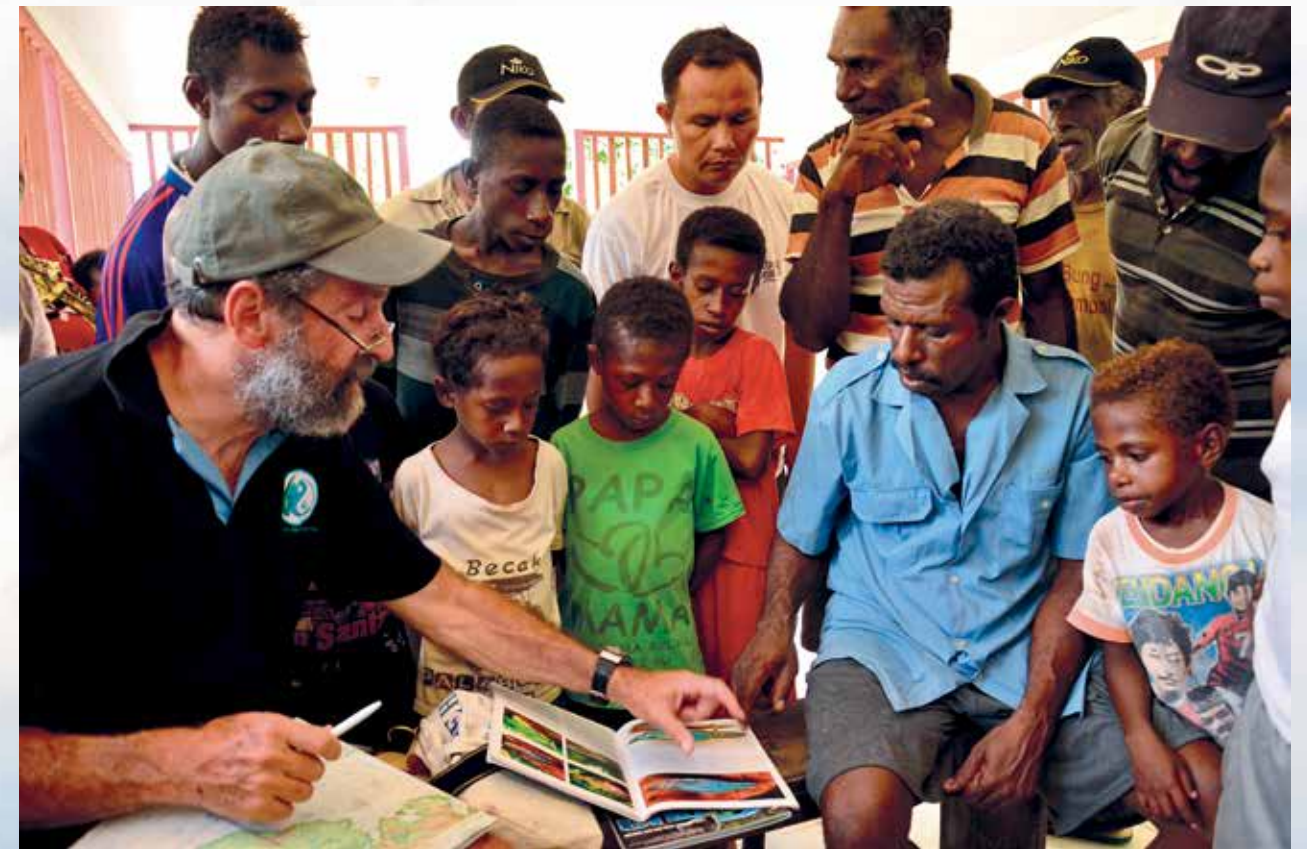




The entrance to Etna Bay, an almost untouched paradise.

# Etna Bay: a primordial paradise



by Heiko Bleher • I have traveled throughout New Guinea in search of new rainbowfishes. One of the most difficult areas to reach, and one of the most pristine for that very reason, is Etna Bay on the south coast of West Papua.

Heiko Bleher talking with the deputy village elder. An *AMAZONAS* issue comes in handy to show what fishes he is seeking.

To get there, I flew from Milan via Jakarta and Sorong to Kaimana. This was my fourth visit to this former Dutch base, which has grown and now has a new container port that can handle 1 million containers and an extensive network of roads. Once again, I arrived there on the sailing ship *Putiraja* with Ken and Josephine, sailing from Kaimana to Etna Bay. Even with the help of Josephine, who is Indonesian, it took a week to get the authorization to travel. Finally, all the papers were signed. Josephine also obtained the fuel and supplies we needed.

