Melanotaenia maylandi, a new species of Rainbowfish (Melanotaeniidae) from New Guinea

by GERALD R. ALLEN *

Fig. 1. - *Melanotaenia maylandi,* male, approximately 70 mm standard length, photographed in an aquarium et Danau Biru, Irian Jaya.
Melanotaenia maylandi, mâle, ca 70 mm LS, photographié en aquarium à Danau Biru, Irian Jaya.

The family Melanotaeniidae contains about 55 species which are confined to fresh and brackish waters of the Australia-New Guinea region. Nine genera are represented of which *Melanotaenia* with 27 species, is by far the largest. Commonly referred to as rainbowfishes the members of *Melanotaenia* are small, colourful species which are extremely common in streams, lakes, and swamps of northern Australia and New Guinea. **Allen** and **Cross** (1982) reviewed the genus as part of their monograph of the Melanotaeniidae. They recorded five species from northern New Guinea including the widely distributed *M. affinis* Weber, *M. praecox* (Weber and de Beaufort), and *M. vanheurni* (Weber and de Beaufort) from the Mamberamo system of Irian Jaya, and two insular dwelling species from Irian Jaya, *M. catherinae* (de Beaufort) from Waigeo and *M. japenensis* Allen and Cross from Japen. The present paper describes a sixth species from this region which was collected by the author during a visit to Irian Jaya during November of 1982.

Type specimens of the new *Melanotaenia* have been deposited at the following institutions: Lembaga Biologi Nasional, Bogor, Indonesia (LBN) ; Museum National d'Histoire Naturelle, Paris (MNHN) ; Rijksmuseum van Natuurlijke Histoire, Leiden (RMHN) ; Western Australian Museum, Perth (WAM) ; and Zoologisch Museuem, Amsterdam (ZMA).

Standard length (SL) was taken from the most anterior point of the upper lip to the midbase of the caudal fin (end of hypural plate). Head length was measured from the front of the upper lip to the rear edge of the opercular membrane. The depth of the body was measured at the level of the pelvic fin base. Body width was measured just behind the gill opening. The diameter of the orbit is the horizontal fleshy diameter. The interorbital width is the bony width at the middle of the orbits. The depth of the caudal peduncle is the least depth. The length of the caudal peduncle is the horizontal measurement connecting two vertical lines, one passing through the base of the last dorsal ray and the other through the base of the middle caudal rays. Predorsal scales were counted on the dorsal midline between the origin of the first dorsal fin and the interorbital. Preopercle-suborbital scale counts refer to the total number of scales overlying the preopercle bone. Pectoral ray counts include the rudimentary lowermost rays. The last ray of the second dorsal and anal fins is usually branched at the base and was counted as a single element.

Proportional measurements for the holotype and five paratypes are summarised in Table 1. The range of counts and proportions for the paratypes are indicated in parentheses if different than the holotype.

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Fig. 2. - *Melanotaenia maylandi*, RMNH male paratype, 68.5 mm SL, Danau Biru, Irian Jaya.
Melanotaenia maylandi, mâle paratype du Rijksmuseum van Natuurlijke Histoire, Leiden, 68,5 mm LS, Danau Biru, Irian Jaya.

Mayland's Rainbowfish

Melanotaenia maylandi, new species

Holotype. LBN 4950, male, 89.5 mm SL, Danau Biru (Lake Holmes), Irian Jaya, Indonesia (approximately 02°29'S, 138°00'E, seine net, **G. Allen** and **H. Bleher**, 20 November 1982.

Paratypes (collected with holotype). LBN 4951, 20 specimens, 13.7-79.5 mm SL; MNHN 1983-556, 3 specimens, 37.8-65.5 mm SL; RMNH 29310, 2 specimens, 59.0-68.5 mm SL; WAM P27869-002, 8 specimens, 42.5-88.7 mm SL; ZMA 119.120, 2 specimens, 53.0-75.0 mm SL.

Description (based on 24 specimens, 43-89 mm SL).

Dorsal rays V-I,20; anal rays I,20; pectoral rays 14 (13 to 15); horizontal scale rows between anus and base of first dorsal fin 12 (11 or 12); vertical scale rows from upper corner of gill opening to caudal fin base 36 (36 or 37); predorsal scales 14 (13 to 15); preopercle-suborbital scales 24 (16 to 23); gill rakers on first branchial arch 2 + 14 (2 or 3 + 14 or 15). Body ovate, laterally compressed, the snout somewhat pointed. Predorsal profile straight, the interobital and adjacent nape flattened. Ventral, prepelvic profile steeper than prodorsal profile, the breast strongly compressed at ventral midline. Greatest body depth 2.7 (2.6 to 3.3) in SL; maximum width 2.6 (2.1 to 2.7) in greatest depth; head length 3.4 (3.2 to 3.6) in SL; snout 2.9 (2.7 to 3.2), eye 4.2 (3.4 to 4.2), interorbital 2.9 (2.8 to 3.3), caudal peduncle depth 2.1 (2.1 to 2.7), caudal peduncle length 2.3 (1.9 to 2.4), all in length of head.

