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A new trans-Andean Stick Catfish of the genus *Farlowella* Eigenmann & Eigenmann, 1889 (Siluriformes: Loricariidae) with the first record of the genus for the río Magdalena Basin in Colombia

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Abstract

A new species of *Farlowella* is described from El Carmen de Chucurí in the Departamento de Santander, western flank of the Cordillera Oriental, río Magdalena Basin, Colombia. *Farlowella yarigui* n. sp. differs from its congeners in lateral body plate morphology, abdominal cover, cephalic hypertrophied odontodes, and details of coloration. This is the first verifiable record of the genus in the Magdalena drainage. Aspects of natural history and implications of this finding are provided concerning the state of knowledge of the fishes of the río Magdalena Basin. Previous records of *Farlowella gracilis* in the río Cauca basin are examined and herein considered erroneous, rendering the new species the only representative of the genus in the Magdalena-Cauca system. A key to species of *Farlowella* from Colombia is provided.

Keywords: Loricariinae, *Farlowella gracilis*, trans-Andean, Serranía de los Yariguíes, taxonomy

Resumen

Se describe una nueva especie de *Farlowella* de El Carmen de Chucurí, en el Departamento de Santander, flanco occidental de la Cordillera Oriental, cuenca del río Magdalena, Colombia. *Farlowella yarigui* sp. nov. difiere de sus congéneres en la morfología de las placas laterales, cobertura ventral, odontoides cefálicos hipertrofiados, y detalles de coloración. Este representa el primer registro verificable del género en el drenaje del Magdalena. Se proporcionan aspectos de historia natural e implicaciones de este hallazgo con respecto al estado del conocimiento sobre los peces de la cuenca del río Magdalena. Se examinan registros previos de *Farlowella gracilis* en la cuenca del río Cauca y son considerados erróneos, haciendo de la nueva especie el único representante del género en el sistema Magdalena-Cauca. Se proporciona una clave para las especies de *Farlowella* de Colombia.

Introduction

The Loricariinae is a subfamily of armored catfishes comprising more than 31 genera and 209 species (Ferraris, 2003). Fishes assigned to this subfamily are generally recognized by being strongly depressed, elongate, and lacking an adipose fin. Genera of the Loricariinae are outstandingly rich in morphological variation, which has led to the recognition of several monotypic genera (Covain & Fisch-Muller, 2007). A few genera include moderate to large numbers of species, and some of them are found in cis-Andean areas (*Farlowella*, *Harttia*, *Loricariichthys*), while others occupy both cis- and trans-Andean drainages (*Rineloricaria*, *Spatuloricaria* and *Sturisoma*). One of these genera, *Farlowella*, is the second richest genus in the subfamily with 26 species (Retzer, 2006).

The genus *Farlowella* Eigenmann & Eigenmann was revised by Retzer & Page (1996) who proposed an intrageneric arrangement of species groups. These authors provided information on the taxonomy and geographic

distribution of the then-known species as well as formal descriptions of six new species. The genus was arranged in six species groups (number of species in parentheses): *acus* (five), *amazona* (four), *curtirostra* (two), *knerii* (two), *mariaelenae* (one), and *nattereri* (six) species groups. In contrast, six species were kept unassigned to any species group.

To date the known geographic range of the genus includes most of the major drainages east of Andes as well as the Maracaibo drainage in Venezuela, but none of the specimens reported by Retzer and Page originated from either the Magdalena drainage or any region west of the Cordillera Oriental-Perijá mountain ranges of Colombia. In Colombia, 12 species have been reported: *F. acus*, *F. amazona*, *F. colombiensis*, *F. curtirostra*, *F. gracilis*, *F. mariaelenae*, *F. nattereri*, *F. oxyrrhyncha*, *F. platorhynchus*, *F. smithi*, *F. taphorni* and *F. vittata* (Galvis *et al.*, 1997; Maldonado-Ocampo *et al.*, 2008), all from localities east of the Andes in the Orinoco and Amazonas drainages, and the Lago Maracaibo Basin.

During an expedition jointly supported by the Universidad Nacional de Colombia and Parques Nacionales Naturales de Colombia, specimens of the genus *Farlowella* were collected. These specimens represent the first voucher-based, confident record of the genus for the Magdalena drainage in Colombia. Furthermore, these specimens represent an undescribed species that we formally describe herein.

