Ichthyology

Central Highland Rainbows from Papua New Guinea, With Descriptions of Two New Species (Melanotaeniidae)

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The Lake Tebera basin is surrounded by steep jungle-covered slopes. Photo by the author.

The previous hour, and particularly the past 15 minutes, of this September 24th morning had been tense—nerve wracking to put it mildly. But as the helicopter began its descent into the miniscule jungle clearing just east of Lake Tebera, it all began to seem worthwhile. A few moments later we scrambled out of the chopper onto the gravel bank of a pristine stream. It was sheer relief to be earthbound once again, but would we find the elusive Tebera rainbowfish?

The quest for this fish began nearly four years ago. Patricia Kailola, then the curator of the Kanudi Fisheries Research Lab in Port Moresby, sent a photo of an unusual *Melanotaenia* rainbowfish collected by Mr. Grant West at Lake Tebera in the Central Highlands of Papua New Guinea. It was clearly a new species and, although the specimens in the photo were dead and faded, they hinted at a tremendous potential as an aquarium fish. I eventually requested a loan of the seven preserved specimens obtained by West in order to prepare a scientific description. Unfortunately, the parcel containing the only known specimens was lost in the mail. In the meantime I received several photos from Grant West showing scenes of his float-plane visit to Lake Tebera. I had not anticipated such a lovely setting. The slides revealed a large lake surrounded by imposing jungle-clad peaks. Over the next few months I gradually became obsessed with the idea of visiting this remote haven to collect the new rainbowfish.

Thinking about a trip to the lake and actually getting there, however, proved to be worlds apart. Lake Tebera is situated in the rugged Central Highlands in an area of dense jungle. During collecting expeditions to New Guinea in 1978 and 1979, I made some preliminary inquiries about possible access to the lake. I discovered that one of the missionary groups made occasional float-plane visits, but these had been discontinued. I also discovered it was possible to reach Lake Tebera on foot, but the journey was hazardous and required several days, not to mention a great deal of organization. Early in 1980 I received encouraging news from Brian Parkinson, a New Guinea resident who had greatly assisted me on previous visits. Brian wrote that it was possible to charter a helicopter for the Tebera trip from Goroka. Thus, the only remaining problem was one of money. I estimated it would require about 2½ hours of flight time for the round trip from Goroka and this would amount to $1,200. Another $1,000 would be required for travel fares and hotel accommodations. Clearly I needed some sort of outside financial backing. Dr. Herbert R. Axelrod had previously shown considerable interest in my research on freshwater fishes of the Australia-New Guinea region, so I decided to submit a grant proposal to T.F.H. Publications. I waited anxiously for the reply, which eventually arrived in early August. It was good news! Dr. Axelrod had enclosed a check to cover the expenses of the trip.

After three weeks of collecting in the Cape York area of northern Queensland, I departed for Port Moresby, Papua New Guinea's capital city and port of entry. Brian Parkinson was there to meet the flight, and after clearing customs we worked out the details of the expedition. I had only eight days in New Guinea so the schedule would be tight. The real success of the trip hinged on our getting in to Lake Tebera and obtaining specimens of the new rainbow.

We arrived in Goroka at noon two days later, and final arrangements were made at the helicopter firm that afternoon. We were relieved to learn that flying conditions had been excellent over the past few days and all was in readiness for an early morning departure. Goroka, the provincial capital of the Eastern Highlands district, is a town of about 1,000 inhabitants situated in mountainous country some 75 miles north of Lake Tebera.

We reported to the airport at 6:30 the following morning. We had hoped for a 7 A.M. departure, but a thick mantle of fog caused a slight delay. Our pilot, Brian Eggleton, a New Zealander, assured Brian and me that early morning fogs were the norm in the Highlands and it would soon clear. About an hour later we lifted off, heading south along the Asaro River Gorge. After about 20 minutes virtually all signs of civilization disappeared. Bald, burnt off hills dotted occasionally with picturesque villages were replaced with endless tracts of virgin rainforest. We flew over some of the most incredible scenery on earth ... narrow gorges with 1,000-foot sheer cliffs, numerous waterfalls, some cascading more than 500 feet, and jungle-clad mountains pierced by deep white-water ravines. We eventually left the river and threaded our way along the gorges on the eastern slopes of Mount Karamui. This saved us nearly 30 minutes of expensive flight time. However, a thick blanket of fog covered the final ridge and several minutes of searching failed to reveal any breaks in the ghostly gray wall. The pilot asked if there was any place back on the river where I might collect for an hour or so while we waited for the fog to clear. Several minutes later we located a spot with good potential at the junction of the Pima and Tua Rivers.

The Pima and Tua Rivers are upland tributaries of the Purari River, one of the four largest drainage systems of southern New Guinea. The Pima-Tua junction is situated about 220 miles upstream from the Gulf of Papua. At this point the two streams are mainly fast-flowing with numerous white-water rapids and are not suited for rainbowfishes, which prefer slow-moving or still waters. From the air we spotted several likely col-

