

**First record of the Colombian endemic plump toad  
*Osornophryne percrassa* Ruiz-Carranza and Hernández-Camacho, 1976  
(Anura: Bufonidae) from the Department of Risaralda,  
Central Mountain Range of Colombia**

**Primer registro del sapo endémico colombiano  
*Osornophryne percrassa* Ruiz-Carranza y Hernández-Camacho, 1976  
(Anura: Bufonidae) en el departamento de Risaralda,  
cordillera Central de Colombia**

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**Abstract**

The Colombian endemic plump toad *Osornophryne percrassa* Ruiz-Carranza and Hernández-Camacho, 1976, is registered for first time in the Department of Risaralda, Colombia, inside the protected area "Distrito de Conservación de Suelos Campoalegre". This new record fills a geographical gap between the known localities reported in the departments of Caldas and Quindío. We suggest a conservation and management program for this and other threatened amphibian species in the Department.

**Keywords:** Andean forests, Colombian Andes, Geographic distribution.

**Resumen**

El sapo endémico colombiano *Osornophryne percrassa* Ruiz-Carranza y Hernández-Camacho, 1976, es registrado por primera vez en el departamento de Risaralda, Colombia, al interior del Distrito de Conservación de Suelos Campoalegre. Este nuevo registro llena un vacío geográfico entre las localidades registradas en los departamentos de Caldas y Quindío. Se sugiere la implementación de un programa de conservación y manejo de esta y otras especies amenazadas en el departamento.

**Palabras clave:** Andes colombianos, Bosques andinos, Distribución geográfica.

The Andean toad genus *Osornophryne* is an endangered lineage composed by 11 currently described species, confined to a small, but topographically complex biogeographic area (northern Andes of Colombia and Ecuador) (Páez-Moscoso and Guayasamin 2012). Five species occur in Colombia, which are: *O. antisana* Hoogmoed 1987, *O. bufoniformis* (Peracca 1904), *O. guacamayo* Hoogmoed 1987, *O. percrassa* Ruiz-Carranza and Hernández-Camacho 1976, and

*O. talipes* Cannatella 1986 (Vanegas-Guerrero *et al.* 2016). Among these species, the Colombian endemic plump toad *O. percrassa* (Figure 1) is restricted to the Colombian Central Andes in the departments of Antioquia, Caldas, Quindío, Tolima and Valle del Cauca (from north to south), at elevations between 2700 and 3840 m (Hoogmoed 1987, Vanegas-Guerrero *et al.* 2016). *Osornophryne percrassa* is a leaf-litter dwelling species, commonly found under rocks and debris

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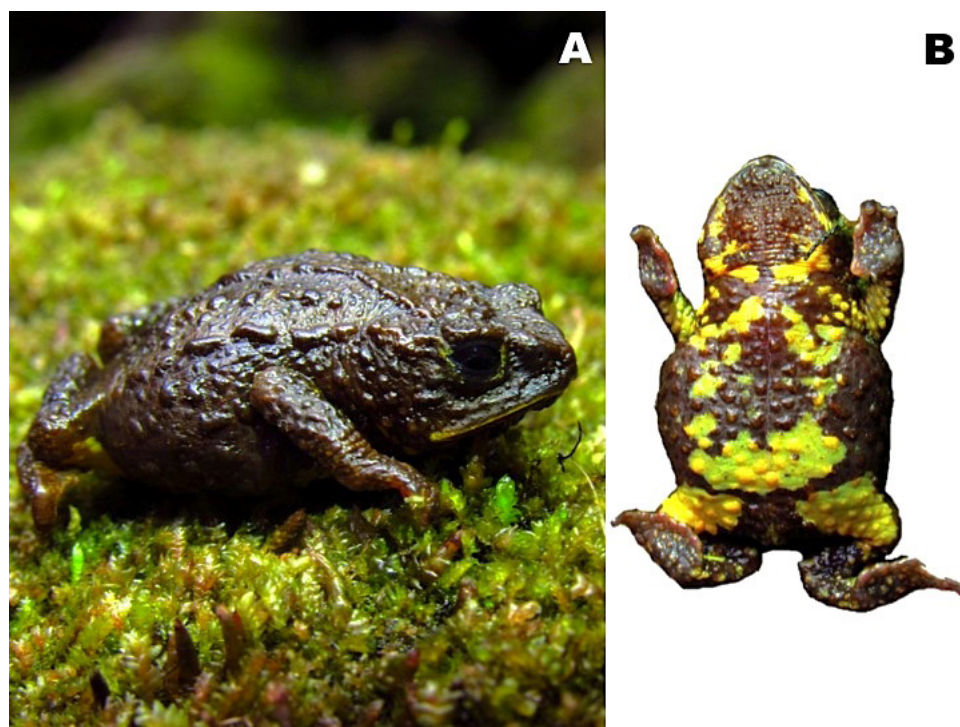
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in trails borders and roads, inside the Andean forests and “Páramos”; however, it has not been recorded in open disturbed habitats (Bernal and Quevedo 2004, Vanegas-Guerrero *et al.* 2016). Several aspects about its morphology, habitat use, behavior, and geographic distribution have been discussed in different works (Ruiz-Carranza and Hernández-Camacho 1976, Escobar-Lasso and González-Duran 2012, Burbano-Yandi *et al.* 2015, Vanegas-Guerrero *et al.* 2016).

