

Chilatherina alleni, a new species of Rainbowfish (Melanotaeniidae) from Irian Jaya

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Abstract

A new species of melanotaeniid, *Chilatherina alleni*, is described from 13 specimens, 44.1-82.6 mm SL, collected in 1994 in the Aiborei River of the Siriwo drainage, near Nabire, northern Irian Jaya. It is most similar to *C. fasciata* of the northern New Guinea mainland and *C. pricei* of Yapen Island in Geelvink Bay. It differs greatly from these in colouration, *C. alleni* having a dark mid-lateral stripe and reddish fins in males. It further differs from *C. fasciata* in having a shorter blunter snout with the maxillary reaching to about the level of the anterior edge of the eye (falling well short in *C. fasciata*). It further differs from *C. pricei* in the modal counts of soft anal rays (usually 19-24 in *alleni* vs 24-27 in *pricei*), and in the number of cheek scales (16-18 in *alleni* vs 19-23).

Introduction

The melanotaeniid genus *Chilatherina* contains small (up to 100 mm SL) freshwater fishes that inhabit rivers, creeks and lakes and are restricted to the lowlands of northern New Guinea and adjacent Yapen Island in the Geelvink Bay. Allen (1981) reviewed the genus, recognising six species including *C. axelrodi* Allen, *C. campsi* (Whitley), *C. crassispinosa* (Weber), *C. fasciata* (Weber), *C. lorentzi* (Weber), and *C. sentaniensis* (Weber). Since that review, three other species have been added; *C. bulolo* (Whitley, see Allen 1983), *C. bleheri* Allen, 1985 and *C. pricei* Allen, 1996. This paper describes a new member of the genus from Siriwo, north Irian Jaya.

The methods of counting and measuring are as follows: *dorsal and anal rays* - the last ray of the anal and second dorsal fins is frequently divided at the base and counted as a single ray; *lateral scales* - number of scales in horizontal row from upper corner of gill cover to caudal-fin base, excluding the small scales posterior to the hypural junction; *transverse scales* - number of scales in vertical row between anal fin origin and base of first dorsal fin; *predorsal scales* - number of scales along midline of nape in front of first dorsal fin; *cheek scales* - total number of scales covering the suborbital and preoperculum; *standard length (SL)* - measured from the tip of the upper lip to the caudal-fin base; *head length* - measured from the tip of the upper lip to the upper rear edge of the gill opening; *caudal peduncle depth* is the least depth and *caudal peduncle length* is measured between two vertical lines, one passing through the base of the last anal ray and the other through the caudal-fin base.

Counts and measurements that appear in parentheses in the description refer to the range for paratypes if different from the holotype. Type specimens are deposited at the Museum Zoologicum Bogoriense, Bogor, Indonesia (MZB) and the Western Australian Museum, Perth (WAM).

Chilatherina alleni new species (Figs 1-2)

Holotype. MZB 6234, male, 82.6 mm SL, in a tributary of the Aiborei River of the Siriwo drainage, Irian Jaya (3°38'S, 136°05'E); collected by Siriwo villagers using a piece of wire mosquito mesh, November, 1994.

Paratypes. MZB 6235, 7 specimens, 56.7-70.6 mm SL, collected with holotype; WAM P.31029-001, 5 specimens, 44.1-65.5 mm SL, collected with holotype.

Description

Counts and proportions that appear in parentheses refer to the range for paratypes if different from the holotype.

Dorsal rays V-I, 13 (IV to VI, 13 to 15); anal rays I, 20 (I, 19-24); pectoral rays 15 (13 to 15); pelvic rays I, 5; branched caudal rays 15; lateral scales 38 (37 or 38); transverse scales 10; predorsal scales 17 (16 to 19); cheek scales 17 (15 to 18); gill rakers on first arch 2 + 13 = 15 (2 + 12 to 14).

