Three New Rainbowfishes (Melanotaeniidae) from Irian Jaya and Papua New Guinea

by Gerald R. ALLEN *

The author has studied freshwater fishes of New Guinea since 1978, having made annual fieldtrips there for six consecutive years. Until 1982 only the eastern half of this enormous island, the independant nation of Papua New Guinea was visited. Collections there resulted in many new discoveries, particularly in the rainbowfish family Melanotaeniidae. In spite of the richness of these collections the prospect of visiting the Indonesian controlled Irian Jaya immediately to the west was even more exciting. Few freshwater collections have been made there and most of these were long ago by Dutch naturalists, mainly between 1903 and 1922, with the exception of an expedition from the Rijksmuseum in Leiden during the early 50's. I had studied most of the known fishes from Irian Jaya in the museums at Leiden and Amsterdam during 1981 and found a number of undescribed species. Because of the limited nature of the Dutch collections I anticipated a wealth of fishes remaining to be discovered on the seldom visited western half of the island.

Finally in 1982 I had on opportunity to make collections in Irian Jaya. Although the expedition was of only two weeks duration and the number of collecting days considerably less, nearly every stream yielded new fishes, especially in the jungles of the remote Vogelkop Peninsula. The present paper describes two species of rainbowfishes taken on this expedition and a third species collected from Papua New Guinea in 1983. The new taxa belong to the genera *Chilatherina, Glossolepis*, and *Melanotaenia*. The first two groups are represented by eight and six species respectively and are distributed in northern New Guinea. *Melanotaenia*, the largest genus in the family, contains about 30 species from Australia and New Guinea. **Allen** and **Cross** (1982) reviewed these genera in their monograph of the family, although a number of additional species have been described since this work appeared.

The methods of counting and measuring follow those of **Allen** and **Cross** (1982). Proportional measurements and counts for the new species are summarised in Tables 1-5. Type specimens have been deposited at the following institutions: Lembaga Biologi Nasional, Bogor, Indonesia (LBN); Rijksmuseum van Natuurlijke Histoire, Leiden (RMNH); United States Museum of Natural History, Washington, D.C. (USNM); Western Australian Museum, Perth (WAM); and Zoologisch Museum, Amsterdam (ZMA).

Fig. 1. - *Chilatherina bleheri*, male, approximately 80 mm standard length, photographed in an aquarium at Danau Biru, Irian Jaya.
Chilatherina bleheri, mâle, environ 80 mm longueur standard, photographié en aquarium à Danau Biru, Irian Jaya.

* *Departement of Ichthyology, Western Australian Museum, Francis Street, Perth, Western Australia 6000.*

