

Scarthyla goinorum (BOKERMANN, 1962): New records for the States of Amazonas and Pará, Brazil

Scarthyla DUELLMAN & DE SÁ, 1988, is an anuran genus distributed in the northern South America and currently composed by only two species: *Scarthyla vigilans* (SOLANO, 1971) and *Scarthyla goinorum* (BOKERMANN, 1962). The latter is distributed across the upper Amazon Basin, including Peru (DUELLMAN & DE SÁ 1988; RODRIGUEZ & DUELLMAN 1994; WILD 1996; DUELLMAN & THOMAS 1996; DUELLMAN 2005; UPTON et al. 2011; UPTON et al. 2014), Colombia (RUIZ-CARRANZA et al. 1996; ACOSTA-GALVIS 2000; LYNCH 2005; LYNCH & SUARÉZ-MAYORGA 2011), Bolivia (DE LA RIVA 1999; DE LA RIVA et al. 2000), and Brazil (LUTZ 1973; GASCON 1994; GASCON et al. 1998; DE LA RIVA 2000; BERNARDE et al. 2011; PANTOJA & FRAGA 2012; WALDEZ et al. 2013; RAMALHO et al. 2016). Its type locality is the Municipality of Tarauacá, in the State of Acre, Brazil (BOKERMANN 1962). In the Brazilian Amazonia, beyond the type locality, populations were found in the margins of the Juruá River in the municipalities of Eirunepé, Itamarati and Juruá (GASCON 1994; GASCON et al. 1998), in the Rio Gregório Extractive Reserve, located in the municipalities of Eirunepé and Ipixuna (PANTOJA & FRAGA 2012), in the Piagaçu-Purus Sustainable Development Reserve, in the Tapauá Municipality (WALDEZ et al. 2013), and in the middle Purus River between the municipalities of Boca do Acre and Pauini (RAMALHO et al. 2016), all located in the State of Amazonas, and in the municipalities of Cruzeiro do Sul (GASCON

1994), Porto Walter (DE LA RIVA 2000) and in the Riozinho da Liberdade Extractive Reserve, municipality of Tarauacá (BERNARDE et al. 2011), in the State of Acre.

Herein the authors report eight additional localities of *S. goinorum* in Amazonas and two in the State of Pará, all located in Brazilian Amazonia (Table 1). Adults from three localities were deposited in the Coleção de Anfíbios e Répteis of the Instituto Nacional de Pesquisas da Amazônia (INPA-H), further adult specimens and a tadpole in the Coleção Zoológica Paulo Bührnheim of the Universidade Federal do Amazonas (CZPB-AA/CZPB-UFAM), Manaus, Brazil (Table 2). All areas studied here belong to the central and eastern portions of the Amazonian biome. Most adults were sampled during nocturnal visual surveys, and a tadpole during diurnal sampling, using a net. The Catalão lake, the Ererê stream and the Marchantaria and Ipanema islands are located in flooded forest environments (várzea). The São Raimundo stream runs through the urban area of Manaus. Additional records from INPA-H for the Amazonas state come from the municipalities of Tefé (INPA-H 18044-18047; 3°26'53.2"S, 64°47'4.8"W), Carauari (INPA-H 20434; 5°36'28.2"S, 67°35'0.0"W), and Anamá (INPA-H 28451; 3°30'26.1"S, 61°42'36.6"W) (Fig. 1C).

Table 2 provides voucher codes and morphometric measurements of ten males, five females and one juvenile individual. These specimens present the following characteristics: small size (< 23 mm), acuminate snout projecting beyond margin of lip, tympanum distinct, hind limbs long, fingers unwebbed, toes nearly fully webbed, dorsum pale tan with darker brown longitudinal markings and broad dark brown and white dorsolateral stripes, as described in DUELLMAN & DE SÁ (1988). The tadpole (stage 33; GOSNER 1960) has an elongate body, dorsal fin shallow, terminal and small mouth with a single row of papillae laterally and labial tooth row formula 2(2)/3(1), as described in DUELLMAN & DE SÁ (1988), DUELLMAN (2005), and LYNCH & SUÁREZ-MAYORGA (2011).