Body depth 2.7 (2.7-3.3), head length 3.9 (3.8-4.1), both in SL. Greatest width of body 2.8 (2.3-2.7) in greatest body depth. Snout length 3.2 (3.1-3.5), eye diameter 3.5 (3.1-3.3), interorbital width 2.8 (2.8-3.2), depth of caudal peduncle 2.1 (2.3-2.8), length of caudal peduncle 1.7 (1.4-2.0), all in head length.

Upper jaw slightly protruding; jaws oblique, premaxilla without an abrupt bend between the anterior horizontal portion and lateral part; maxilla ends at level of front border of eye or slightly anterior; upper lip swollen with 6-7 irregular rows of small conical teeth, mainly embedded outside of mouth, teeth usually narrowing to a single row on posterior-most part of jaw; similar teeth in lower jaw in about 6-7 irregular rows anteriorly, reduced to 1 or 2 rows posteriorly; a small patch of minute, conical teeth on vomer, palatines with narrow row of similar teeth.

Scales relatively large, arranged in regular horizontal rows; most of body scales with crenulate or weakly scalloped margins; predorsal scales extending to posterior half of interorbital; preopercle with 2 scale rows between its posterior angle and edge of eye.

First dorsal fin originates about even with level of anal fin origin; longest (third) spine of first dorsal fin in males 1.5 (1.6) in head length, its depressed tip reaching second soft ray of second dorsal fin; longest (third) spine of first dorsal fin in females 2.0-2.2 in head length, its depressed tip reaching spine of second dorsal fin or falling short of this point; longest (anterior in females, posterior in males) rays of second

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dorsal fin 2.3 (2.1-2.5) in head length, the depressed posterior rays extending on to basal third of caudal peduncle in females and posterior third of caudal peduncle in males; longest (anterior in females, posterior in males) anal rays 2.0 (1.9) in head length of males and 2.2-2.7 in head length of females. Pelvic fin tips of males when depressed reaching second soft anal ray, length of pelvics 1.5; pelvic fin tips of females when depressed reaching origin of anal fin or just falling short of this point, length of pelvics 1.8-2.1 in head length; length of pectoral fins 1.6 (1.4-1.7), of caudal fin 1.4 (1.1-1.3), both in head length. Caudal fin moderately forked.

Colour of male holotype in life: upper half brownish anteriorly becoming turquoise posteriorly, each horizontal scale row separated by narrow brown or dull orange stripe; midlateral dark blue stripe, occupying about two horizontal scale rows, from upper rear corner of eye to base of caudal fin, interrupted on its lower edge by about five, white indentations in area just behind pectoral fin; lower half of body mainly dusky silver, except for intense white stripe with lower margin of dull orange occupying scale row immediately below dark midlateral stripe; 4-5 diffuse charcoal coloured bars on lower side bet-

ween level of pelvic fin base and anal fin origin; first dorsal fin light blue; second dorsal and anal fins translucent bluish becoming reddish on distal portion; caudal fin translucent reddish; pectoral and pelvic fins mainly translucent. Live colours of a mature female were very similar although slightly less intense. Its median fins were mainly translucent to bluish without any red.

Colour in alcohol: upper half of body brown, lower half white; a broad (average width of two scale rows), blackish midlateral stripe from rear edge of head to base of caudal fin; fins whitish or translucent with dusky pigmentation on membranes. Some specimens with several faint vertical, dark bars on lower sides between level of pelvic fin base and middle of anal fin.

Sexual dimorphism: besides the colour difference noted above, males are typically more deep-bodied. The average body depth as percentage of the SL for the two male types is 37.2 compared with an average of 31.4 for 11 female paratypes. In addition, the sexes differ in the posterior profile of the second dorsal and anal fins; it is short and blunt in females and somewhat elongate and pointed in males.

