarmid and Paolillo (1988).

*Pristimantis* sp. 6

**Distribution:** Cerro de la Neblina, Amazonas state; camps I, II, X, and XI.
**Remarks:** This species corresponds to *Eleutherodactylus* “bromlike” in McDiarmid and Paolillo (1988).

*Pristimantis* sp. 7

**Distribution:** Cerro de la Neblina, Amazonas state; camps VII and XI.
**Remarks:** This species corresponds to *Eleutherodactylus* “stream” in McDiarmid and Paolillo (1988).

*Pristimantis* sp. 8

**Distribution:** Cerro de la Neblina, Amazonas state; camps VII, XI.
**Remarks:** This species corresponds to *Eleutherodactylus* “violet” in McDiarmid and Paolillo (1988).

Family Plethodontidae

*Bolitoglossa* cf. *altamazonica* (Cope, 1874)

**Syntypes:** ANSP or USNM, now lost or destroyed.
**Terra typica:** “Nauta,” Departamento Loreto, Perú.
**Distribution:** Valle del río Doradas.
**Remarks:** Barrio-Amorós et al. (2015), when reporting *B. leandrae* for Venezuela, state the presence of *B. altamazonica* must be corroborated. The only specimen of this species reported, a juvenile (ULABG 3392), cannot be positively identified and possibly represents *B. leandrae*. However, until more data is available, the possibility of a widespread Amazonian species in the Doradas River valley cannot be ruled out, as the area is an important locality for upper Amazonian herpetofauna (Barrio et al. 1999; Barrio 1999a, 2001; Barrio-Amorós et al. 2002, 2003; Chacón et al. 2002; Barrio-Amorós and Chacón 2004; Barrio-Amorós and Díaz de Pascual 2008).
**References:** Barrio-Amorós 2004; Barrio-Amorós et al. 2015; Schargel and Rivas 2003.
Appendix 2. Taxonomic list of the Amphibians of Venezuela.

In the past 15 years, amphibian taxonomy has undergone many changes. As a living science, many genetic studies on previously unknown species or groups are still being performed, and the taxonomic panorama is being modified continuously. While it is not imperative to follow the latest papers on each taxon, here the most recent taxonomic reviews based on genetic and morphological data are presented, and specific points of disagreement are explained. The following sources are used for the taxa indicated: Faivovich et al. (2005) and Duellman et al. (2016) for Arboranae; Faivovich et al. (2010) and Duellman et al. (2016) for Phyllomedusidae; Faivovich et al. (2012) for Pleurodema, and Faivovich et al. (2014), for Ceratophryidae; Frost et al. (2006) for Amphibia in general (with exceptions); Grant et al. (2006, 2017) and Santos et al. (2009) for Dendrobatidae; Guayasamin et al. (2009) for Allophrynidae and Centrostenidae; Castroviejo-Fisher et al. (2015) for Hemiphractidae; Hedges et al. (2008) and Heinicke et al. (2009, 2018) for Terraranae; Jungfer et al. (2013) for Osteocephalus and Tepuihyla; De Sá et al. (2012, 2014) for Microhylidae and Leptodactylus; and Blackburn and Wake (2011) for higher amphibian taxa. Many of these works are in conflict, and decisions are presented here on which is the most appropriate for each taxon. This comprehensive list also shows the species known to exist in Venezuela but not yet described, and under our subjective view taxa that have been incorrectly identified (see Appendix 1).

*Species with an asterisk are endemic to Venezuela.

CLASS AMPHIBIA Gray, 1825

Order ANURA Fischer von Waldheim, 1813

Family Allophrynidae Goin, Goin and Zug, 1978

Genus Allophryne Gaige, 1926

1. Allophryne ruthveni Gaige, 1926

Family Bufonidae Gray, 1825

Genus Amazophrynella Fouquet, Recoder, Teixeira, Cassimiro, Amaro, Camacho, Damasceno, Carnaval, Moritz and Rodrigues, 2012

2. Amazophrynella minuta (Melin, 1941)

Genus Atelopus Duméril and Bribon, 1841

3. Atelopus carbonerensis Rivero, 1972*
4. Atelopus chrysocorallus La Marca, 1996*
5. Atelopus cruciger (Lichtenstein and Martens, 1856)*
6. Atelopus mucubajensis Rivero, 1974*
7. Atelopus oxyrhynchus Boulenger, 1903*
8. Atelopus pinangoi Rivero, 1980*
9. Atelopus sorianoii La Marca, 1983*
10. Atelopus tamaense La Marca, Garcia-Perez and Renjifo, 1990
11. Atelopus vogli Müller, 1934*
12. Atelopus sp.1
13. Atelopus sp. 2

Genus Metaphryniscus Señaris, Ayarzagüena and Gorzula, 1994

14. Metaphryniscus sosae Señaris, Ayarzagüena and Gorzula, 1994*
Genus *Oreophrynella* Boulenger, 1895

15. *Oreophrynella cryptica* Señaris, 1995*
16. *Oreophrynella huberi* Diego-Arransay and Gorzula, 1988*
17. *Oreophrynella macconelli* Boulenger, 1900
18. *Oreophrynella nigra* Señaris, Ayarzagüena and Gorzula, 1994*
19. *Oreophrynella quelchii* (Boulenger, 1895)
20. *Oreophrynella vasquezii* Señaris, Ayarzagüena and Gorzula, 1994*

Genus *Rhaebo* Cope, 1862

21. *Rhaebo glaberrimus* (Gunther, 1868)
22. *Rhaebo guttatus* Schneider, 1799
23. *Rhaebo haematiticus* Cope, 1862
24. *Rhaebo nasicus* (Werner, 1903)

Genus *Rhinella* Fitzinger, 1826

25. *Rhinella ceratophrys* (Boulenger, 1882)
26. *Rhinella horribilis* (Wiegmann, 1833)
27. *Rhinella humboldti* (Gallardo, 1965)
28. *Rhinella margaritifera* (Laurenti, 1758)
29. *Rhinella marina* (Linnaeus, 1758)
30. *Rhinella merianae* (Gallardo, 1965)
32. *Rhinella cf. proboscidea* (Spix, 1824)
33. *Rhinella sclerocephala* (Mijares-Urrutia and Arends, 2001)*
34. *Rhinella sternosignata* (Günther, 1859)

Family *Centrolenidae* Taylor, 1951

Subfamily *Centroleninae* Taylor, 1951

Genus *Centrolene* Jiménez de la Espada, 1872

35. *Centrolene altitudinalis* (Rivero, 1968)*
38. *Centrolene venezuelensis* (Rivero, 1968)*

Genus *Cochranella* Taylor, 1951

39. “*Cochranella*” duidaeana (Ayarzagüena, 1992)*
40. “*Cochranella*” riveroi (Ayarzagüena, 1992)*
41. “*Cochranella*” sp. 1