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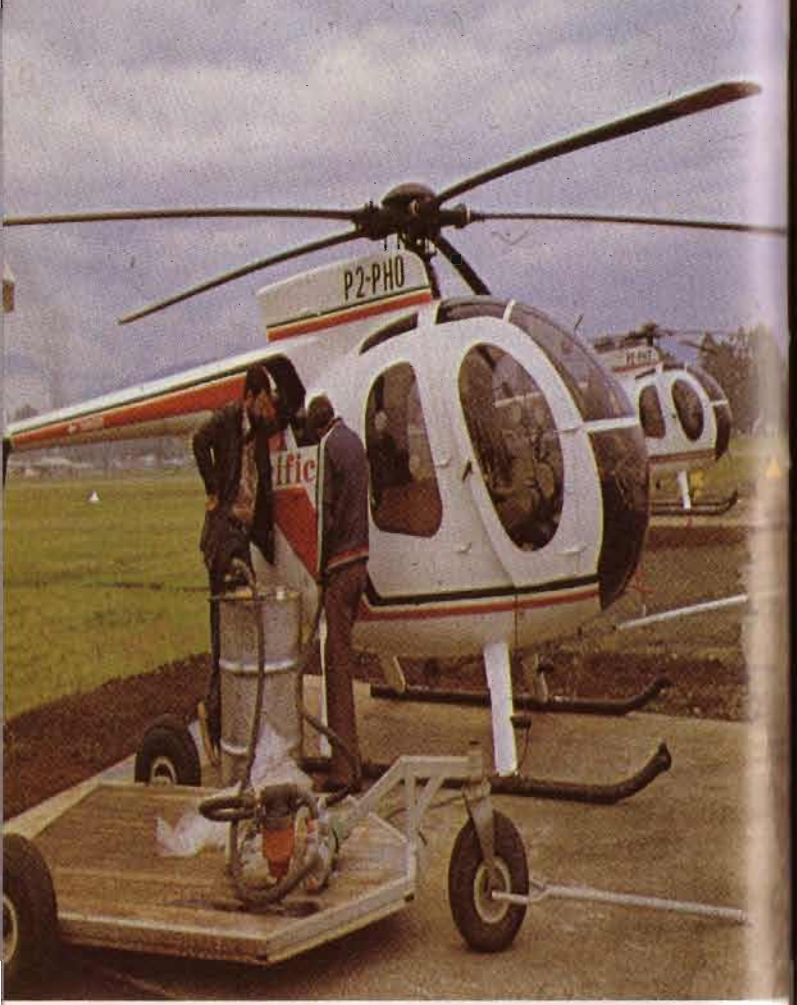
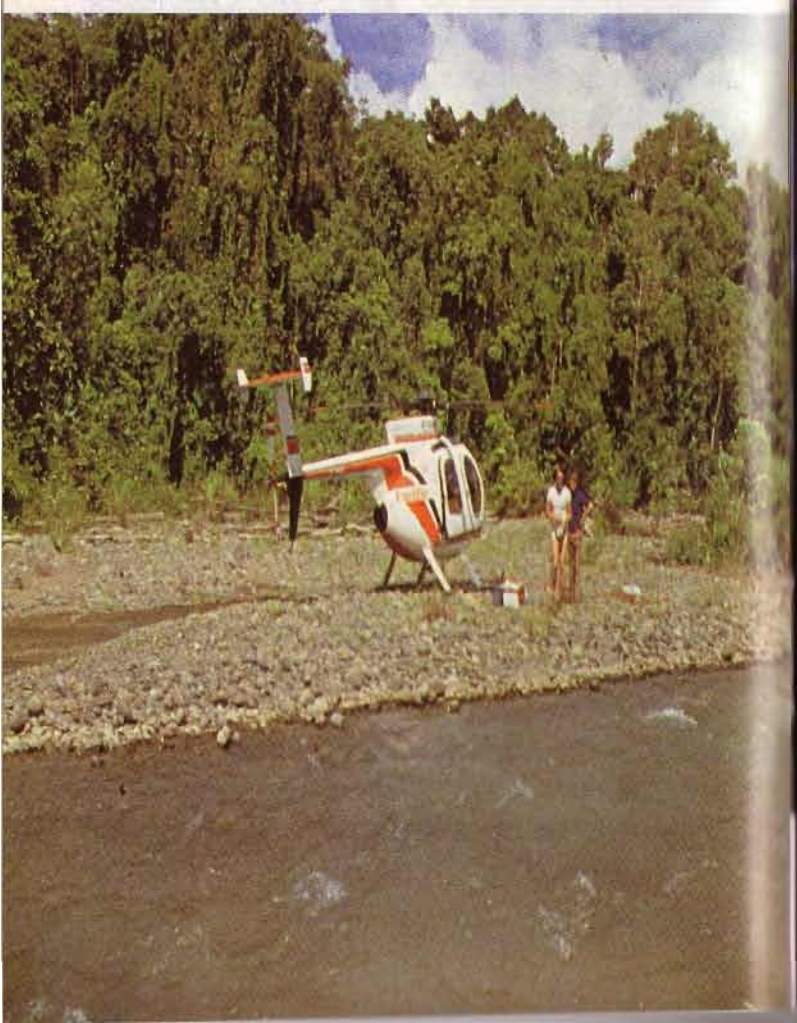
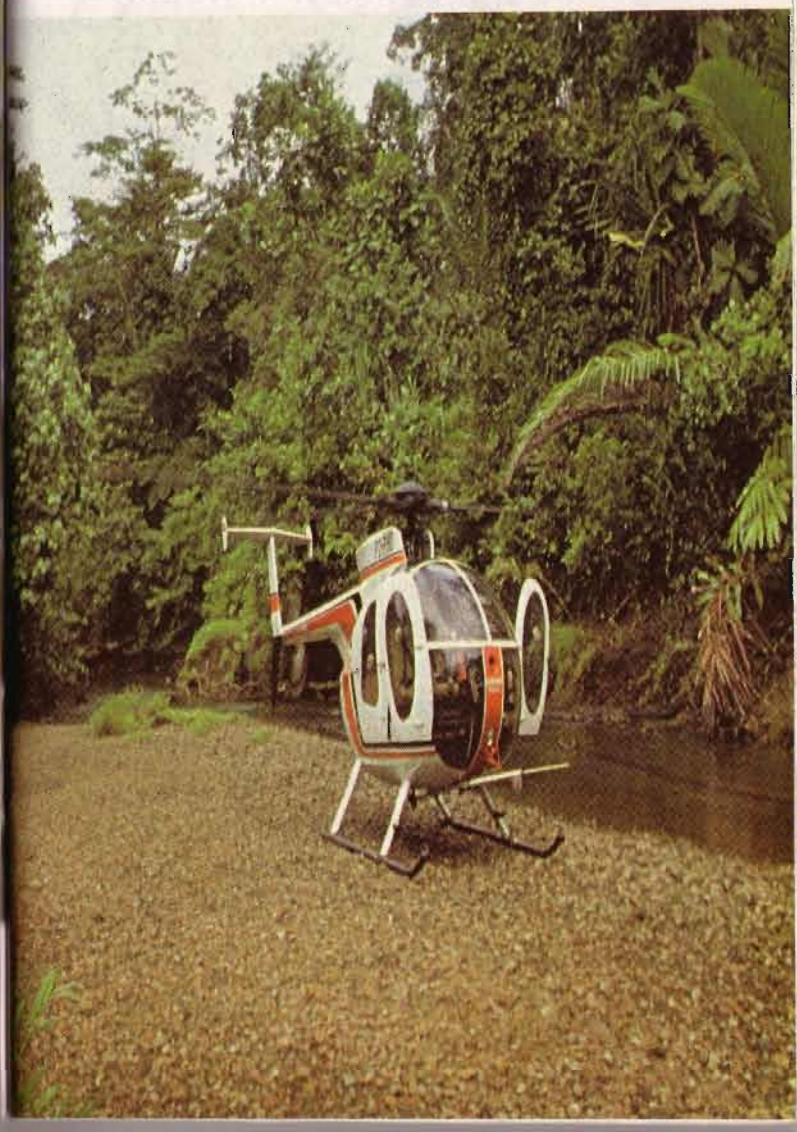


Above: Brian Parkinson (left) and the pilot, Brian Eggleton, fuel the helicopter prior to takeoff from Goroka. Photo by the author. **Below:** The first landing site along the Pima River. *Melanotaenia pimaensis*, new species, was collected from a side channel on the edge of the forest in the background. Photo by Brian Parkinson.



Above: The small clearing ahead of the helicopter was one of the author's landing sites. This site was a few miles east of Lake Tebera. **Below:** The type locality of *Melanotaenia herbertaxelrodi*. Photos by the author.