Materials and methods

Measurements were taken with dial calipers under a Wild stereoscope. Terminology, meristics and measurements follow Boeseman (1976), Retzer & Page (1996), and Schaefer (1997); osteological terminology follows Geerinckx *et al.* (2007). Museum acronyms follow Sabaj Pérez (2009). Abbreviations in the text are SL (standard length), HL (head length), and masl (meters above sea level). Statistical summaries were prepared with the program R v. 2.10.0 (R Development Core Team, 2009), available at <http://www.r-project.org>. The map in Figure 2 was prepared following the tutorial of L. Sousa at <http://www.wikepexes.com.br/tutoriais:mapas>, using both Google Earth v. 6.1.0 and Quantum GIS v. 1.7.0-Wroclaw, available at <http://www.google.com/earth/index.html> and <http://qgis.org/> respectively.

Species-group composition in the genus *Farlowella* is herein adopted following Retzer & Page (1996) and Retzer (2006); when citing species groups in the diagnosis we make direct reference to the species included in such groups in the aforementioned references.

Farlowella yarigui, new species

(Figure 1, Table 1)

Holotype. ICNMHN 17819, adult male, 112.3 mm SL, COLOMBIA, Departamento de Santander, El Carmen de Chucurí, Vereda El Topón, río Topón, main channel of the river, 6°42'00" N, 73°32'31" W, 422 masl, 19 March 2011, J. I. Mojica, G. A. Ballen, and biology students, Universidad Nacional de Colombia.

Paratypes. COLOMBIA, Departamento de Santander, El Carmen de Chucurí, Vereda El Topón, río Topón, ICNMHN 18889 (same data as the holotype), 2, 36.2–43.4 mm SL; río Topón, main channel, 6°45'45"N, 73°34'56"W, 276 masl, 18 March 2011, J. I. Mojica, G. A. Ballen, and biology students, Universidad Nacional de Colombia, ICNMHN 17789, 2, 75.6–76.9 mm SL.

Diagnosis. *Farlowella yarigui* differs from species of the *F. curtirostra* species group by having restricted odontodes on sides of the snout but not extending onto the cheek region (vs. hypertrophied odontodes in breeding males extensive on sides of the snout and cheek in species of the *F. curtirostra* species group). In addition, *F. yarigui* differs from species of the *F. amazona* species group by presenting notably concave lateral margins of the snout (vs. lateral margins of the snout straight to nearly straight in the *F. amazona* species group); and eyes not elevated on the head (vs. eyes elevated on the head in the *F. amazona* species group). *Farlowella yarigui* differs from species of the *Farlowella nattereri* species group as well as from *Farlowella gracilis* by presenting four rows of lateral plates (vs. five rows in *F. gracilis* and the *F. nattereri* species group). In addition, *Farlowella yarigui* differs from species of the *F. knerii* and *F. mariaelenae* species groups by presenting two abdominal plate rows (vs. three abdominal rows in the *F. knerii* and *F. mariaelenae* species groups).