Genus *Espadarana* Guayasamin, Castroviejo-Fischer, Trueb, Ayarzagüena, Rada and Vilà, 2009

42. *Espadarana andina* (Rivero, 1968)

Genus *Vitreorana* Guayasamin, Castroviejo-Fischer, Trueb, Ayarzagüena, Rada and Vilà, 2009

43. *Vitreorana antisthenesi* (Goin, 1963)*
44. *Vitreorana castroviejoi* (Ayarzagüena and Señaris, 1997)*
45. *Vitreorana gorzulae* (Ayarzagüena, 1992)
46. *Vitreorana helenae* (Ayarzagüena, 1992)
Subfamily Hyalinobatrachinae Guayasamin, Castroviejo-Fischer, Trueb, Ayarzagüena, Rada and Vilà, 2009

Genus Celsiella Guayasamin, Castroviejo-Fischer, Trueb, Ayarzagüena, Rada and Vilà, 2009

47. Celsiella revocata (Rivero, 1985)*
48. Celsiella vozmedianoi (Ayarzagüena and Señaris, 1997)*

Genus Hyalinobatrachium Ruiz-Carranza and Lynch, 1991

49. Hyalinobatrachium cappellei van Lidth de Jeude, 1904
50. Hyalinobatrachium duranti (Rivero, 1985)*
51. Hyalinobatrachium fragile (Rivero, 1985)*
52. Hyalinobatrachium guairarepanense Señaris, 1999*
53. Hyalinobatrachium iaspidiense (Ayarzagüena, 1992)*
54. Hyalinobatrachium mesai Barrio-Amorós and Brewer-Cariás, 2008*
55. Hyalinobatrachium mondolfii Ayarzagüena and Señaris, 2001*
56. Hyalinobatrachium orientale (Rivero, 1985)*
57. Hyalinobatrachium orocostale (Rivero, 1968)*
58. Hyalinobatrachium pallidum (Rivero, 1985)*
59. Hyalinobatrachium tatayoi (Castroviejo-Fisher, Ayarzagüena and Vilà, 2007)*
60. Hyalinobatrachium taylori (Goin, 1968)

Family Ceratophryidae Tschudi, 1838

Genus Ceratophrys Wied-Neuwied, 1824

61. Ceratophrys calcarata Boulenger, 1890

Family Ceuthomantidae Heinicke, Duellman, Trueb, Means, MacCulloch and Hedges, 2009

Genus Ceuthomantis Heinicke, Duellman, Trueb, Means, MacCulloch and Hedges, 2009

62. Ceuthomantis aracamuni (Barrio-Amorós and Molina, 2006)*
63. Ceuthomantis cavernibardus (Myers et Donnelly, 1997)
64. Ceuthomantis duellmani Barrio-Amorós, 2010*

Family Craugastoridae Hedges, Duellman and Heinicke, 2008

Genus Tachiramantis Heinicke, Barrio-Amorós and Hedges, 2015

65. Tachiramantis lentiginosus (Rivero, 1984)*

Family Dendrobatidae Cope, 1865

Subfamily Aromobatinae Grant, Frost, Caldwell, Gagliardo, Haddad, Kok, Means, Noonan, Schargel and Wheeler, 2006
Genus *Prostherapis* Cope, 1868

67. *Prostherapis dunnii* Rivero, 1961*

Genus *Allobates* Zimmermann and Zimmermann, 1988

68. *Allobates algorei* Barrio-Amorós and Santos, 2009*
69. *Allobates bromelicola* (Test, 1956)*
70. *Allobates caribae* (Barrio-Amorós, Rivas and Kaiser, 2006)*
71. *Allobates femoralis* (Boulenger, 1884)
72. *Allobates humilis* (Rivero, 1980)*
73. *Allobates mandelorum* (Schmidt, 1932)*
74. *Allobates aff. marchesianus* (Melin, 1941)
75. *Allobates pittieri* (La Marca, Manzanilla and Mijares-Urrutia, 2004)*
76. *Allobates sanmartini* (Rivero, Langone and Prigioni, 1986)*
77. *Allobates undulatus* (Myers and Donnelly, 2001)*

Genus *Anomaloglossus* Grant, Frost, Caldwell, Gagliardo, Haddad, Kok, Means, Noonan, Schargel and Wheeler, 2006

78. *Anomaloglossus ayarzaguenai* (La Marca, 1997)*
79. *Anomaloglossus breweri* (Barrio-Amorós, 2006)*
80. *Anomaloglossus guanayensis* (La Marca, 1997)*
81. *Anomaloglossus moffetti* Barrio-Amorós and Brewer-Carias, 2008*
82. *Anomaloglossus murisipanensis* (La Marca, 1997)*
83. *Anomaloglossus parimae* (La Marca, 1997)*
84. *Anomaloglossus parkerai* (Meinhardt and Parmalee, 1996)*
85. *Anomaloglossus praderioi* (La Marca, 1997)*
86. *Anomaloglossus roraima* (La Marca, 1997)*
87. *Anomaloglossus rufulus* (Gorzula, 1990)*
88. *Anomaloglossus shrevei* (Rivero, 1961)*
89. *Anomaloglossus tamacuarensis* (Myers and Donnelly, 1997)
90. *Anomaloglossus tepuyensis* (La Marca, 1997)*
91. *Anomaloglossus triumfo* (Barrio-Amorós, Fuentes and Rivas, 2004)*
92. *Anomaloglossus verveeksnyderorum* Barrio-Amorós, Santos and Jovanovic 2009*
93. *Anomaloglossus wothuja* (Barrio-Amorós, Fuentes and Rivas, 2004)*

Genus *Aromobates* Myers, Paolillo and Daly, 1991

94. *Aromobates alboguttatus* (Boulenger, 1903)*
95. *Aromobates cannatellai* Barrio-Amorós and Santos, 2012*
96. *Aromobates capurinensis* (Péfaur, 1993)*
97. *Aromobates duranti* (Péfaur, 1985)*
98. *Aromobates eckersonae* Barrio-Amorós and Santos, 2012*
99. *Aromobates haydeae* (Rivero, 1978)*
100. *Aromobates inflexus* (Rivero, 1978)*
101. *Aromobates leopardalis* (Rivero, 1978)*
102. *Aromobates mayorgai* (Rivero, 1980)*
103. *Aromobates meridensis* (Dole and Durant, 1973)*
104. *Aromobates molinarii* (La Marca, 1985)*
105. *Aromobates nocturnus* Myers, Paolillo, and Daly, 1991*
106. *Aromobates ornativissimus* Barrio-Amorós, Rivero and Santos, 2011*
107. *Aromobates orostoma* (Rivero, 1978)*
108. *Aromobates saltuensis* (Rivero, 1980)*
109. *Aromobates serranus* (Péfaur, 1985)*
110. *Aromobates tokuko* Rojas-Runjaic, Infante and Barrio-Amorós, 2011*
111. *Aromobates walerarpi* (La Marca et Otero, 2012)*
112. *Aromobates zippeli* Barrio-Amorós and Santos, 2012*
113. *Aromobates spp.* 1
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**Genus Mannophryne** La Marca, 1992