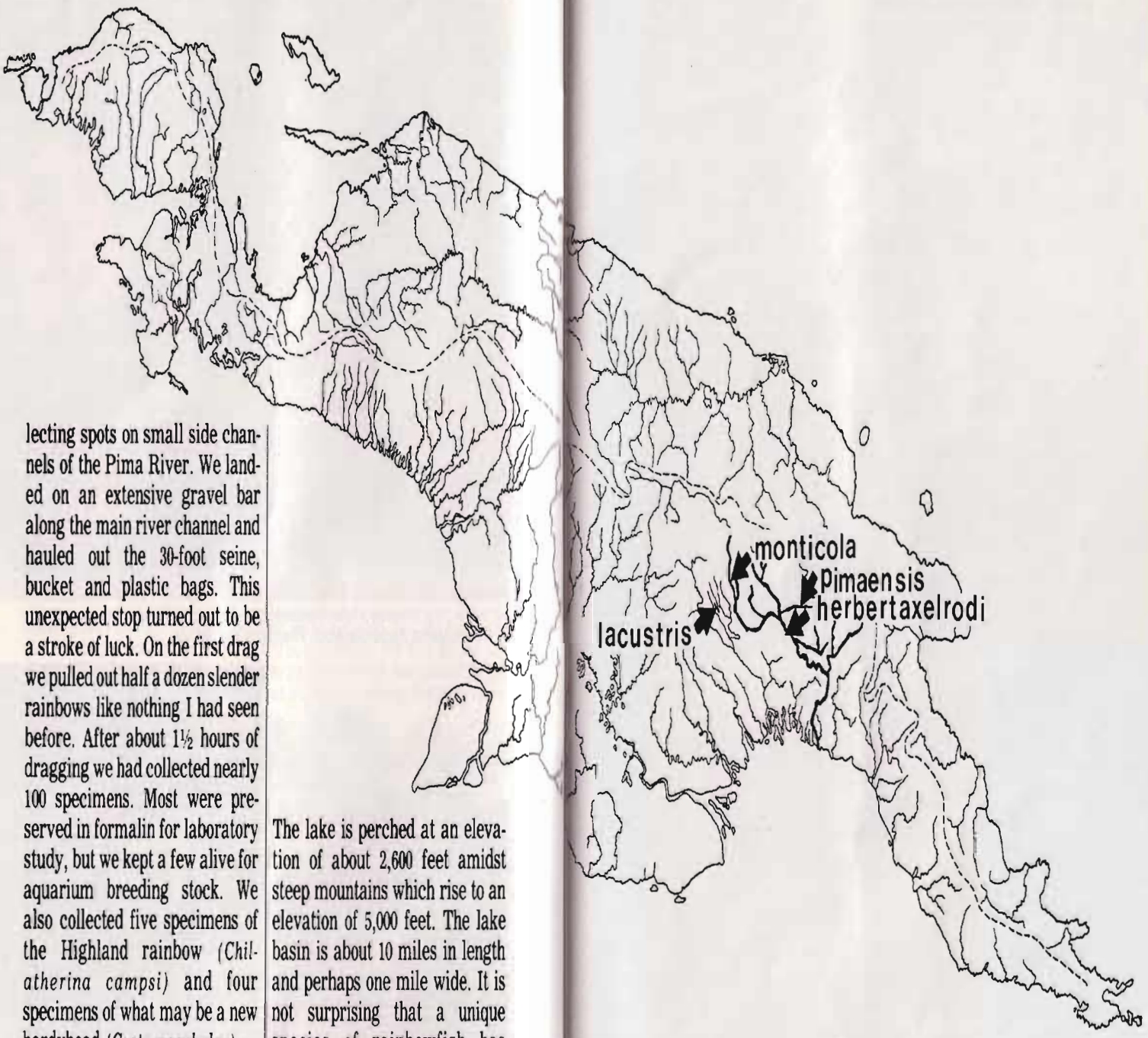


lecting spots on small side channels of the Pima River. We landed on an extensive gravel bar along the main river channel and hauled out the 30-foot seine, bucket and plastic bags. This unexpected stop turned out to be a stroke of luck. On the first drag we pulled out half a dozen slender rainbows like nothing I had seen before. After about 1½ hours of dragging we had collected nearly 100 specimens. Most were preserved in formalin for laboratory study, but we kept a few alive for aquarium breeding stock. We also collected five specimens of the Highland rainbow *(Chilatherina campsi)* and four specimens of what may be a new hardyhead *(Craterocephalus)*.

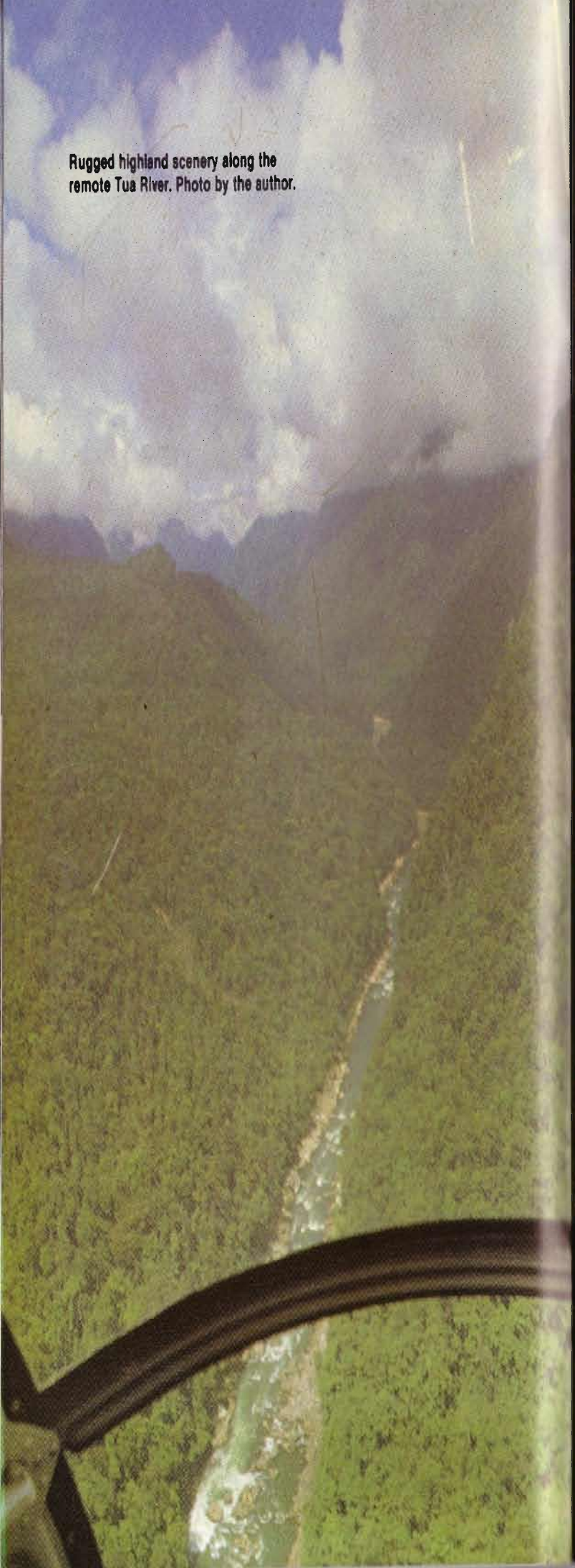
By the time we were ready to depart the weather had improved. The fog was still lingering on the slopes of Mount Karamui, but a quick search revealed a narrow canyon passage. We descended the southern slopes of the mountain and some 20 minutes later caught our first glimpse of Lake Tebera.

