

***Cordylancistrus nephelion* (Siluriformes, Loricariidae), a new and endangered species of suckermouth armored catfish from the Tuy River, north-central Venezuela**

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Abstract

A new species of suckermouth armored catfish, *Cordylancistrus nephelion*, is described from seven specimens collected in tributaries of the Tuy River in the Caribbean Sea basin of north-central Venezuela. *Cordylancistrus nephelion* can be distinguished from the other species assigned to its genus by its unique color pattern, the head and body being marked with irregular white spots. *Cordylancistrus nephelion* is the third species of the genus described from Venezuela: *Cordylancistrus torbesensis* (Schultz 1944) from the Mérida mountain range (Cordillera de Mérida), Orinoco River basin; *C. perijae* Pérez and Provenzano 1996 from Perijá mountain range (Sierra de Perijá), Maracaibo Lake basin; and now *C. nephelion* from the La Costa mountain range (Cordillera de La Costa). These three species inhabit isolated foothill rivers and have very restricted geographic distributions. The extreme alteration of the Tuy River basin by humans may threaten *Cordylancistrus nephelion* and the other fish species endemic to the basin with extinction. An artificial key for the species assigned to the genus *Cordylancistrus* is presented.

Keywords: *Cordylancistrus*, Loricariidae, Ancistrini, Venezuela, Tuy River, endangered species, suckermouth armored catfish

Resumen

Se describe una nueva especie de bagre corroncho *Cordylancistrus nephelion* con base a siete ejemplares capturados en tributarios del río Tuy, cuenca del Mar Caribe, centro norte de Venezuela. *Cordylancistrus nephelion* se distingue de todas las especies agrupadas en el género por su patrón de coloración único, cabeza y cuerpo con manchas redondeadas de color blanco. *Cordylancistrus nephelion* es la tercera especie del género descrita para Venezuela: *Cordylancistrus torbesensis* (Schultz 1944) para la Cordillera de Mérida, cuenca del río Orinoco; *C. perija* Pérez y Provenzano 1996 para la Sierra de Perijá, cuenca del lago de Maracaibo y ahora, *C. nephelion* para la Cordillera de La Costa. Estas tres especies habitan en ríos de pie de monte de forma aislada y tienen una

distribución geográfica restringida. La cuenca del río Tuy esta extremadamente alterada por las actividades humanas y es probable que la nueva especie y otras que son endémicas de dicha cuenca puedan extinguirse. Se presenta una clave artificial para la identificación de las especies asignadas al género *Cordylancistrus*.

Introduction

The genus *Cordylancistrus* was described by Isbrücker (1980) with *C. torbesensis* (Schultz, 1944) as the type and only species. Isbrücker (1980: 48) stated that: “*Cordylancistrus* seems related to the genus *Lasiancistrus*, from which it can easily be distinguished by its exceptionally wide head”. Pérez and Provenzano (1996) described *C. perijae*, indicated some external characters that define the genus *Cordylancistrus* and postulated a close relationship between *Cordylancistrus* and the genus *Chaetostoma*. They also presented a biogeographic hypothesis on the distribution of *C. torbesensis* and *C. perijae*. Isbrücker (2001) included in the genus *Cordylancistrus* the species: *C. daguae*, *C. perijae*, *C. platycephalus*, *C. platyrhynchus* and *C. torbesensis*, without comment. Fisch-Muller (2003) listed the same five species of *Cordylancistrus*. Armbruster (2004) indicates that species of the genera *Chaetostoma*, *Leptoancistrus*, *Dolichancistrus* and *Cordylancistrus* together form a monophyletic group, but that *Cordylancistrus* is apparently not monophyletic and pointed out that only one basic difference (naked snout) was found between the species of *Chaetostoma* and the species assigned to *Leptoancistrus*, *Dolichancistrus* and *Cordylancistrus*. He transferred *Cordylancistrus platyrhynchus* to the genus *Chaetostoma* and presented a new diagnosis for *Chaetostoma* while maintaining the rest of the genera. Apparently, the recognition of genera and the assignment of species to a genus are controversial. Transitory, we agree with Isbrücker (2001) and Fisch-Muller (2003) and accept five species in the genus *Cordylancistrus*. Currently, we are working in a morphological and osteological analysis of all the species assigned to *Cordylancistrus*, *Dolichancistrus* and *Leptoancistrus* to verify the taxonomic status of each genus and the species included.