These new records extend the distribution range of *S. goinorum* approximately 2,100 km (Ipanema island, Almeirim, Pará state) northeast of its type locality (Tarauacá,

Table 1: Ten new record localities of *Scaphiophis goinorum* (BOKERMANN, 1962) in the Brazilian States of Amazonas and Pará, documented by the authors. (u) – unvouchered, (v) – vouchered, A – State of Amazonas, P – State of Pará, TL – Total length.

No.	Record locality	Date	Coordinates	N adults	Vouchers, Habitat, Region, State
1(u)	Marchantaria island	May 2000	3°14'44.8"S/59°57'19.3"W	1	on a floating meadow, in the Solimões River, Iranduba Municipality, A
2(u)	São Raimundo Stream	19-22 Aug 2011	3°07'26.5"S/60°01'55.5"W	6	on macrophytes, Manaus Municipality, A
3(v)	Catalão lake	Aug. 2009	3°09'42.9"S/59°55'13.9"W	1	on a floating meadow, Iranduba Municipality, A
3(v)		18 June 2013		1 tadpole	CZPB-UFAM 243/555, TL 27.08 mm, among the roots of a macrophyte raft, A
4(u)	Urucará Municipality	12 Feb. 2009	2°33'16.7"S/57°43'41.2"W	1	on floating meadow, Urucará Municipality, A, (Fig. 1A)
5(u)	Esperança II	16 June 2002	3°58'40.3"S/63°09'30.4"W	1	on branches in the transition of flooded forest and floating meadow, Coari Municipality, A
6(u)	Muritiba	18 Nov. 2001	3°53'21.0"S, 62°31'46.1"W	1	on floating meadow, Codajás Municipality, A
7(u)	Codajás	19 Nov. 2001	3°51'21.6"S, 62°22'6.9"W	5	on the grass inside a secondary forest, Codajás Municipality, A
8(u)	Pesqueiro II	20 June 2002	3°21'24.8"S/60°31'18.6"W	4	during the day on the grass in an anthropic area, Codajás Municipality, A
9(v)	Ererê stream	24-26 Oct. 2015	2°01'44.7"S/54°07'30.1"W	1	on branches inside a secondary forest, Manacapuru Municipality, A
10(v)	Ipanema island	7 Nov. 2015	1°37'20.2"S/52°49'28.6"W	4	CZPB-AA 945-948, on floating meadows, Monte Alegre Municipality, P
				2	CZPB-AA 949-950, on floating meadows, Almeirim Municipality, P (Fig. 1B).

