

Scenic Lake Sentani, in the Irian Jaya portion of the island of New Guinea.

In Search of the Kamaka Rainbow

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Photos by the author

Travelling is definitely the most exciting aspect of my profession as an ichthyologist. Since my days as a graduate student in Hawaii, now more than 20 years ago, I've spent nearly 4-5 months of every year on the road. Most of these travels have been to sunny tropical latitudes, including exotic destinations such as the Caribbean Sea, Galapagos, Easter Island, Tahiti, Indonesia, Maldives, Seychelles, Kenya, and the Red Sea, to name just a few of the better known spots. However, in recent years I have restricted most of my field activities to the Australian region—and for good reason. It's not a case of travel fatigue, rather I have gradually gained an appreciation of the unsurpassed opportunities that exist in my

own "backyard." This region possesses the world's most diverse marine fish fauna, and although relatively few in number, the freshwater fishes are highly unique, with the study of groups such as the colorful rainbowfishes especially rewarding.

As an added bonus, Australia's next door neighbor, New Guinea, is one of the Earth's last untamed frontiers. The world's second largest island (after Greenland), it is an unparalleled land of scenic contrasts. It is a kaleidoscope of tropical lagoons, alpine peaks, endless rainforest, and active volcanoes. My tally of visits there is now 14, seemingly enough to have exhausted all possibilities. No way! The result of every trip is the same...a desire to return just as soon as possible. New Guinea has it all for an ichthyologist ... excellent diving coupled with the challenge of undiscovered freshwater fishes in the interior jungles. Among my most memo-

orable trips were those to the poorly explored western side of the island, known as Irian Jaya, which was also the destination of my most recent journey in May, 1991.

The highlight of this visit was the trek to Lake Kamaka, the largest of the Triton Lakes, situated about 18 miles east of

Kaimana. It has long been my ambition to visit these lakes, which had been completely unexplored by biologists. Based on my knowledge of the interesting fish communities in other New Guinea lakes, I predicted that the Triton Group would yield special ichthyological treasures.



Top: Samuel Renyaan (center), flanked by Frank Doejaaren and his son Eric, is seen holding a catch of Sentani rainbows. **Bottom:** A young male red rainbowfish, *Glossolepis incisus*.



I don't know how many idle minutes I've spent pondering these lakes on various maps, at the same time daydreaming about what it would be like to be the first ichthyologist to reach them. However, I realized that there would be many obstacles to overcome. First and foremost was the problem of financing an expedition to Irian Jaya. Once there, how could I possibly reach these isolated lakes? The nearest commercial landing strip was at Kaimana, some 36 miles to the west. How would I get to Lomira Village, the nearest coastal settlement within striking range of the lakes? Last, but not least, I was also concerned about the nature of the climb

required to reach the nearest lake.

Hopefully, it would be possible to walk over the ridge, which judging from my maps was only about 1000 feet high. Somewhat unsettling was the knowledge that the lakes are situated in an area of well-developed karst topography, highly eroded limestone that can form an impenetrable barrier to anyone on foot. During a previous trip to the Bird'shead Peninsula, a pilot aptly compared the landscape to an inverted egg carton—endless small hills with steep sides, arranged in a maze-like configuration.

Because of the problems of surmounting these obstacles I had to put my Triton Lakes plans on hold. However, toward the end of 1990 I received an encouraging letter from Dave Price of the Summer Institute of Linguistics. Dave is a



Top: Carwash Creek abounded with *Chilatherina sentaniensis*. **Center:** Female *Chilatherina fasciata* (center of photo) and *C. sentaniensis* (lower right) from Carwash Creek. Note the longer, more pointed snout of *C. sentaniensis*. **Bottom:** Adult female *C. sentaniensis*.

missionary linguist working on Bible translation with the Ambai people at Yapen Island. Between visits to his Ambai village he resides with his family at beautiful Danau Bira (also known as Lake Holmes), home of *Chilatherina bleheri*. Dave reported that the SIL pilot at Danau Bira, Gary Friesen, was a rainbowfish enthusiast who, whenever his duties allowed, brought back a few live fishes from remote destinations. He mentioned that Gary had recently invited him to visit a lake near Lobo, where SIL had a language team. I could scarcely contain my excitement when a quick search of the map revealed the position of this locality. It was situated on the edge of Triton Bay and the lake in question was my long-dreamed-of destination. Unfortunately, Dave was unable to make the trip so he temporarily shelved his plans.