In this article we describe *Cordylancistrus nephelion* from seven specimens collected in the Cagua, Mesia and Grande Rivers, all tributaries of the Tuy River in the Caribbean Sea basin of north-central Venezuela. An artificial key for the species assigned to *Cordylancistrus* is given.

Methods

Measurements follow Boeseman (1968). Additional measurements include: Postdorsal length, measured from end of dorsal-fin base to posterior hypural margin. Preanal length, measured from the tip of the snout to the origin of anal fin. Longest interopercular odontode, measured from the base to the tip of the longest evertible odontode, when it is

present. Length of mandibular ramus, measured by pressing the calipers on the long axis of the dentary bone. Measurements were made point to point with dial calipers to the nearest 0.1 mm. Counts and measurements were made on the left side of specimens whenever possible. Standard length is expressed in mm. All other measurements are expressed as percents of standard length and head length. To facilitate comparison with the original descriptions of the other species of *Cordylancistrus* we include some additional morphometric data: Mandibular ramus length in interorbital width (IOW/MRL); Interorbital width in head length (HL/IOW); Orbital diameter in interorbital width (IOW/OD); Orbital diameter in head length (HL/OD). Institutional abbreviations are as listed in Leviton et al. (1985).

***Cordylancistrus nephelion* new species**

Figs. 1–2, Table 1

Holotype: MBUCV-V-21800, 129.1 mm SL; Venezuela, Caribbean Sea basin, Tuy River system, Mesia River, tributary of the Guare River, near Village Corocito, approximately 10°12'N, 67°05'W; N. Padilla and H. Camejo; 26 January 1992.

Paratypes: All from Venezuela, Caribbean Sea basin, Tuy River system. Miranda State: MBUCV-V-21801, 1 ex., 121.2 mm SL; collected with the holotype. MBUCV-V-12526, 1 ex., 61.0 mm SL; Grande River approximately 500 m upstream from its mouth in Santa Cruz River, a tributary of Taguaza River, Guatopo National Park, approx. 10°05'N, 66°29'W; R. Royero and party; 01 March 1981. MBUCV-V-16382, 1 ex., 55.2 mm SL; Mesia River, tributary of the Guare River, Paso del Viento, near the road to Tácata, approx. 10°12'N, 67°02'W; N. Padilla and L. Aguana; 30 January 1992. MBUCV-V-21806, 1 ex., 31.1 mm SL; Cagua River, Boca de Cagua, approximately 10 km E of Village Guayas, approx. 10°14'N 67°07'W; R. Royero, F. Gil and C. Navarrese, 06 April 1991. MBUCV-V-27872, 1 ex., 76.4 mm SL; Mesia River, tributary of the Guare River, Pozo El Cirilo, near Village El Salado, approx. 10°13'N 67°03'W; N. Padilla and E. Camejo; 29 May 1994. Aragua State: MBUCV-V-22700, 1 ex., 75.9 mm SL; Quebrada Agua Amarilla, a tributary of the Cagua River, Village Agua Amarilla, SE of Tejerías, approx. 10°12'N, 67°03'W; N. Padilla; 23 February 1992.

Diagnosis. *Cordylancistrus nephelion* can be distinguished from the other species assigned to its genus by its unique color pattern. Head and body blackish to greenish brown with white irregular spots. Abdomen uniformly white. All fins with whitish spots that simulate bands.