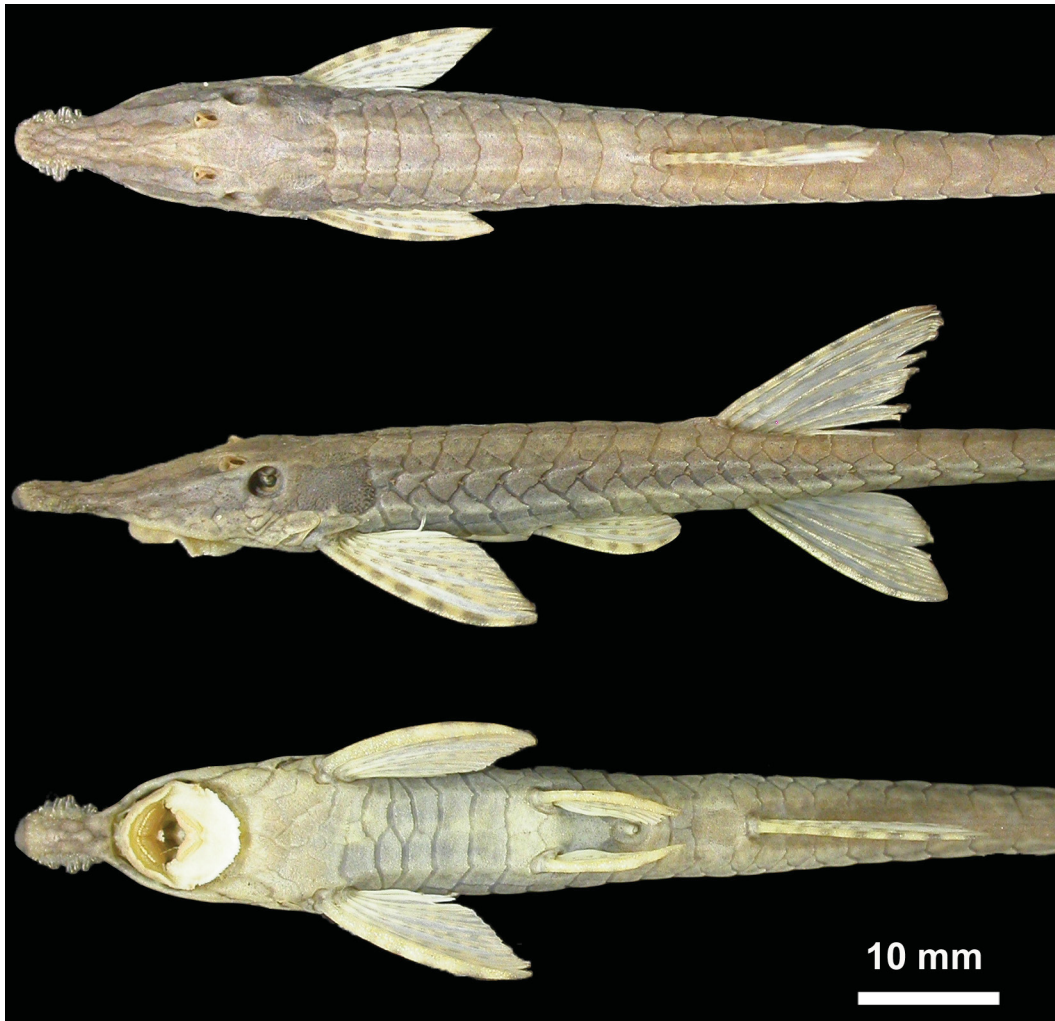


FIGURE 1. *Farlowella yarigui* n. sp., holotype, ICNMHN 17819, 112.3 mm SL, dorsal, lateral, and ventral views.

Farlowella yarigui is herein assigned to the *Farlowella acus* species group by the presence of long breeding odontodes on the snout in mature males; four rows of lateral body plates from the anteriormost portion of body to posterior margin of dorsal- and anal-fin base; two complete rows of ventral plates and no single plate between pelvic-fin insertions. *Farlowella yarigui* differs from all the species currently assigned to the *F. acus* species group by having the median anterior lateral row of plates diamond-shaped (vs. hexagonal in shape in *F. acus*, *F. colombiensis*, *F. martini*, *F. venezuelensis* and *F. vittata*). In addition, *Farlowella yarigui* differs from *F. martini* by having dark interradiation membranes in the caudal fin (vs. interradiation membranes clear in *F. martini*).

Description. Largest specimen 16.8 mm SL (adult male, holotype). Overall shape elongate and cylindrical. Head slightly depressed, body cylindrical, tail very depressed. Dorsal profile from tip of snout to level of nares concave, almost entirely straight from level of dorsal-fin insertion to caudal peduncle. Ventral profile obliquely straight from tip of snout to pectoral girdle and then straight to caudal peduncle. Body completely covered with plates except for tip of snout and gular region.

Head in dorsal view with concave lateral margins from snout to halfway between tip of snout and nares, and gently concave from such landmark to opercular region. Snout short with papillary naked tip, papillae more evident in adults; hypertrophied odontodes present on sides of snout in mature males but restricted to snout and not reaching sides of head. Preorbital ridge present; nares with anterior opening smaller than posterior opening, dermal flap separating both openings present. Eyes lateral, not visible from below yet visible in dorsal view, and not raised above head surface; iris operculum present. Six infraorbitals evident. Head plates and bones covered by short and flat odontodes. Dorsal surface of head with longitudinal keel on parieto-supraoccipital bone; compound pterotic ornamented with low reticulate ridges and pits. Mouth ovoid with lower lip larger than upper lip; ventral surface

covered by wide oval papillae on upper lip and round papillae on lower lip; round papillae decreasing in size from oral aperture to lip margins; lip margins papillose. Platelets covering dorsal surface of upper lip. Each premaxilla with 13–25 teeth, each dentary with 13–22 teeth; premaxilla wider than dentary. Buccal papilla present, with papillose surface. Ventral surface of head covered by platelets without a particular arrangement. Maxillary barbel very short and projecting only slightly from mouth margin.

Abdomen flat, covered with two complete rows of plates and median incomplete row with two to four plates. Ventral plates angled and delimiting abdomen laterally. Posteriormost abdominal plate pair without median platelet. Anal plate arrow-head shaped with posterior margin either straight or slightly curved. Four lateral plate rows on body, all of them forming longitudinal keels.

