



First Record of the Plump Frog, *Elachistocleis pearsei* (Ruthven 1914), in Costa Rica

Josué Alberto Vargas¹ and César L. Barrio-Amorós²

¹CRWild, Associated Researcher, Ojochal, Puntarenas, Costa Rica

²CRWild, Uvita, Puntarenas, Costa Rica (cbarrioamoros@crwild.com; <https://orcid.org/0000-0001-5837-9381>)

The genus *Elachistocleis*, described by Parker (1927), is the second most speciose microhylid genus in the Neotropics, with 21 currently recognized species; only *Chiasmocleis* Méhely (1904), with 36 species, has more (Frost 2021). *Elachistocleis* occurs mainly in South America and ranges from Central Argentina, southeastern Brazil, and Uruguay north to Trinidad, Venezuela, northern Colombia, and western Panama. Some species are also found in western Ecuador (Frost 2021). The northernmost species is *Elachistocleis pearsei*, initially described by Ruthven (1914) under the genus *Hypopachus* from “Fundación [at the base of Sierra Nevada de Santa Marta, Magdalena], Colombia.” It was later assigned to the monotypic genus *Relictivomer* Carvalho (1954) until de Sá et al. (2012) placed it in *Elachistocleis*. More recently, Dubois et al. (2021) considered it under *Engystoma*, but their proposal has not been popularly followed. *Elachistocleis pearsei* occurs in open areas (Barrio-Amorós et al. 2019) of northwestern Venezuela, where it was first reported as *Elachistocleis ovalis* by Barrio and Durant (2000) and later as *Relictivomer pearsei* by Infante-Rivero et al. (2006), and northern (Caribbean) Colombia into the Magdalena Valley (Acosta-Galvis, 2022) through Pacific Panama (Azuero Peninsula: Kovacs and Nordseth 2021; Cerro Hoya, Veragua: Flores et al. 2017, and as far west as Los Algarrobos, Chiriquí: Köhler 2011) at elevations from near sea level to about 500 m asl (Köhler 2011). This species, like others in the genus, is fossorial with marked

seasonality and is most easily observed after heavy rains during the rainy season (Acosta-Galvis 2012; Cuentas et al. 2002; Renjifo and Lundberg 1999). Ruthven (1914) found them around swamps in intervening areas.

Herein we report the first record of *Elachistocleis pearsei* in Costa Rica. At about 2045 h on 25 June 2022, Gustavo Salazar Cortés found one individual in his garden near a dirt road and a swamp in Mango de Laurel, Corredores, Puntarenas, Costa Rica (08°27'17.93"N 82°54'37.58"W, 19 m asl; Fig. 1). The frog (Fig. 2) was not collected but photographic vouchers were deposited in the University of Texas Digital Catalogue (UTADC 9751A–D). The frog clearly corresponds to the species *E. pearsei* (Medina-Rangel et al. 2011) by having the following morphological characteristics: body oval; head small and triangular; snout pointed in dorsal view and protruding in profile; eyes small and dorsolateral; tympanum concealed; supratympanic fold absent; arms moderately robust; fingers slender and free, tips of fingers not flattened or expanded; hindlimbs short and robust; dorsal and belly skin smooth; dorsum and flanks dark gray with small white speckles, no vertebral line or other dorsal marks; belly, chest, and underparts of arms and hindlimbs covered with large orange spots; tips of fingers and toes white; iris dark gray. This locality is 53.6 km WSW of the nearest previously-published locality for this species in Panama, Los Algarrobos, Chiriquí (Köhler 2011).

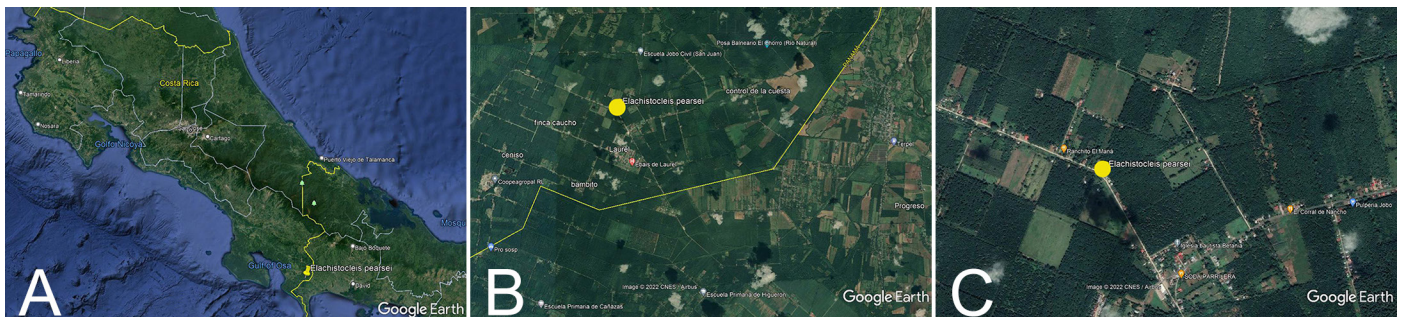


Fig. 1. Google Earth® image of Costa Rica showing the only known locality of the Plump Frog (*Elachistocleis pearsei*) (A); a general view of the area showing the extent of Palm Oil crops (the yellow line is the border with Panama) (B); and a detailed view of the area (C).



Fig. 2. The first recorded Plump Frog (*Elachistocleis pearsei*) from Costa Rica (UTADC 9751A–D). Photographs by Luis Gustavo Salazar Cortés.