Description. Morphometric data are given in Table 1. Head wide and slightly depressed. Snout edge covered with small plates, its contour oval. Eyes in dorsal position, dorsal edge of the orbits slightly raised, small odontodes found around orbits. Interorbital space flat. Posterior edge of the supraoccipital without a fleshy keel. Mouth wide, lips papillose, papillae of the anterior lip slightly larger. Edge of the posterior lip with marked

undulations. Maxillary barbels very short and joined to lower lip by a fleshy flap, leaving tip of barbel free. Premaxilla and dentary enlarged. Inside mouth behind premaxilla with three to five larger papillae. Also behind the dentary three to five larger and smooth papillae present that increase in size toward center of mouth (Fig. 2). Teeth numerous, 49 to 105 teeth on each premaxilla and 53 to 129 on each dentary. Teeth are very thin and elongated, with apex curved toward interior of mouth. Teeth bifurcate, one lobe slightly longer than other, both tips are pointed. Tooth apex yellowish, stalk whitish. Interopercular hypertrophied evertible odontodes vary in size; longest odontode sometimes reaches the cleithrum but surpasses it in only one specimen. Hypertrophied odontodes vary in number from six on smallest specimen to 25 on the largest. Body robust and relatively deep. Caudal peduncle compressed. Lateral plates of the body without spiny keels. Lateral line plates 23 to 24. Post-anal plates 10 to 11. Inter-dorsal plates six, the last with a slight keel. Ventral surface of body naked to origin of anal fin. Dorsal fin I8. Pectoral fin I6, pectoral spine relatively short, reaching one-third length of pelvic spine or less. In all examined specimens, pectoral spine with odontodes on posterodorsal surface. Anal fin with four branched rays, three on one specimen. Pelvic fin I5. Caudal fin I14I, obliquely truncate.

Color. In specimens preserved in 70% ethanol head and body color varies from blackish to greenish brown with white irregular spots; abdomen uniformly white. Dorsal surface of head with small spots that become larger posteriorly. Spots along body approximately as wide as the eye; in some cases two or more spots unite to form a spot of greater size. Spine and branched rays of dorsal fin with four to five whitish spots. Interradial membrane with irregular translucent spots, more evident towards the distal margin. In largest specimens (121 and 129 mm SL), pectoral-fin and pelvic-fin spine have six to seven whitish spots and branched rays have five to six, while in smaller specimens (76.4 mm SL or less) spines with four to five and branched rays with three to four. Interradial membrane hyaline. Anal fin generally whitish with dark distal border. Adipose fin with whitish band. Caudal-fin spines with six to seven whitish spots and branched rays with four to six. Interradial membrane with pattern similar to dorsal fin.

Range. The specimens of *Cordylancistrus nephelion* were captured in three tributaries of the Tuy River: the Cagua River, the Mesia River (a tributary of the Guare River) and the Santa Cruz River (a tributary of the Taguaza River) at 40 km, 55 km and 130 km east of the headwaters of the Tuy River respectively (Fig. 3). This distribution suggests that the species may be present throughout the Tuy River basin. The species seems to inhabit small rivers of the north slope of the Serranía del Interior, Cordillera de La Costa. These rivers have transparent waters, with moderate to strong flow and a temperature of 15° to 20° C. The bottom generally consists of stone, gravel and sand. The predominant vegetation in this mountainous area is cloud forest.

An exhaustive review of the Venezuelan fish collections shows that the geographic distribution of the three species of *Cordylancistrus* present in the country is restricted and disjunct. *Cordylancistrus torbesensis* inhabits the foothill rivers of the south slope of the

Cordillera de Mérida; *C. perijae* is found in rivers of the eastern slope, north of the Sierra of Perijá and *C. nephelion* inhabits the Tuy River basin, in rivers of the north slope of the Serranía of the Interior, Cordillera de La Costa (Fig. 3).

TABLE 1. Morphometric data of *Cordylancistrus nephelion*. Morphometric data 1–15 are expressed as percentage of standard length, 16–20 as percentage of the head length, and 21–24 in ratios. MIN: minimum, MAX: maximum, AVE: average, STD: standard deviation, HL: head length, IOW: interorbital width, MRL: mandibular ramus length, OD: orbital diameter.