Pectoral fin with distal margin straight, leading ray twice as thick as branched rays; median row of hypertrophied odontodes on dorsal surface absent, dorsal odontodes flat and not hypertrophied, ventral odontodes flat and medially directed. Pelvic fin with posterior margin slightly curved; dorsal odontodes flat, not hypertrophied, ventral odontodes flat, medially directed. Dorsal fin with posterior margin straight, triangular in overall shape. Anal fin the same as dorsal fin. Caudal fin emarginated with dorsal lobe larger than ventral lobe; dorsal filament present.

TABLE 1. Summary measurements for *Farlowella yarigui* n. sp. Measurements follow Boeseman (1976) with modifications. Measurements from head length to snout-mouth length are percentages of SL; and from eye diameter to head depth are percentages of HL. Measurements were taken from the holotype and the three paratypes ($n = 4$).

Measurement	Range	Mean	SD
Standard length (SL)	36.2–112.3	68.9	30.5
Head length (HL)	24.4–26.5	25	0.9
Body depth at dorsal origin	5.6–6.1	5.8	0.2
Body width at dorsal origin	5.3–6.8	5.9	0.6
Body width at anal origin	5.6–6.6	5.9	0.4
Predorsal length	42.1–47.0	44.9	1.9
Postdorsal length	48.0–52.6	50.1	2.0
Postanal length	48.8–52.1	50.1	1.4
Caudal peduncle depth	1.2–1.4	1.3	0.1
Dorsal-spine length	14.6–16.7	15.4	0.9
Pectoral-spine length	11.5–13.1	12.3	0.7
Pelvic-spine length	7.0–9.3	8.2	0.9
Anal-spine length	13.8–15.4	14.8	0.7
Snout length	15.0–16.4	15.9	0.7
Snout-mouth length	5.0–7.1	5.9	0.7
Eye diameter	8.4–10.9	9.5	1.1
Interorbital width	20.9–25.9	24.1	2.0
Head width	33.7–42.1	37.4	3.2
Head depth	21.7–27.8	24.7	2.5

Coloration in alcohol. Head, dorsum, and caudal peduncle light brown; sides of head and body with longitudinal dark brown stripe continuous from tip of snout to fusion of median and ventromedian plate rows; ventral portions of head, body, and caudal peduncle light khaki from snout to base of caudal fin; some individuals show abdomen lighter than ventral portions of head, body, and caudal peduncle, so lateral darker stripe appears less evident from remaining coloration. Head with dark pigment delimiting plates in dorsal and lateral views; longitudinal dark brown stripe present from parieto-supraoccipital to dorsal-fin insertion. Dorsal, pectoral, pelvic,

and anal fins with hyaline membranes and black spots on rays poorly arranged in bars. Caudal fin with overall dark brown-black coloration on both membranes and rays; area free of pigment present posteriorly at level of caudal emargination; tips unpigmented; variable clear ocelli present on dorsal and ventral lobes toward margins of lobes.

Ontogenetic variation. Description based on three paratype juveniles, 75.6–76.9 mm LS, and the adult male holotype, 112.3 mm SL. Cephalic ridges are more prominent in juveniles, in adults such structures become less defined and show gentle curvatures when compared with juveniles. Odontodes on plates on head, body and caudal peduncle form prominent keels no longer present in subadults and adults. Caudal is not visible in the holotype because of damage in the caudal fin, but present in juveniles. Spots on fins increase in number with size, from three to seven. Despite being less firm, odontodes on ventral surface of paired fins show the same median orientation as in adults.

Distribution. *Farlowella yarigui* is currently known only from the type locality in the middle río Magdalena Basin, western flank of the Cordillera Oriental, Colombia. The río Topón drains the western flank of the area under protection by the Parque Nacional Natural Serranía de los Yariguíes (Fig. 2).