Jaws oblique, the lower jaw slightly inferior ; premaxilla with an abrupt bend between the anterior horizontal portion and lateral part; rear edge of maxilla level with anterior half of pupil; lips thin; both jaws with dense covering of teeth arranged in irregular rows; teeth conical with slightly curved tips; teeth on anterior and lateral portions of premaxilla invading lips and distinctly visible when mouth is closed; exposed teeth also visible at front of lower jaw; vomer with triangular patch of conical teeth; palatines with a narrow band of similar teeth.

Table 1
Proportional measurements of selected type specimens of *Melanotaenia maylandi*
(Expressed as a percentage of the standard length)

	Holotype LBN 4950	Paratypes LBN 4951				
	male	male	male	male	female	female
Standard length (mm)	89.5	79.5	74.2	59.3	54.5	46.5
Depth	37.3	35.2	35.3	34.2	32.3	31.0
Width	14.5	14.2	14.2	14.7	15.0	14.0
Head length	29.1	28.2	27.7	28.7	28.3	29.9
Snout length	10.2	9.9	9.8	9.4	9.2	9.7
Orbit diameter	6.8	7.3	7.7	8.4	7.9	9.2
Bony interorbital width	10.1	8.8	10.1	9.8	8.6	9.2
Depth of caudal peduncle	14.0	11.9	12.5	12.1	11.0	11.0
Length of caudal peduncle	12.8	13.2	12.5	12.8	14.7	13.5
Snout to lst dorsal fin origin	45.8	45.2	47.2	47.0	45.0	43.7
Snout to anal fin origin	46.7	49.1	49.5	52.1	48.6	47.3
Snout to pelvic fin origin	38.2	36.7	38.4	40.1	41.1	41.1
Length of 2nd dorsal fin base	36.9	34.2	33.6	33.1	33.2	32.5
Length of anal fin base	46.4	44.0	42.7	42.5	38.9	41.7
Length of pectoral fin	16.5	17.6	18.9	17.5	17.2	17.0
Length of pelvic fin	13.1	14.5	14.0	13.0	13.2	12.5
Longest ray of 1st dorsal fin	12.2	12.3	13.3	10.5	11.4	11.8
Longest ray of 2nd dorsal fin	13.4	11.6	12.1	11.5	10.6	9.5
Longest anal ray	11.7	11.6	11.3	11.5	9.4	11.6
Length of caudal fin	19.8	22.0	22.2	24.2	21.3	23.9

Fig. 3. - *Melanotaenia affinis,* approximately 70 mm standard length, Lae, Papua New Guinea. G. Schmida
Melanotaenia affinis, ca 70 mm LS, Lae, Nouvelle-Guinée Papouasie.

Scales relatively large, arranged in regular horizontal rows; most scales on sides with crenulate margins; predorsal scales extending to rear of interorbital; preopercle-suborbital scales in three or four rows.

First dorsal fin origin about level with anal fin origin; first dorsal spine 2-3 times thickness of other spines of first dorsal fin; third spine the longest, its tip reaching base of about second soft ray of second dorsal fin in males when depressed. Penultimate ray of second dorsal fin the longest; depressed tip of second dorsal fin extending nearly to caudal fin base in males. Anal spine about one-half length of first dorsal spine, which is about 1/3 head length; longest rays of anal in middle portion of fin. Pectoral fins pointed, length 1.8 (1.6 to 1.8) in head. Pelvic fin tips when depressed extending to about base of 2nd or 3rd soft anal ray, pelvic fin length 2.2 (1.9 to 2.4) in head. Caudal fin moderately forked, length 1.5 (1.2 to 1.5) in head.

Colour of holotype in alcohol: generally grey-brown on dorsal half of head and body, yellowish-tan on ventral half; upper half of sides with five alternating, brown and tan, longitudinal stripes, the lowermost darkest; scales on lower half of body with silvery margins; a series of 5-6, irregular shaped black blotches along middle of sides; opercle silvery; fins pale grey except pectorals largely translucent. Some paratypes light brown on dorsal half of body with blackish scale margins and blackish longitudinal stripe along middle of side.