	Holotype	MIN	MAX	AVE	STD
SL (mm)	129,10	31,10	129,10	78,56	35,33
1 Head length	35,24	34,32	41,16	36,32	2,41
2 Predorsal length	43,14	42,90	46,62	44,17	1,37
3 Postdorsal length	36,64	35,05	37,68	35,98	0,95
4 Interdorsal length	14,79	10,13	15,31	13,29	1,93
5 Preanal length	64,14	64,14	69,45	67,36	1,84
6 Postanal length	28,43	28,43	35,11	30,50	2,20
7 Thoracic length	20,99	20,58	23,44	21,93	1,00
8 Abdominal length	22,46	19,61	24,01	21,69	1,40
9 Dorsal fin base	22,08	18,49	22,53	20,91	1,49
10 Dorsal spine length	24,98	21,34	25,50	23,50	1,67
11 Pectoral spine length	32,61	24,77	33,00	27,77	3,65
12 Pelvic spine length	25,64	25,00	27,31	25,94	0,86
13 Cleithral width	36,17	32,80	36,17	34,61	1,14
14 Caudal peduncle depth	14,64	12,50	14,64	13,43	0,84
15 Head depth	19,33	17,21	20,16	18,81	1,02
16 Snout length	69,67	59,38	70,55	66,67	4,29
17 Interorbital width	29,23	27,34	30,29	28,45	1,03
18 Orbital diameter	13,63	13,63	16,52	15,37	0,94
19 Longest interopercular odontode	40,88	11,72	40,88	21,23	9,81
20 Mandibular ramus length	29,89	23,44	30,77	28,36	2,51
21 IOW/MRL	0,98	1,17	0,93	1,01	0,08
22 HL/IOW	3,42	3,66	3,30	3,52	0,13
23 IOW/OD	2,15	2,15	1,73	1,86	0,17
24 HL/OD	7,34	7,34	6,05	6,53	0,42

TABLE 2 Comparative morphometric data of *Conchylancistrus*. Morphometric data 1-15 are expressed as percentage of standard length, 16-19 as percentage of the head length, and 20-23 in ratios. Abbreviations as in Table 1.

	<i>C. nephelion</i>		<i>C. perijae</i>		<i>C. torbesensis</i>		<i>C. platycephalus</i>		<i>C. platyrhynchus</i>		<i>C. daguae</i>	
	n=7	n=9	n=8	n=3	n=4	n=9	n=4	n=9	n=4	n=9	n=4	n=9
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
SL (mm)	31,10	129,10	33,40	127,30	28,75	64,60	86,60	115,40	55,50	70,70	32,37	88,28
1 Head length	34,32	41,16	35,90	39,42	36,10	41,39	36,53	37,53	31,82	35,65	31,28	38,30
2 Predorsal length	42,90	46,62	47,90	51,69	43,53	48,39	45,44	47,79	44,55	46,49	43,74	49,60
3 Postdorsal length	35,05	37,68	31,91	35,03	28,38	34,09	29,45	33,09	27,81	30,45	26,79	31,23
4 Interdorsal length	10,13	15,31	14,37	17,83	4,97	8,99	12,59	14,14	12,43	13,58	9,14	13,06
5 Preanal length	64,14	69,45	68,86	73,39	67,74	72,34	69,89	72,80	54,59	74,61	69,34	76,60
6 Postanal length	28,43	35,11	23,27	31,50	25,22	29,21	22,01	27,89	24,50	26,87	22,01	26,17
7 Thoracic length	20,58	23,44	19,77	24,72	21,01	32,18	23,74	27,29	22,16	28,97	20,96	26,29
8 Abdominal length	19,61	24,01	20,96	23,73	19,08	20,97	20,41	23,09	26,17	29,73	21,74	26,12
9 Dorsal fin base	18,49	22,53	22,46	25,68	22,09	24,89	23,79	24,87	25,31	30,26	23,11	29,11
10 Dorsal spine length	21,34	25,50	22,15	25,05	19,65	24,19	21,36	22,11	19,41	23,90	18,46	24,85
11 Pectoral spine length	24,77	33,00	24,55	36,55	23,26	31,29	24,77	29,28	29,50	35,64	24,41	36,68
12 Pelvic spine length	25,00	27,31	21,38	24,07	22,20	27,18	18,82	19,28	19,28	23,71	20,37	27,64
13 Cleithral width	32,80	36,17	33,98	40,78	34,30	39,68	35,91	39,30	35,29	38,67	31,80	38,10
14 Caudal peduncle depth	12,50	14,64	9,58	11,55	6,26	7,60	10,15	11,87	10,78	11,89	9,65	11,88
15 Head depth	17,21	20,16	17,42	19,04	14,58	16,42	16,50	19,52	14,97	137,88	14,27	17,66
16 Snout length	59,38	70,55	66,74	73,65	65,13	71,93	68,66	69,81	66,67	70,31	58,99	70,40
17 Interorbital width	27,34	30,29	25,86	28,68	26,05	28,67	25,51	26,69	25,05	27,45	27,94	35,11
18 Orbital diameter	13,63	16,52	11,38	16,28	10,06	12,83	10,63	11,02	12,50	15,69	10,79	13,95
19 Mandibular ramus length	23,44	30,77	25,97	33,45	24,37	34,49	33,23	33,33	34,38	37,68	21,15	29,59
20 IOW/MRL	0,93	1,17	0,79	1,10	0,81	1,14	0,77	0,80	0,66	0,80	1,03	1,46
21 HL/IOW	3,30	3,66	3,49	3,87	3,36	3,84	3,75	3,92	3,64	3,99	2,85	3,58
22 IOW/OD	1,73	2,15	1,76	2,48	2,17	3,00	2,31	2,50	1,75	2,19	2,14	3,11
23 HL/OD	6,05	7,34	6,14	8,79	7,79	10,08	9,07	9,41	6,38	8,00	7,17	9,27