I had originally planned to visit Dave in 1990, but was prevented from doing so because of lack of funds and a commitment to work on a research project in Panama. Thankfully, Dr. Axelrod and T.F.H. Publications came to the rescue and provided funds for a visit during May of 1991.

Prior to the trip I did not have a firm itinerary, although I knew a considerable portion of the time would be spent in the vicinity of Danau Bira. Gary made almost daily flights from the lake to service remote areas throughout the Mamberamo region and it might be possible for me to

join him on a space available basis. Secretly, I hoped we might fly to Lobo, but at best it was a long shot considering the great distance involved. I spoke to Dave on the radio from SIL headquarters in Jayapura shortly after my arrival. I was ecstatic when he informed me that the



Top: Aerial view of Danau Bira, with landing strip visible at upper center. **Bottom:** A submerged fig tree at Danau Bira.



Top: A woodcutter's camp near Danau Bira. **Bottom:** Searching for *Melanotaenia maylandi* near Danau Bira.

lake near Lobo would be one of our main objectives. I knew that if nothing else was achieved on this journey, that would make it all worthwhile.

I spent nearly a week at Abepura, near Lake Sentani, before joining the Price family at Danau Bira. I took advantage of this time to visit with Samuel Renyaan, an instructor at the local Cenderawasih University. Samuel is very interested in the fish resources of Irian Jaya and we are hoping to collaborate on a multi-year study of freshwater fishes of Irian Jaya beginning in 1992 or 1993.

One of the highlights of the week was a rainbow-collecting trip to Lake Sentani with Samuel, Frank Doejaaren, and his son Eric. Frank is the head of the Publications Section at SIL and both he and Eric are avid aquarists. Our main objective was to capture live specimens of the Sentani rainbow (*Chilatherina sentaniensis*). This species had never been photographed alive, although many photographs of *C. fasciata*, erroneously labeled as *C. sentaniensis*, have appeared in various aquarium publications. We chartered a large motorized canoe to ferry

us to a village on an island in the middle of the lake. On arrival we asked local fishermen where we could catch the "green" rainbowfish. They told us there was none around their island, only the red type (*Glossolepis incisus*). We saw an abundance of the "reds" swimming among dense vegetation next to the shore. It was tempting to stop and fish for these, but we decided to motor the remaining distance across the lake, finally entering the outlet stream. The river was crystal clear, fast flowing, and about 100 feet wide. There were plenty of fish in the shallows near shore, which, after several drags with the seine, we identified as *Ophieleotris aporos* and young *Glossolepis*.

Eventually, we headed back across the lake, still empty-handed. I decided to sample several small streams running into the lake along the Sentani Road. In the first creek we netted a prize male *Glossolepis*. Overcome with "rainbow fever," I charged ahead with the net to try another spot on the opposite bank. Plowing through the dense tangle of vegetation, I suddenly felt excruciating pain on my neck, forehead, and arm. Then I became aware of a surrounding cluster of yellow and black wasps. Luckily, I escaped with only six stings. They were extremely painful for about five minutes, but the soreness subsided rapidly leaving only tender welts. Oddly enough, I had never experienced this problem previously in New Guinea, but this was to be only the first of several encounters with these dreaded pests on this trip.

We unanimously agreed to abandon this stream and find another. Frank suggested we try a nearby creek where he had previously caught rainbows. However, when we arrived I had my doubts about this spot, which served as the local car wash. Several cars were parked in midstream and were being doused with buckets of soapy water. In spite of this activity the fishing was excellent and at last we captured some Sentani Rainbows. We also caught some very colorful *Glossolepis*, and a single specimen of *C. fasciata*. The latter species is very similar in appearance to *C. sentaniensis*, but has a significantly shorter, blunter snout and more rays in the second dorsal fin. After a 30 minute drive back to the Doejaaren house, I spent the rest of the afternoon photographing the catch in Frank's aquarium.

On the morning of the departure for Danau Bira, I made a one-hour stop at the SIL high school and talked to their 40 students about my experiences as an ichthyologist. I was warmly received by the faculty as well as the students. Prior to the talk I chatted with the biology teacher, Matthew Huffine, and several of his students. They proudly showed me their class aquarium, which housed a number of coral reef fishes. I was really impressed by the enthusiasm of this group and thought to myself how lucky they were to have the opportunity to study biology in such a fascinating environment.