## Via Triton to the Etna Bay

If you travel southeast along this southern stretch of West Papua coastline, you encounter no towns except for Triton Bay, which we passed in the morning. About 20 years ago, I caught *Melanotaenia kamaka* and *M. lakamora* in the Triton lakes—Kamaka, Lakamora, and Aiwaso—situated between 2,297 and 2,953 feet (700 and 900 m) above sea level. At that time the area was still untouched, but Conservation International has now built a facility here. On a hill above an inner bay is

the village of Lobo.

Mountains covered with primary forest line the shore to a height of about 3,281 feet (1,000 m). We sailed past many uninhabited wooded islands, which had beautiful sandy beaches. Then, around 3:00 p.m., the wide mouth of Etna Bay came into view. We dropped anchor at the small peninsula projecting into the bay. We saw a single house and a cross there. In our small speedboat, we drove around the headland. We could see that the settlement was larger than we had expected, though it was neither marked on maps nor visible on Google Earth.

From the dock, we had to climb up to the shore. Josephine asked for the Kepala Desa, the village elder, and we were escorted to the meetinghouse. Here, pretty much all of the elder's 74 family members, with kids in tow, assembled; the Kepala Desa himself was unavailable. I showed the people the photos of rainbowfishes in my *AMAZONAS* magazine, but no one recognized them. The people here use so many different fishes as food that they were unfamiliar with such small fishes, which have no food value. Unfortunately,



no one spoke Indonesian, so we could not communicate with them. We understood only that the Kepala Desa would be back by evening. When he arrived, we were invited to his house.

He spoke a few words of English and, by candlelight, we learned that this area, which is almost as big as Switzerland, had 10 more villages with approximately 2,000 inhabitants belonging to two tribes: the Napiti, who live along the right bank (although we could not make out further settlements during our journey), and the Manekamoro, who live on the left bank. The people live almost exclusively on fishes (mainly groupers and snappers) that they also trade for petrol, oil, and sago with traders from Kaimana once a month. Otherwise, they hunt seasonally for deer and wild boar and grow pineapple, papaya, and some vegetables. The area is officially divided into the two districts: Etna and Jamor.

Finally, the village elder told me that Mbuta Lake lies at a very high elevation. If we could climb well, he said, it would take me about three hours to get there. He kindly provided me with two guides, Marcans and Orgenes, of the Napiti tribe.

### Sungai Jabaria

I had used the three hours before our visit with the Kepala Desa to examine the only nearby creek. At its widest point, the Sungai Jabaria measured a little more than 10 feet (3 m) and was no more than knee-deep. It had a strong current and the water was clear. The sides of the river were almost completely overgrown with bamboo,

so the creek was shaded. The substrate consisted of fine gravel. There were no aquatic plants, but there were trees, branches, and leaves in the water. I discovered a beautiful freshwater pipefish, possibly *Microphis leiaspis*, which had an attractive head pattern and a fine bright-blue stripe along its entire body. I also found some gobies and an extra-colored male *Stiphodon semoni*.

Another freshwater pipefish that we netted in this sungai could be *Hippichthys heptagonus*. We also found two shrimp species that were a real feast for the eyes: *Atyopsis moluccensis*, which has red stripes and a burgundy body, and *Macrobrachium cf. spinipes*. The water parameters in this freshwater creek were as follows: pH 7.25, conductivity 199  $\mu$ S/cm, temperature (around 5:00 p.m.) 78.3°F (25.7°C).

### Up the hill

At sunrise, I set out with Marcans and Orgenes to hike to the high-altitude Lake Mbuta. The climb was more than exhausting, because the trail was very steep and we had to climb over rocks

overgrown with vegetation. Each of us carried between 44 and 88 pounds (20–40 kg) of luggage on his back—my equipment, food, and water. Although we crossed the virgin forest in the shade of trees 13 to 160 feet (40–50 m) tall, where the temperature was only 77°F (25°C), I was sweating profusely. After three exhausting hours, we finally reached the valley where the nearly dry Lake Mbuta lay at an altitude of 3,658 feet (1,115 m).



Mbuta Lake, 3,280 feet (1,000 m) above sea level, has almost dried out.

These juvenile *Bostrychus cf. zonatus* were discovered in the residual waters of Mbuta Lake, which used to be larger.