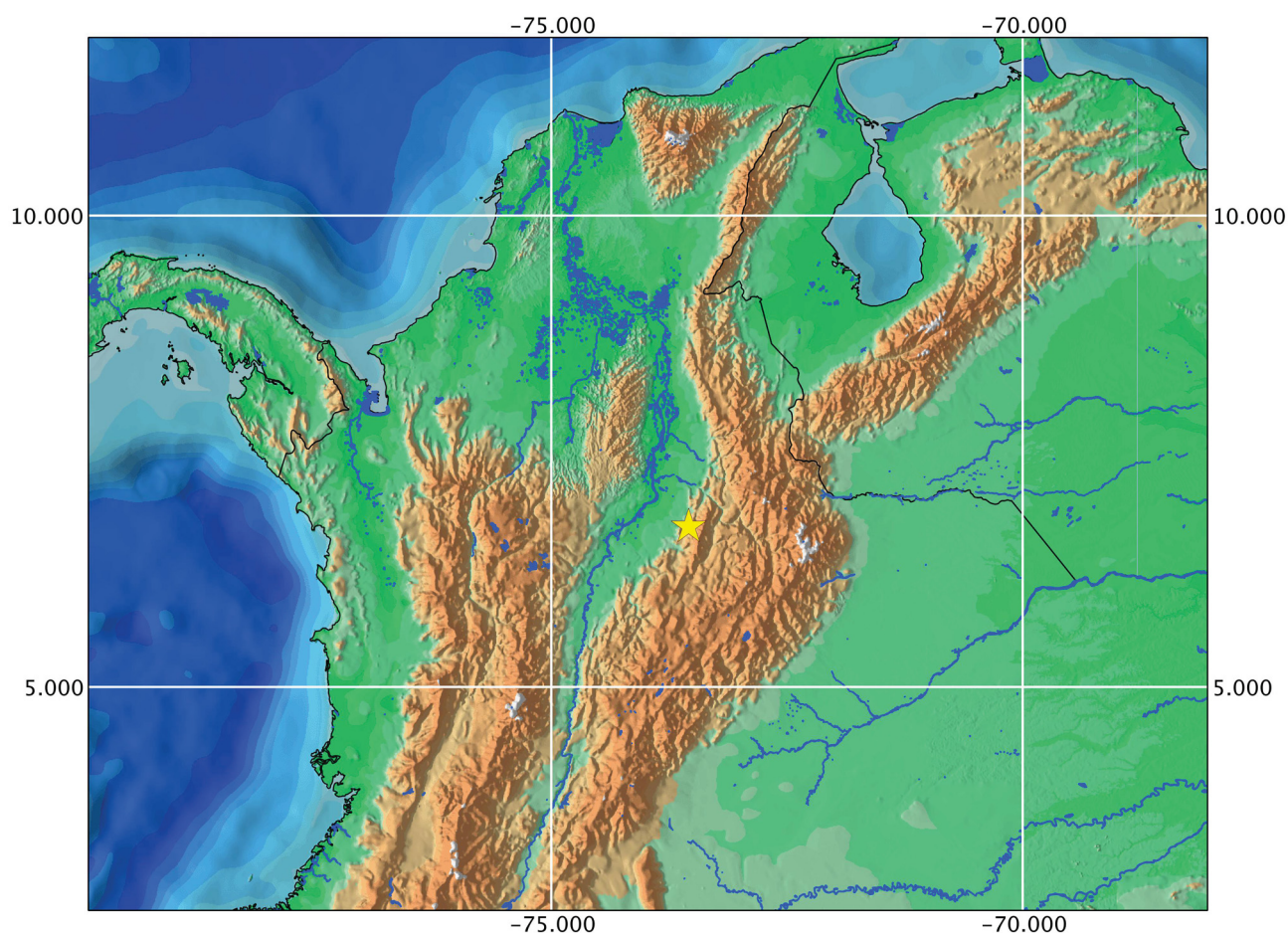


FIGURE 2. Distribution map of *Farlowella yarigui* n. sp. This species is only known from the type locality (indicated by a star).

Habitat. The type series of *Farlowella yarigui* was collected among wood sticks and partially-submerged vegetation using a bottom net. During a two-week collecting period, specimens of the new species were found exclusively in such microhabitat despite collection efforts throughout the main channel of the río Topón. Syntopic species included *Astyanax caucanus*, *A. magdalenae*, *A. filiferus*, *Roeboides dayi*, *Sturisoma* cf. *panamense*, *Chaetostoma* sp., *Lasiancistrus caucanus*, *Creagrutus* cf. *guanés* and *Hemibrycon* sp.

During the fieldtrip a wide range of microhabitats were sampled for fishes, but specimens of *F. yarigui* were collected only with bottom netting amidst submerged vegetation and sticks (Fig. 3) in almost the same microhabitat where cis-Andean species of *Farlowella* are common. No specimens were detected in still water, mountain brooks, muddy environments, sandy banks, or among gravel and boulders in swift water.



FIGURE 3. Microhabitat where the type series of *Farlowella yarigui* n. sp. was collected in the río Topón, piedmont of the Serranía de los Yariguíes, Santander, Colombia. Note the clear water conditions with submerged vegetation typical of microhabitats where fishes of the genus *Farlowella* are common.