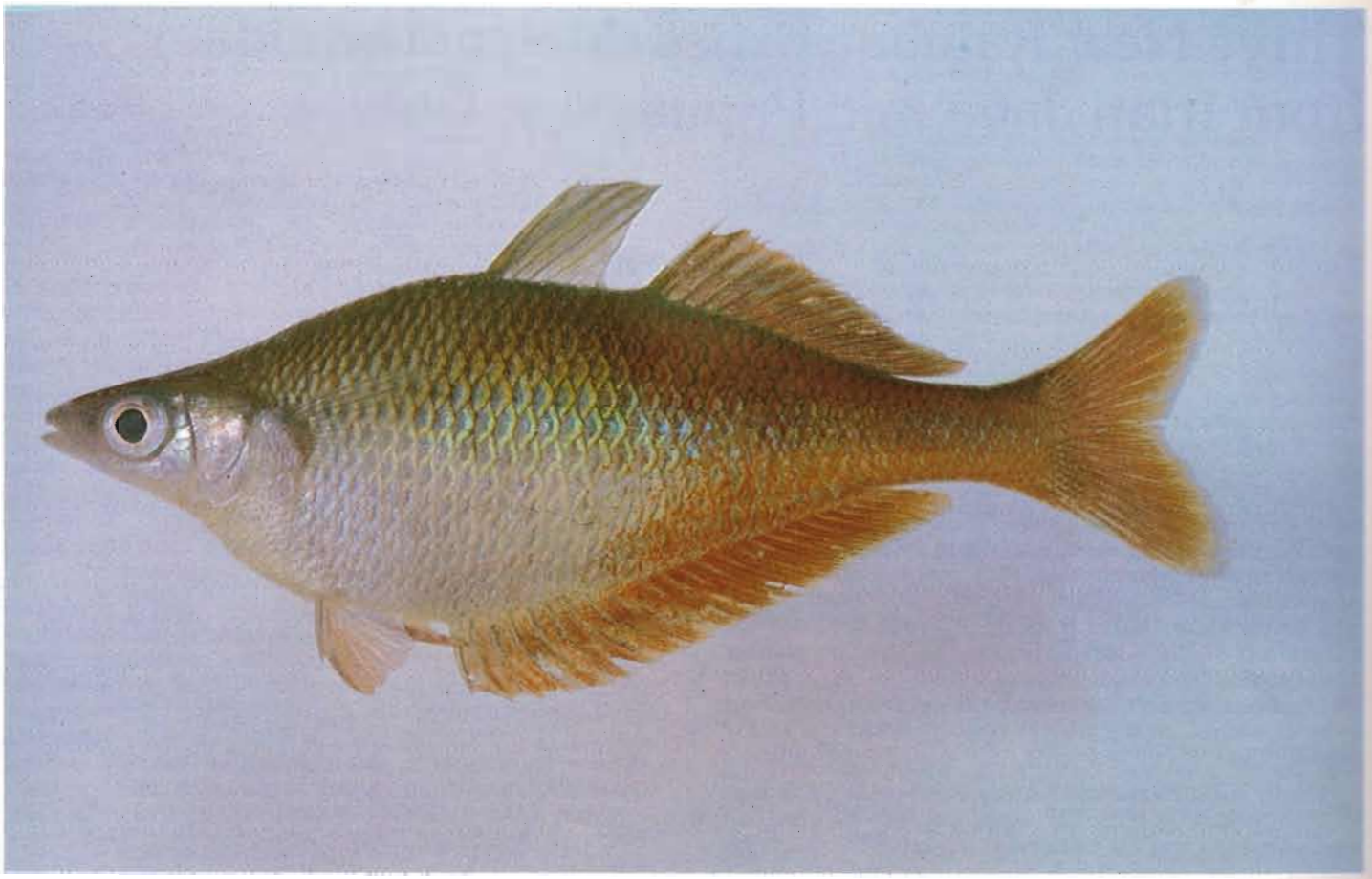

Fig. 2. - *Chilatherina bleheri*, male paratype, 91.6 mm standard length, Danau Biru, Irian Jaya.
Chilatherina bleheri, mâle paratype, 91,6 mm longueur standard, Danau Biru, Irian Jaya.

Bleher's Rainbowfish
Chilatherina bleheri, new species

Holotype. LBN 5240, male, 89.0 mm SL, small creek next to landing strip on south shore of Lake Holmes (Danau Biru), Irian Jaya, Indonesia (approximately 2°29'S, 138°OO'E), rotenone, **G. Allen**, 21 November 1982.

Paratypes (all collected at Lake Holmes). LBN 5241, 7 specimens, 35.9-95.2 mm SL, seine, **G. Allen** and **H. Bleher,** 22 November 1982; RMHN 29397, 2 specimens, 75.3-81.5 mm SL, collected with holotype; USNM 266380, 2 specimens, 71.7-84.3 mm SL, collected with LBN paratypes; WAM P27869-001, 30 specimens, 24.0-84.0 mm SL, small tributary at west end of lake, rotenone, **G. Allen, H. Bleher,** and **W. Tins,** 20 November 1982; WAM P27870-001, 4 specimens, 74.0-90.0 mm SL, collected with LBN paratypes; WAM P27871-001, 10 specimens, 47.0-91.6 mm SL, collected with holotype; ZMA 119.212, 2 specimens, 71.7-84.3 mm SL, collected with holotype.

Description

Counts and proportions that appear in parentheses refer to the range for paratypes (based on 20 specimens, 55-95 mm SL) if different from the holotype.

Dorsal rays V-I,13 (IV to VI-I,11 to 16); anal rays I,24 (I,21 to 26); pectoral rays 14 (14 to 16); pelvic rays I,5; branched caudal rays 15; vertical scale rows from rear edge of operculum to caudal fin base 49 (43 to 50); horizontal scale rows from base of anal fin origin to base of first dorsal fin 14 (14 to 16); predorsal scales 24 (22 to 25); preopercle-suborbital scales 20 (23 to 28); gill rakers on first arch 4 + 17 = 21 (2 to 4 + 14 to 17 = 17 to 21).

Body depth 2.6 (2.5 to 4.5), head length 4.1 (3.8 to 4.1), both in standard length. Greatest width of body 3.2 (2.4 to 3.2) in body depth. Snout length 3.3 (3.3 to 3.5), eye diameter 3.2 (3.0 to 3.3), interorbital width 3.3 (3.1 to 3.4), depth of caudal peduncle 2.7 (2.6 to 3.0), length of caudal peduncle 1.4 (1.3 to 1.6), all in head length.

Jaws oblique, upper jaw produced; premaxilla without an abrupt bend between the anterior horizontal portion and lateral part; maxilla ends slightly anterior to level of front of eye; upper lip swollen anteriorly, lower lip relatively thin; teeth conical with slightly curved tips; teeth in upper and lower jaw extending onto lip outside of mouth, arranged in a dense band composed of about 7 to 10 irregular rows anteriorly and gradually reduced to a single row posteriorly; a few scattered conical teeth on vomer; palatines edentulous.

Scales relatively large, arranged in regular horizontal rows; most of body scales with slightly crenulate margins; predorsal scales extending to posterior portion of interorbital; preopercle scale rows from posterior angle to edge of eye 3.

First dorsal fin originates opposite base of first or second soft anal fin ray; longest spine (3rd) of first dorsal fin 1.5 (1.5 to 1.9) in head length, its tip reaching base of spine at beginning of second dorsal fin in females and third soft ray in mature males when depressed. Longest soft ray (first in females, last two in males) of second dorsal fin 2.1 (1.7 to 2.2) in head length, the depressed posterior rays extending 1/4th to 1/3rd length of caudal peduncle in females and 2/3rd to 3/4th length in mature males. Longest (middle rays in both sexes) anal rays 2.0 (1.8 to 2.3) in head length. Soft dorsal and anal fins rectangular in outline, the posterior rays somewhat elongate and pointed, particularly in males. Pelvic fin tips when depressed reaching beginning of anal fin in females, to base of second or third soft anal ray in males; length of pelvic fin 1.6 (1.4 to 1.8), of pectoral fin 1.4 (1.4 to 1.5), of caudal fin 1.2 (1.1 to 1.4), all in head length. Caudal fin moderately forked.

Colour of male holotype in life: generally silvery or bluish on anterior half grading to greenish on upper back, becoming reddish posteriorly; scales on anterior half of body, particularly on upper back, with broad yellow-green margins; first dorsal fin charcoal grey: second dorsal fin grey suffused with red; caudal and anal fins red; pelvic fins reddish anteriorly with remainder white or translucent; pectoral fins translucent. Females lack the vivid red hues and are mainly silvery or pale bluish grading to grey or greenish-brown dorsally.