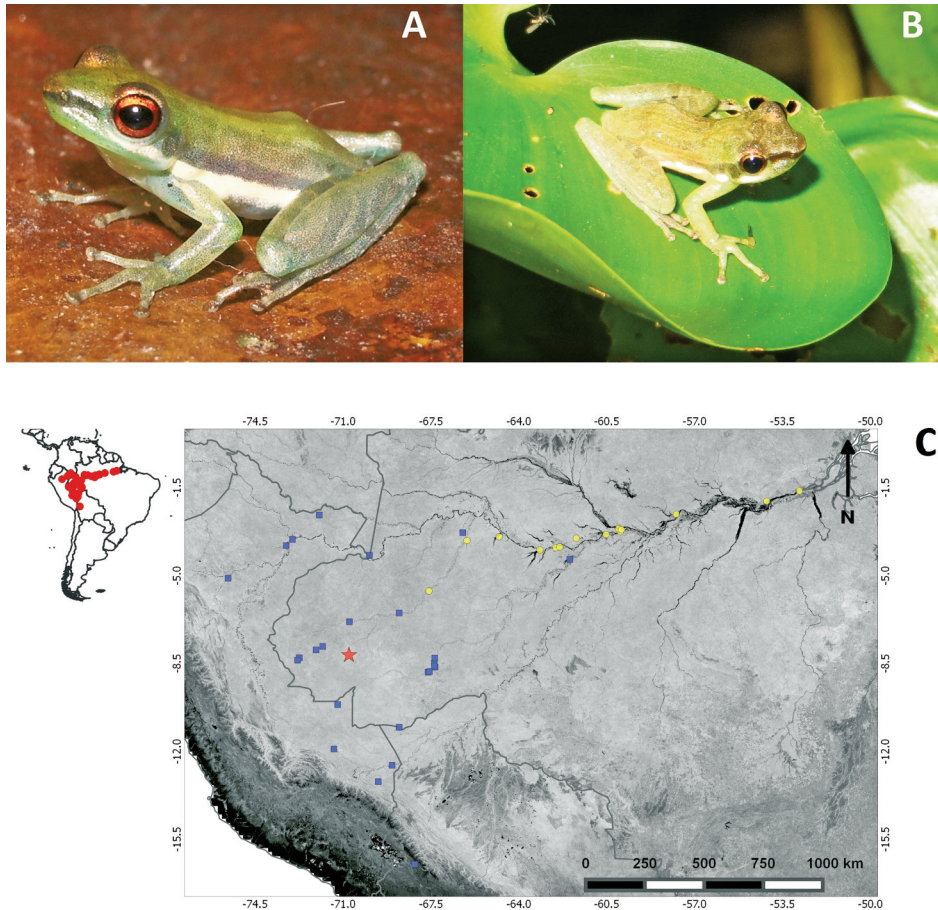


Fig. 1: Adult males of *Scarthyla goinorum* (BOKERMANN, 1962) (individuals not to scale).

A - individual from Urucará, Amazonas state (Photo: Robson Waldemar Avila),
 B - individual from Ipanema island, Almeirim Municipality, Pará state, Brazil (Photo: Luis F. M. da Fonte),
 C - Geographic distribution of *S. goinorum*: type locality at Tarauacá Municipality, Acre state, Brazil (star); previous records from the Amazonas and Acre states, Brazil, and from Peru, Colombia, and Bolivia (blue squares; see the text to references); new records for the Amazonas and Pará states, Brazil (yellow dots).

Acre state) and approximately 1,000 km northeast of the nearest known locality available in the literature, which is in the Municipality of Tapauá (Piagaçu-Purus Sustainable Development Reserve, WALDEZ et al. 2013).

Scarthyla goinorum is associated with floating meadows and its wide distribution can be related to dispersion of free-floating meadows across the rivers of the Amazon basin, as suggested for *S. vigilans* by ROJAS-RUNJAIC et al. (2008). Floating meadow rafts are considered dispersal vectors for

aquatic organisms such as fishes and amphibians (SCHIESARI et al. 2003).

ACKNOWLEDGMENTS: The authors are grateful to Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio) for the collection permits (29197, 44897-1); the Sistema Nacional de Pesquisa em Biodiversidade Program (SISBIOTA) "Girinos do Brasil" (Ministério da Ciência, Tecnologia e Inovação - MCTI / Conselho Nacional de Desenvolvimento Científico e Tecnológico - (CNPq) #563075/2010-4 / Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP) #10/52321-7), and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) for financial support. Marcelo MENIN received Re-

Table 2: Morphometric data (in mm) of ten males, five females and one juvenile of *Scaphiyla goiourum* (BOKERMANN, 1962), collected in the Terê Municipality (INPA-H 18044-18047), in the Rio Gregório Extractive Reserve - municipalities of Eritupepe and Ipixuna (INPA-H 30169-30171), in the Anama Municipality (INPA-H 28451), in the Juruá Municipality (INPA-H 17332), in the Caruaru Municipality (INPA-H 20434), all in Amazonas state, and in the Monte Alegre Municipality (CZPB-AA 945-948) and Almeirim Municipality (CZPB-AA 949-950), both in the Pará state, Brazil, and comparison with the female holotype from Acre state. Values are given as mean \pm standard deviation and range. Each group is formed by individuals of one locality. Measurements of the holotype and some landmarks follow BOKERMANN (1962). M – male; F – female; J – juvenile. MZUSP – Museu de Zoologia da Universidade de São Paulo, WCAB – Werner C. A. Bokermann Collection.