It is noteworthy that such a distinctive loricariid catfish remained unnoticed until now in the río Magdalena Basin. Most of the collection efforts in Colombia have concentrated on this drainage (in addition to the Llanos region) since the XIX century. Some of the prominent collectors working in trans-Andean Colombia were Carl H. Eigenmann, Cecil Miles, George Dahl, Plutarco Cala, and Germán Galvis, along with several other incidental collectors. In addition, it was quite easy to secure specimens of *F. yarigui* when working in the right microhabitat, which suggests that either collectors working in the río Magdalena Basin have been concentrating on mainstream and lowland areas and devoting little or no effort to piedmont areas, or that this drainage (one of the supposedly best-sampled in Colombia) is indeed still poorly known. In addition to the present species of *Farlowella*, Torres-Mejía *et al.* (2012) described *Astyanacinus yariguies* from the Serranía de los Yariguíes in Santander, suggesting that some tributaries of the río Magdalena Basin are still poorly known and that more intensive biodiversity inventories may enhance the discovery of additional new species.

The río Magdalena system supports ca. 80% of the total Colombian population (32 million people). This extreme anthropic impact has caused deforestation, an increase in erosion and sediment transport, floodplain draining, and fisheries collapse, that together severely degrade the environmental quality of habitats available for fish communities (Galvis & Mojica, 2007). Contrary to the long-held opinion about the completeness of our knowledge on the río Magdalena fishes, urgent efforts are required on at least two fronts: (1) biodiversity inventories in fragile systems such as piedmont tributaries, and (2) more efficient conservation policies. Without such measures, the rate of habitat degradation will continue to rise while the rate of knowledge acquisition will decrease, and the río Magdalena biodiversity will be lost even before being adequately documented.

Etymology. The specific epithet is an arbitrary combination of letters in allusion to the Parque Nacional

Natural Serranía de los Yariquíes, Departamento de Santander, Colombia, in recognition of its conservation efforts in this region of the Eastern Colombian Andes. It is used as a noun in apposition.

Remarks. The present contribution records for the first time the genus *Farlowella* from trans-Andean drainages exclusive of the Maracaibo Basin, where two other species have been recorded (*F. curtirostra* and *F. taphorni*). However, in his monograph on the fishes of Northern Colombia, Dahl (1971:81) comments on the type locality of *F. gracilis* and its confusing report for the Cauca valley. Additionally, in a footnote, the editor, probably Jorge Hernández-Camacho, a Colombian naturalist very interested in birds, may have confused the collector's name based on his knowledge of ornithology, suggesting that such locality is in fact a mistyping of a locality in the río Cauca Basin: "The type locality of *Farlowella gracilis* corresponds to the río Cauquita, Cali, Departamento de Valle [del Cauca], small affluent on the left margin of the upper río Cauca. The manuscript labels for material collected there by Batty have allowed erroneous transcriptions (río "Cauqueta", río "Caquetá"), and therefore generates confusion with the río Caquetá or Yapuará, in the Amazon basin. If no label change ever occurred in fact, the type specimen of *F. gracilis* must be considered to be collected in the río Cauca basin, which requires confirmation through collection of additional specimens." (Editor footnote, our translation; Dahl, 1971:82).

Regan (1904:303) reported the collector of the holotype of *F. gracilis* to be Mr. M. D. Eder, and makes no mention of any collector and/or donor with last-name Batty, who was a well-known collector of birds. J. H. Batty collected birds in Western and Central Colombia during the XIX century, particularly in the Cauca Valley and adjoining mountains (Chapman, 1912), and none of the localities reported by Chapman belong to the Amazonian versant of the Colombian Andes. In addition, there is no way to link the collections of J. H. Batty to M. D. Eder, so every data at hand suggest that the interpretation presented in Dahl (1971) has no merit.

The historical limits of the Departamento de Cauca in Colombia in the XIX century were markedly different from those currently in use, and included the upper río Caquetá, as well as from the Darién mountain range to the north and the río Mira to the south, including part or all of the actual departments of Cauca, Valle del Cauca, Chocó, Antioquia, Quindío, Caldas, Risaralda, and Nariño. Even today, the Departamento de Cauca includes the upper río Caquetá drainage. This historical background allows one to consider the possibility of reporting the río Caquetá as belonging to the Departamento de Cauca, and is even more likely to be confounded as synonymous with Cauca Valley, particularly in the XIX century.