Table 1
Proportional measurements of selected type specimens of *Chilatherina alleni* expressed as percentage of the standard length

	holotype MZB 6234 male	paratype MZB 6235 female	paratype MZB 6235 male	paratype WAM P.31029-001 female	paratype WAM P.31029-001 female	paratype MZB 6235 female	paratype WAM P.31029-001 female	paratype WAM P.31029-001 female
Standard length (mm)	82.6	70.6	67.5	65.5	64.3	60.6	56.2	54.2
Body depth	36.8	30.2	37.5	32.5	31.6	31.4	33.6	30.6
Body width	13.3	12.2	13.8	13.0	14.0	12.7	13.9	12.7
Head length	25.4	24.5	25.9	25.2	26.1	25.4	26.3	26.6
Snout length	7.9	7.4	8.3	7.6	8.2	7.3	7.8	7.9
Eye diameter	7.3	7.5	7.9	8.2	8.2	8.1	8.5	8.7
Bony interorbital width	9.0	8.2	8.7	9.0	9.3	8.7	9.1	8.3
Depth of caudal peduncle	12.2	9.8	11.1	10.8	10.7	10.2	10.3	9.6
Length of caudal peduncle	15.4	16.9	12.7	17.6	16.0	16.2	15.1	15.5
Predorsal distance	46.9	49.4	46.7	48.4	48.8	47.9	50.4	47.2
Preanal distance	49.3	51.1	47.6	51.3	52.1	51.2	52.8	50.2
Prepelvic distance	37.4	36.0	35.3	36.9	37.5	35.3	37.4	36.5
2nd dorsal fin base	24.9	22.4	27.0	23.2	22.4	22.4	22.1	24.5
Anal fin base	40.9	38.0	44.0	34.7	34.1	36.8	35.2	38.7
Pectoral fin length	15.5	16.4	18.8	17.1	16.3	17.0	15.1	17.0
Pelvic fin length	16.6	13.6	17.8	14.0	14.5	13.7	14.8	12.4
Longest ray 1st dorsal fin	15.6	10.9	16.4	12.5	12.4	11.9	12.1	13.3
Longest ray 2nd dorsal fin	10.9	10.9	12.1	10.2	10.3	12.0	11.0	12.4
Longest anal ray	12.6	11.2	13.3	11.5	10.4	10.1	9.8	10.3
Caudal fin length	18.6	21.2	21.5	22.0	21.5	21.9	20.5	21.4

Table 2
Fin ray counts for type specimens of *Chilatherina alleni*

Spines on 1st Dorsal Fin			Soft Rays - 2nd Dorsal Fin			Pectoral Rays		
IV	V	VI	13	14	15	13	14	15
2	10	1	5	5	3	1	6	6



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Fig. 1. - *Chilatherina alleni*, holotype, 82.6 mm SL, Siriwo, Irian Jaya, photographed in an aquarium.



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Fig. 2. - *Chilatherina alleni*, female paratype, 60.6 mm SL, Siriwo, Irian Jaya, photographed in an aquarium.



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Fig. 3. - *Chilatherina fasciata*, adult male, about 80 mm SL, Mamberamo River system, photographed in an aquarium.

Comparisons

Chilatherina alleni is most similar to and apparently related to *C. fasciata*, which is broadly distributed in northern New Guinea between the Markham and Mamberamo river systems. The two species share similar fin ray counts (see

Allen 1991 for a review of *Chilatherina*), but differ noticeably in colour (compare Figs 1-2 with Fig. 3) and shape of the snout. The most prominent colour difference concerns the dark midlateral stripe, which is well developed in *C. alleni*,