*Osornophryne percrassa* is listed as Endangered (EN) under criteria B1ab (iii) (IUCN 2015) and is listed as “Vulnerable” on the Colombian Red List of Amphibians, because the known geographical distribution is less than 5.000 km<sup>2</sup> and its suitable habitat on the Colombian Central Mountain range is fragmented and declining, both in extent and quality (Bernal and Quevedo 2004). Also, *O. percrassa* is listed as an Endangered species by the Colombian Ministerio de Ambiente y Desarrollo Sostenible (MADV 2017). A potential distribution model showed a larger area of suitable habitat than was previously assumed for *O. percrassa*, including areas around the National Natural Park Los Nevados (Vanegas-Guerrero *et al.* 2016). Here we provide new information about the

distribution of the plump toad *O. percrassa*, based on first records of this species for the department of Risaralda. Also, we have gathered and updated all known localities throughout the distribution range of *O. percrassa*, which might be used to do spatial analysis and design conservation actions.

Two specimens of *O. percrassa* were recorded in Andean forest at the sector of El Retén, road to Potosí, municipality of Santa Rosa de Cabal, department of Risaralda, Colombia (04°51'48" N; 75°30'39" W, WGS84, elevation 2856 m). This locality is located inside the protected area “Distrito de Conservación de Suelos (DCS) Campoalegre”. A juvenile individual (lacking testes, 19.6 mm snout-vent-length) was collected on 19 April 2013 at 17:30 h, on a concrete wall at the edge of a fragment forest, and an adult male (22.8 mm SVL) was observed on 5 August 2017 at 11:00 h, under a rotten trunk. Both specimens show the diagnostic characteristics of the species: truncated snout with non-projected papilla and light-yellow spots on the belly (Figure 1A) (Ruiz-Carranza and Hernández-Camacho 1976, Páez-Moscoso and Guayasamin 2012). The specimens were photographed, but only first individual was euthanized and