Given the inconsistency in the collector's information discussed in Dahl (1971), the lack of evidence linking Batty and Eder, and the historical geographic setting of Colombia in the XIX century, we conclude that earlier comments about the type locality of *F. gracilis* are unfounded. Finally, Retzer & Page (1996) reported *F. gracilis* as endemic to the río Caquetá. This implies that *F. gracilis* is not a trans-Andean species as suggested in earlier literature (Dahl, 1971), and that *F. yarigui* is the only species known with certainty to dwell in trans-Andean rivers exclusive of the Maracaibo basin.

Key to the species of *Farlowella* from Colombia

The following key is partially modified from Retzer & Page (1996), and based on species reported from Colombia in the literature (Retzer & Page, 1996; Galvis *et al.*, 1997; Maldonado-Ocampo, *et al.*, 2008).

1	Five rows of anterior lateral plates	2
-	Four rows of anterior lateral plates	3
2	Anterior plates on median row hexagonal in shape	<i>F. gracilis</i>
-	Anterior plates on median row diamond-shaped.	<i>F. nattereri</i>
3	Two complete rows of plates on abdomen	4
-	Three complete rows of plates on abdomen	9
4	Anterior plates on median row diamond-shaped.	<i>F. yarigui</i> n. sp.
-	Anterior plates on median row hexagonal in shape	5
5	Very dark vermiculations on head and snout	<i>F. amazona</i>
-	No dark vermiculations on head and snout	6
6	Head with raised mid-dorsal ridge	<i>F. colombiensis</i>
-	Head nearly flat	7
7	Eyes raised on head, lateral margins of snout nearly straight	<i>F. platorhynchus</i>
-	Eyes set at the level of dorsal surface of head, lateral margins of snout noticeably concave.	8
8	Breeding odontodes on preorbital ridge	<i>F. acus</i>

-	No breeding odontodes on preorbital ridge	<i>F. vittata</i>
9	Breeding odontodes on sides of head, plates in second lateral row thickened and forming a keel	10
-	Breeding odontodes on sides of head absent, plates in second lateral row normal and not forming a keel	11
10	Adult males with body depth less than snout-mouth length	<i>F. taphorni</i>
-	Adult males with body depth greater than snout-mouth length	<i>F. curtirostra</i>
11	Wide caudal peduncle plates	<i>F. oxyrrhyncha</i>
-	Narrow caudal peduncle plates	12
12	Median row of anterior lateral plates diamond-shaped	<i>F. mariaelenae</i>
-	Median row of anterior lateral plates hexagonal	<i>F. smithi</i>

Material examined

All from Colombia; number of specimens examined in parentheses. *Farlowella colombiensis*: Departamento de Boyacá, San Luis de Gaceno, Caño El Chuy tributary of río Upía, ICNMHN 17109 (3); Quebrada Gacenera tributary of río Lengupa, ICNMHN 17126 (1); Departamento de Meta, Acacías, Villavicencio-Acacías road, tributary of río Acacías, ICNMHN 11982 (1). *F. curtirostra*: Departamento de Norte de Santander, La Gabarra, río Catatumbo at the confluence with quebrada Brady, ICNMHN 16915 (1); río Pamplonita, ICNMHN 2320 (1), ICNMHN 2362 (13). *F. gracilis*: Departamento de Caquetá, Guayuyaco, upper río Caquetá, ICNMHN 14005 (1). *F. hasemani*: Departamento de Caquetá, Florencia, Isla El Hospital. río Pescado, upper río Caquetá basin, ICNMHN 9434 (1). *F. isbruckeri*: Departamento de Amazonas, Leticia, río Amazonas, ICNMHN 5994 (1); Km 8 Leticia-Tarapacá road, Quebrada Yahuaraca, 4°8'5.5"S, 69°56'37.1"W, ICNMHN 7009 (4). *F. mariaelenae*: Departamento de Meta, Cumaral, Hacienda Japón, río Humea, ICNMHN 9213 (1); Granada, Río Ariari, ICNMHN 11981 (2); San Martín, ICNMHN 9267 (1); Río Ocoa, Apiay Station, ICNMHN 6759 (1). *F. nattereri*: Departamento de Amazonas, Leticia, ICNMHN 14003 (1); Km 8 Leticia-Tarapacá road, Quebrada Yahuaraca. 4°8'5.5"S, 69°56'37.1"W, ICNMHN 14004 (1). *F. oxyrrhyncha*: Departamento de Amazonas, Leticia, Leticia, Km 6.5 Leticia-Tarapacá road, Quebrada Tacana, ICNMHN 10294 (8); Km 8 vía Leticia-Tarapacá. Quebrada Yahuaraca. 4°8'5.5"S, 69°56'37.1"W, ICNMHN 9202 (1), ICNMHN 9226 (1), ICNMHN 14006 (1), ICNMHN 14007 (1); Km 9.5 Leticia-Tarapacá road, Quebrada La Arenosa, ICNMHN 6184 (4), ICNMHN 6291 (4); Km 10.5 Leticia-Tarapacá road, Quebrada La Arenosa, ICNMHN 14008 (1), ICNMHN 14009 (3). *F. platorhynchus*: Departamento de Amazonas, Leticia, Laguna Yahuaraca, ICNMHN 4450 (1), ICNMHN 4488 (1), ICNMHN 9212 (2), ICNMHN 9241 (1); Km 8 Leticia-Tarapacá road, Quebrada Yahuaraca. 4°8'5.5"S, 69°56'37.1"W, ICNMHN 6975 (1), ICNMHN 6995 (1), ICNMHN 13996 (2), ICNMHN 13998 (1), ICNMHN 13999 (2). *F. reticulata*: Departamento de Caquetá, Quebrada Congo affluent of río Caquetá, ICNMHN 9214 (1). *F. schreitmuelleri*: Departamento de Amazonas, Leticia, río Amazonas, ICNMHN 5522 (6). *F. vittata*: Departamento de Meta, Acacías, río Orotoy affluent of río Acacías ICNMHN 12805 (10); Puerto Gaitán, Caño Porfia affluent of río Yucao, ICNMHN 12824 (23); San Martín, Quebrada Grande affluent of río Humadea, ICNMHN 11995 (10).