	INPA-H 18044- 18047 (4 M)	INPA-H 30169- 30171 (3 M)	INPA-H 28451 (1 J)	INPA-H 17332 (1 F)	INPA-H 20434 (1 F)	CZPB-AA 945- 946 (2 F)	CZPB-AA 947- 948 (2 M)	CZPB-AA 949 (1 M)	CZPB-AA 950 (1 F)	Female Holotype MZUSP 74197 (formerly WCAB 1401)
Snout-vent length	17.57 \pm 1.45 (16.12–19.05)	19.43 \pm 4.27 (14.50–22.00)	11.55	22.22	22.04	16.7, 19.28	16.69, 16.52	16.00	14.42	20
Head length	6.19 \pm 0.78 (5.19–7.03)	6.21 \pm 0.58 (5.60–6.75)	3.86	7.28	7.40	5.64, 6.17	5.42, 5.51	5.40	4.27	6
Head width	5.15 \pm 0.20 (4.95–5.43)	5.58 \pm 0.77 (4.70–6.14)	3.80	6.30	6.30	4.77, 5.36	4.90, 4.79	4.74	4.10	-
Tibia length	10.95 \pm 1.09 (9.68–12.14)	10.61 \pm 3.11 (7.08–12.97)	5.52	12.76	12.40	9.63, 10.49	10.54, 9.88	8.44	8.32	-
Eye diameter	1.75 \pm 0.25 (1.44–1.95)	2.18 \pm 0.89 (1.17–2.83)	2.21	3.10	2.56	1.30, 1.67	1.78, 1.54	1.63	1.27	2.5
Eye-nostril distance	1.21 \pm 0.10 (1.06–1.27)	1.70 \pm 0.37 (1.29–2.01)	1.57	1.25	1.47	1.50, 1.62	1.96, 2.30	1.22	1.14	2.2
Internarial distance	1.12 \pm 0.28 (0.70–1.27)	1.40 \pm 0.48 (0.86–1.78)	0.96	1.84	1.46	1.00, 1.40	1.03, 1.41	0.86	1.13	-
Hand length	5.11 \pm 0.51 (4.73–5.84)	5.61 \pm 1.87 (3.66–7.40)	4.08	6.57	6.15	4.98, 5.63	4.85, 5.19	4.72	4.27	-
Foot length	8.44 \pm 0.73 (7.42–9.09)	9.58 \pm 2.34 (7.12–11.77)	8.49	10.61	10.08	6.82, 8.91	7.29, 7.52	7.53	5.05	-

search Productivity Grant from CNPq. David O. CARMO TELLES received a grant from the Programa de Concessão de Bolsas de Apoio a Projetos de Pesquisa (Fundação de Amparo à Pesquisa do Estado do Amazonas - FAPEAM/Secti, Edital 09/2013). Robson W. ÁVILA kindly provided data from Uruará as well as the *S. goinorum* photograph. Marcelo GORDO received financial and logistical support from Instituto Piatam (Manaus).