Colour in alcohol: overall dark brown or greyish on upper sides, pale tan or whitish on lower portion; median fins dusky grey, dorsal fin darkest; pelvic fins translucent with dark grey tips; pectoral fins pale.

Table 1

Proportional measurmeents of selected type specimens of *Chilatherina bleheri* expressed as a percentage of the standard length

	Holotype	Paratypes				
	LBN 0000 male	WAM P27871-001 male	RMNH 29397 male	WAM P27871-001 female	RMNH 29397 female	WAM P27871-001 female
Standard length (mm)	89.0	91.6	81.5	84.7	75.3	63.7
Depth	34.9	38.4	35.8	30.1	29.9	28.4
Width	10.9	11.9	12.8	12.8	12.2	10.8
Head length	21.8	25.1	25.1	26.0	26.3	24.5
Snout length	6.6	7.6	7.5	7.8	7.6	7.1
Orbit diameter	6.8	7.9	8.5	8.6	8.9	8.0
Bony interorbital width	6.6	8.1	7.5	8.2	7.8	8.0
Depth of caudal peduncle	8.2	9.6	9.8	8.7	8.8	8.3
Length of caudal peduncle	16.1	17.5	16.2	19.8	17.4	16.8
Snout to 1st dorsal fin origin	43.2	46.9	46.8	48.3	48.9	49.6
Snout to anal fin origin	40.6	46.9	45.0	48.4	48.9	48.4
Snout to pelvic fin origin	30.3	34.6	33.9	36.1	36.2	36.0
Length of 2nd dorsal fin base	25.0	25.9	27.6	23.8	22.0	21.2
Length of anal fin base	38.7	43.1	43.9	36.6	39.8	38.3
Length of pectoral fin	15.6	17.5	18.4	17.0	17.1	16.6
Length of pelvic fin	13.3	16.9	17.3	14.5	14.2	14.1
Longest ray of 1st dorsal fin	14.8	13.2	14.3	13.6	13.7	14.1
Longest ray of 2nd dorsal fin	10.3	14.3	13.6	14.2	13.7	14.1
Longest anal ray	10.9	12.9	13.7	11.4	12.0	11.6
Length of caudal fin	15.0	19.4	22.1	20.9	19.2	21.5

Table 2

Fin ray counts of type specimens of *Chilatherina bleheri*

1st Dorsal fin spines			2nd Dorsal fin soft rays					
IV	V	VI	11	12	13	14	15	16
1	16	4	1	1	4	12	2	1

Soft anal fin rays						Pectoral fin rays		
21	22	23	24	25	26	14	15	16
2	3	3	7	5	1	12	7	2

Fig. 3. - The type locality of *Chilatherina bleheri* at Danau Biru (Lake Holmes), Irian Jaya.
Localité typique de *Chilatherina bleheri* à Danau Biru (Lac Holmes), Irian Jaya.

Remarks

Chilatherina bleheri is most closely related to *C. fasciata*, a widely distributed species inhabiting northern New Guinea in the region between the Markham and Mamberamo Rivers. Although the type locality of the new species is part of the Mamberamo system no specimens of *C. fasciata* were collected in the vicinity. The two species differ primarily with respect to size of scales and coloration, particularly of mature males. The scale difference is reflected in several counts with *C. bleheri* invariably having smaller scales and hence higher counts: vertical scale rows - 43 to 50 vs. 39 to 44 for *C. fasciata*; horizontal scale rows 14 to 16 vs. 11 or 12 and predorsal scales 22 to 25 vs. 18 to 22. Sixty specimens of *C. fasciata* from seven localities throughout its range were utilised for comparisons. The males of *C. fasciata* lack the red coloration of *C. bleheri* and often possess a series of dark bars on the lower side above the breast region.

The type locality of Danau Biru or Lake Holmes (fig. 3) is a complex of three interconnected lakes lying at an altitude of about 430 metres above sea level and set in mountainous jungle terrain, approximately 290 kilometres west of Jayapura, the capital city of Irian Jaya. The lakes lie within a radius of 6-7 kilometres with the main lake having a length of approximately 4.5 kilometres and maximum width of about two kilometres. The depth appears to be relatively shallow (perhaps averaging less than 5-10 metres) and one of the dominant features is a profusion of dead "iron-wood" tree stumps which protrude above the surface. Their presence indicates that the present shoreline or perhaps the entire lake system was formed in relatively recent times by a catastrophic event which blocked the feeder stream. The lakes are drained by a small stream which flows into the Maberamo River at a point approximately 15 kilometres directly to the north. The type specimens were collected along the heavily vegetated shoreline of the main lakes and also from small, rocky bottom, tributary streams. The lake and surrounding creeks are inhabited by 11 fish species, including one other rainbowfish, *Melanotaenia maylandi* Allen.

Fig. 4. - *Glossolepis ramuensis*, male holotye, 55.0 mm standard length, tributary of Ramu River, Papua New Guinea.
Glossolepis ramuensis, mâle holotype, 55,0 mm longueur standard, affluent de Ramu River, Nouvelle-Guinée Papouasie.

In addition to the differences in colour pattern and fin lengths between the sexes of *C. bleheri* which were mentioned in the description, there is also a significant difference in the maximum body depth. Mature males are much deeper bodied than females. The maximum depth of 17 males, 74-95 mm SL, averaged 36.6 percent of the standard length compared with 27.6 percent for 13 females, 40-85 mm SL.

The species is named *bleheri* in honour of **Mr. Heiko Bleher** of Frankfurt, Germany who helped to collect the type specimens and generously provided financial assistance for the 1982 visit to Irian Jaya.