Colour in life: olive-green or brownish dorsally and silvery-white on ventral half, upper back and sides frequently reflecting bluish hues; a series of narrow orange longitudinal lines (approximately one per scale row) on sides; a prominent dark blue mid-lateral stripe extending from upper corner of opercle margin to middle of caudal fin base; 3-5 large black blotches on middle of sides; fins translucent to light blue-grey except anal fin yellow.

Table 2
Fin ray counts of type specimens
of *Melanotaenia maylandi*

1st Dorsal fin spines

IV	V	VI
6	16	2

2nd Dorsal fin soft rays

16	17	18	19	20	21
1	2	6	11	3	1

Soft anal fin rays

24	25	26	27	28	29
1	4	7	9	2	1

Pectoral fin rays

13	14	15
2	11	11

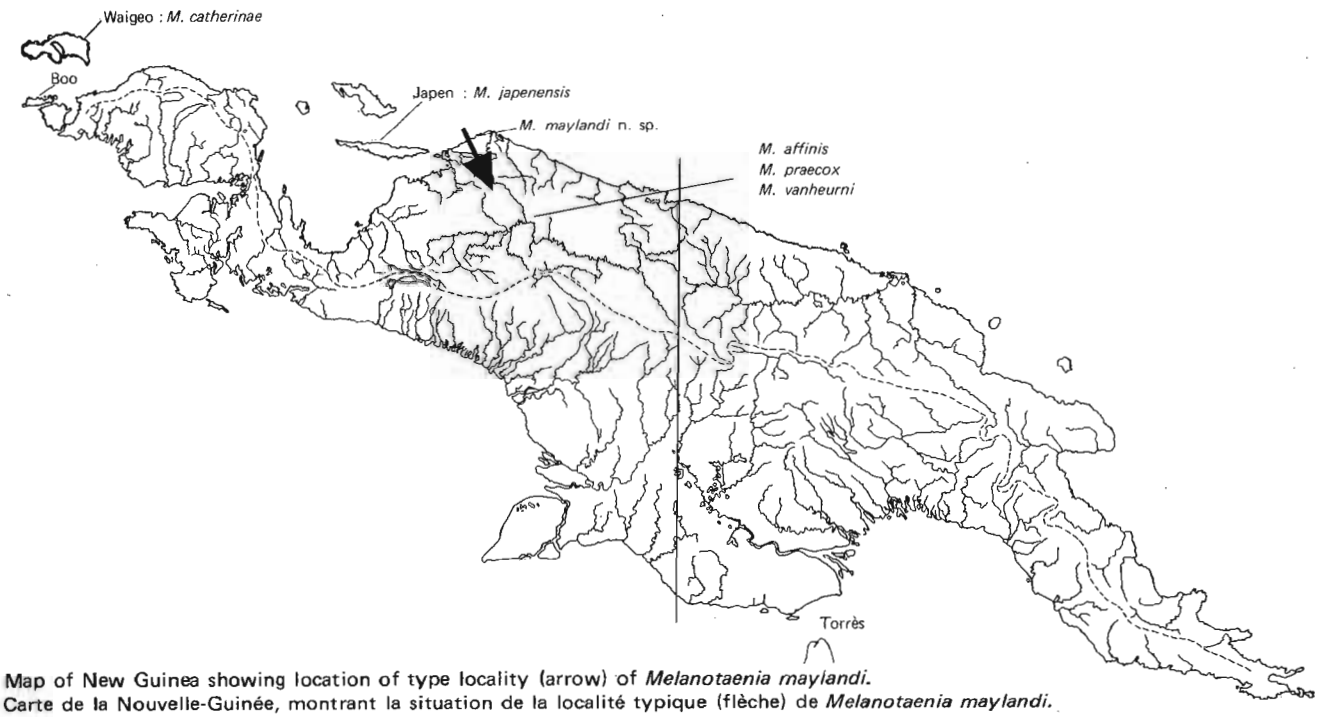

Fig. 4. - Map of New Guinea showing location of type locality (arrow) of *Melanotaenia maylandi.*
Carte de la Nouvelle-Guinée, montrant la situation de la localité typique (flèche) de *Melanotaenia maylandi.*

Fig. 5. - Aerial view of Danu Biru. The type specimens of *Melanotaenia maylandi* were captured in a small tributary of the stream shown in the centre of this photograph.
Vue aérienne du Danau Biru. Les spécimens types de *Melanotaenia maylandi* ont été capturés dans un petit affluent du cours d'eau qui est visible au centre de la photographie.