REFERENCES: ACOSTA-GALVIS, A. R. (2000): Ranas, salamandras y caecilianas (Tetrapoda: Amphibia) de Colombia.- *Biota Colombiana*, Santafé de Bogotá; 1 (3): 289-319. BERNARDE, P. S. & MACHADO, R. A. & TURCI, L. C. B. (2011): Herpetofauna da área do Igarapé Esperança na Reserva Extrativista Riozinho da Liberdade, Acre – Brasil.- *Biota Neotropica*, Campinas; 11 (3): 117-144. BOKERMANN, W. C. A. (1962): Cuatro nuevos hylidos del Brasil (Amphibia, Salientia, Hylidae).- *Neotropica*, notas zoológicas sudamericanas, Buenos Aires; 8: 81-91. DE LA RIVA, I. (1999): Geographic distribution: *Scarthyla ostinodactyla*.- *Herpetological Review*, New York; 30 (2): 108. DE LA RIVA, I. (2000): On the taxonomic status of *Hyla goinorum* BOKERMANN, 1962 (Amphibia, Anura, Hylidae).- *Amphibia-Reptilia*, Leiden; 21: 493-495. DE LA RIVA, I. & KÖHLER, J. & LÖTTERS, S. & REICHEL, S. (2000): Ten years of research on Bolivian amphibians: updated checklist, distribution, taxonomic problems, literature and iconography.- *Revista Española de Herpetología*, Salamanca; 14: 19-164. DUELLMAN, W. E. (2005): *Cusco Amazónico. The lives of amphibians and reptiles in an Amazonian rainforest*. Ithaca (Cornell University Press), pp. 433. DUELLMAN, W. E. & SÁ, R. O. DE (1988): A new genus and species of South American hylid frog with a highly modified tadpole.- *Tropical Zoology*, London; 1: 117-136. DUELLMAN, W. E. & THOMAS, R. (1996): Anuran Amphibians from a seasonally dry forest in southeastern Peru and comparisons of the anurans among sites in the upper Amazon Basin.- *Occasional Papers of the Natural History Museum, The University of Kansas*, Lawrence; 180: 1-34. GASCON, C. (1994): *Scarthyla ostinodactyla* (NCN). Geographic Distribution.- *Herpetological Review*, New York; 25 (4): 162. GASCON, C. & LOUGHEED, S. C. & BOGART, J. P. (1998): Patterns of genetic population differentiation in four species of Amazonian frogs: a test of the riverine barrier hypothesis.- *Biotropica*, Oxford; 30 (1): 104-119. GOSNER, K. L. (1960): A simplified table for staging anuran embryos and larvae with notes on identification.- *Herpetologica*, Lawrence; 16: 183-190. LUTZ, B. (1973): Brazilian species of *Hyla*. Austin and London (University of Texas Press), pp. xiv, 265. LYNCH, J. D. (2005): Discovery of the richest frog fauna in the World: an exploration of the forests to the north of Leticia.- *Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales*, Bogotá; 29: 581-588. LYNCH, J. D. & SUÁREZ-MAYORGA, A. M. (2011): Clave ilustrada de los renacuajos en las tierras bajas al Oriente de los Andes, con énfasis en Hylidae.- *Caldasia*, Bogotá; 33: 235-270. PANTOJA, D. L. & DE FRAGA, R. (2012): Herpetofauna of the Reserva Extrativista do Rio Gregório, Juruá Basin, southwest Amazonia, Brazil.- *Check List*, São Paulo; 8 (3): 360-374. RAMALHO, W. P. & ANDRADE, M. S. & MATOS, L. R. A. & VIEIRA, L. J. S. (2016): Amphibians of varzea environments and floating meadows of the oxbow lakes of the Middle Purus River, Amazonas,