Ramu Rainbowfish
Glossolepis ramuensis new species

Holotype. WAM P28187-004, male, 55.0 mm SL, tributary of Ramuy River about 3 km south of Walium Village, Papua New Guinea (approximately 5°37'S, 145°28'E), rotenone, **G. ALLen** and **R. Steene,** 17 October 1983.

Description

Dorsal rays V-I,11; anal rays I,21; pectoral rays 13; pelvic rays I,5; branched caudal rays 15; vertical scale rows from rear edge of operculum to caudal fin base 38; horizontal scale rows from base of anal fin origin to base of first doral fin 10; predorsal scales 18; preopercle-suborbital scales 15; gill raker on first arch 5 + 13 = 18.

Body depth 3.0; head length 4.2, both in standard length. Greatest width of body 3.0 in body depth. Snout length 3.9, eye diameter 3.0, interorbital width 2.8, depth of caudal peduncle 2.3, length of caudal peduncle 1.2, all in head length.

Jaws about equal, oblique, premaxilla with an abrupt bend between the anterior horizontal portion and lateral part; maxilla ends at level well anterior to front border of eye; lips thin; teeth conical with slightly curved tips, those in outer row slightly stouter; teeth in upper jaw in 2 or 3 irregular rows anteriorly, reduced to a single row posteriorly, where they are most stout and are exposed when mouth is closed; about 26 teeth in outer row of upper jaw; teeth in lower jaw in about 4 or 5 irregular rows anteriorly, reduced to 1 or 2 rows posteriorly; a row of 10 small, conical teeth on vomer; palatines edentulous.

Scales relatively large, arranged in regular horizontal rows; most of body scales with slightly crenulate margins; predorsal scales extending to posterior portion of interorbital; preopercle scale rows from posterior angle to edge of eye 2.

First dorsal fin originates about 1/2 to 2/3rds eye diameter behind anal fin origin; longest spine (3rd) of first dorsal fin 1.3 in head length, its tip reaching base of 4th soft ray when depressed. Longest ray (last) of second dorsal fin 1.4 in head length, the depressed posterior rays extending to 3/4th length of caudal peduncle. Longest (last) anal ray 1.6 in head length. Soft dorsal and anal fins rectangular in outline, the posterior rays somewhat elongate and pointed. Pelvic fin tips when depressed reaching base of 3rd soft anal ray; length of pelvic fin 1.6, of pectoral fin 1.3, of caudal fin 1.0, all in head length. Caudal fin moderately forked.

Colour in life: upper half of body and head generally brown with charcoal scale outlines, lower half whitish; operculum silvery; a pair of yellow longitudinal stripes, with white space between, separating light and dark areas on side, these stripes extending from level of anal fin origin to caudal fin base; about 10 irregularly scattered black blotches on lower sides between yellow stripes and anterior portion of anal fin base; blackish stripe from upper rear edge of eye to upper pectoral fin base; first dorsal fin slightly dusky grey; second dorsal and anal fins yellow on basal third, translucent or slightly dusky on distal portions; caudal fin charcoal grey at base and translucent distally with some yellow at base of central rays; pelvic and pectoral fins mainly translucent.

Colour in alcohol: similar to live coloration except yellow absent from sides and fins; a blackish stripe evident from rear edge of eye to caudal fin base separating brown of upper half and whitish or tan of lower half; scales on upper portion of body with black scale outlines forming network.

Fig. 5. - *Glossolepis macutosus*, male from Omsis River, Papua New Guinea. This species is closely related to *G. ramuensis*.
Glossolepis maculosus, mâle de Omsis River, Nouvelle-Guinée Papouasie. Cette espèce est étroitement apparentée à *G. ramuensis*.

Fig. 6. - The type locality of *Glossolepis ramuensis* near Walium Village, Papua New Guinea.
Localité typique de *Glossolepis ramuensis* près de Walium Village, Nouvelle-Guinée Papouasie.

Remarks

Glossolepis ramuensis is most closely allied to *G. maculosus* Allen (fig. 5) known only from a small tributary of the Lower Markham River, approximately 185 km southeast of the type locality of the former species. Both species have crenulate scale margins and a small premaxillary with relatively few teeth, typical features of the genus. However, they differ from the other five *Glossolepis* with respect to a reduced number of gill rakers and scales (see Table 3). *Glossolepis ramuensis* differs from *G. maculosus* only with respect to colour pattern and a slightly higher number of vertical scale rows (38 vs. 34-36). However, the two species may well have overlapping ranges of scale counts if more specimens of *ramuenis* become available.

The holotype and only known specimen of *G. ramuensis* was obtained from a metre-wide tributary (fig. 6) of the Ramu River flowing slowly through dense rainforest. The water was exceptionally clear with gravel bottom and very few aquatic plants except in occasional sun-lit pools. Temperature and pH readings of 28.5°C and 7.8 were recorded at the collecting site. The stream was inhabited by large numbers of the Highlands Rainbowfish (*Chilatherina campsi*) and a few North New Guinea Rainbows (*Melanotaenia affinis*).

The species is named ramuensis with reference to the river system of the type locality.

Table 3

Comparison of selected counts for species of *Glossolepis*

	Gill rakers lower limb of first arch	Horizontal scale rows	Vertical scale rows	Predorsal scales	Preopercle-suborbital scales
incisus	26-32	16-20	50-60	30-36	26-38
maculosus	13-14	10	34-36	17-20	11-14
multisquamatus	19-23	12-16	38-43	24-31	20-26
pseudoincisus	26-30	12-16	38-43	27-34	21-29
ramuensis	13	10	38	18	15
wanamensis	19-23	15-17	39-44	23-35	21-30

Irian Jaya Rainbowfish
Melanotaenia irianjaya, new species

Holotype. LBN 4952, male, 50.0 mm SL, stream at Fruata Village, Irian Jaya, Indonesia (approximately 2°59'S, 133°324E), seine net, **G. Allen** and **H. Bleher**, 16 November 1982.