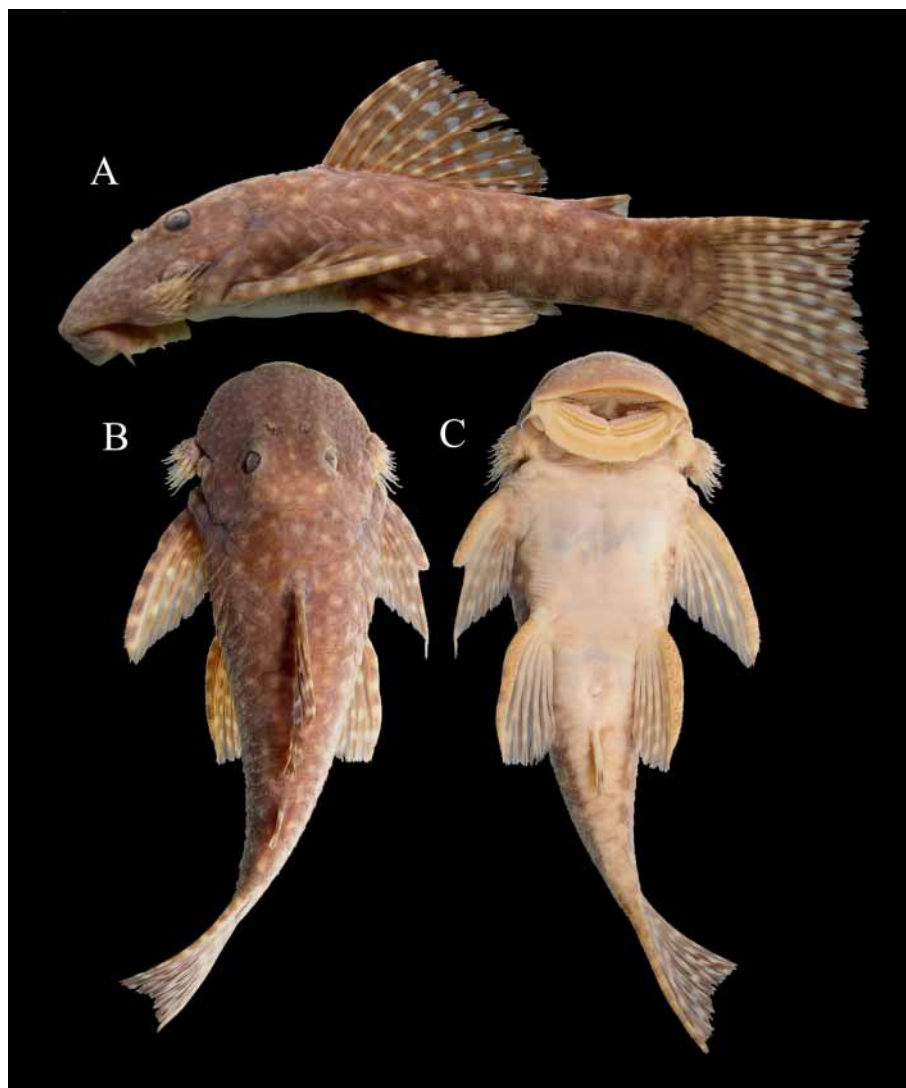


FIGURE 1. *Cordylancistrus nephelion* MBUCV-V-21800, 129.1 mm SL, holotype, A: lateral, B: dorsal, and C: ventral views. Photos by N. Milani.