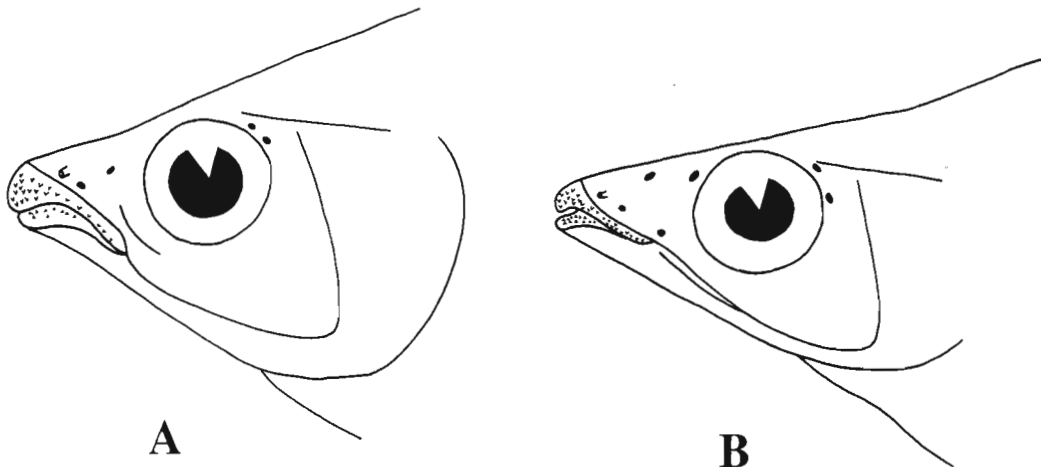


Fig. 4. - Camera lucida drawings of snout region of (A) *Chilatherina alleni*, male, 82.6 mm SL and (B) *C. fasciata*, male, 83.0 mm SL.

but either absent or weak in *C. fasciata*. Furthermore, the reddish fin colouration of male *C. alleni* is lacking in *C. fasciata*. The snout of *C. alleni* is short and blunt in comparison to the more elongate, somewhat pointed snout of *C. fasciata*. Additionally, the rear edge of the maxillary of *C. alleni* is about level with the anterior edge of the eye, but falls well short of the eye in *C. fasciata*. The snout and jaw differences are contrasted in Fig. 4.

Habitat

C. alleni was collected from a tributary of the Aiborei (=Aboge) River which is part of the Siriwo drainage. The river is approximately five meters wide, with a maximum depth on about one meter, although most pools which *C. alleni* tend to favor are no more than 70 cm in depth. The substrate consists of gravel and rocks. The water is cold and clear and swiftly descends from the mountains through the village adjacent to the airstrip. In November 1994 water pH was 7.0.

Etymology

Named *alleni* in honour of **Gerald R. Allen**, in recognition of his outstanding contribution to ichthyology and his

deep commitment to the study and preservation of the aquatic fauna of New Guinea.

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RÉSUMÉ

Chilatherina alleni n.sp., une nouvelle espèce de Poisson Arc-en-Ciel (Melanotaeniidae) d'Irian Jaya

Le genre *Chilatherina* renferme de petites espèces (jusqu'à 100 mm LS) des eaux douces qui fréquentent les rivières, les ruisseaux et les lacs dans les basses terres du Nord de la Nouvelle-Guinée et sur l'île de Yapen, dans la baie de Geelvink. Avec *C. alleni*, la nouvelle espèce décrite d'un affluent de la rivière Aiborei, dans le bassin du Siriwo, au Nord d'Irian Jaya, le genre compte 10 espèces, toutes revues par **Gerald R. Allen** qui en a décrit trois nouvelles et dont la dernière connue lui est dédiée.

Elle est la plus semblable à *C. fasciata* Allen, 1996 qui est largement distribuée dans le Nord de la Nouvelle-Guinée,

entre les systèmes des rivières Markham et Mamberano. Son museau est court en comparaison de celui de *C. fasciata* et la limite postérieure du maxillaire est sensiblement au niveau du bord antérieur de l'oeil ; de plus, les couleurs sont différentes : une bande latérale sombre bien nette et la coloration rougeâtre des nageoires impaires du mâle (Fig. 1).

La localité typique est un cours d'eau de 5 m de large environ sur 1 m de fond au maximum. La plupart des bassins qu'affectionnent particulièrement les poissons ne dépassent pas 70 cm. Le fond est fait de gravier et de pierres. L'eau est froide, claire et descend rapidement de la montagne (pH 7).