114. *Mannophryne caquetio* Mijares-Urrutia and Arends-R., 1999*
115. *Mannophryne collaris* (Boulenger, 1912)*
116. *Mannophryne cordilleriana* La Marca, 1995*
117. *Mannophryne herminiae* (Boettger, 1893)*
118. *Mannophryne lamarcai* Mijares-Urrutia and Arends-R., 1999*
119. *Mannophryne larandina* (Yústiz, 1991)*
120. *Mannophryne leonardi* Manzanilla, La Marca, Jowers, Sánchez and Garcia-Paris, 2007*
121. *Mannophryne molinai* Rojas-Runjaic, Matta-Pereira and La Marca, 2018*
122. *Mannophryne neblina* (Test, 1956)*
123. *Mannophryne oblitterata* (Rivero, 1984)*
124. *Mannophryne orellana* Barrio-Amorós, Santos and Molina, 2010*
125. *Mannophryne riveroi* (Donoso-Barros, 1965)*
126. *Mannophryne speeri* La Marca, 2009*
127. *Mannophryne trujillensis* Vargas and La Marca, 2007*
128. *Mannophryne urticans* Barrio-Amorós, Santos and Molina, 2010*
129. *Mannophryne venezuelensis* Manzanilla, Jowers, La Marca and Garcia-Paris, 2007*
130. *Mannophryne vulcano* Barrio-Amorós, Santos and Molina, 2010*
131. *Mannophryne yustizi* (La Marca, 1989)*
132. *Mannophryne* sp. 1
133. *Mannophryne* sp. 2

**Subfamily Dendrobatinae Cope, 1865**

**Genus Ameerega** Bauer, 1986

134. *Ameerega picta* (Tschudi, 1838)
135. *Ameerega trivittata* (Spix, 1824)

**Genus Dendrobates** Wagler, 1830

136. *Dendrobates leucomelas* Steindachner, 1864

**Genus Minyobates** Myers, 1997

137. *Minyobates steyermarki* Rivero, 1971*

**Family Eleutherodactyldae Lutz, 1954**

**Subfamily Eleutherodactylinae Lutz, 1954**

**Genus Eleutherodactylus** Duméril and Bribon, 1841


**Subfamily Phyzelaphryninae Hedges, Duellman and Heinicke, 2008**

**Genus Adelophryne** Hoogmoed and Lescure, 1984

139. *Adelophryne gutturosa* Hoogmoed and Lescure, 1984

**Family Hemiphractidae Peters, 1862**

**Genus Cryptobatrachus** Ruthven, 1916
140. Cryptobatrachus remotus Infante, Rojas-Ruijac and Barrio-Amorós, 2009*

Genus Flectonotus Miranda-Ribeiro, 1920

141. Flectonotus fitzgeraldi (Parker, 1933)
142. Flectonotus pygmaeus (Boettger, 1893)

Genus Gastrotheca Fitzinger, 1843

143. Gastrotheca helenae Dunn, 1944
144. Gastrotheca nicefori Gaige, 1933
145. Gastrotheca ovifera Lichtenstein and Weinland, 1854*
146. Gastrotheca walkeri Duellman, 1980*
147. Gastrotheca williamsoni Gaige, 1922*
148. Gastrotheca yacambuensis Yústiz, 1976*

Genus Stefania Rivero, 1968

149. Stefania brevleri Barrio-Amoros and Fuentes, 2003*
150. Stefania ginesi Rivero, 1968*
151. Stefania goini Rivero, 1968*
152. Stefania marahuaquensis (Rivero, 1961)*
153. Stefania oculosa Señaris, Ayarzagüena and Gorzula, 1997*
154. Stefania percristata Señaris, Ayarzagüena and Gorzula, 1997*
155. Stefania riae Duellman and Hoogmoed, 1984*
156. Stefania riveroi Señaris, Ayarzagüena and Gorzula, 1997*
157. Stefania sateles Señaris, Ayarzagüena and Gorzula, 1997*
158. Stefania scalae Rivero, 1970*
159. Stefania schuberti Señaris, Ayarzagüena and Gorzula, 1997*
160. Stefania tamacuarina Myers and Donnelly, 1997

Family Hylidae Rafinesque, 1815

Subfamily Cophomantinae Hoffmann, 1878

Genus Hyloscirtus Peters, 1882

161. Hyloscirtus jahni (Rivero, 1961)*
162. Hyloscirtus japreria Rojas-Ruijac, Infante-Rivero, Salerno and Meza-Joya, 2018
163. Hyloscirtus lascinius (Rivero, 1969)*
164. Hyloscirtus platydactylus (Boulenger, 1905)*

Genus Boana Wagler, 1830

165. Boana alemani (Rivero, 1964)*
166. Boana benitezi (Rivero, 1961)*
167. Boana boans (Linnaeus, 1758)
168. Boana calcarata (Troschel, 1848)
169. Boana cinerascens (Spix, 1824)
170. Boana graphica (Spix, 1824)
171. Boana hobbsi (Cochran and Goin, 1970)
172. Boana jimenezi Señaris and Ayarzagüena, 2006*
173. Boana lanciformis (Cope, 1870)
174. Boana lemai (Rivero, 1971)
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175. Boana multifasciata (Günther, 1859)
176. Boana ornatissima (Noble, 1923)
177. Boana pugnax (Schmidt, 1857)
178. Boana punctata (Schneider, 1799)
179. Boana roraima Duellman and Hoogmoed, 1992
180. Boana rhythmica (Señaris and Ayarzagüena, 2002)*
181. Boana sibleszi (Rivero, 1971)
182. Boana tepuiana Barrio-Amorós and Brewer-Carias, 2008
183. Boana wavrini (Parker, 1936)
184. Boana xerophylla (Duméril and Bibron, 1841)
185. Boana sp. (cf. rufitela)

Genus Myersiohyla Faivovich, Haddad, García, Frost, Campbell and Wheeler, 2005

186. Myersiohyla aromatica (Ayarzagüena and Señaris, 1994)*
187. Myersiohyla chamaeleo Faivovich, McDiarmid and Myers, 2013*
188. Myersiohyla inparquesi (Ayarzagüena and Señaris, 1994)*
189. Myersiohyla loveridgei (Rivero, 1961)*
190. Myersiohyla neblinaria Faivovich, McDiarmid and Myers, 2013*