Paratypes. LBN 4953, 50 specimens, 20.0-58.0 mm SL, collected with holotype; LBN 4954, 9 specimens, 34.8-58.8 mm SL, creek near Merdai Village, Irian Jaya, Indonesia (approximately 1°35'S, 133°20'E), seine net, **G. Allen** and **H. Bleher**, 16 November 1982; RMNH 29398, 5 specimens, 28.4-45.2 mm SL, collected with LBN 4954; WAM P27863-001, 12 specimens, 29.5-50.5 mm SL, collected with holotype; WAM P27864-001, 32 specimens, 21.0-55.0 mm SL, collected with LBN 4954; WAM P27868-001, 41 spécimens, 13.0-53.0 mm SL; Auk River at Suswa Village, Irian Jaya, Indonesia (approximately 0°56'S, 132°15'E), seine net, **G. Allen** and **H. Bleher**, 18 November 1982; WAM P27869-001, 17 specimens, 14.0-47.0 mm SL, tributary of Kamundan River at Senopi Village, Irian Jaya, Indonesia (approximately 0°50'S, 132°56'E), seine net, **G. Allen** and **W. Tins**, 18 November 1982; ZMA 119.213, 4 specimens, 36.2-50.5 mm SL, collected with LBN 4954.

Description

Counts and proportions that appear in parentheses refer to the range for paratypes (based on 20 specimens, 44-59 mm SL) if different from the holotype.

Dorsal rays V-I,13 (IV to VI-I,12 to 16); anal rays I,23 (I,22 to 25); pectoral rays 14 (13 to 15); pelvic rays I,5; branched caudal rays 15; vertical scale rows from rear edge of operculum to caudal fin base 38 (37 to 39); horizontal scale rows from base of anal fin origin to base of first dorsal fin 11 (11 or 12); predorsal scales 17 (15 to 19); preopercle-suborbital scales 13 (11 to 17); gill rakers on first arch 4 + 16 = 20 (2 to 4 + 12 to 16 = 14 to 20).

Body depth 3.1 (3.2 to 3.4); head length 3.8 (3.7 to 4.1), both in standard length. Greatest width of body 2.5 (2.6 to 2.8) in body depth. Snout length 3.1 (3.1 to 3.4), eye diameter 3.0 (3.0 to 3.3), interorbital width 3.0 (2.4 to 3.0), depth of caudal peduncle 2.6 (2.4 to 2.7), length of caudal peduncle 1.5 (1.4 to 1.6), all in head length.

Jaws about equal, oblique, premaxilla with an abrupt bend between the anterior horizontal portion and lateral part; maxilla ends at level of front border of eye or slightly anterior; lips thin; teeth conical with slightly curved tips, those in outer row slightly stouter; teeth in upper jaw in 4 or 5 irregular rows anteriorly, reduced to a single row posteriorly, where they are most stout and are exposed when mouth is closed; teeth in lower jaw in about 8 irregular rows anteriorly, reduced to 1 or 2 rows posteriorly; a narrow band of small, conical teeth on vomer; palatines edentulous.

Scales relatively large, arranged in regular horizontal rows; most of body scales with scalloped margins; predorsal scales extending to posterior portion of interorbital; 3 scale rows from posterior angle of preopercle to edge of eye.

First dorsal fin originates opposite base of 2nd to 4th soft anal fin ray; longest spine (3rd) of first dorsal fin 1.7 (1.8 to 2.0) in head length, its tip reaching base of spine or first soft ray of second dorsal fin in females and 1st or 2nd soft ray in males when depressed. Longest soft ray (1st or 2nd in males and females) of second dorsal fin 1.9 (1.8 to 1.9) in head length, the depressed posterior rays extending to about middle of length of caudal peduncle or less. Longest soft rays (middle ones in males and females) of anal fin 1.7 (1.5 to 1.9) in head length. Soft dorsal and anal fins rectangular in outline. Pelvic fin tips when depressed reaching base of 2nd to 4th soft anal ray; length of pelvic fin 1.5 (1.4 to 1.6), of pectoral fin 1.4 (1.3 to 1.5), of caudal fin 1.0 (1.0 to 1.1), all in head length. Caudal fin emarginate.

Colour in life (male aquarium specimen in captivity for 18 months): blue-grey or slightly violet on back, lower half silvery-white with slight yellow hue posteriorly; opercle silvery; blue-black mid-lateral band extending from rear part of head to beyond base of caudal fin, most intense in pectoral region and on posterior third of body; median fins bluish or dusky grey with reddish hue, caudal fin with dorsal and ventral margins blackish (not apparent in figs. 7 and 8); pelvic and pectoral fins mainly transparent.

Colour in alcohol: brown on upper half, yellowish or tan below, these two areas separated by black mid-lateral band, about one scale wide, extending from rear part of head to beyond caudal fin base; interorbital and snout dark grey; operculum silvery; dorsal, caudal, and anal fins dusky grey; pelvic and pectoral fins mainly translucent. Many of the paratypes have darkened scale margins on the upper half of the body giving an overall reticulated pattern; also the mid-lateral stripe is often faint anteriorly. There are often 2 or 3 irregular blackish spots just behind the pectoral base.