Brazil.- *Biota Neotropica* [electronic resource], Campinas; 16 (1): e20150093. RODRIGUEZ, L. O. & DUELLMAN, W. E. (1994): Guide to the frogs of the Iquitos region, Amazonian Peru.- *Natural History Museum, University of Kansas, Special Publication*, Lawrence; 22: 1-80. ROJAS-RUNJAIC, F. J. M. & BARRIO-AMORÓS, C. L. & MOLINA-R., C. & SEÑARIS, J. C. & FEDÓN, I. C. (2008): Amphibia, Anura, Hylidae, *Scarthyla vigilans*: Range extensions and new state records from Delta Amacuro and Miranda states, Venezuela.- *Check List*, São Paulo; 4 (3): 301-303. RUIZ-CARRANZA, P. M. & ARDILA-ROBAYO, M. C. & LYNCH, J. D. (1996): Lista actualizada de la fauna Amphibia de Colombia.- *Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales*, Bogotá; 20 (77): 365-415. SCHIESARI, L. & ZUANON, J. & AZEVEDO-RAMOS, C. & GARCIA, M. & GORDO, M. & MESSIAS, M. & VIEIRA, E. M. (2003): Macrophyte rafts as dispersal vectors for fishes and amphibians in the lower Solimões River, Central Amazon.- *Journal of Tropical Ecology*, Cambridge; 19: 333-336. UPTON, K. & STEADMAN, J. & POPPLEWELL, D. & ROGERS, I. & WILLS, A. (2011): Amazonian frog diversity and microhabitat use.- *Herpetological Bulletin*, London; 118: 10-17. UPTON, K. & WARREN-THOMAS, E. & ROGERS, I. & DOCHERTY, E. (2014): Amphibian diversity on floating meadows in flooded forest on the Peruvian Amazon.- *Herpetological Review*, New York; 45 (2): 209-212. WALDEZ, F. & MENIN, M. & VOGT, R. C. (2013): Diversidade de anfíbios e répteis Squamata na região do baixo rio Purus, Amazônia Central, Brasil.- *Biota Neotropica*, Campinas; 13 (1): 300-316. WILD, E. R. (1996): Natural history and resource use of four Amazonian tadpole assemblages.- *Occasional Papers of the Natural History Museum, The University of Kansas*, Lawrence; 176: 1-59.

KEY WORDS: Amphibia: Anura: Hylidae: *Scarthyla goinorum*; distribution, new country records, floating meadows, Amazonia, Brazil

SUBMITTED: August 05, 2016

AUTHORS: David Otávio CARMO TELLES ¹⁾, Vinícius T. DE CARVALHO ²⁾, Marcelo GORDO ^{3, 4)}, Igor Luis KAEFFER ^{3, 4)}, Luis Fernando MARIN DA FONTE ⁵⁾, Marcelo MENIN (Corresponding author <menin@ufam.edu.br > ^{3, 4)}

¹⁾ Universidade Federal do Amazonas (UFAM), Instituto de Ciências Biológicas, Programa de Pós-Graduação em Diversidade Biológica. Av. General Rodrigo Otávio Jordão Ramos, 6200, 69077-000 Manaus, AM, Brazil.

²⁾ Universidade Federal do Amazonas (UFAM), Instituto de Ciências Biológicas, Programa de Pós-Graduação em Biodiversidade e Biotecnologia. Av. General Rodrigo Otávio Jordão Ramos, 6200, 69077-000, Manaus, AM, Brazil.

³⁾ Universidade Federal do Amazonas (UFAM), Instituto de Ciências Biológicas, Departamento de Biologia. Av. General Rodrigo Otávio Jordão Ramos, 6200, 69077-000 Manaus, AM, Brazil.

⁴⁾ Universidade Federal do Amazonas (UFAM), Instituto de Ciências Biológicas, Programa de Pós-Graduação em Zoologia. Av. General Rodrigo Otávio Jordão Ramos, 6200, 69077-000 Manaus, AM, Brazil.

⁵⁾ Universität Trier, Faculty of Geography/ Geosciences, Biogeography Department, 54286 Trier, Germany.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Herpetozoa](#)

Jahr/Year: 2017

Band/Volume: [30_1_2](#)

Autor(en)/Author(s): Carmo-Telles David Otavio, Carvalho Vinicius T. de, Gordo Marcelo, Kaefer Igor Luis, Fonte Luis Fernando Marin da, Menin Marcelo

Artikel/Article: [Scarthyia goinorum \(BOKERMANN, 1962\) New records for the States of Amazonas and Para, Brazil 88-92](#)