Subfamily Dendropsophinae Fitzinger, 1843

Genus Dendropsophus Fitzinger, 1843

191. Dendropsophus amicorum (Mijares-Urrutia, 1998)*
192. Dendropsophus battersbyi (Rivero, 1961)*
193. Dendropsophus luteooCELLATUS (Roux, 1927)*
194. Dendropsophus marmoratus (Laurenti, 1768)
195. Dendropsophus meridensis (Rivero, 1961)*
196. Dendropsophus microcephalus (Cope, 1886)
197. Dendropsophus minusculus (Rivero, 1971)
198. Dendropsophus aff. minutus (Peters, 1872)
199. Dendropsophus parviceps (Boulenger, 1882)
200. Dendropsophus pelidnus (Duellman, 1989)
201. Dendropsophus sarayacuensis (Shreve, 1935)
202. Dendropsophus yaracuyanus (Mijares-Urrutia and Rivero, 2000)*

Subfamily Lophyohylinae Miranda-Ribeiro, 1926

Genus Aparasphenodon Miranda-Ribeiro, 1920

203. Aparasphenodon venezolanus (Mertens, 1950)

Genus Osteocephalus Steindachner, 1862

204. Osteocephalus helenaE (Ruthven, 1919)
205. Osteocephalus leprieurii (Duméril and Bibron, 1841)
206. Osteocephalus aff. planiceps (Ca1)
207. Osteocephalus taurinus Steindachner,1862
208. Osteocephalus aff. taurinus (sp 1; Ca2)
209. Osteocephalus aff. taurinus (sp 2; Ca3)

Genus Phytotriades Jowers, Downie and Cohen, 2008

210. Phytotriades auratus (Boulenger, 1917)

Genus Tepuihyla Ayarzagüena, Señaris and Gorzula, 1993
211. *Tepuihyla aecii* (Ayarzagüena, Señaris and Gorzula, 1992)*
212. *Tepuihyla edelcae* (Ayarzagüena, Señaris and Gorzula, 1992)*
213. *Tepuihyla exophthalma* (Smith and Noonan, 2001)
215. *Tepuihyla obscura* (Kok, Ratz, Tegelaar, Aubret and Means, 2015)*

**Genus Trachycephalus** Fitzinger, 1843

217. *Trachycephalus resinifictrix* (Goeldi, 1907)
218. *Trachycephalus typhonius* (Laurenti, 1768)

**Subfamily Pseudinae Fitzinger, 1843**

**Genus Pseudis** Wagler, 1830

219. *Pseudis paradoxa* (Linnaeus, 1758)

**Genus Scarthyla** Duellman et de Sá, 1988

220. *Scarthyla vigilans* (Solano, 1971)

**Subfamily Scinaxinae Duellman, Marion and Hedges, 2016**

**Genus Scinax** Wagler, 1830

221. *Scinax baumgardneri* (Rivero, 1961)*
222. *Scinax boesemani* (Goin, 1966)
223. *Scinax danae* (Duellman, 1986)*
224. *Scinax exiguis* (Duellman, 1986)*
225. *Scinax fuscomarginatus* (Lutz, 1925)
226. *Scinax garbei* (Miranda-Ribeiro, 1926)
228. *Scinax marriquie* Barrio-Amorós, Orellana and Chacón, 2004
229. *Scinax nebulosus* (Spix, 1824)
230. *Scinax rostratus* (Peters, 1863)
231. *Scinax ruber* (Laurenti, 1768)
233. *Scinax x-signatus* (Spix, 1824)

**Genus Sphaenorhynchus** Tschudi, 1838

234. *Sphaenorhynchus lacteus* Daudin, 1802

**Family Leptodactylidae Werner, 1896**

**Subfamily Leiuperinae Bonaparte, 1850**

**Genus Engystomops** Jiménez de la Espada, 1872

235. *Engystomops pustulosus* (Cope, 1864)

**Genus Physalaemus** Fitzinger, 1826
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236. Physalaemus cuvieri (Fitzinger, 1826)
237. Physalaemus ephippifer (Steindachner, 1864)
238. Physalaemus fisheri (Boulenger, 1890)

**Genus Pleurodema** Tschudi, 1838

239. Pleurodema brachyops (Cope, 1869)

**Genus Pseudopaludicola** Miranda-Ribeiro, 1926

240. Pseudopaludicola boliviana Parker, 1927
241. Pseudopaludicola llanera Lynch, 1989

**Subfamily Leptodactylinae** Werner, 1896

**Genus Adenomera** Fitzinger, 1867

243. Adenomera andreae (Müller, 1923)
244. Adenomera hylaedactyla (Cope, 1868)
245. Adenomera cf. simonstuarti (Angulo and Icochea, 2010)
246. Adenomera sp. 1

**Genus Leptodactylus** Fitzinger, 1826

247. Leptodactylus bolivianus Boulenger, 1898
248. Leptodactylus colombiensis Heyer, 1994
249. Leptodactylus diedrus Heyer, 1994
250. Leptodactylus fragilis (Brocchi, 1877)
251. Leptodactylus fuscus (Schneider, 1799)
252. Leptodactylus guianensis Heyer and de Sá, 2011
253. Leptodactylus insularum Barbour, 1906
254. Leptodactylus knudseni Heyer, 1972
255. Leptodactylus leptodactyloides (Andersson, 1945)
256. Leptodactylus lithonastes Heyer, 1996
257. Leptodactylus longirostris Boulenger, 1882
258. Leptodactylus aff. macrosternum Miranda-Ribeiro, 1926
259. Leptodactylus magistris Mijares-Urrutia, 1997*
260. Leptodactylus mystaceus (Spix, 1824)
261. Leptodactylus pentadactylus (Laurenti, 1768)
262. Leptodactylus petersii (Steindachner, 1864)
263. Leptodactylus poecilochilus (Cope, 1862)
264. Leptodactylus rhodomystax Boulenger, 1884
265. Leptodactylus riveroi Heyer and Pyburn, 1983
266. Leptodactylus rugosus Noble, 1923
267. Leptodactylus sabanensis Heyer, 1994
268. Leptodactylus turimiquensis Heyer, 2005*
269. Leptodactylus validus Garman, 1888
270. Leptodactylus sp. 1

**Genus Lithodytes** Fitzinger, 1843

271. Lithodytes lineatus (Schneider, 1799)

**Family Microhylidae** Günther, 1858
Genus *Adelastes* Zweifel, 1986

272. *Adelastes hylonomos* Zweifel, 1986*

**Subfamily Gastrophryninae** Fitzinger, 1843

Genus *Chiasmocleis* Méhély, 1904

273. *Chiasmocleis hudsoni* Parker, 1940

Genus *Ctenophryne* Mocquard, 1904

274. *Ctenophryne geayi* Mocquard, 1904

Genus *Elachistocleis* Parker, 1927

275. *Elachistocleis ovalis* (Schneider, 1799)
276. *Elachistocleis pearsei* (Ruthven, 1914)
277. *Elachistocleis surinamensis* (Daudin, 1802)