Table 4

Fin ray counts of type specimens of *Melanotaenia irianjaya*

1st Dorsal fin spines		
IV	V	VI
1	31	3

2nd Dorsal fin soft rays				
12	13	14	15	16
1	9	18	5	1

Soft anal fin rays			
82	23	24	25
1	12	12	5

Pectoral fin rays		
13	14	15
7	26	2

Fig. 7. - *Melanotaenia irianjaya*, young male, approximately 55 mm standard length, Vogelkop Peninsula, Irian Jaya.
Melanotaenia irianjaya, jeune mâle, environ 55 mm longueur standard, Vogelkop Peninsula, Irian Jaya.

Fig. 8. - *Melanotaenia irianjaya*, paratypes, male (upper) 58.0 mm standard length, and female. 50.0 mm standard length, near Merdai Village, Irian Jaya.
Melanotaenia irianjaya, paratypes, mâle (en haut) 58,0 mm longueur standard, et femelle, 50.0 mm longueur standard, près de Merdai Village, Irian Jaya.

Table 5

Proportional measurements of selected type specimens of *Glossolepis ramuensis* and *Melanotaenia irianjaya* expressed as a percentage of the standard length

	G. ramuensis	*M. irianjaya*				
	Holotype	Holotype	Paratypes			
	WAM P28187-004	LBN 4952	LBN 4953			
	male	male	male	female	male	female
Standard length (mm)	55.0	59.0	58.4	54.9	51.2	50.5
Depth	32.7	32.2	29.1	30.8	29.1	29.3
Width	10.7	12.7	11.1	11.8	10.9	11.1
Head length	23.6	26.1	25.9	26.6	24.4	26.7
Snout length	6.0	8.5	8.4	8.4	7.8	8.1
Orbit diameter	8.0	8.6	8.0	8.0	8.2	8.5
Bony interorbital width	8.6	8.8	9.2	9.6	10.0	10.1
Depth of caudal peduncle	10.4	10.2	9.4	10.2	10.2	10.3
Length of caudal peduncle	20.6	17.5	16.6	16.6	18.0	16.8
Snout to 1st dorsal fin origin	49.8	50.0	50.0	50.4	49.6	50.1
Snout to anal fin origin	46.0	48.3	49.0	50.3	48.8	48.9
Snout to pelvic fin origin	35.6	36.9	34.6	36.6	35.9	36.8
Length of 2nd dorsal fin base	19.4	22.4	23.5	23.7	23.8	22.8
Length of anal fin base	42.2	40.5	37.7	39.3	40.2	38.8
Length of pectoral fin	18.4	18.8	18.8	19.3	18.8	18.6
Length of pelvic fin	14.4	16.9	16.1	17.5	18.0	18.4
Longest ray of 1st dorsal fin	18.0	15.3	12.8	12.8	13.7	13.3
Longest ray of 2nd dorsal fin	17.4	14.1	13.5	13.8	13.5	15.0
Longest anal ray	14.7	15.2	14.2	14.8	16.0	14.2
Length of caudal fin	24.0	25.4	23.8	24.2	24.8	25.4

Fig. 9. - The habitat of *Melanotaenia irianjaya* near Suswa, Vogelkop Peninsula, Irian Jaya.
Habitat de *Melanotaenia irianjaya* près de Suswa, Vogelkop Peninsula, Irian Jaya.