After the lecture one of the students drove me to the Sentani airstrip, where Sam Renyaan was waiting. Dave Price had invited Sam to join us for the weekend at Danau Bira. Our pilot for the hour-and-45-min-

ute flight was Dave's friend and neighbor, Gary Friesen. Gary is an ichthyologist's dream come true! Unlike the 99.9% of us who are mad keen about rainbowfishes, dreaming endlessly of having the time, means, and money to explore New Guinea's wild interior, Gary flies his single-engine plane on daily trips to some of the most exciting destinations imaginable. When he has a spare moment on these daily runs he collects rainbows or recruits local villagers to catch them. Until my arrival, however, his only collecting implement was an old piece of window screen. So during my stay I always made sure he was well equipped with a proper seine, plastic bags, and buckets.

It was a great feeling to at last taxi down the main runway. We were soon airborne and on our way. I looked forward to the next three weeks with great



A beautiful *Chilatherina bleheri* collected at Danau Bira.



What a beauty! The metallic blue body and red fins of the dwarf rainbow, *Melanotaenia praecox*, make this a particularly attractive species. This deep-bodied specimen is an old male in an aquarium.

anticipation and a sense of high adventure. By far the best way to gain an appreciation of the vastness of New Guinea's wild interior is to fly over it in a light aircraft. We saw only three tiny villages and a few isolated

huts...otherwise nothing but dense greenery in all directions. Highlights of the flight included the passage over the Fojoa Mountains and spectacular views of the seemingly endless Lakes-Plains of the Mamber-

amo. Shortly before arriving at Danau Bira we crossed the mighty Mamberamo just downstream from where it enters a scenic gorge as it cuts through the Fojoa Range before spilling into the swampy delta near its



A young male *M. praecox*. Wild and/or young fish are much slimmer than aquarium-raised adults.

mouth. This great river is one of the three largest in New Guinea and was the focal point of early Dutch collectors.

Finally we sighted Danau Bira in the distance, nestled among low jungle-covered foothills, about 12 miles west of the Mamberamo. Moments after touching down, Dave and Tammy Price and their infant sons Samuel and Kyle walked across the grassy strip to greet us. Gary was scheduled to make an afternoon flight to a couple of villages on the Rouffaer River, a large tributary of the Mamberamo. He eagerly volunteered to bring back some fishes. I jumped at this chance and quickly unpacked nets and other collecting gear for him to take along.

After a five-minute stroll on a narrow jungle path we reached the Price house, which commands a superb view of the lake. Tammy served up a tasty and much appreciated lunch while we made plans for the coming weeks. After lunch I leisurely unpacked my bags and organized the collecting and camera equipment. A real bonus as far as staying with Dave was concerned was his large living room aquarium that was well landscaped with rocks and local aquatic plants. On most previous trips to New Guinea I have not had the luxury of being able to do live fish photography while in the field, instead being forced to take diagnostic photos



Top: A yellowbelly gudgeon, *Mogurnda nesolepis*, from the Mamberamo plains. **Center:** A halfbeak, *Zenarchopterus kampeni*, from the Mamberamo Plains. **Bottom:** A large male of Mayland's rainbow, *Melanotaenia maylandi*.



An adult male *Melanotaenia maylandi*.

of freshly dead specimens. Dave had the tank filled with rainbows on my arrival and I could not resist the temptation to begin photographing at once. Among the fishes in Dave's tank were the previously unphotographed *Melanotaenia vanheurni* and a new *Melanotaenia* that Gary had brought back from Siriwo, a mountainous region near the Paniai Lakes.

Late in the afternoon we heard the distant drone of Gary's plane. We arrived beside the uphill landing strip just as the plane touched down. Judging from Gary's broad grin as he jumped from the cockpit I knew he had been successful. He produced three bags full of fishes including three species of rainbows, gudgeons, a grunter, and an excellent catch of freshwater half-beaks (*Zenarchopterus kampeni*). The prize catch was the dwarf rainbow (*Melanotaenia praecox*). This species was pre-

viously known only on the basis of 31 specimens collected in 1920 from a tributary of the Mamberamo. The Dutch collectors had not recorded their live colors. I was therefore totally unprepared for the spectacular beauty of this fish, which is certainly one of the most attractive members of the family. It is a bright neon blue and possesses red fins. As the common name suggests, it is a small species with a maximum size of only 5-6 cm. However, even at a small size the males develop a remarkably deep body. Subsequently, Gary brought in another collection of these stunning fish and I spent hours photographing them in Dave's tank.