Genus *Hamptophryne* Carvalho, 1954

278. *Hamptophryne boliviana* (Parker, 1927)

**Subfamily Otophryninae** Wasserssug and Pyburn, 1987

Genus *Otophryne* Boulenger *in* Lankaster, 1900

279. *Otophryne pyburni* Campbell and Clarke, 1998
280. *Otophryne robusta* Boulenger, 1900

Genus *Synapturanus* Carvalho, 1954

282. *Synapturanus mirandaribeiroi* Nelson and Lescure, 1975
283. *Synapturanus salseri* Pyburn, 1975

**Family Phyllomedusidae** Günther 1859

Genus *Agalychnis* Cope, 1864

284. *Agalychnis medinae* (Funkhouser, 1962)*

Genus *Callimedusa* Duellman, Marion and Hedges, 2016

285. *Callimedusa tomopterna* (Cope, 1868)

Genus *Pithecopus* Cope, 1866

286. *Pithecopus hypochondrialis* (Daudin, 1802)

Genus *Phyllomedusa* Wagler, 1830

287. *Phyllomedusa bicolor* (Boddaert, 1772)
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288. *Phyllomedusa neildi* Barrio-Amorós, 2006*
289. *Phyllomedusa tarsius* (Cope, 1868)
290. *Phyllomedusa trinitatis* Mertens, 1926
291. *Phyllomedusa vaillanti* Boulenger, 1882
292. *Phyllomedusa venusta* Duellman and Trueb, 1971

**Family Pipidae Gray, 1825**

**Genus Pipa** Laurenti, 1768

293. *Pipa arrabali* Izecksohn, 1976
294. *Pipa parva* Ruthven and Gaige, 1923
295. *Pipa pipa* (Linnaeus, 1758)

**Family Ranidae Rafinesque-Schmaltz, 1814**

**Genus Lithobates** Fitzinger, 1843

296. *Lithobates catesbeianus* (Shaw, 1802)
297. *Lithobates palipes* (Spix, 1824)

**Family Strabomantidae Hedges, Duellman and Heinicke, 2008**

**Incertae sedis**

**Genus Dischidodactylus** Lynch, 1979

298. *Dischidodactylus colonnelloii* Ayarzagüena, 1985*
299. *Dischidodactylus duidensis* (Rivero, 1968)*

**Subfamily Pristimantinae Ohler and Dubois, 2012**

**Genus Pristimantis** Jiménez de la Espada, 1871

300. *Pristimantis abakapa* Rojas-Runjaic, Salerno, Señaris and Pauly, 2013*
301. *Pristimantis ameliae* Barrio-Amorós, 2011*
302. *Pristimantis anolirex* (Lynch, 1983)
303. *Pristimantis anotis* (Walker and Test, 1955)*
304. *Pristimantis aureoventris* Kok, Means and Bosseruyt, 2011
305. *Pristimantis auricarens* (Myers and Donnelly, 2008)*
306. *Pristimantis avius* (Myers and Donnelly, 1997)*
307. *Pristimantis bicumulus* (Peters, 1864)*
308. *Pristimantis boconoensis* (Rivero and Mayorga, 1973)*
309. *Pristimantis briceni* (Boulenger, 1903)*
310. *Pristimantis cantitans* (Myers and Donnelly, 1996)*
311. *Pristimantis colostichos* (La Marca and Smith, 1982)*
312. *Pristimantis conservatio* Barrio-Amorós, Heinicke and Hedges, 2013*
313. *Pristimantis culatensis* (La Marca, 2007)*
314. *Pristimantis fasciatus* Barrio-Amorós, Rojas-Runjaic and Infante, 2007*
315. *Pristimantis flabellidiscus* (La Marca, 2007)*
316. *Pristimantis geminus* Kaiser, Barrio-Amorós, Rivas-Fuenmayor, Steilein and Schmidt, 2015*
317. *Pristimantis ginesi* (Rivero, 1964)*
318. *Pristimantis gryllus* Barrio-Amorós, Guayasamin and Hedges, 2012
319. *Pristimantis guaiquinimensis* (Schlüter and Rödder, 2007)*
320. *Pristimantis hoogmoedi* Kaiser, Barrio-Amorós, Rivas-Fuenmayor, Steilein and Schmidt, 2015*
321. Pristimantis imthurni Kok, 2013*
322. Pristimantis incertus (Lutz, 1927)*
323. Pristimantis jabonensis (La Marca, 2007)*
324. Pristimantis janescameroni Kok, 2013*
325. Pristimantis lancinii (Donoso-Barros, 1965)*
326. Pristimantis lassoalcalai Barrio-Amorós, Rojas-Runjaic and Barros, 2010*
327. Pristimantis longicorpus Kaiser, Barrio-Amorós, Rivas-Fuenmayor, Steilein and Schmidt, 2015*
328. Pristimantis marahuaka (Fuentes and Barrio-Amorós, 2004)*
329. Pristimantis marmoratus (Boulenger, 1900)
330. Pristimantis melanoproctus (Rivero, 1984)*
331. Pristimantis memorans (Myers and Donnelly, 1997)*
332. Pristimantis mondolfii (Rivero, 1984)*
333. Pristimantis muchimuk Barrio-Amorós, Mesa, Brewer-Carías and McDiarmid, 2010*
334. Pristimantis nicefori (Cochran and Goin, 1970)
335. Pristimantis nubisilva Kaiser, Barrio-Amorós, Rivas-Fuenmayor, Steilein and Schmidt, 2015*
336. Pristimantis paramerus (Rivero, 1984)*
337. Pristimantis pariaignomus Kaiser, Barrio-Amorós, Rivas-Fuenmayor, Steilein and Schmidt, 2015*
338. Pristimantis pedimontanus (La Marca, 2004)*
339. Pristimantis pleurostriatus Rivero, 1984*
340. Pristimantis pruinatus Myers and Donnelly, 1996*
341. Pristimantis pulvinatus Rivero, 1984*
342. Pristimantis reticulatus Walker and Test, 1955*
343. Pristimantis rhigophilus (La Marca, 2007)*
344. Pristimantis rivasi Barrio-Amorós, Rojas-Runjaic and Barros, 2010*
345. Pristimantis riveroi Lynch and La Marca, 1993*
346. Pristimantis rozei Rivero, 1961*
347. Pristimantis sarisarinama Barrio-Amorós and Brewer-Carías, 2008*
348. Pristimantis stenodiscus (Walker and Test, 1955)*
349. Pristimantis telefericus La Marca, 2005*
350. Pristimantis thyellus (La Marca, 2007)*
351. Pristimantis tubernasus Rivero, 1984 *
352. Pristimantis turik Barrio-Amorós, Rojas-Runjaic and Infante, 2007*
353. Pristimantis turumiquirensis Rivero, 1961*
354. Pristimantis vanadisae La Marca, 1984*
355. Pristimantis vilarsi Melin, 1941
356. Pristimantis yaviensis Myers and Donnelly, 1996*
357. Pristimantis yukpa Barrio-Amorós, Rojas-Runjaic and Infante, 2007*
358. Pristimantis yuruaniensis Rödder and Jungfer, 2008*
359. Pristimantis yustizi Barrio-Amorós and Chacón, 2004*
360. Pristimantis zeuctotylus Lynch and Hoogmoed, 1977
361. Pristimantis sp. 1
362. Pristimantis sp. 2
363. Pristimantis sp. 3
364. Pristimantis sp. 4
365. Pristimantis sp. 5
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367. Pristimantis sp. 7
368. Pristimantis sp. 8