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References

- Boeseman, M. (1976) A short review of the Surinam Loricariinae; with additional information on Surinam Harttiinae, including the description of a new species (Loricariidae, Siluriformes). *Zoologische Mededelingen*, 50 (11), 153–177.
- Chapman, F.M. (1912) Diagnoses of apparently new Colombian birds. *Bulletin of the American Museum of Natural History*, 31, 139–166.
- Dahl, G. (1971) *Los Peces del Norte de Colombia*. Inderena, Bogotá, 391 pp.
- Galvis, G. & Mojica, J.I. (2007) The Magdalena river freshwater fishes and fisheries. *Aquatic Ecosystem Health and Management*, 10 (2), 127–139.
<http://dx.doi.org/10.1080/14634980701357640>
- Galvis, G., Mojica, J.I. & Camargo, M. (1997) *Peces del Catatumbo*. Asociación Cravo Norte, Bogotá, D.C., 118 pp.
- Geerinckx, T., Brunain, M., Herrel, A., Aerts, P. & Adriaens, D. (2007) A head with a suckermouth: a functional-morphological study of the head of the suckermouth armoured catfish *Ancistrus* cf. *triradiatus* (Loricariidae, Siluriformes). *Belgian Journal of Zoology*, 137 (1), 47–66.
- Maldonado-Ocampo, J.A., Vari, R.P. & Usma, J.S. (2008) Checklist of freshwater fishes of Colombia. *Biota Colombiana*, 9 (2), 143–237.
- R Development Core Team (2009) R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna. Available from: <http://www.R-project.org> (accessed 1 January 2010)
- Regan, C.T. (1904) A monograph of the fishes of the family Loricariidae. *Transactions of the Zoological Society of London*, 17 (1), 191–350.
<http://dx.doi.org/10.1111/j.1096-3642.1904.tb00040.x>
- Retzer, M.E. (2006) A new species of *Farlowella* Eigenmann & Eigenmann (Siluriformes: Loricariidae), a stickcatfish from Bolivia. *Zootaxa*, 1282, 59–68.
- Retzer, M.E. & Page, L.M. (1996) Systematic of the Stick Catfishes, *Farlowella* Eigenmann & Eigenmann (Pisces, Loricariidae). *Proceedings of the Academy of Natural Sciences of Philadelphia*, 147, 33–88.
- Sabaj, M.H. (Ed.) (2010) Standard symbolic codes for institutional resource collections in herpetology and ichthyology: an online reference. Version 2.0 (8 November 2010). American Society of Ichthyologists and Herpetologists, Washington, DC. Available from: <http://www.asih.org> (accessed 2 Mar 2011)
- Torres-Mejía, M., Hernández, H. & Senechal, V. (2012) A New Species of *Astyanacinus* (Characiformes: Characidae) from the Río Magdalena System, Colombia. *Copeia*, 2012 (3), 501–506.
<http://dx.doi.org/10.1643/ci-10-160>