Golden-yellow male *Craterocephalus* sp. live in what is left of Mbuta Lake.



Above, top to bottom:

In the late afternoon, we explored the Sungai Jabaria.

Caught in the Sungai Jabaria: *Microphis cf. leiaspis* with exceptionally vibrant colors.

*Mogurnda mbuta* is endemic in Mbuta Lake.

Why did I go through all this hardship? Well, since my friend Gerald R. Allen discovered an unusual rainbowfish in Lake Mbuta in 1998, which he described in the same year as *Pelangia mbutaensis*, the family Melanotaeniidae has been found to contain a seventh genus, which is monotypic. I wanted to see this new species with my own eyes. I suspected that, like *Melanotaenia boesemani*, *M. parva*, *M. praecox*, *Glossolepis pseudoincisus*, and many other species that I first caught alive and introduced to the hobby, the preserved specimens would not show the same colors as they did when alive. (Gerry had come in a helicopter owned by the Freeport mining company and did not have to cope with the climb and the cost that I did).

Now I stood there at the southern end of this 6-mile (10-km) long, nearly dry lake bed, which consisted of just a few brooks and residual ponds. I had to find the *Pelangia*, so I started searching with my hand net, but I kept sinking deep into the mud. I fished in every water hole, but at the end of my arduous trip I had only found three

species of fish—the only ones that had survived here. I also saw thousands of dead fishes among long green *Vallisneria*. In the slightly flowing water, I also noticed a bright red *Vallisneria* species.

Two of the three species I found were gobies: the small and gorgeous *Mogurnda mbutaensis*, described by Allen after his expedition, and another that resembles *Bostrychus zonatus*. The third fish was an undescribed *Craterocephalus*. It is very small; the males are golden yellow and the females are yellow.

Given my disappointment at seeing no *Pelangia* in the remaining puddles of Lake Mbuta (could they be extinct?), I found the descent particularly difficult. In addition, it was raining in torrents, so the sharp karst was slippery. Marcans, who was walking behind me, suddenly indicated that we should head down to the left, even though I was sure the trail went straight. I followed his instructions, and then it happened: I stepped onto a rock overgrown with plants. In its center, hidden by plants, was a huge hole, and I crashed through it, injur-

ing my right thumb in the process. Later I struggled all night against an attack of malaria, which had broken out because of my extremely exhausted state. My thumb was swollen to ten times its normal size, and I had to have surgery in Kaimana a few days later.

### Sungai Pama

The next morning we drove almost three hours to get to a river in Etna Bay that I wanted to investigate. It was the Sungai Pama, a stream that nobody had previously explored. This was just the kind of place I like best.

It turned out to be very difficult to get to the Sungai Pama. The influence of the tides and the mangroves growing everywhere made the passage almost impossible. Marcans got out of the boat and tried to hack a way through with his machete.

I took this opportunity to go fishing.

In brackish water, I suddenly saw the bright beak of a *Zenarchopterus*, a

halfbeak. This fish uses its long jaw extension to attract prey, which usually consists of flying insects, to the water's surface. I also caught a blue-eye that looked very similar to a species I had caught at the north end of Aru (see AMAZONAS 19). This one had distinctive dorso-lateral neon stripes over its entire body length—perhaps to attract insects. This is an extreme surface swimmer. Another *Pseudomugil* species I saw had golden yellow fins and looked similar to *P. paludicola*. I was also able to see a fourth fish species, *Tetraodon erythrotaenia*, from above because of its broad orange head pattern.

When you study all these features in detail, you begin to understand the evolutionary adaptations that have secured the survival of these small species here. I was also able to catch a striking *Toxotes* that had a broad orange band running through the caudal fin. Among the gobies in this river, those that stood out were *Butis amboinensis* with its blood-red spots and a glass perch, *Ambassis* cf. *interrupta*, which had a huge red first dorsal ray.



At the mouth of the Sungai Pama, Etna Bay.