Subfamily Strabomantinae Hedges, Duellman and Heinicke, 2008

Genus Strabomantis Cope, 1862

369. Strabomantis biporcuatus (W. Peters, 1863)*
Catalogue of the amphibians of Venezuela

Order URODELA Duméril, 1805

Family Plethodontidae Gray, 1850

Subfamily Hemidactylineae Hallowell, 1856

Genus **Bolitoglossa** Duméril, Bibron and Duméril, 1854

- 370. *Bolitoglossa* cf. *altamazonica* (Cope, 1884)
- 371. *Bolitoglossa borburata* Trappido, 1942*
- 372. *Bolitoglossa guaramacalensis* Schargel, García-Pérez and Smith, 2002*
- 373. *Bolitoglossa leandrae* Acevedo, Wake, Marquez, Silva, Franco and Amezquita, 2013
- 375. *Bolitoglossa orestes* Brame and Wake, 1962*

Order GYMOPHIONA Müller, 1831

Family Caeciliaidae Rafinesque, 1814

Genus **Caecilia** Linnaeus, 1758

- 377. *Caecilia flavopunctata* Roze and Solano, 1963*
- 378. *Caecilia subnigricans* Dunn, 1942
- 379. *Caecilia tentaculata* Linnaeus, 1758

Family Rhinatrematidae Nussbaum, 1977

Genus **Epicrionops** Boulenger, 1883

- 380. *Epicrionops niger* (Dunn, 1942)

Family Siphonopidae Bonaparte, 1850

Genus **Microcaecilia** Taylor, 1968

- 381. *Microcaecilia rabei* (Roze and Solano, 1963)*

Genus **Siphonops** Wagler, 1830

- 382. *Siphonops annulatus* (Mikan, 1820)

Family Typhlonectidae Taylor, 1968

Genus **Nectocaecilia** Taylor, 1968

- 383. *Nectocaecilia petersii* (Boulenger, 1882)

Genus **Potomotyphlus** Taylor, 1968

- 384. *Potomotyphlus kaupii* (Berthold, 1858)

Genus **Typhlonectes** Peters, 1879

- 385. *Typhlonectes natans* (Fisher, 1879)
- 386. *Typhlonectes compressicauda* Duméril and Bibron, 1841
Appendix 3. List of amphibian species of Venezuela by biogeographic areas. 1. Andes (including Cordillera de Mérida, Venezuelan part of Cordillera Oriental de Colombia, and Sierra de Perijá); 2. Coastal Range (including eastern and western sections); 3. Llanos; 4. Amazon lowlands; 5. Guiana shield (including lowlands, uplands, and highlands); and 6. Maracaibo basin. An asterisk after name indicates species is endemic for Venezuela.

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Appendix 3 (continued). List of amphibian species of Venezuela by biogeographic areas. 1. Andes (including Cordillera de Mérida, Venezuelan part of Cordillera Oriental de Colombia, and Sierra de Perijá); 2. Coastal Range (including eastern and western sections); 3. Llanos; 4. Amazon lowlands; 5. Guiana shield (including lowlands, uplands, and highlands); and 6. Maracaibo basin. An asterisk after name indicates species is endemic for Venezuela.

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Appendix 3 (continued). List of amphibian species of Venezuela by biogeographic areas. 1. Andes (including Cordillera de Mérida, Venezuelan part of Cordillera Oriental de Colombia, and Sierra de Perijá); 2. Coastal Range (including eastern and western sections); 3. Llanos; 4. Amazon lowlands; 5. Guiana shield (including lowlands, uplands, and highlands); and 6. Maracaibo basin. An asterisk after name indicates species is endemic for Venezuela.

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### Appendix 3 (continued). List of amphibian species of Venezuela by biogeographic areas.

1. Andes (including Cordillera de Mérida, Venezuelan part of Cordillera Oriental de Colombia, and Sierra de Perijá); 2. Coastal Range (including eastern and western sections); 3. Llanos; 4. Amazon lowlands; 5. Guiana shield (including lowlands, uplands, and highlands); and 6. Maracaibo basin. An asterisk after name indicates species is endemic for Venezuela.

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Appendix 3 (continued). List of amphibian species of Venezuela by biogeographic areas. 1. Andes (including Cordillera de Mérida, Venezuelan part of Cordillera Oriental de Colombia, and Sierra de Perijá); 2. Coastal Range (including eastern and western sections); 3. Llanos; 4. Amazon lowlands; 5. Guiana shield (including lowlands, uplands, and highlands); and 6. Maracaibo basin. An asterisk after name indicates species is endemic for Venezuela.

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</table>
### Appendix 3 (continued). List of amphibian species of Venezuela by biogeographic areas.

1. Andes (including Cordillera de Mérida, Venezuelan part of Cordillera Oriental de Colombia, and Sierra de Perijá); 2. Coastal Range (including eastern and western sections); 3. Llanos; 4. Amazon lowlands; 5. Guiana shield (including lowlands, uplands, and highlands); and 6. Maracaibo basin. An asterisk after name indicates species is endemic for Venezuela.

<table>
<thead>
<tr>
<th>Species</th>
<th>Andes</th>
<th>Coastal Range</th>
<th>Llanos</th>
<th>Amazon Lowlands</th>
<th>Guiana Shield</th>
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<td>Scinax danae*</td>
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</table>
**Appendix 3 (continued). List of amphibian species of Venezuela by biogeographic areas.** 1. Andes (including Cordillera de Mérida, Venezuelan part of Cordillera Oriental de Colombia, and Sierra de Perijá); 2. Coastal Range (including eastern and western sections); 3. Llanos; 4. Amazon lowlands; 5. Guiana shield (including lowlands, uplands, and highlands); and 6. Maracaibo basin. An asterisk after name indicates species is endemic for Venezuela.