I soon discovered that Dave had other wildlife interests besides fishes. Foremost among these were frogs and birds. I was continually amazed by his knowledge of the local avifauna. The highlight of that first week-

end was a sighting of the magnificent bird of paradise. Sam, Gary, Dave, and myself, accompanied by a local guide, set out across the lake in Dave's canoe early Saturday morning. Dave had earlier made a standing request with our guide to keep a lookout for a dancing ground, a site used by the male bird when courting its mate. After a short walk up a steep slope in the rain forest we settled in among thick foliage next to a dancing ground frequented by this species. Almost immediately we heard the call of the male high up in a nearby tree. We strained to get a glimpse of the bird, which refused to come in closer. Gary had brought along a small but powerful tape recorder and had been recording the male's distinctive call. He decided to try playing back the call repeatedly. Evidently the male magnificent bird of paradise is highly territorial. Suspecting that its territory

was being invaded by a rival, he swooped down and alighted on the forest floor a mere 20 feet away. We were astounded by the stunning beauty of this bird at such close range.

Later that same day, we traveled by canoe for several miles up the main feeder stream of the lake—as far as it was navigable. Our quarry on this occasion was Mayland's Rainbowfish (*Melanotaenia maylandi*), which I had first collected during the 1982 visit. Dave had failed to find any around the lake and was beginning to have doubts about its continued occurrence. I directed our small party to the same creek where the fish was collected nine years earlier. The lower part of the creek, near where it joined the river, was inhabited exclusively by Bleher's rainbow. We walked slowly upstream through a narrow corridor of rainforest, stopping now and then to sample with our net. Eventually we caught a huge female *M. maylandi*, but in the process stumbled directly into another wasp nest. Remembering the first unpleasant encounter, I immediately dropped to my knees and submerged myself in the shallow pool. Finally out of breath, I burst from the water and sprinted at full steam away from the angry wasps. Miraculously, we all escaped their stings.

The following day we gave Gary the nets once again and wished him good fishing. His itinerary included stops at Lereh and Dabra, both in the Mamberamo system. Lereh is located in hilly terrain on a tributary, well upstream of the main river.

Dabra, in contrast, was on the floodplain, close to the main river. Gary's efforts resulted in a nice catch of rainbows at both spots. The relatively drab *Chilatherina crassispinosa* was found at Lereh, but Dabra yielded a number of the dazzling, neon-hued *Melanotaenia praecox*. The latter fish were caught in a quiet pool of a small clear stream with a pH of 6.5. That evening after another photographic session we packed our gear and made final plans with Gary for our next day's journey to the Triton Lakes.

We departed at 7 AM, flying in a southwesterly direction to Nabire. The initial part of the journey took us over mountainous jungle terrain before finally emerging on a broad swampy plain that stretches along the eastern edge of Cenderawasih Bay. We stopped briefly to take on fuel at Nabire. While on the ground we received an unexpected photographic bonus. One of the pilots lived in a house on the edge of the strip and had several small aviaries in his yard. One of these housed a pair of the spectacular lesser bird of para-



A captive lesser bird of paradise at Nabire.



dise. I had seen these in the wild on previous trips, but this was my first close-up encounter with this unbelievably beautiful bird.

From Nabire we flew directly west into the heart of one of the most exciting and least explored regions of Irian Jaya. This is the isthmus that separates the main body of New Guinea from the Vogelkop Peninsula. There are no airstrips in the interior and the extremely rugged karst landscape is penetrated by very few walking trails. The region contains approximately 20 unexplored lakes, including those in the Triton Group. The only previous fish collection was made by Dutch scientists at Lake Yamur (sometimes spelled Jamur) in the mid 1950's. Their most startling find was the bull shark (*Carcharhinus leucas*), which they reported as being common in the lake. This