Etymology. The name of the species is taken from the Greek word *nephelion*, meaning cloudlike spots, in reference to the color pattern of the species.

Discussion

Comparisons. The external morphology of *C. nephelion* most closely resembles *C. perijae*. Both species possess a robust body and both reach a similar maximum size that is larger than the maximum size of other *Cordylancistrus* species. The remaining species

possesses a more depressed body. *Cordylancistrus nephelion* separates easily from *C. platycephalus* by the absence of keels on lateral plates of the body. *Cordylancistrus nephelion* can be distinguished from *C. platyrhynchus* in the number of odontodes in the interopercular area (six or more large odontodes vs. two or three smaller ones). *Cordylancistrus nephelion* differs from *C. torbesensis* and *C. perijae* because the latter two species have the edge of the posterior lip without undulations and the edge of the posterior lip of *C. nephelion* has undulations. Finally, in *C. nephelion* the exposed area of the opercle is small, while in *C. daguae* the exposed area of the opercle is of greater size, very evident and extended posteriorly. Table 3 shows the morphometric data of the species currently assigned to *Cordylancistrus*. The morphometric data that distinguish *C. nephelion* from the other species are postdorsal distance, postanal length, cleithral width, length of dorsal-fin base and caudal peduncle depth.



FIGURE 2. *Cordylancistrus nephelion* MBUCV-V-21800, 129.1 mm SL, holotype, Detail of the ventral surface of head. Photo by N. Milani

Observations. Collections in the Tuy River basin (Eigenmann, 1920; Schultz, 1944; Fernández Yépez, 1945) have produced a list of fish species inhabiting this basin and the description of three new species of loricariid catfishes, *Ancistrus brevifilis* and *Chaetostoma pearsei* Eigenmann 1920 and *Chaetostoma dupouii* Fernández-Yépez 1945. Additionally, *Chaetostoma guairense* Steindachner, 1881 was described from the basin. Other loricariid catfishes that apparently came from the Tuy River basin are: *Farlowella acus* (Kner, 1853), *Lasiancistrus mystacinus* (Kner, 1854), *Rineloricaria caracasensis* (Bleeker, 1862), and *Squaliforma villarsi* (Lütken, 1874). Mago-Leccia (1968) presented

an inventory of the fishes from the Guaire River and the Tuy River basin and included the following additional species: *Loricaria* sp., *Hypostomus plecostomus* and *Hypostomus emarginatus* (probably *Squaliforma emarginata*). The discovery of a species new to science in the Tuy River basin, despite the prior inventories and the basin's relatively small size, suggests the following non-exclusive possibilities: 1) The population density of *C. nephelion* has been continuously low and is not a recent result or sampling artifact; 2) The species inhabits restricted areas of the basin where peculiar environmental conditions are found. At the moment, *C. nephelion* and other fish species of this basin are obliged to live in the few remaining small rivers that have not been contaminated with pollution or rendered impassable by dams. The Tuy River basin is extremely altered, and the Tuy River proper and almost all of its tributaries (Guaire, Caucagua Rivers and others) are highly contaminated by the urban and industrial waste of human conglomerates and industries. Other tributaries, including the Lagartijo, Taguaza and Taguazita Rivers have been dammed for water supply. Because of this environmental degradation, there are very few areas where the autochthonous fish fauna can take refuge and survive. If government institutions fail to establish recovery or protection plans, the extinction of this new species and others that are endemic to the basin will be a very distinct possibility. The extinction of these species would imply not only the loss of the biological information that it represents, but also the loss of information on the evolutionary history of the Tuy River and of the La Costa mountain range. Such a loss would reduce the biodiversity of northern Venezuela significantly.