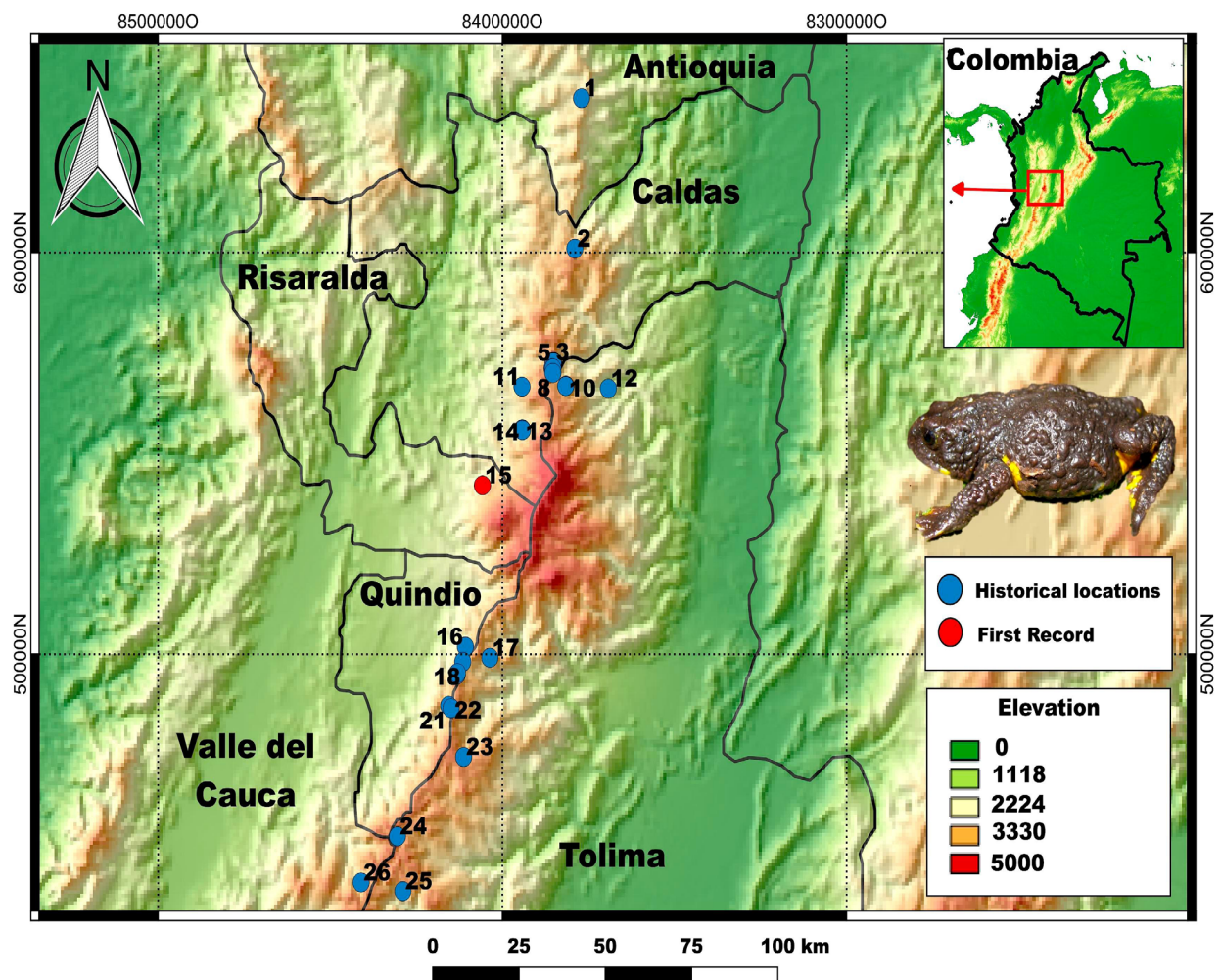
**Figure 1.** Dorsolateral and ventral view of an adult male *Osornophryne percrassa* (SVL 22.8 mm; not collected) from El Retén, municipality of Santa Rosa de Cabal, department of Risaralda, Colombia. Photo: Julián Andrés Rojas-Morales.

deposited at the amphibian's collection of the Universidad de Santa Rosa de Cabal (accession number CUS-A 0012); the second specimen (Figure 1B) was photographed and released in the same place where it was found. These are the first records of *O. percrassa* for the department of Risaralda, filling a geographical gap between the known localities reported in Caldas and Quindío departments (Figure 2, Table 1). The record of *O. percrassa* in Risaralda was highly predictable, taking into account the distribution model showed by Vanegas-Guerrero *et al.* (2016).

Individuals of *O. percrassa* were found inside a protected area DCS Campoalegre, but it is important to highlight that this category is not strict and rigorous in terms of biodiversity conservation, since it allows different uses of lands, such as livestock and agricultural exploitation, as we observed between the years

2014 and 2017 (Figure 3). In this way, it corresponds to Corporación Autónoma Regional de Risaralda (CARDER), to take necessary measures to avoid the cattle breeding expansion and agricultural frontier, over the natural Andean forests where *O. percrassa* and other endemic and threatened amphibians have been found, such as *Centrolene quindianum* and *Andinobates bombetes* (Mantilla *et al.* 2015).

Unfortunately, *O. percrassa* doesn't have a national conservation plan throughout its distribution range. Therefore, it is really important to do it with a committed network between researchers, NGO's, universities and local communities. To date, there are known 26 records of *O. percrassa* throughout its distribution range (Table 1). These records are distributed in five departments (Antioquia, Caldas, Quindío, Tolima and Valle del Cauca), and only



**Figure 2.** Known localities of *Osornophryne percrassa* in Colombia, showing previously known (blue dots) and new (red dot) records. Localities are shown in Table 1.



**Figure 3.** Panoramic view of the protected area “Distrito de Conservación de Suelos (DCS) Campoalegre”, department of Risaralda, Colombia, where *Osornophryne percrassa* was recorded. Note the extensive deforestation of the Andean forest due the cattle breeding inside the protected area. Photo: Julián Andrés Rojas-Morales.

in the department of Caldas has been established a conservation plan of the species in its territory (Burbano-Yandi *et al.* 2015). Therefore, is really urgent develop a conservation plan for this species in the territory of Risaralda.