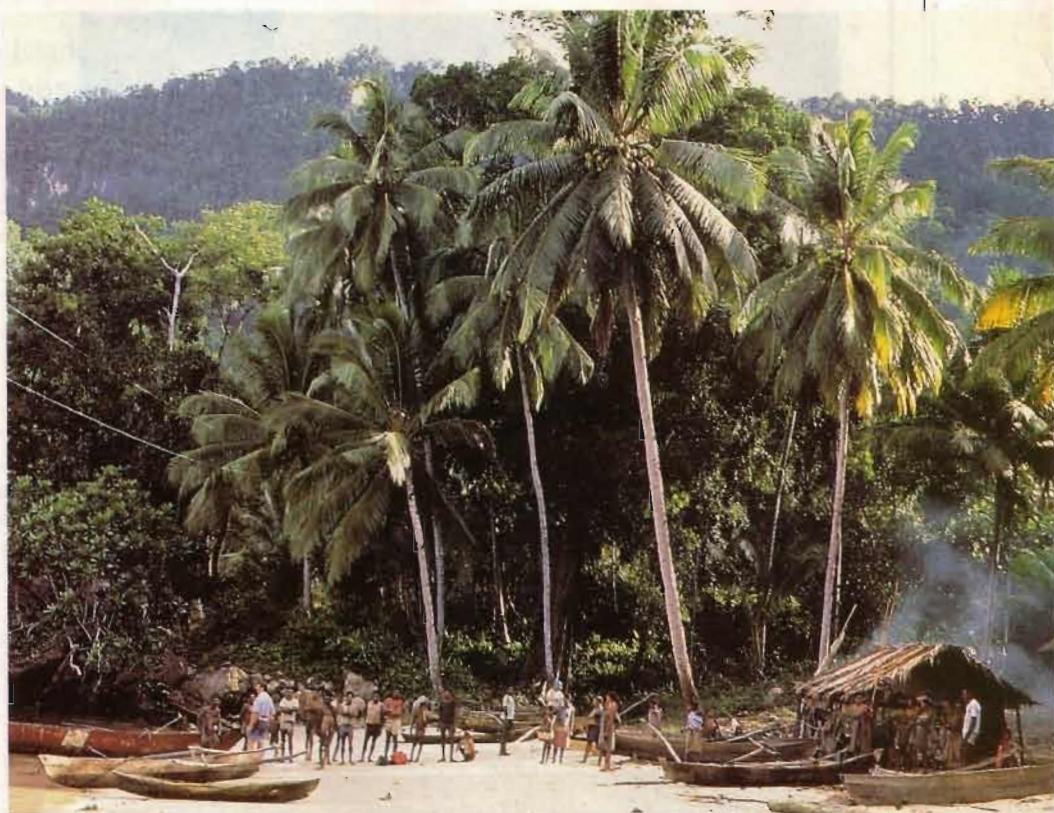
Top: An abortive landing attempt at Gusimawa. **Center:** Aerial view of Lake Kamaka, where the author's party hoped to find an unknown rainbowfish. Many isolated New Guinea lakes harbor endemic rainbowfishes, some undescribed. **Bottom:** Landing at Lobo Village.

locality is situated in the middle of the isthmus, more than 60 miles upstream from the sea. It is difficult to imagine that rain-bowfishes and sharks live side by side in this scenic lake. The Dutch used a pontoon plane to reach the lake. Hopefully, I will get there someday, either on foot or by helicopter.

The scenery below us became increasingly spectacular as we proceeded westward. Gary purposely flew at a low altitude to give us a good look at the area. I tried to imagine what it might be like walking in the jungle below and exploring the countless creeks and rivers we crossed. Moments like this can be very exciting but terribly frustrating!

Our plan was to first land at Gusimawa, where Gary had previously collected a new species of *Melanotaenia*. I had already examined the preserved specimens back at Danau Bira, and could hardly wait to catch some live individuals for photography. We came in low over the village, which was nestled in an incredibly picturesque site beside a fjord-like inlet of Arguni Bay. Mountains rising to an elevation of 3000 feet on both sides of the inlet provide a spectacular setting. Gary made two low passes in order to inspect the landing strip at close range. Much to our disappointment, he decided it was too risky to attempt a landing due to the tall grass. Apparently the strip is relatively new and, because it is so infrequently used, it is not properly maintained.