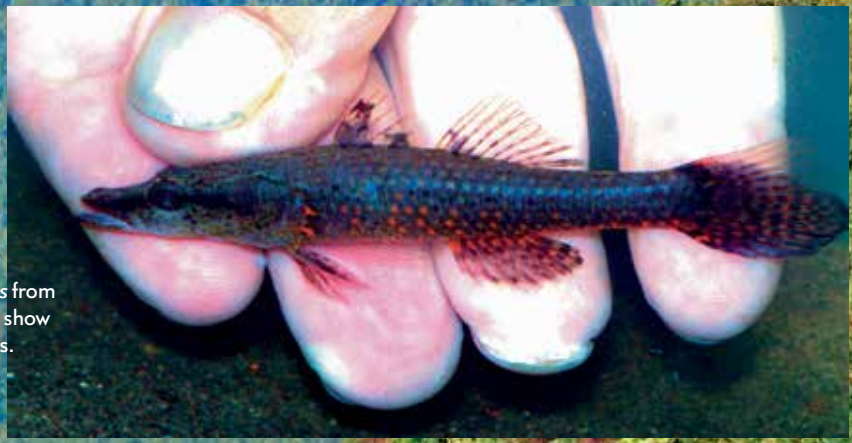
Male *Melanotaenia* sp. "Sungai Pama."



*Pseudomugil* cf. *paludicola* from the Sungai Pama.



*Butis amboinensis* from the Sungai Pama show attractive red dots.



*Ambassis* cf. *interrupta* from the Sungai Pama has a red first dorsal ray.



Male *Pseudomugil* sp. "Sungai Pama."



Underway in Etna Bay.



A male *Melanotaenia* sp. "Sungai Ambalanga" shortly after being caught.



A male *Melanotaenia* sp. "Sungai Ambalanga" after a color change to yellow-orange.

then we got started at 8.00 a.m. Besides Josephine and Marcans, who knew the way, our chef came along. This last site was to become the best fishing ground of our entire trip. Again we climbed over fallen trees and soon reached the upper reaches of the river, where we found a deeper trough in which gorgeous rainbowfishes swam. When I saw them through my diving mask underwater, it took almost my breath away. I had never seen so many rainbow colors combined in a single fish before. Later I learned that these fish change color like chameleons, and some become partly golden.

The water parameters were as follows: pH 7.80, conductivity 195  $\mu\text{S}/\text{cm}$ , and temperature (at 11.00 a.m.) 78°F (25.3°C). The stream was sandy, without any vegetation. Numerous *Cryptocoryne ciliata* grew only in the lower section near Ambalanga, in the tidal area. I struggled to catch the *Melanotaenia*, for they were exceedingly nimble. Unfortunately, my two assistants did not succeed in closing the net on the other end quickly enough. I wished Natasha were there!

Nevertheless, we succeeded eventually, and I was

able to bring those dream fish to Europe. Now they have reproduced and enriched our beautiful and instructive hobby. In addition to this fantastic rainbowfish and other species, I found a stunning *Stiphodon* in the same biotope—possibly a variant of *S. rutilaureus*.

This trip turned out to be quite a risky adventure, but it was worth it, and I certainly will go back. There are countless treasures still to be found in this unspoiled region, a paradise that you can hardly find elsewhere nowadays. Moreover, *Pelangia* is still missing. 🐟

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REFERENCE

Bleher, H. 2008. Die Aru-Inseln—Geschichte und Neuentdeckungen. AMAZONAS 19: 20-30.



*Melanotaenia* sp. "Sungai Ambalanga" females are attractively colored.

I felt sure I would find a rainbowfish here. However, I would only be able to succeed in an area that was not reached by the tide. I wandered up the creek and climbed over the many fallen trees overgrown with moss and orchids. When I was deep in the jungle, away from the mangroves, I discovered a group of *Melanotaenia* near the surface of the stream. They swam in one of the few sunlit areas below the dense canopy of giant trees. The crystal clear water flowing over the sandy bottom was so shallow that I could catch the fishes with my hand net. This species had a wide, dark blue stripe that ran from the eye to the caudal, framed with a series of red dots.

The water parameters in this habitat where I found the rainbowfishes (at 5:00 p.m.) were: pH 7.35, con-

ductivity 152  $\mu\text{S}/\text{cm}$ , and temperature 83°F (28.5°C). During low tide, the parameters in the habitat further downstream were pH 7.65, conductivity 715  $\mu\text{S}/\text{cm}$ , and temperature 81°F (27.7°C).

**Sungai Ambalanga**

To celebrate our first rainbowfish, and to help me regain my strength, Josephine promised to prepare a T-bone steak for me that evening. My thumb had now swelled to a monstrous size. Yet on the last day, I wanted to visit another river before we lifted the anchor. Marcans, who now knew what a rainbowfish looked like, told us that there was a sungai in Ambalanga where these fishes lived.

I fought one more night against my rising fever, and



The Sungai Ambalanga, where I caught these attractive new rainbowfish.