The lake is perched at an elevation of about 2,600 feet amidst steep mountains which rise to an elevation of 5,000 feet. The lake basin is about 10 miles in length and perhaps one mile wide. It is not surprising that a unique species of rainbowfish has evolved in this setting, as the lake is isolated from the nearby Purari River, apparently being connected to it only via underground water.

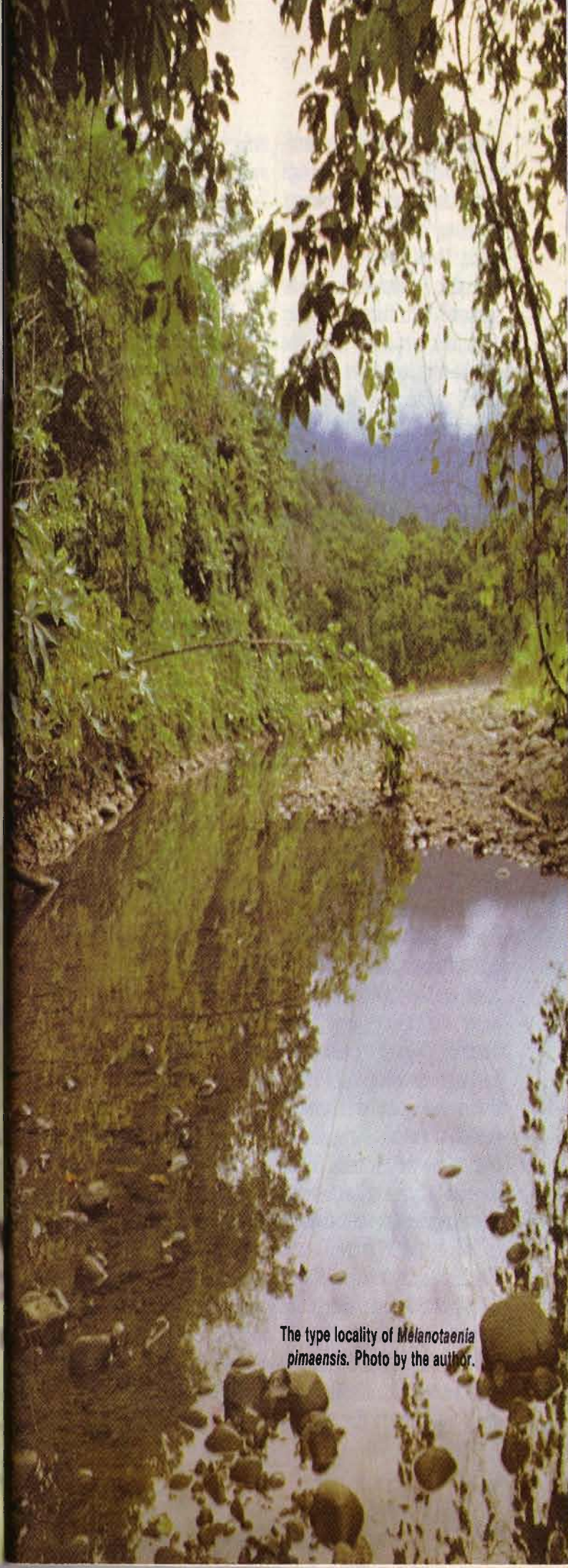
As we approached Lake Tebera it had a somewhat ominous appearance. The skies were overcast and light drizzle was falling. We had been told that



Map of New Guinea showing distributions of *Melanotaenia lacustris* (Lake Kutubu), *M. monticola* (Ka River), *M. pimaensis* (Pima River), and *M. herbertaxelrodi* (Lake Tebera). The Purari River System is boldly outlined.



Rugged highland scenery along the remote Tua River. Photo by the author.



The type locality of *Melanotaenia pimaensis*. Photo by the author.

there was a small native population at the lake, but the only sign of habitation was a single empty canoe on the banks of a small island. I was previously warned that the helicopter should be equipped with floats, but they were not available from the Goroka firm, and when I had inquired about this I received assurances that they would get me there without them. But as we approached I suddenly realized that getting there was one thing and finding a place to land was quite another. We circled the perimeter of the lake twice in a vain attempt to find a suitable landing spot. The shores were either steep rainforested slopes or swampland with tall grass. At one point we descended to within 10 feet of the ground. The pilot thought he might be able to lower me on a rope and with a machete I could clear away the tall grass. The blast of air from the rotor blades flattened the grass and the pilot opened his door to have a look. From this vantage point he could see there was nothing but water and swampy mud below the thick grass. We could never land in such conditions. I had a sinking feeling and was literally speechless when the pilot informed me that it would not be possible to land and that because of our limited fuel reserves we could not linger much longer. The disappointment was bitter . . . all those dreams, energy and money down the drain.

We turned toward Goroka and were leaving the basin when suddenly we sighted a tiny clearing along a rainforest stream which appeared to feed into Lake Tebera some 3 or 4 miles to the west. Truthfully, I didn't think we could squeeze through, but Brian masterfully negotiated the landing. I could scarcely believe we had at last found a collecting site, but would we find the rainbowfish? After all, it wasn't really the same habitat, even though there appeared to be a continuous connection with the lake. I did not have to wait long for the answer. No sooner had we jumped out of the chopper when several rainbows were spotted swimming around the log debris in the crystal-clear waters. Minutes later we dragged the seine through a 50-foot long pool. Excitedly the net was hauled onto the stream bank and there they were . . . about 10 specimens of the gorgeous Tebera rainbowfish. What makes this fish so special is the inordinate amount of yellow on the body and fins, much in excess of that found in other related species. The bright yellow hues contrast vividly with the blue-black stripe along the middle of the sides. We spent about two hours on the ground and during this period made repeated drags with the seine, catching a total of 120 specimens.

I kept about 40 specimens of the Lake Tebera rainbowfish alive. Half of these were given to friends in New Guinea for their assistance, and, unfortunately, most of the others were lost through the rigors of shipping. However, I did manage to get back the nucleus of an aquarium breeding stock. The five live females now in my aquarium are too small to breed, but are growing fast. I hope to write a future article for *T.F.H. Magazine* on the breeding and aquarium maintenance of this species.