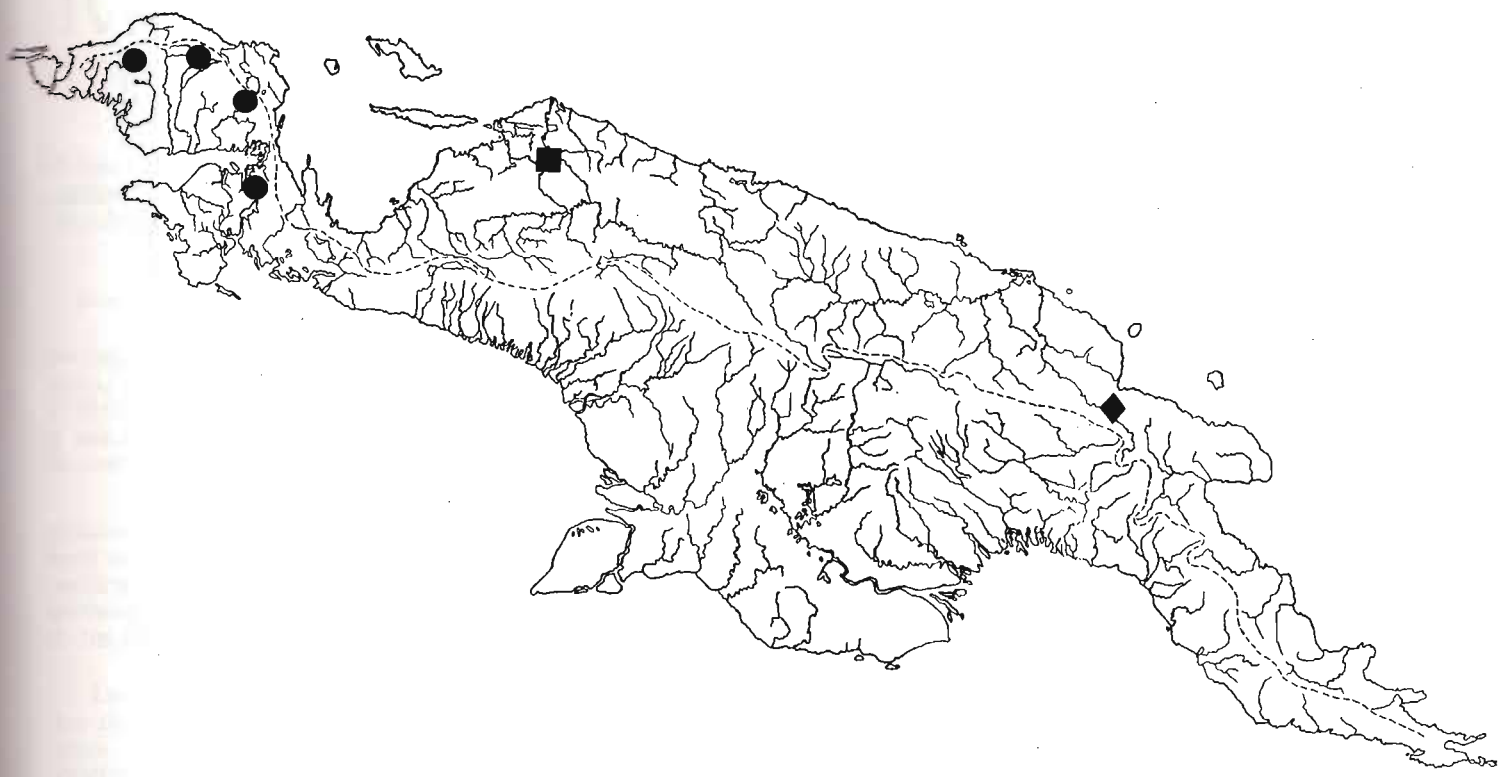

Fig. 10. - Map of New Guinea showing collecting sites for *Melanotaenia irianjaya* (circles), *Chilatherina bleheri* (square) and *Glossolepis ramuensis* (diamond).
Carte de Nouvelle-Guinée montrant les lieux de récoltes de *Melanotaenia irianjaya* (cercles), *Chilatherina bleheri* (carré) et *Glossolepis ramuensis* (losange).

Remarks

Melanotaenia irianjaya does not appear to be closely related to other members of the genus. It is the only *Melanotaenia* lacking palatine teeth and also is unique in possessing dark margins on the caudal fin. Additionally, it appears to lack pronounced sexual dimorphism, a feature which is prominent in most other *Melanotaenia*. Although most collected specimens were small (under 50 mm SL), a few were sexually mature, but it was necessary to examine the gonads to determine sex. A presumed male held for 18 months in the author's aquarium has increased in size from 55 mm to 80 mm SL. It remains relatively slender (fig. 7) compared to similar sized males of other species and also it lacks the pronounced elongation of the posterior dorsal and anal rays. Instead the middle rays of these fins are the longest, a feature shared only by *Melanotaenia coronatus* Allen, from north-central New Guinea.

Melanotaenia irianjaya is apparently distributed over much of the Vogelkop Peninsula at the western extremity of New Guinea, and on the Bomberai Peninsula immediately to the south (see map). It was taken at every locality visited in this region except the Ajamaru Basin at the centre of Vogelkop Peninsula. Habitat conditions ranged from slightly turbid, slow flowing streams in flat country (Fruata) to more clear streams with moderate flow in hilly terrrain (Senopi and Suswa, fig. 9). All streams were situated in areas of dense rainforest at elevations ranging between about 90 and 460 metres. Temperature and pH values at these localities ranged from 27.0°C to 28.3°C and 7.3 to 7.8 respectively. The fish were generally found in areas with relatively little aquatic vegetation over gravel or sand bottom, often in the vicinity of submerged logs. It was the only melanotaeniid encountered in these streams, although local vilagers at several of the sites said there was another, less common rainbowfish present. Other fishes collected with *M. irianjaya* included gudgeons *(Oxyeleotris)*, gobies *(Glossogobius)*, grunters *(Hephaestus)*, and half-beaks *(Zenarchopterus)*. These species were illustrated by **Bleher** (1984) and a narrative of the expedition was provided by **Allen** (1984).

The species is named *irianjaya* with reference to the district containing the type locality, which represents the easternmost province of Indonesia.

Acknowledgements

I express sincere thanks to **Mr. Heiko Bleher** and **Dr. Wolfgang Tins**, who accompanied me on the Irian Jaya expedition and provided companionship and collecting assistance. Generous assistance was also provided by the Summer Institute of Linguistics missionary settlement at Danau Biru, especially by staff members **Chrys** and **Rasmi Suratno**, **Mr. Tim Kevern**, **Mr. Ken Baily**, **Mr. Dave Briley**, and the **Kugler** family. **Mr. Hans Mayland** of Frankfurt provided financial assistance. The collection of *G. ramuensis* in Papua New Guinea was facilitated by a three-year grant from the Papua New Guinea Biological Foundation. Finally, I thank **Mrs. Connie Allen** for her careful preparation of the typescript.

References

Allen (G.R.) and **N.J. Cross**, 1982. - *Rainbowfishes of Australia and Papua New Guinea*. T.F.H. Publications, Inc., New Jersey, U.S.A.

Allen (G.R.), 1984. - Irian Jaya - The Last Frontier. *Trop. Fish Hobbyist*, **32** (7): 22-29.

Bleher (H.), 1984. - Mysterious Rainbowfish. *Trop. Fish Hobbyist*, **32** (7): 54-66.

RESUME

Trois nouveaux Poissons Arc-en-Ciel (Melanotaeniidae) d'Irian Jaya et de Nouvelle-Guinée.

L'auteur a étudié les Poissons d'eau douce de Nouvelle-Guinée depuis 1978,au cours de 6 expéditions annuelles. Jusqu'en 1982, seule la moitié orientale de l'île, la nation indépendante de Papua New Guinea, a été visitée. Beaucoup d'espèces, surtout dans la famille des Melanotaeniidae, y furent découvertes. La perspective de prospecter la moitié occidentale, Irian Jaya, sous contrôle de l'Indonésie, était encore plus enthousiasmante. En effet, peu de récoltes de Poissons d'eau douce y ont été faites, si l'on excepte celles des naturalistes néerlandais, surtout entre 1903 et 1922, et l'expédition du Rijksmuseum de Leiden, au début des années 50.