On 8 July 2022, we revisited the area in search of additional individuals. Despite an intensive search, we could not find any, as the weather was quite dry (two days without any rain). However, we were able to assess the habitat, which consists largely of Oil Palm (*Elaeis guineensis*) monoculture and associated human habitations in the small villages of Laurel and Mango where oil palm workers live. The habitat is completely altered (Fig. 1C) but species in the genus *Elachistocleis* are known to tolerate contaminated or altered water. We did observe several species of amphibians including: *Scinax elaeochroa*, *S. boulengeri*, *Boana rosenbergi*, *Dendropsophus ebraccatus*, *D. microcephalus* (Hylidae), *Engystomops pustulosus*, *Leptodactylus fragilis*, *L. insularum*, *L. poecilochilus*, *L. savagei* (Leptodactylidae), and *Agalychnis callidryas* (Phyllomedusidae).

Acknowledgements

We thank Luis Gustavo Salazar Cortés for the advice, help, and photographs of this new addition to the herpetofauna of Costa Rica.

Literature Cited

- Acosta-Galvis, A.R. 2022. *Lista de los Anfibios de Colombia/Checklist Colombian Amphibians*. V.12.2022. Villa de Leyva, Boyacá, Colombia. <www.batrachia.com>.
- Acosta-Galvis, A.R., J.F.R. Tonini, and R.O. de Sá. 2022. Two new species of *Elachistocleis* Parker, 1927 (Anura: Microhylidae: Gastrophryinae) from Colombia. *Zootaxa* 5099: 527–548. <https://doi.org/10.11646/zootaxa.5099.5.2>.
- Barrio, C.L. and P. Durant. 2000. Geographic distribution. *Elachistocleis ovalis*. *Herpetological Review* 31: 50.
- Barrio-Amorós, C.L., F.J.M. Rojas-Runjaic, and J.C. Señaris. 2019. Catalogue of the amphibians of Venezuela: Illustrated and annotated species list, distribution, and conservation. *Amphibian & Reptile Conservation* 13(1) [Special Section]: 1–198 (e180).
- Caramaschi, U. 2010. Notes on the taxonomic status of *Elachistocleis ovalis* (Schneider, 1799) and description of five new species of *Elachistocleis* Parker, 1927 (Amphibia, Anura, Microhylidae). *Boletim do Museu Nacional. Nova Serie. Zoologia* 527: 1–30.
- Carvalho, A.L. 1954. A preliminary synopsis of the genera of American microhylid frogs. *Occasional Papers of the Museum of Zoology, University of Michigan* 555: 1–19.
- Cuentas, D., R. Borja, J.D. Lynch, and J.M. Renjifo. 2002. *Anuros del Departamento del Atlántico y Norte de Bolívar*. CENCYS 21, Barranquilla, Colombia.
- de Sá, R.O., J.W. Streicher, R. Sekonyela, M.C. Forlani, S.P. Loader, E. Greenbaum, S.J. Richards, and C.F.B. Haddad. 2012. Molecular phylogeny of microhylid frogs (Anura: Microhylidae) with emphasis on relationships among New World genera. *BMC Evolutionary Biology* 12: 1–21. <https://doi.org/10.1186/1471-2148-12-241>.
- Dubois, A., A. Ohler, and R.A. Pyron. 2021. New concepts and methods for phylogenetic taxonomy and nomenclature in zoology, exemplified by a new ranked cladonomy of recent amphibians (Lissamphibia). *Megataxa* 5: 1–738. <https://doi.org/10.11646/megataxa.5.1.1>.
- Flores, E.E., B. Peña, and D. Rivas. 2017. Geographic distribution. *Elachistocleis pearsei* (Colombian Plump Frog). *Herpetological Review* 48: 118–119.
- Frost, D.R. 2021. *Amphibian Species of the World: An Online Reference*. Version 6.1. American Museum of Natural History, New York, New York, USA. <<https://amphibiansoftheworld.amnh.org/index.php>>.
- Infante-Rivero, E.E., F.J.M. Rojas-Runjaic, and C.L. Barrio-Amorós. 2006. Geographic distribution: Anura: *Relictivomer pearsei*. *Herpetological Review* 37: 102–103.
- Köhler, G. 2011. *Amphibians of Central America*. Herpeton, Offenbach, Germany.
- Kovacs, T.J. and A.E. Nordseth. 2021. Geographic distribution. *Elachistocleis pearsei* (Colombian Plump Frog). *Herpetological Review* 52: 342.
- Medina-Rangel, G.F., G. Cárdenas-Arévalo, and O.V. Castaño-Mora. 2011. Anfibios y reptiles de los alrededores del complejo cenagoso de Zapatosá, departamento del Cesar, Colombia. In: J.O. Rangel-Ch. (ed.). *Colombia Diversidad Biótica*. Publicación Especial No. 1. Grupo de Biodiversidad y Conservación, Instituto de Ciencias Naturales, Universidad Nacional de Colombia-CORPOCESAR, Bogotá. D.C., Colombia.
- Parker, H.W. 1927. The brevicipitid frogs allied to the genus *Hypopachus*. *Occasional Papers of the Museum of Zoology, University of Michigan* 187: 1–6.
- Renjifo, J. and M. Lundberg. (1999). *Guía de campo de anfibios y reptiles de Urrá*. Colina, Medellín, Colombia.
- Ruthven, A.G. 1914. Description of a new engystomatid frog of the genus *Hypopachus*. *Proceedings of the Biological Society of Washington* 27: 77–80.