The Tebera rainbow and the other new species from the Pima River belong to the genus *Melanotaenia* as defined by Allen (1980) and are described below.

Type specimens of the new rainbowfishes have been deposited at the following institutions: Australian Museum, Sydney (AMS); Kanudi Fisheries Research Laboratory, Papua New Guinea (PNG); Rijksmuseum van Natuurlijke Historie (RMNH); United States National Museum of Natural History, Washington, D.C. (USNM); Western Australian Museum, Perth (WAM); and Zoologisch Museum, Amsterdam (ZMA). Museum registration numbers from all institutions were not available at the time of publication.

Fin ray counts are summarized in Table 1. Data in parentheses indicate the range for paratypes when differing from the holotype. Proportional measurements are presented as percentages of the standard length (SL) and are based on specimens in excess of 50 mm SL unless stated otherwise.

Melanotaenia herbertaxelrodi, new species
Lake Tebera Rainbowfish

Holotype—WAM P26972-001, male, 61.4 mm SL, small creek about 4 km east of Lake Tebera, Purari River System, Papua New Guinea (approximately 6°45'S, 144°39'E), seine net, G. Allen and B. Parkinson, 24 September 1980.

Paratypes (collected with the holotype)—AMS: 6 specimens, 47.0-58.0 mm SL; PNG: 18 specimens, 35.2-67.2 mm SL; RMNH: 6 specimens, 36.3-66.1 mm SL; USNM: 7 specimens, 35.0-65.1 mm SL; WAM P26972-002, 41 specimens, 25.5-84.2 mm SL; ZMA: 6 specimens, 35.6-62.3 mm SL.

Description:

Dorsal rays VI-I,13 (IV to VI-I,10 to 16); anal rays I,24 (I,17 to 25); pectoral rays 13 (13 to 15); horizontal scale rows 10 (10 to 12); vertical scale rows 35 (34 to 36); predorsal scales 16 (14 to 17) (mean = 15, N = 59); preopercle scales 12 (11 to 16) (mean = 14, N = 59); gill rakers on first arch 2 + 13 (1 to 3 + 12 to 15).

Greatest body depth of holotype 43.0, greatest depth of paratypes by sex and size class as follows: *males* - (a) 40-49 mm SL, 31.0-42.8 (mean = 37.1, N = 5), (b) 50-69 mm SL, 32.7-42.6 (mean = 38.4, N = 19), (c) 70 + mm SL, 41.7 (N = 1); *females* -(a) 35-49 mm SL, 30.0-34.1 (mean = 32.2, N = 14); (b) 50-65 mm SL, 30.0-34.5 (mean = 32.6, N = 22); (c) 70 + mm SL, 35.3 (N = 1); head length 28.5 (28.0-31.1); snout length 8.6 (8.4-10.6); eye

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Melanotaenia herbertaxelrodi, male, holotype, 61.4 mm standard length. Photo by the author.

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Aquarium photo of an adult male of the Lake Tebera rainbowfish, *Melanotaenia herbertaxelrodi*, new species. Photo by the author.

diameter 9.8 (8.0-10.5); interorbital width 10.3 (10.1-11.5); caudal peduncle depth 11.8 (10.4-12.3); caudal peduncle length 13.5 (13.1-18.0); predorsal distance 49.3 (47.0-49.4); preanal distance 51.3 (51.8-53.3); prepelvic distance 39.9 (39.0-41.0).

Jaws about equal, oblique, premaxilla with an abrupt bend between the anterior horizontal portion and lateral part; maxilla ends opposite front border of eye or slightly forward; lips thin, except median portion of upper lip bulbous; teeth conical with slightly curved tips, arranged in dense bands in upper and lower jaws; teeth at front of upper jaw in 4 or 5 irregular rows, reduced to 1 or 2 rows posteriorly; teeth at front of lower jaw in about 7 to 10 irregular rows, tapering to 1-3 rows posteriorly; teeth of upper jaw and middle portion of lower jaw extending outside of mouth onto lip; a narrow edentulous space at symphysis of lower jaw; narrow band of small, conical teeth on vomer and palatines.

Scales relatively large, arranged in regular horizontal rows; body scales with smooth or weakly crenulate margins; predorsal scales extending to posterior portion of interobital; preopercle scale rows from posterior angle to edge of eye 2 or 3.

First dorsal fin originates about opposite anal fin origin or slightly anterior; first dorsal spine is slightly (in females) to distinctly (in males) shorter than longest (usually 3rd) spine; longest spine of first dorsal fin 10.6 (11.6-20.9), its tip reaching base of about 1st soft ray of second dorsal fin in females and 3rd or 4th soft ray in males when depressed. Longest soft ray of second dorsal fin 13.8 (11.4-14.0); depressed posterior rays of second dorsal fin extend back about half length of caudal peduncle in females and nearly to caudal fin base in males. Longest anal rays 11.1 (11.1-13.3). Soft dorsal and anal fins rectangular in outline, somewhat pointed posteriorly, particularly in males. Pelvic fin tips when depressed reaching base of 1st or 2nd soft anal ray; length of pelvic fin 16.2 (14.7-18.0). Pectoral fins pointed, the length 20.4 (19.5-21.7). Caudal fin moderately forked, its length 24.6 (22.1-28.3).

Coloration: Fresh colors are shown in the accompanying photographs. Preserved specimens are basically gray-brown on the upper half and whitish below with a blackish mid-lateral stripe. Fins are translucent to slightly dusky. After three weeks in alcohol the caudal fins of males are slightly reddish; those of females are dusky with plain translucent membranes.

Comparisons:

Melanotaenia herbertaxelrodi belongs to a species complex which inhabits the Highland drainage systems of the Kikori and Purari Rivers. The group contains two other species, *M. monticola* Allen and *M. lacustris* Munro. The three species are probably derivatives of the ancestral stock of *M. goldiei* (Macleay), which ranges widely in the lowland and foothill areas of southern New Guinea. Both *herbertaxelrodi* and *lacustris* are lake-dwelling forms which exhibit similar morphology and coloration. However, they differ in modal fin ray counts (Table 1), and the eye of *M. lacustris* is significantly larger. The eye diameter is much greater than the snout length, whereas in *M. herbertaxelrodi* the eye is equal to or less than the snout length. The color pattern of adult *M. lacustris* is primarily blackish on the upper half and silvery below with an intense black mid-lateral band. The fins of mature adults are plain blackish. This species is known only from Lake Kutubu, which lies about 145 km (90 miles) to the west and slightly north of Lake Tebera (see map).