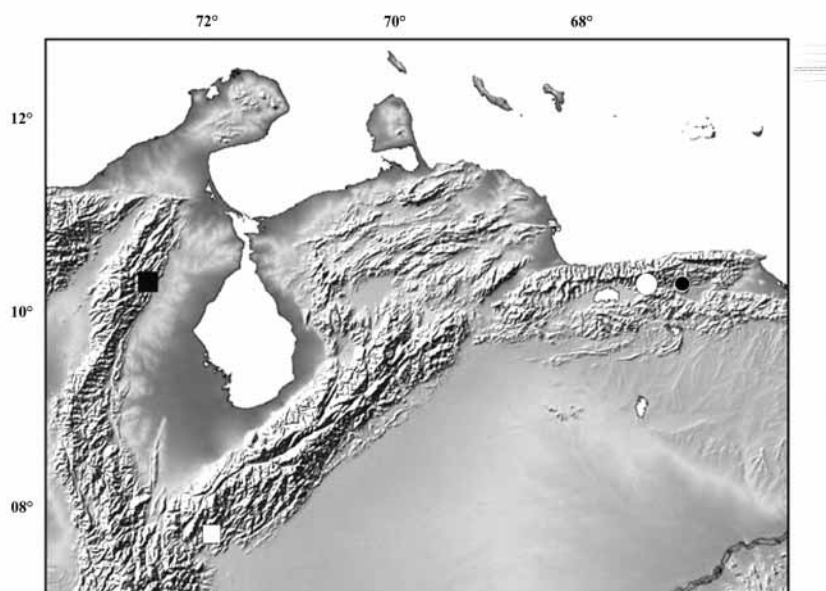


FIGURE 3. Geographical distributions of *Cordylancistrus* species in Venezuela. *C. nephelion* circles, white circle is the type locality. *C. torbesensis* white square. *C. perija* black square.

Artificial key for the species of the genus *Cordylancistrus*

- A) Lateral plates of the body without spiny keels B
 Lateral plates of the body with spiny keels
 *Cordylancistrus platycephalus* (Boulenger, 1898) Ecuador
- B) Evertible odontodes of the interopercular area well developed (hypertrophied), visible and numerous (generally 10 or more) C
 Evertible odontodes of the interopercular area inconspicuous and reduced in number to two or three *Cordylancistrus platyrhynchus* (Fowler, 1943) Colombia
- C) Edge of the posterior lip without undulations D
 Edge of the posterior lip with marked undulations E
- D) Color pattern of the body and fins uniform, grayish-green to light or dark brown. Head depth 17.4–19.0% of standard length. Longest evertible interopercular odontode doesn't reach the cleithral spine.....
 *Cordylancistrus perijae* Pérez and Provenzano, 1996 Venezuela
 Color pattern of the body with a midlateral irregular dark stripe with four or five vertical projections, these projections join in the dorsal region and surround four to five pale areas, fins with three to four dark bands, distal border of the first dorsal rays pale, distal border of the upper lobe of the caudal-fin rays pale. Head depth 14.6–16.4% of standard length. Longest evertible interopercular odontode reaches the end of the cleithral spine *Cordylancistrus torbesensis* (Schultz, 1944) Venezuela
- E) Color pattern of the body uniform light to dark brown, without spots. Fins spines with three to four whitish spots. Head depth 14.3–17.7% of standard length
 *Cordylancistrus daguae* (Eigenmann, 1912) Colombia
 Color pattern of the body grayish-green with whitish irregular spots. Fins spines with four to six whitish spots. Head depth 17.2–20.2% of standard length
 *Cordylancistrus nephelion* new species Venezuela