We turned southward and flew another 36 miles before landing at Kaimana for refuel-



Lomira Village, the beginning of the trail to Lake Kamaka.

ing. From there it was only a 15-minute flight on to Lobo. We flew along a very scenic stretch of coastline. The jungle-covered mountains rose steeply from the sea and there was an abundance of deep inlets and offshore islets. In sharp contrast to the murky waters of Arguni Bay, the sea was crystal-clear, revealing rich coral growth along the shore. I could scarcely contain my excitement as we neared Triton Bay. The shutter on my camera was definitely working overtime. As we approached Lobo I asked Gary if he could fly us across the bay and over the ridge so we could have a look at Lake Kamaka. This would give us a chance to assess the terrain we would have to negotiate. A few minutes later we traversed the ridge and a breathtaking panorama unfolded

before us. I could hardly believe I was really there. The lake looked even better than I had imagined. It was much larger than anticipated, about 6 mi long with an average width of about 1.2 mi. The lake was surrounded on all sides by steep mountains, and was without an outlet stream. Apparently the drainage occurs underground through porous limestone. My thoughts turned to the fishes that we might find. Certainly, there must be a new species of rainbowfish down there. As we made a final pass and headed back to Lobo, the reality of the task in front of us was a bit unsettling. Our biggest problem was a lack of time. It was nearly noon and we would have to depart from Lobo as early as possible the next morning in order to accommodate Gary's busy flight schedule. I



Dave and Gary en route to Lake Kamaka.

was very concerned by what appeared to be a long trek over rugged terrain, and there was also the problem of getting across the 6-mile width of Triton Bay before we could even start to walk. I really had serious doubts concerning our ability to reach the lake and return by the next morning.

The landing on the rough strip at Lobo was a bumpy affair. The grassy strip actually has a slight hill in the middle. Villagers came running to greet us from all directions and soon formed a large audience of curious onlookers. Minutes later a jumbo helicopter set down at the opposite end of the strip. It belonged to the

Mobil Oil Company, which was engaged in experimental drilling a short distance from the village. Gary suddenly had an idea that might just save the day for us. He would ask the chopper pilot if we could hitch a ride over to the lake. We quickly walked down the strip and intercepted the crew. The Indonesian pilot was friendly, but he said it was not possible to help us without permission from his boss in Kaimana. We followed the crew to their office in the village and Gary attempted to raise Kaimana on the radio, but was unsuccessful. However, we explained our plight to the office manager, and he generously

offered us the use of his motor canoe for the trip across Triton Bay.

In the meantime, Dave rounded up a couple of guides to accompany us on the trek. Thanks to the large outboard motor the journey across the bay only took 45 minutes. We beached the canoe at Lomira, a tiny, picturesque village at the beginning of the walking trail. We were delighted by the news that our guides conveyed. The track was good and the walk would only require 2-3 hours, therefore giving us ample time to fish before dark. After unloading our packs and camera gear, we made arrangements with the boat driver to pick us up at 8:30 the next morning. It was nearly 2:00 in the afternoon before we headed inland. After a short distance, the track began climbing steeply and there was little respite for the next hour and a half. It was incredibly hot and humid. By the time we crested the 1,000-foot-high ridge I was totally soaked with sweat. It appeared as though I had been swimming fully clothed.

It only took another 45 minutes of steady downhill walking to reach our destination. A welcome breeze greeted us as we penetrated the last bit of forest. The lakeside panorama was just as spectacular as the aerial one. I was very tempted to jump in with mask and snorkel to look for the rainbowfish that I felt sure would be here. However, I kept this enthusiasm in check while our guides negotiated with a family group for the use of one of their small canoes. We also made arrangements with these

people to stay overnight at their camp, located across the lake. As we loaded the canoe, I began having second thoughts about the crossing. With the five of us and all our gear aboard, there was about one inch of freeboard remaining! Fortunately, the surface was calm, and as long as we did not make any sudden movements there was no great

danger. I had no doubts about being able to reach shore if we capsized, but was concerned about the safety of our highly vulnerable camera gear.

Thirty minutes later we glided onto the far shore. There were less than two hours of daylight remaining, thus fish collecting was our first priority. We hurriedly carried the gear up the

slope to the nearby camp and unpacked the nets and plastic bags. Unfortunately, the shoreline near the camp was cluttered with small dead trees and a reed-like plant, which prevented use of the seine net. Therefore, I requested the guides to take us to an inlet creek that might afford a better chance of netting fishes. Ten minutes later we



Top: Lake Kamaka was reached in the late afternoon. **Bottom:** One of the fruits of the quest: a young male Kamaka rainbowfish.



A pair of Kamaka rainbows; the male has a strongly arched back.

paddled into a perfect spot where a small stream flowed into a narrow, shallow inlet. Excitement was at fever pitch when we spotted shoals of rainbowfish swimming by in the clear waters below. The species looked unfamiliar, with the males showing a very deep body, which is a typical feature of several lake-dwelling rainbows.