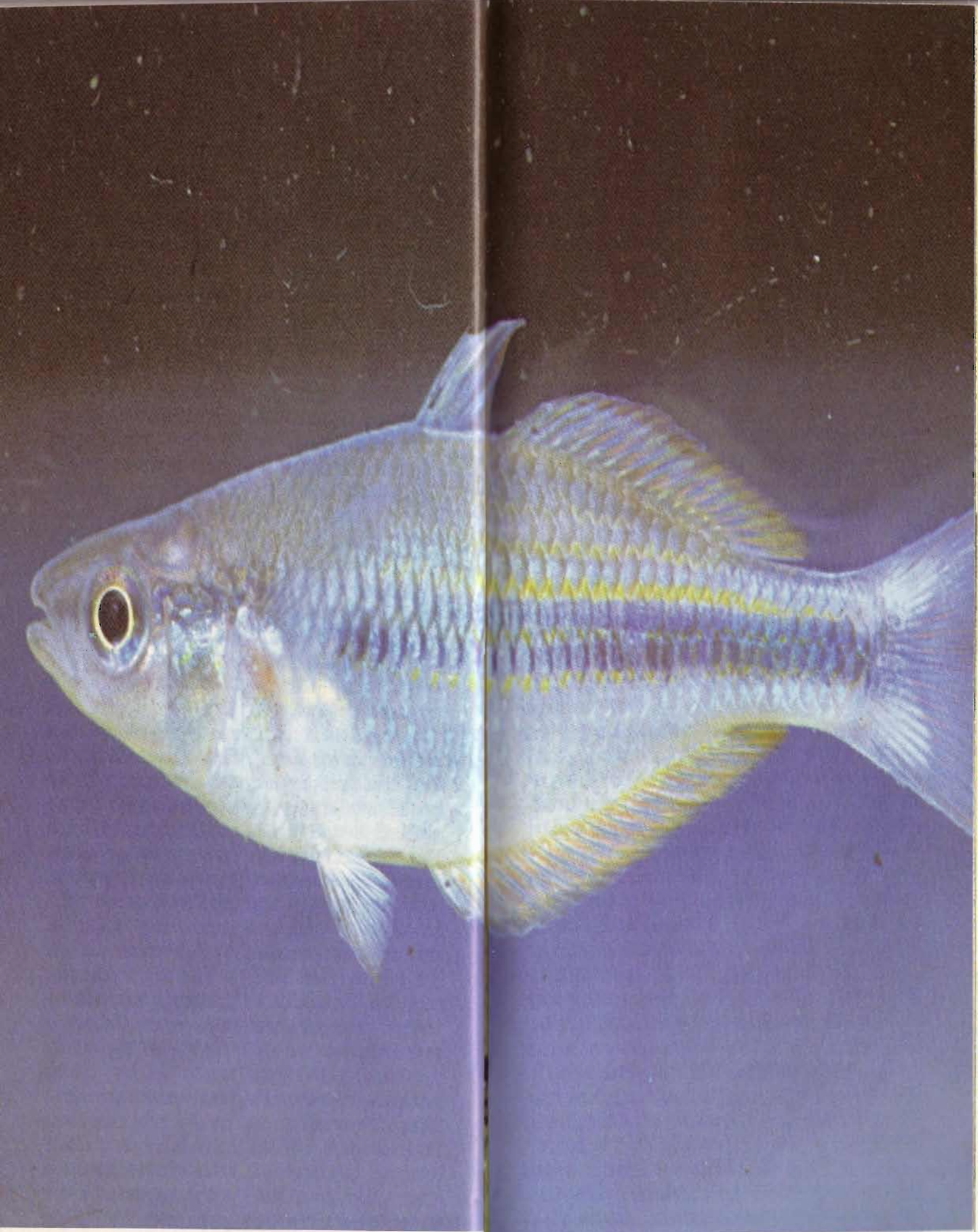
M. herbertaxelrodi is most closely allied to *M. monticola* from the upper Purari System near Mendi, about 200 km (125 miles) upstream from the Lake Tebera Basin. The latter species has far less yellow coloration on the body and fins and tends to have a more intense (particularly in preservative) mid-lateral stripe. Other differences for *M. monticola* include the modal counts for the dorsal and anal rays (Table 1), a more rounded snout profile, and a differently shaped vomerine tooth patch. The vomerine teeth of *M. herbertaxelrodi* are arranged in a narrow, gently curving band, whereas those of *M. monticola* are in a dense, more or less circular patch.

Sexual Differences:

Males are typically deeper bodied than females and develop a nuchal hump and an angulate breast profile with increased growth. The body begins to deepen in males after a length of 45-50 mm SL is attained or at about the onset of sexual maturity. In addition, the middle portion of the first dorsal fin is much longer in males and the posterior outline of the second dorsal fin is more pointed than in females, although this difference is not nearly as apparent as in many other members of the genus. The smallest female paratype with eggs is 35 mm SL.

Habitat:

The type locality is a small stream flowing into Lake Tebera about 3-4 km east of the lake. The stream was exceptionally clear and a temperature of 21°C and pH of 7.8 were recorded. The lake and stream are at an elevation of approximately 793 meters (2,600 feet). Lake Tebera is situated in a narrow elongate basin and is about 8 kilometers in length with a width of about 1½ kilometers. The lake basin is surrounded by steep mountains which rise to 1.2-1.5 km (4,000-5,000 feet). Apparently the lake and its tributary streams are isolated from the main Erave-Purari River, which lies several miles to the east. However, the lake is probably connected to the river by subterranean flow. The lake



Melanotaenia pimaensis, male, holotype, 64.4 mm standard length. Photo by the author.

contains numerous floating rafts of aquatic vegetation and the shoreline is swampy and lined with tall grass. On the eastern end of the basin the grasslands give way to dense rainforest, through which the type locality stream winds on its course to Lake Tebera. *M. herbertaxelrodi* was reported to be abundant in the main lake by biologists who visited the area several years ago. It was also abundant in the rainforest stream at the type locality. The bright yellow color of individual fish and small schools was easy to detect when viewed from the edge of the stream. The only other fish collected or sighted was the dusky mountain goby *(Glossogobius brunnoides)*. The stomach contents of several paratypes of *M. herbertaxelrodi* included a fine filamentous alga, parts of ant and beetle-like insects, and small (3.5 mm diameter) pulpy fruits with a central seed.

Etymology:

The species is named in honor of Dr. Herbert R. Axelrod for his continuing interest and support of my studies on rainbowfishes.

Melanotaenia pimaensis, new species
Pima River Rainbowfish

Holotype—WAM P26971-001, male, 64.4 mm SL, small side channel of Pima River (Oima River on some maps) at junction with Tua River, Purari River System, Papua New Guinea (approximately 6°25'S, 144°49.5'E), seine net, G. Allen and B. Parkinson, 24 September 1980.

Paratypes (collected with the holotype)—AMS: 5 specimens, 25.5-53.8 mm SL; PNG: 15 specimens, 23.9-57.0 mm SL; RMNH: 5 specimens, 27.2-48.8 mm SL; USNM: 6 specimens, 30.1-57.8 mm SL; WAM P26971-002, 43 specimens, 15.4-55.3 mm SL; ZMA: 5 specimens, 26.7-57.0 mm SL.