L'occasion de récolter en Irian Jaya se présenta en 1982. Bien que limitée à 2 semaines, pendant lesquelles bien peu de jours purent être consacrés aux récoltes, presque tous les cours d'eau ont fourni des espèces nouvelles, surtout dans les jungles reculés de Vogelkop Peninsula.

Cette note fait connaître deux espèces de Poissons Arc-en-Ciel découvertes lors de cette expédition et une troisième espèce récoltée en 1983 en Papouasie ; elles appartiennent aux genres *Chilatherina*, *Glossolepis* et *Melanotaenia*. Les deux premiers genres sont représentés respectivement par 8 et 6 espèces, répandues en Nouvelle-Guinée septentrionale, tandis que *Melanotaenia* renferme environ 30 espèces d'Australie et de Nouvelle-Guinée. Depuis la révision de ces genres (**Allen** et **Cross** 1982), beaucoup d'espèces supplémentaires ont déjà été décrites.

Les spécimens types ont été déposés dans divers Institutions en Indonésie, aux Pays-Bas, aux Etats-Unis et en Australie (détails dans le texte anglais).

Chilatherina bleheri n.sp.
Poisson Arc-en-Ciel de Bleher

Holotype. LBN 5240, mâle, 89 mm LS, petit ruisseau près du débarcadaire sur le rivage sud du lac Holmes (Danau Biru), Irian Jaya, Indonesia (environ 2°29'S, 138°00'E), roténone, **G. Allen**, 21 novembre 1982.

Paratypes. 57 spécimens, mâles et femelles, 35,9 à 95,2 mm LS.

Description. Se reporter au texte anglais et aux figures 1 et 2.

Affinités. Très voisin de *C. fasciata*, espèce largement répandue en Nouvelle-Guinée septentrionale, entre les rivières Markham et Mamberamo. Les deux espèces diffèrent principalement par la dimension des écailles et la coloration, celle des mâles mûrs en particulier. 60 spécimens de *C. fasciata*, pris dans 7 localités réparties sur toute l'aire de répartition, ont servi de matériel de comparaison. Le lac Holmes et les ruisseaux voisins hébergent 11 espèces de Poissons, parmi lesquelles *Melanotaenia maylandi* Allen.

Espèce dédiée à **Heiko Bleher**, de Francfort, pour son aide sur le terrain et sa contribution financière.

Glossolepis ramuensis n.sp.
Poisson Arc-en-Ciel de la rivière Ramu

Holotype. WAM P28187-004, mâle, 55 mm LS, affluent de la Ramu River, à 3 km environ au sud de Walium Village, Papua New Guinea (environ 5°37'S, 145°28'E), roténone, **G. Allen** et **R. Steene**, 17 octobre 1983.

Description. Se reporter au texte anglais et à la figure 4.

Affinités. Très voisin de *G. maculosus* Allen (comparer les figures 4 et 5) qui n'est connu que d'un affluent de la Lower Markham River, à 185 km environ au SE de la localité de la nouvelle espèce. Les deux espèces ne diffèrent que par le patron de coloration et un nombre légèrement plus élevé de rangées verticales d'écailles chez *ramuensis*.

L'unique spécimen connu a été pris dans un ruisseau d'un mètre de large, coulant lentement dans l'épaisse forêt hygrophile (fig. 6). Eau très claire, sur fond de gravier, avec très peu de plantes. Un grand nombre de *Chilatherina campsi* et quelques *Melanotaenia affinis* peuplaient le ruisseau.

Melanotaenia irianjaya n.sp.
Poisson Arc-en-Ciel d'Irian Jaya

Holotype. LBN 4952, mâle, 59 mm LS, cours d'eau à Fruata Village, Irian Jaya, Indonesia (environ 2°59'S, 133°32'E), seine, **G. Allen** et **H. Bleher**, 16 novembre 1982.

Paratypes. 170 spécimens, mâles et femelles de 13 à 58,8 mm LS.

Description. Se reporter au texte anglais et aux figures 7 et 8.

Affinités. Cette espèce ne semble pas étroitement apparentée aux autres représentants du genre. C'est le seul *Melanotaenia* dépourvu de dents palatines et le seul à présenter aussi des marges sombres à la caudale. De plus, il semble ne pas manifester de dimorphisme sexuel prononcé, à l'inverse de la plupart des autres *Melanotaenia*. Bien que la plupart des spécimens récoltés aient été petits (moins de 50 mm LS), quelques uns étaient sexuellement mûrs, mais il était nécessaire d'examiner les gonades pour reconnaître le sexe. Un mâle présumé, tenu en aquarium, a grandi de 55 à 80 mm LS en 18 mois ; comparé à des mâles de même taille d'autres espèces, il demeure relativement élancé.

L'espèce semble répandue sur la plus grande partie de Vogelkop Peninsula, ainsi que sur Bomberai Peninsula (cercles sur la carte, fig. 10). Les biotopes vont d'une eau légèrement turbide en plaine, à des eaux claires dans les collines, mais tous les cours d'eaux se trouvaient en forêt hygrophile dense ; ils étaient relativement peu plantés, sur fond de gravier ou de sable. Aucune autre espèce de Mélanoténiidé n'était présente ; les autres Poissons comprenaient des *Oxyeleotris*, *Glossogobius*, *Hephaestus* et *Zenarchopterus*.