<table>
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<td>Scinax garbei</td>
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<tr>
<td>Scinax kennedyi</td>
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<tr>
<td>Scinax manriquei</td>
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<tr>
<td>Scinax nebulosus</td>
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<td>Scinax rostratus</td>
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<tr>
<td>Scinax ruber</td>
<td>X X</td>
</tr>
<tr>
<td>Scinax wandae</td>
<td>X X</td>
</tr>
<tr>
<td>Scinax x-signatus</td>
<td>X X X X X</td>
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<tr>
<td>Sphaenorhynchus lacteus</td>
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<tr>
<td>Tepuihyla aecii*</td>
<td>X</td>
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<tr>
<td>Tepuihyla edelcae*</td>
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<td>Tepuihyla exophthalma</td>
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<td>Tepuihyla luteolabris*</td>
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<td>Tepuihyla obscura*</td>
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<td>Pseudopaludicola llanera</td>
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<td>Adenomera hylaedactyla</td>
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<tr>
<td>Adenomera cf. simonstuarti</td>
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<tr>
<td>Adenomera sp. 1</td>
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<tr>
<td>Leptodactylus bolivianus</td>
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<tr>
<td>Leptodactylus colombiensis</td>
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</table>
### Appendix 3 (continued). List of amphibian species of Venezuela by biogeographic areas.

1. Andes (including Cordillera de Mérida, Venezuelan part of Cordillera Oriental de Colombia, and Sierra de Perijá); 2. Coastal Range (including eastern and western sections); 3. Llanos; 4. Amazon lowlands; 5. Guiana shield (including lowlands, uplands, and highlands); and 6. Maracaibo basin. An asterisk after name indicates species is endemic for Venezuela.

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Presence</th>
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</table>
### Appendix 3 (continued). List of amphibian species of Venezuela by biogeographic areas.

1. Andes (including Cordillera de Mérida, Venezuelan part of Cordillera Oriental de Colombia, and Sierra de Perijá); 2. Coastal Range (including eastern and western sections); 3. Llanos; 4. Amazon lowlands; 5. Guiana shield (including lowlands, uplands, and highlands); and 6. Maracaibo basin. An asterisk after name indicates species is endemic for Venezuela.

<table>
<thead>
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<th>Species</th>
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<td>Bolitoglossa guaramacalensis*</td>
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<td>Bolitoglossa orestes*</td>
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<td>Caecilia flavopunctata*</td>
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<td>Caecilia subnigricans</td>
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<td>Caecilia tentaculata</td>
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### Appendix 4. Addition of species for Venezuela between 2009 and 2018 (not including those in Appendix 1).

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<tbody>
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<td>Amazophrynella minuta</td>
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<td>Rhinella beebei</td>
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<td>Rhinella merianae</td>
<td>Narvaes and Rodrigues 2009</td>
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<td>Rhinella nattereri</td>
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<tr>
<td>Allobates algorei</td>
<td>Barrio-Amorós and Santos 2009</td>
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<td>Allobates femoralis</td>
<td>Barrio-Amorós and Santos 2010</td>
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<td>Anomaloglossus veerbeeksnyderorum</td>
<td>Barrio-Amorós et al. 2010</td>
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<td>Aromobates kannatellai</td>
<td>Barrio-Amorós and Santos 2012</td>
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<tr>
<td>Aromobates ericksonae</td>
<td>Barrio-Amorós and Santos 2012</td>
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<tr>
<td>Aromobates inflexus</td>
<td>Barrio-Amorós and Santos 2012; this work, by implication</td>
</tr>
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<td>Aromobates ornatissimus</td>
<td>Barrio-Amorós et al. 2011</td>
</tr>
<tr>
<td>Aromobates tokuko</td>
<td>Rojas-Runjaic et al. 2011</td>
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<td>Aromobates Walterarpi</td>
<td>La Marca and Otero 2012</td>
</tr>
<tr>
<td>Aromobates zippeli</td>
<td>Barrio-Amorós and Santos 2012</td>
</tr>
<tr>
<td>Mannophryne molinai</td>
<td>Rojas-Runjaic et al. 2018</td>
</tr>
<tr>
<td>Mannophryne orellana</td>
<td>Barrio-Amorós et al. 2010b</td>
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<tr>
<td>Mannophryne speeri</td>
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<tr>
<td>Mannophryne urticans</td>
<td>Barrio-Amorós et al. 2010b</td>
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<td>Mannophryne vulcano</td>
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<td>Centrolene daidalea</td>
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<td>Centrolene nodosticta</td>
<td>Rojas-Runjaic et al. 2012</td>
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<tr>
<td>Boana roraima</td>
<td>Barrio-Amorós et al. 2011</td>
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Appendix 4 (continued).  Addition of species for Venezuela between 2009 and 2018 (not including those in Appendix 1).

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<thead>
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<td><em>Hyloscirtus japreria</em></td>
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<td><em>Myersiohyla chamaeleo</em></td>
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<td><em>Myersiohyla neblinaria</em></td>
<td>Faivovich et al. 2013</td>
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<td><em>Osteocephalus helena</em></td>
<td>Jungfer et al. 2013</td>
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<td><em>Phytotriades auratus</em></td>
<td>Rivas and De Freitas 2015</td>
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<tr>
<td><em>Scinax fuscomarginatus</em></td>
<td>Brusquetti et al. 2014</td>
</tr>
<tr>
<td><em>Tepuhiyla exophilhalma</em></td>
<td>Barrio-Amorós et al. 2010h</td>
</tr>
<tr>
<td><em>Tepuhiyla obscura</em></td>
<td>Kok et al. 2015</td>
</tr>
<tr>
<td><em>Leptodactylus guianensis</em></td>
<td>Heyer and De Sá 2011</td>
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<td><em>Leptodactylus pentadactylus</em></td>
<td>De Sá et al. 2014</td>
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<td><em>Leptodactylus rhodomystax</em></td>
<td>Camargo et al. 2016</td>
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<td><em>Ceuthomantis duellmani</em></td>
<td>Barrio-Amorós 2010</td>
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<tr>
<td><em>Pristimantis abakapa</em></td>
<td>Rojas-Runjaic et al. 2013</td>
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<tr>
<td><em>Pristimantis auroventris</em></td>
<td>Jablonsky et al. (2017)</td>
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<td><em>Pristimantis ameliae</em></td>
<td>Barrio-Amorós 2011</td>
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<td><em>Pristimantis conservatio</em></td>
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</tr>
<tr>
<td><em>Pristimantis gemenus</em></td>
<td>Kaiser et al. 2015</td>
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<td><em>Pristimantis gryllus</em></td>
<td>Barrio-Amorós et al. 2012</td>
</tr>
<tr>
<td><em>Pristimantis hoogmoedi</em></td>
<td>Kaiser et al. 2015</td>
</tr>
<tr>
<td><em>Pristimantis imthurni</em></td>
<td>Kok 2013</td>
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<td><em>Pristimantis jamescameroni</em></td>
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<td><em>Pristimantis lassoalcalai</em></td>
<td>Barrio-Amorós et al. 2010</td>
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<td><em>Pristimantis longicorpus</em></td>
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<td><em>Pristimantis muchimuk</em></td>
<td>Barrio-Amorós et al. 2010</td>
</tr>
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<td><em>Pristimantis nubisilva</em></td>
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<td><em>Pristimantis pariagnostus</em></td>
<td>Kaiser et al. 2015</td>
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<td><em>Pristimantis rivasi</em></td>
<td>Barrio-Amorós et al. 2010</td>
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<tr>
<td><em>Bolitoglossa mucuyensis</em></td>
<td>García et al. 2013</td>
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<tr>
<td><em>Bolitoglossa leandrae</em></td>
<td>Barrio-Amorós et al. 2015</td>
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<tr>
<td><em>Bolitoglossa tamaense</em></td>
<td>Barrio-Amorós et al. 2015</td>
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<tr>
<td><em>Tachiramantis</em></td>
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Appendix 5. Species deleted from previous list (Barrio-Amorós 2009c) or reported after and deleted herein.