Fig. 6. - Habitat scene near the type locality of *Melanotaenia maylandi*. Specimens were collected from a tributary of this stream.
Paysage près de la localité typique de *Melanotaenia maylandi*. Les spécimens ont été récoltés dans un affluent de ce cours d'eau.

Remarks

Melanotaenia maylandi is most closely related to and perhaps derived from *M. affinis* (fig. 3), a species which ranges widely through much of northern New Guinea. Colour pattern differences and fin ray counts constitute the best means of separation. *Melanotaenia maylandi* is readily identified on the basis of the large black blotches on the middle of the sides and usually possesses 18 or 19 soft dorsal and more than 25 soft anal rays in comparison with a normal count of 13 to 16 soft dorsal and less than 24 (usually 20 to 23) soft anal rays for *M. affinis*. A total of 70 specimens of the latter species were studied from scattered localities between Lae, Papua New Guinea and Nabire, Irian Jaya.

The type locality consists of a very small (approximately one metre wide and 0.1-0.5 metre deep) creek which flows into the main feeder stream of Danau Biru (Lake Holmes). The creek is situated about two kilometres upstream of the lake. Extensive netting and underwater observations in the main lake indicated that this species was absent from the lacustrine habitat. It appears to be restricted to the tributary streams and is replaced in the lake by another rainbowfish, *Chilatherina fasciata*. Danau Biru or Lake Holmes is situated at an elevation of 430 metres above sea level in mountainous jungle terrain of the Lower Mamberamo River system. The lake is drained by a small river which flows into the main Mamberamo at a point approximately 15 kilometres directly to the north. It is about 160 kilometres distance upstream from the Pacific Ocean at this location. The lake area is populated by the Bauzi tribe and is also the site of a missionary settlement. The Bauzi name for *M. maylandi* is "feeba".

Acknowledgements

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Reference

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.

RÉSUMÉ

Melanotaenia maylandi, une nouvelle espèce de Poisson Arc-en-Ciel (Melanotaeniidae) de Nouvelle-Guinée

La famille des Melanotaeniidae, dont les représentants sont confinés dans les eaux douces ou saumâtres d'Australie et de Nouvelle-Guinée, renferme environ 55 espèces réparties entre 9 genres, *Melanotaenia*, avec 27 espèces, étant le plus vaste. Les *Melanotaenia* sont de petits Poissons très colorés, extrêmement communs dans les cours d'eaux, les lacs et les marécages d'Australie septentrionale et de Nouvelle-Guinée. Le genre a été révisé par **Allen** et **Cross** (1982) qui recensent 5 espèces de Nouvelle-Guinée septentrionale ; une espèce à large répartition, *M. affinis* Weber ; *M. praecox* (Weber et de Beaufort) et *M. vanheurni* (Weber et de Beaufort), du système de la rivière Mamberamo, Irian Jaya, et deux espèces insulaires d'Irian Jaya, *M. catherinae* (de Beaufort), de Waigeo et *M. japenensis* Allen et Cross, de Japen. Une 6e espèce, récoltée par l'auteur au cours d'une visite à Irian Jaya, en novembre 1982, est décrite ici.

Poisson Arc-en-Ciel de Mayland

***Melanotaenia maylandi* n. sp.**

Holotype. LBN 4958, mâle, 89,5 mm LS, Danau Biru (Lake Holmes), Irian Jaya, Indonesia, senne, **G. Allen** et **H. Bleher**, 28-XI-82.

Description. Se reporter au texte anglais et aux illustrations (figs 1 et 2).

Remarques. *M. maylandi* est très voisin, et peut-être même issu, de *M. affinis*. Les différences dans le patron de coloration et dans les comptes des rayons constituent les meilleurs critères de discrimination. *M. maylandi* est facile à identifier par les grandes taches noires du milieu des flancs et la présence de 18-19 rayons à la dorsale et de plus de 25 à l'anale (13-16 et 20-23 chez *affinis*).

La localité typique est un très petit ruisseau (1 m de large ; 0,1 à 0,5 m de profondeur) qui rejoint le principal cours d'eau alimentant le Danau Biru (lac Holmes), à environ 2 km en amont du lac.

Des pêches et des observations subaquatiques montrent que *M. maylandi* est absent du lac où il est remplacé par *Chilatherina fasciata*. Le lac est à 430 m d'altitude dans une jungle de montagne du système inférieur de la rivière Mamberamo. La tribu Bauzi qui occupe les abords du lac désigne *M. maylandi* par le nom vernaculaire de «feeba».

L'espèce est dédiée à **M. Hans Mayland** qui a aidé financièrement l'auteur pour lui permettre de visiter Irian Jaya, en compagnie de **Heiko Bleher** et du **Dr. Wolfgang Tins**.