Additional Specimens Examined

Ancistrus brevifilis: MBUCV V 21248, 1 ex., 78.6 mm SL. *A. gymnorhynchus*: MBUCV V 19956, 5 ex., 17.83–82.72 mm SL. *A. macrophthalmus*: MBUCV V 18380, 3 ex., 52.81–66.84 mm SL. *Aphanotorulus ammophilus*: MBUCV V 26460, 1 paratype, 90.14 mm SL. *Chaetostoma anomalum*: MBUCV V 11864, 9 ex., 59.25–79.93 mm SL. *C. guairense*: MBUCV V 21804, 6 ex., 58.9–84.2 mm SL. *C. vasquezi*: MBUCV V 18380, 8 ex, 35.61–84.03 mm SL. *C. venezuelae*: MBUCV V 9762, 4 ex., 58.56–81.14 mm SL. *C. perijae*: MBLUZ 4413, holotype, 127.3 mm SL; MBUCV V 21168, 3 paratypes, 31.9–52.6 mm SL; MBUCV V 21747, 7 paratypes, 32.4–121.3 mm SL. *Cordylancistrus daguae*: FMNH 569052, holotype, 60.4 mm LS; FNNH 569053, 3 of 27 paratypes, 75.84–32.02 mm SL; FNNH 569054, 2 of 4 paratypes, 33.9–65.5 mm SL; FMNH 76262, 3 of 14

ex., 60.69–51.03 mm SL. *C. platycephalus*: BMNH 1898.11.4.42, holotype, 110.3 mm SL; ANSP 153645, 2 ex., 86.6–115.4 mm SL; FMNH 97429, 1 ex., 90.1 mm SL. *C. platyrhynchus*: ANSP 70512, holotype, 70.70 mm SL; ANSP 70513, 1 paratype, 67.75 mm SL; MBUCV V 18376 (ANSP 84570), 3 ex. 37.4–56.10 mm SL. *C. torbesensis*: MBUCV V 18374 (USNM-121002), 5 paratypes, 23.8–51.8 mm SL; MCNG 8066, 17 ex., 26.2–58.7 mm SL; MCNG 11798, 1 ex., 62 mm SL. *Dekeyseria scaphirhyncha*: MBUCV V 17568 2 ex., 61–96.50 mm SL. *Dolichancistrus carnegiei*: FMNH 58350, holotype, 82.67 mm SL; FMNH 58351, 2 of 5 paratypes, 17.1–31.42 mm SL. *D. cobrensis*: MBUCV V 18375 (USNM 121037), 10 paratypes, 12.7–53.8 mm SL. *D. pediculatus*: FMNH 58352, holotype, 84.10 mm SL; FMNH 58564, 2 of 3 paratypes, 34.46–63.12 mm SL; FMNH 58565, 2 of 4 paratypes, 32.04–69.9 mm SL. *D. setosus*: BMNH 1880.2.26.9-10, holotype and paratype, 79.2–95.2 mm SL. *Exastilithoxus fimbriatus*: MBUCV V 19564, 1 ex., 50.56 mm SL. *Glyptoperichthys gibbiceps*: MBUCV V 18421, 1 ex, 91.13 mm LS. *Hemiancistrus maracaiboensis*: MBUCV V 16353, 1 ex., 206.8 mm LS. *H. megacephalus*: MBUCV V 16972, 3 ex., 84.9–107.4 mm SL. *Hypostomus sculpodon*: MBUCV V 8151, 2 paratypes, 35.53–97.11 mm LS. *Lasiancistrus maracaiboensis*: MBUCV V 18305, 6 ex, 77.65–107.27 mm SL; MBUCV V 18457, 3 ex., 112.0–112.6 mm SL. *Liposarcus multiradiatus*: MBUCV V 18422, 1 ex, 96.15 mm LS. *Leptoancistrus canensis*: MBUCV V 28064, 6 ex., 28.09–37.76 mm SL. *Neblinichthys roraima*: MBUCV V 21301, 1 paratype, 43.08 mm SL; MBUCV V 21303, 4 paratypes, 33.77–41.63 mm SL. *Panaque maccus*: MBUCV V 17135, 1 ex., 65.9 mm SL. *Parancistrus aurantiacus*: MBUCV V 19959 (INPA-787), 1 ex. 88.7 mm SL. *Peckoltia vittata*: MBUCV-V-23124, 1 ex., 81.4 mm SL. *Lithoxancistrus orinoco*: MBUCV V 16873, 20 ex, 13.50–84.60 mm LS. *Pseudancistrus sidereus*: MBUCV V 26169, 2 ex, 150.86–172.65 mm LS. *Pseudolithoxus anthrax*: MBUCV V 18384 holotype, 123.7 mm SL; MBUCV V 23104, 4 paratypes, 74.6–122.17 mm LS.

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