<table>
<thead>
<tr>
<th>Species and reason of deleting</th>
<th>References</th>
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</thead>
<tbody>
<tr>
<td><em>Rhinella granulosa</em> (taxonomic review reveals that the former subspecies must be elevated to full species rank and <em>R. granulosa</em> is not present in Venezuela)</td>
<td>Narvaes and Rodrigues 2009</td>
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<tr>
<td><em>Rhinella humboldti</em> (confused with <em>R. beebei</em>, the latter recovered from synonymy of <em>R. humboldti</em>), could be present in the Maracaibo lake basin</td>
<td>Murphy et al. 2017</td>
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<tr>
<td><em>Cochranella oyampiensis</em> (confused with <em>C. helena</em>)</td>
<td>Señaris 1997; Kok and Castroviejo 2008</td>
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<tr>
<td><em>Hyalinobatrachium crucifasciatum</em> (synonym of <em>H. cappellei</em>)</td>
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</table>
Appendix 5 (continued). Species deleted from previous list (Barrio-Amorós 2009c) or reported after and deleted herein.

<table>
<thead>
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<th>Former name</th>
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<th>Current family</th>
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<tr>
<td><em>Hyalinobatrachium eccentricum</em> (synonym of <em>H. cappellei</em>)</td>
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<td><em>Hyalinobatrachium ibama</em> (confused with and probably synonym of <em>H. pallidum</em>)</td>
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<tr>
<td><em>Hyalinobatrachium ignioculus</em> (synonym of <em>H. cappellei</em>)</td>
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<td><em>Allobates aff. brunneus</em> (confused with <em>A. aff. marchesianus</em>)</td>
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<tr>
<td><em>Hyloscirtus estevesi</em> (confused with a described <em>Hyloscirtus</em>; synonym of <em>H. jahni</em>)</td>
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<td><em>Hypsoiboas angelicus</em> (synonym of <em>Boana roraima</em>)</td>
<td>Barrio-Amorós et al. 2011</td>
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<td><em>Hypsoiboas pulidoi</em> (synonym of <em>Boana benitezi</em>)</td>
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<td><em>Boana rosenbergii</em> (confused with <em>B. boans</em>)</td>
<td>Chacón et al. 2005; see comment under <em>H. boans</em></td>
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<td><em>Osteocephalus buckleyi</em> (confused with <em>O. helenae</em>)</td>
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<td><em>Osteocephalus cabrerae</em> (confused with <em>O. helenae</em>)</td>
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<td><em>Scinax trilineatus</em> (synonym of <em>S. fuscomarginatus</em>)</td>
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<td><em>Tepuihyla celsae</em> (synonym of <em>T. luteolabris</em>)</td>
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<td><em>Tepuihyla galani</em> (synonym of <em>T. rodriguezi</em>)</td>
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<tr>
<td><em>Tepuihyla rimarum</em> (synonym with <em>T. rodriguezi</em>)</td>
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<td><em>Osteocephalus buckleyi</em> (confused with <em>O. helenae</em>)</td>
<td>Jungfer et al. 2013</td>
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<tr>
<td><em>Leptodactylus ocellatus</em> (confused with <em>L. aff. macrosternum</em> in Venezuela; synonym of <em>L. latrans</em>)</td>
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<td><em>Bolitoglossa spongai</em> (synonym of <em>B. orestes</em>)</td>
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<td><em>Pristimantis anonymus</em> (<em>nomen nudum</em>)</td>
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<td><em>Pristimantis terraebolivaris</em> (synonym of <em>P. incertus</em>)</td>
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<td><em>Pristimantis stegolepis</em> (synonym of <em>P. vilarsi</em>)</td>
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<td><em>Pristimantis tepuiensis</em> (synonym of <em>P. guaiquinimensis</em>)</td>
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</table>

Appendix 6. Taxonomic changes at the genus and species levels, along with emendations that occurred since the last systematic list by Barrio-Amorós (2009c), including changes to new species added in that list.

<table>
<thead>
<tr>
<th>Former name</th>
<th>Current name</th>
<th>Current family</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Dendrophryniscus minutus</em></td>
<td><em>Amazophrynella minuta</em></td>
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<td>Fouquet et al. 2012a,b</td>
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<td><em>Allobates rufulus</em></td>
<td><em>Anomaloglossus rufulus</em></td>
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<td>Barrio-Amorós and Santos 2010</td>
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<td><em>Trachycephalus venulosus</em></td>
<td><em>Trachycephalus typhonius</em></td>
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<td><em>Rhaebo nasicus</em></td>
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<td><em>Centrolene altitudinalis</em></td>
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</table>
Appendix 6 (continued). Taxonomic changes at the genus and species levels, along with emendations that occurred since the last systematic list by Barrio-Amoros (2009c), including changes to new species added in that list.

<table>
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<tr>
<th>Genus/Species</th>
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<td>Centrolene notostictum</td>
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<td>Centrolene venezuelense</td>
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<td>Hyalinobatrachium crurifasciatum</td>
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<td>Heinicke et al. 2007, Padial et al. 2014</td>
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<td>Pristimantis lentiginosus</td>
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Appendix 6 (continued). Taxonomic changes at the genus and species levels, along with emendations that occurred since the last systematic list by Barrio-Amoros (2009c), including changes to new species added in that list.

<table>
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<td>Dubois 2017</td>
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<td>Scinax trilineatus</td>
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<td>Relictivomer pearsei</td>
<td>Elachistocleis pearsei</td>
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