Description:

Dorsal rays VI-I,15 (IV to VI-I,12 to 17); anal rays I,22 (I,20 to 24); pectoral rays 16 (13 to 16); horizontal scale rows 12 (11 to 13); vertical scale rows 36 (34 to 37); predorsal scales 15 (14 to 16) (mean = 15, N = 27); preopercle scales 19 (16 to 22) (mean = 19, N = 27); gill rakers on first arch 3 + 13 (2 or 3 + 12 to 14).

Greatest body depth of holotype 31.1, greatest depth of paratypes by sex and size class as follows: *males* - (a) 50-69 mm SL, 28.6-31.6 (mean = 30.3, N = 4); *females* - (a) 40-49 mm SL, 28.6-31.0 (mean = 30.1, N = 5), (b) 50-65 mm SL, 29.6-31.0 (mean = 30.3, N = 4); head length 26.6 (26.2-29.0); snout length 9.0 (8.7-9.6); eye diameter 8.2 (8.2-9.2); interorbital width 10.7 (9.5-11.0); caudal peduncle depth 11.2 (10.5-11.5); caudal peduncle length 14.8 (12.5-17.4); predorsal distance 44.7 (45.8-47.9); preanal distance 49.2 (49.5-55.5); prepelvic distance 36.8 (36.5-39.2).

Jaws about equal, oblique, premaxilla with an abrupt bend between the anterior horizontal portion and lateral part; maxilla ends opposite front border of eye; lips thin except median portion of upper lip bulbous; teeth conical with slightly curved tips, arranged in dense bands in upper and lower jaws; teeth at front of upper jaw in 4 or 5 irregular rows, reduced to 1 or 2 rows posteriorly; teeth at front of lower jaw in about 6 to 8 irregular rows, tapering to 1-3 rows posteriorly; teeth of upper jaw and middle portion of lower jaw extending outside of mouth onto lip; no edentulous space at symphysis of lower jaw; several rows of small, conical teeth on vomer; palatines with a narrow band of similar teeth.

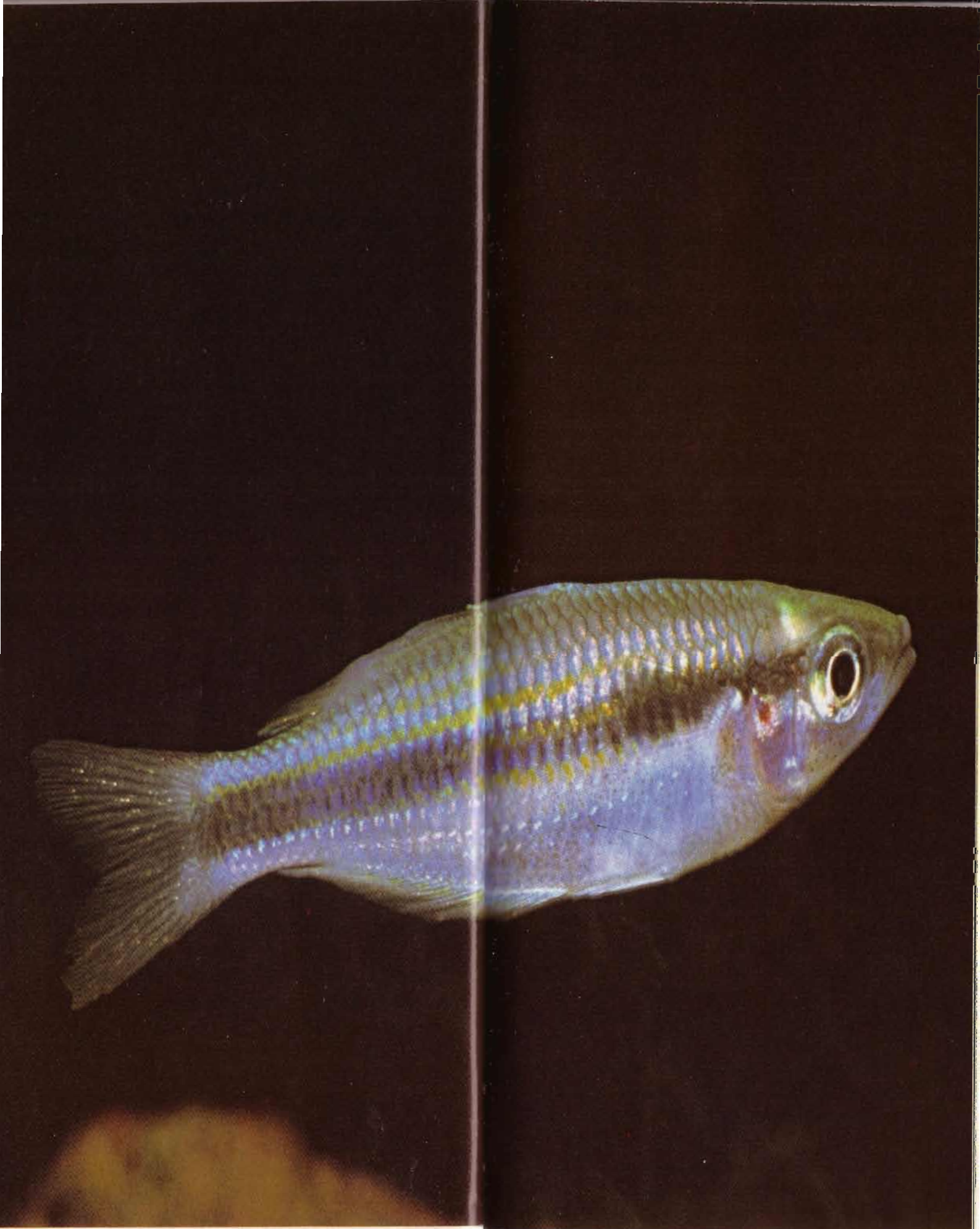
Scales relatively large, arranged in regular horizontal rows; body scales with smooth or weakly crenulate margins; predorsal scales extending to posterior portion of interorbital; preopercle scale rows from posterior angle to edge of eye usually 3.

First dorsal fin originates about one-half pupil diameter in front of level of anal fin origin; first dorsal spine slightly (in females) to distinctly (in males) shorter than longest (3rd) spine; longest spine of first dorsal fin 14.4 (10.7-16.4), its tip just reaching base of 2nd dorsal fin origin in females and base of 1st or 2nd soft ray of second dorsal fin in males when depressed. Longest soft ray of second dorsal fin 11.2 (10.0-12.7); depressed posterior rays of second dorsal fin extend back about half length of caudal peduncle in both males and females. Longest anal rays 12.7 (9.5-12.7). Soft dorsal and anal fins rectangular in outline, somewhat pointed posteriorly. Pelvic fin tips when depressed just reaching base of anal spine in females and extending to base of spine or 1st soft anal ray in males; length of pelvic fin 15.5 (13.3-15.0). Pectoral fins pointed, the length 19.4 (19.6-20.9). Caudal fin moderately forked, its length 23.8 (23.4-26.9).