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**Table 1.** List of historical and new (\*) localities of *Osornophryne percrassa*, from north to south in Colombia. CUS-A (Colección de anfibios Universidad de Santa Rosa de Cabal)

| Locality | Department      | Municipality        | Altitude (m) | Latitude    | Longitude    | Reference                                |
|----------|-----------------|---------------------|--------------|-------------|--------------|------------------------------------------|
| 1◇       | Antioquia       | Sonsón              | 3178         | 5°43'32"    | 75°15'08"    | Loaiza-Piedrahita et al. 2014            |
| 2◇       | Caldas          | Pensilvania         | 3406         | 5°23'27.26" | 75°16'10.77" | Vanegas-Guerrero et al. 2016             |
| 3◇       | Caldas          | Neira               | 3594         | 5°8'17.52"  | 75°19'32.35" | Vanegas-Guerrero et al. 2016             |
| 4◇       | Caldas          | Neira               | 3450         | 5°8'15.29"  | 75°19'35.00" | Vanegas-Guerrero et al. 2016             |
| 5◇       | Caldas          | Neira               | 3450         | 5°8'12.61"  | 75°19'34.47" | Vanegas-Guerrero et al. 2016             |
| 6◇       | Caldas          | Neira               | 3450         | 5°7'26.40"  | 75°19'44.26" | Vanegas-Guerrero et al. 2016             |
| 7◇       | Caldas          | Neira               | 3588         | 5°7'25.60"  | 75°19'37.15" | Vanegas-Guerrero et al. 2016             |
| 8◇       | Caldas          | Neira               | 3615         | 5°6'49.94"  | 75°19'37.20" | Vanegas-Guerrero et al. 2016             |
| 9◇       | Tolima          | Herveo              | 3840         | 5°57.86"    | 75°17'35.38" | Vanegas-Guerrero et al. 2016             |
| 10◇      | Tolima          | Herveo              | 3200         | 5°54"       | 75°17'37"    | Ruiz-Carranza and Hernández-Camacho 1976 |
| 11◇      | Caldas          | Manizales           | 2820         | 5°4'59.44"  | 75°24'27.37" | Rojas-Morales et al. 2014                |
| 12◇      | Tolima          | Herveo              |              | 5°4'45"     | 75°10'56"    | Mueses-Cisneros 2013                     |
| 13◇      | Caldas          | Villamaría          | 2850         | 4°59'17.31" | 75°24'24.66" | Rojas-Morales et al. 2014                |
| 14◇      | Caldas          | Villamaría          | 2850         | 4°59'11.59" | 75°24'23.62" | Rojas-Morales et al. 2014                |
| 15*      | Risaralda       | Santa Rosa de Cabal | 3000         | 4°51'47.9"  | 75°30'38.8"  | This work (CUS-A 0012)                   |
| 16◇      | Quindío         | Salento             | 2700         | 4°30'14"    | 75°33'19"    | Mueses-Cisneros 2013                     |
| 17◇      | Tolima          | Cajamarca           | 3512         | 4°28'44.2"  | 75°29'29.1"  | Vanegas-Guerrero et al. 2016             |
| 18◇      | Tolima          | Cajamarca           | 3040         | 4°28'12"    | 75°33'44"    | Mueses-Cisneros 2013                     |
| 19◇      | Quindío         | Calarcá             | 3600         | 4°26'30"    | 75°34'35.4"  | Vanegas-Guerrero et al. 2016             |
| 20◇      | Quindío         | Calarcá             |              | 4°26'41.6"  | 75°34'33.8"  | Buitrago-González et al. 2016            |
| 21◇      | Quindío         | Cordoba             | 3409         | 4° 22'19.4" | 75° 35'55.7" | Vanegas-Guerrero et al. 2016             |
| 22◇      | Quindío         | Cordoba             |              | 4° 21'59.1" | 75° 35'33.3" | Buitrago-González et al. 2016            |
| 23◇      | Tolima          | Cajamarca           | 3620         | 4°15'28"    | 75°33'35.0"  | Vanegas-Guerrero et al. 2016             |
| 24◇      | Tolima          | Roncesvalle         | 3483         | 4°04'49.9"  | 75°43'57.4"  | Vanegas-Guerrero et al. 2016             |
| 25◇      | Tolima          | Roncesvalle         | 3260         | 3°57'30.09" | 75°43'05.93" | Vanegas-Guerrero et al. 2016             |
| 26◇      | Valle del Cauca | Sevilla             | 3053         | 3°58'39.83" | 75°49'38.46" | Vanegas-Guerrero et al. 2016             |

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