The end of the inlet was small enough to completely surround with the seine. The first scoop yielded several medium-sized rainbows. These were primarily silvery and without a great deal of color. While I bagged the fish, Dave and Gary netted 2 additional specimens. We then decided to swim with mask and snorkel to get a better look at this fish. Seconds after we submerged, a school of about 20 rainbows swam by at close range. The school included several large males and it was abundantly clear that I was viewing yet another new species of rainbowfish. In many respects it is

similar to the Kutubu rainbow (*Melanotaenia lacustris*), which lives in a comparable habitat. The males of these two species possess a similar shape and color scheme, although the Kamaka fish lacks the sky blue color on the upper body that is typical of the Kutubu Rainbow. Rather, it is bluish gray on the upper half with randomly scattered silvery flecks, and white on the lower half.

After more unsuccessful attempts with the seine net, we returned to the campsite and used a larger 100-foot-long seine around the inlet of a nearby brook. It was nearly dark by now, but this effort resulted in a fine catch of rainbows, most of which we kept alive for Dave's and Gary's aquariums. We also caught three other species, two types of gudgeons (*Oxyeleotris fimbriata* and a new species of *Mogurnda*) and an undescribed hardyhead (*Craterocephalus*). Interestingly, the *Mogurnda* and *Craterocephalus* are nearly

identical to and obvious close relatives of *M. variegata* and *C. lacustris* from Lake Kutubu. The relationship of the fish faunas of these two lakes, separated by a distance of nearly 500 miles, is indeed puzzling.

Back at camp we feasted on a large pot of rice and canned pork. The five of us shared a small thatched open-sided shelter with an elevated floor of split bamboo. It had a deceptively comfortable appearance. Mosquitoes dive-bombed us continually, but luckily

I had packed a 2-person mosquito net that Dave and I shared. However, sleep was impossible due to the hard surface and very cramped quarters. I got up with Dave shortly after midnight to change the water on the live fishes. We were greatly relieved to finally get underway at daybreak. Paddling back across the lake, we were treated to a sensational sunrise. Reflections of the cloud-shrouded mountains were perfectly mirrored on the lake's surface. On the opposite shore I transferred the fishes from the large drum to five plastic bags, one for each of us to carry.

The walk back to Triton Bay was considerably easier thanks to the cool morning air and relatively slow pace. The trek was uneventful, with one exception. As we walked single file down the narrow forest track our guide suddenly wheeled around and shouted "ular," which means "snake" in Indonesian. About 10 feet away to our left was a robust, 6-foot-long, cream-colored

snake marked with brown bands. The guide advised us to take a wide berth, although the snake did not appear to acknowledge our presence.

Later at Danau Bira we confirmed the identification as the small-eyed snake (*Micropechis ikaheka*). A snake field guide informed us that "many deaths have been recorded from bites of this species, which tends to inhabit dense forest where it is often seen basking in clearings or on paths. It bites wildly and savagely when alarmed."

On the return flight, Gary flew us over the two other members of the Triton Lakes group. We first crossed Lake Laamora. It has a highly irregular shoreline which contains numerous forest-covered limestone pinnacles that sometimes form intricate mazes. The second lake, Aiwaso, was roughly circular with a very broad, weed-covered shallow margin on one side. The aerial view of these lakes reinforced my ambition to make fish collections there in the near future. It is intriguing to speculate that each lake, which forms an independent drainage with a subterranean outlet, might have fishes that

are different than those in the other lakes.

The highlight of the remaining portion of the 1991 trip to Irian Jaya was a journey with Dave Price to Yapen Island (sometimes spelled Japen). Dave and his family have been working with the Ambai people at Warironi Village for several years and it is really their second home. Therefore, Dave was highly enthusiastic about the

prospect of my visit there and filled me with tales about the fishes that awaited us, including the magnificent Yapen rainbow (*Melanotaenia yapenensis*). In my next article, which will appear in a future issue of T.F.H., this visit will be covered in detail, including an account of fish collecting in the Refafeif River, one of the best localities I have visited in New Guinea. 🐟



Top: A female Kamaka rainbowfish. **Bottom:** Lake Kamaka also yielded a new species of gudgeon (sleeper goby) of the genus *Mogurnda*.