Coloration: Fresh colors are shown in the accompanying photographs. Preserved specimens are gray on the upper half and white below with a blackish mid-lateral stripe. Fins are whitish to slightly dusky.

Comparisons:

Melanotaenia pimaensis is most closely related to *M. goldiei*, which ranges throughout the lowlands and foothills of southern New Guinea from the Port Moresby district to western Irian Jaya. Both species share similar fin ray (Table 1) and scale counts, and there are similarities in color pattern. However, *M. pimaensis* is a more slender species with the greatest body depth of mature males only about 30% of the standard length compared to 34% in *M. goldiei* (22 specimens). The snout of *M. pimaensis* is blunt and rounded compared to the sharp angular snout of *goldiei*. Furthermore there are significant color differences. The Pima fish is



Aquarium photo of a female specimen of *Melanotaenia pimaensis*. Photo by the author.

generally lighter in color and the dark mid-lateral stripe is narrower (one scale vs. two scales in *goldiei*). The stripe is usually interrupted just behind the pectoral fins in adult males of *goldiei* but continuous in *pimaensis*. In addition, *goldiei* usually has a dusky patch on the lower sides which is lacking in *pimaensis*. Finally, the depressed posterior dorsal rays in male *goldiei* reach the caudal base or beyond; in *pimaensis* they are much shorter, extending for only about half the caudal peduncle length. It also appears that *goldiei* attains a much larger size (110 mm SL vs. 65 mm SL), although the sample size of *pimaensis* is very limited.

Sexual Differences:

M. pimaensis lacks the pronounced sexual dimorphism of most *Melanotaenia*. Males and females both have a slender body shape and similar dorsal and anal fin profiles. The best means of separation is the height of the depressed first dorsal fin which barely reaches the 2nd dorsal fin base in females and extends slightly beyond this point in males. The smallest female paratype with eggs is 38.5 mm SL.

Habitat:

The type locality is situated at the junction of the Pima and Tua Rivers, which are headwater streams of the Purari River. The specimens were collected from a small slow-flowing side channel of the Pima River in shallow depths of less than one meter. The stream was relatively open and exposed to sunlight, although it was bordered by rainforest in some sections. Temperatures ranged from 19.5°C in the deeper flowing sections to 25°C in the exposed shallows. A pH value of 7.8 was recorded. About half of the specimens were taken from moderately turbid flowing water and the remainder from a crystal-clear backwater with minimal flow. The elevation was 823 meters (2,700 feet). The stream was also inhabited by a hardyhead species *(Craterocephalus)* and another rainbowfish, *Chilatherina campsi* (Whitley).

Etymology:

The species is named *pimaensis* in reference to the Pima River type locality.

ACKNOWLEDGMENTS

I thank Dr. Herbert R. Axelrod for making the 1980 expedition to Papua New Guinea a reality. Brian Parkinson provided collecting assistance, knowledge of the collecting sites and many personal contacts who aided in numerous ways. David Lourey and Brian Eggleton of Pacific Helicopters, Goroka, were instrumental in providing a smooth flight to Lake Tebera. Eddy Van Ene of the same firm kindly provided aquarium space for live specimens of the Tebera rainbowfish. Similar assistance was provided by Dick Dunham of Port Moresby. Mr. Dunham also helped with the packing and shipping of live specimens to Australia. Barry Crockford of Melbourne helped with field collections in the Lae district and is presently conducting breeding experiments with the Lake Tebera rainbow on behalf of the author. Accommodations were generously provided by Len and Jean Crossfield at Port Moresby and John Gollan and Ron Wilson at Lae. Special thanks are due Navu Kwapena, First Assistant Director and Conservator of Fauna, Wildlife Division, Government of Papua New Guinea, for providing collecting and exporting permits and for the continuing cooperation of his department. Finally, I thank my wife, Connie Allen, for preparing the typescript.

TABLE 1

Fin ray counts for certain species of *Melanotaenia*

	2nd dorsal fin soft rays								Pectoral rays			
Species	10	11	12	13	14	15	16	17	13	14	15	16
herbertaxelrodi	2	1	3	14	13	14	12		7	31	21	
monticola						10	20	8	1	19	6	2
lacustris		4	6	10	2					12	9	1
pimaensis			1	1	10	34	14	4	2	18	29	15
goldiei			1	4	13	12	7	1				

	Anal fin soft rays									
	17	18	19	20	21	22	23	24	25	
herbertaxelrodi	2	1	3	8	20	14	7	2	2	
monticola		4	11	18	5					
lacustris	1	10	6	4	1					
pimaensis				1	16	19	24	4		
goldiei					1	3	9	18	6	

REFERENCES

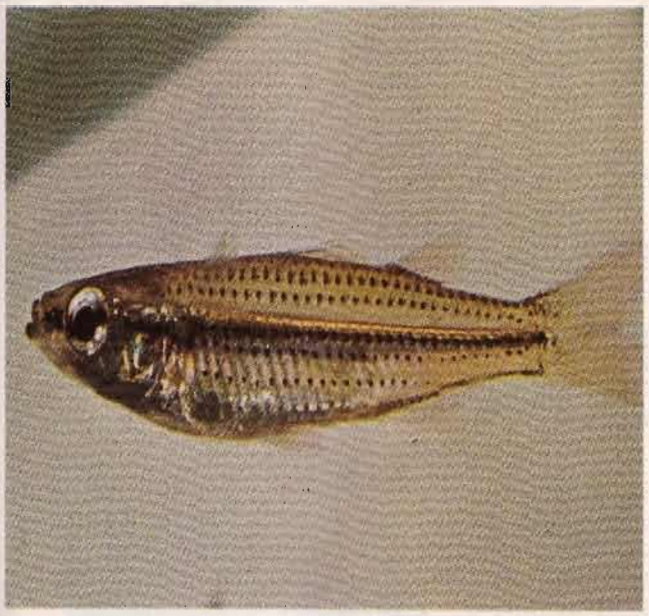
Allen, G. R. 1980. A generic classification of the rainbowfishes (Melanotaeniidae). *Rec. West. Austral. Mus.*, 8 (3): 449-490.

Following pages:

1) The Highland rainbow, *Chilatherina campsi*, was collected along with *Melanotaenia pimaensis* at the Pima River site. Photo by the author. 2) *Melanotaenia goldiei* is closely related to *M. pimaensis*, both having similar dorsal ray and scale counts, but differing in certain aspects of the color pattern. Photo by G.E. Schmida. 3) A species of hardyhead *(Craterocephalus)* was collected with the Pima rainbowfish *Melanotaenia pimaensis*. Photo by Dr. Herbert R. Axelrod of an Australian species. 4) *Melanotaenia goldiei* has a broader lateral band than *M. pimaensis* and it is interrupted behind the pectoral fins. Photo by G.E. Schmida.

1

2



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