



Camp at Al Makhalah, southern Oman.



Marcia's Anthias (*Pseudanthias marcia*).

EXPEDITION TO OMAN

Marcia and the Two-Faced Toadfish

By John Hoover

"Whatever you do," said Dr. Randall, climbing into the waiting Toyota Land Cruiser, "try to get one of those toadfish."

"OK," I replied, "I'll do my best." The vehicle began to move. "Have a good trip," I shouted, then suddenly came to my senses: I knew nothing about toadfishes.

"Wait!" I cried. "What's its habitat?"

The vehicle was quickly gathering speed over the stony ground.

"In crevices," he shouted, leaning out of the window, then he was gone in a cloud of desert dust. I was on my own.

The legendary Dr. John E. Randall, the world's first diving ichthyologist, foremost

expert on coral reef fish taxonomy, and discoverer of countless new species of exciting coral reef fishes, was now leading an expedition to the desert shores of southern Oman. I was accompanying him as underwater photographer. Planned for years, the expedition's ultimate purpose (at the behest of His Majesty Sultan Qaboos bin Said) was

Marcia's Anthias (*Pseudanthias marcia*).



Sarasa Frogfish (*Antennarius sarasa*).



BELOW: Two-Faced Toadfish in its crevice.





Two-Faced Toadfish (anesthetized).

the publication of a major book on the fishes of Oman. It's immediate aim was to explore the almost unknown fish life of Oman's southern coast.

The shores of Oman, the second largest country in Arabia, are washed by three bodies of water: the Persian Gulf and the Gulf of Oman in the north, and the Arabian Sea in the south. Although well within the tropics, this southern coast is subject during the summer to massive cold upwellings, giving rise to the unlikely combination of kelps and other cold water seaweeds growing side by side with corals. As might be expected, this unusual ecosystem is home to unusual fishes. (Readers of FAMA may recall my account of the discovery of two endemics, the Oman Butterflyfish and the Oman Clownfish in these same waters several years ago.)

Under the aegis of Mr. Ralph Daly, the Sultan's Adviser for Conservation of the Environment, and his right hand man, Dr. Ian McLeish (who has lived in southern Oman for many years), a series of desert camps had been planned for us along a stretch of shore virtually untouched by ichthyologists. Everything necessary had been provided: vehicles, a boat, a laboratory, portable compressors, and most important, a support crew (including a team of highly experienced divers).

Then bad luck hit: Dr. Randall was taken ill and rushed back to the States. Let me say

right now that his condition was not serious and he is okay; but we didn't know that at the time. Meanwhile, I found myself leading the expedition.

Now I am a librarian, writer and underwater photographer, but not a scientist. I have no training in zoology whatsoever. Luckily, having lived and dived in Oman for three years, I knew something of the area and what to expect. I also knew that in addition to general survey work, Dr. Randall greatly desired specimens and underwater photographs of a most unusual toadfish that he and Jonathan Mee, then head of the Oman Aquarium, had discovered on a very brief exploratory trip to the area several years ago.

This toadfish was not only a new species; it represented a new genus. Its most distinguishing characteristic, Dr. Randall had explained, was the presence of two flaps on either side of the head, each bearing a false eye spot. These false eye flaps presumably discouraged predators by making the toadfish appear larger than it really is. I had never seen the toadfish, but knew that it had been discovered about 20 miles up the coast from our campsite, near a site we planned to visit later.

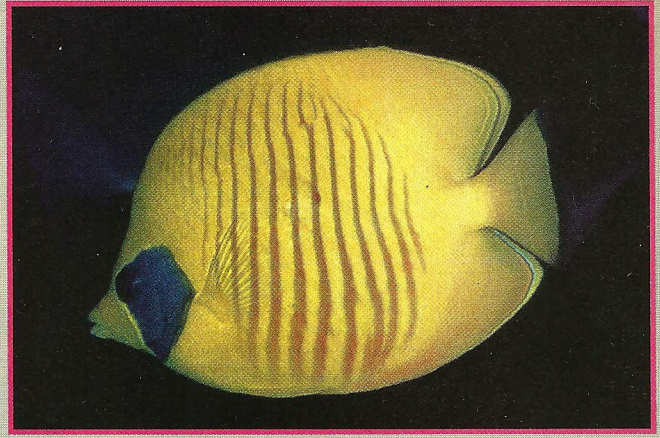
In addition to collecting the toadfish, there was another assignment: find and collect a new species of anthias that both of us had glimpsed on separate occasions in 1989 and 1990 on a deep reef off the capital

city of Muscat. If I could get it, Dr. Randall had promised to name this attractive fish after my wife, Marcia. Muscat lies about 600 miles up the coast in a completely different faunal region, so there was no guarantee that the new anthias would occur in our area. But I had a strong feeling it did. And if it did, I had a good idea where I might find it.

Our boatmaster, Steve Shaw, lifelong British expatriate, helicopter mechanic for the Royal Oman Air Force, champion windsurfer, adventure diver and sometime cook, had told me of a dive site he had discovered only ten minutes by boat from our camp. It featured a drop-off with swim-through cave at a depth of about 80 feet that sounded perfect for anthias. He called the site "Hole-in-the-Wall."

Anthias, for those who are not familiar with them, are small, colorful plankton-eating fishes in the grouper family, Serranidae. They inhabit drop-offs (where currents bring them a steady supply of plankton) and they love crevices and caves (which provide shelter from predators). When I described anthias to Steve he knew immediately what I was talking about. "They're there all right, mate," he said. "We'll go first thing in the morning."

Steve easily located the site the next day using line-of-sight coordinates. We anchored and went down. I was thrilled to find the area was swarming with anthias of



Golden Butterflyfish (*Chaetodon semilarvatus*).

Pinecone fish (*Monocentris japonicus*).



Stars-and-Stripes Snakelet (*Haliophis diademus*).

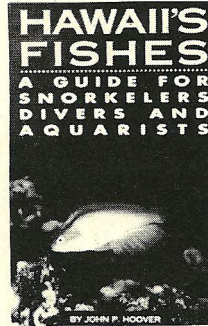


two species: the strikingly striped Townsend's Anthias (*Pseudanthias townsendi*), and the new species. The latter was easy to recognize, having a single prolonged filament on the tip of the upper caudal fin. Dr. Randall had said it is the only known anthias with such a filament.

"They should be easy to catch," he had told me. "When they hole up in a crevice just squirt in some quinaldine (a fish anesthetic). They'll come out, then you can pop them in a jar. If that fails, run a rotenone station."

We had brought quinaldine in plastic squirt bottles, but the anthias didn't hole up as expected. Steve and I chased them up and down the wall until we ran out of air, watched all the while by some fairly hefty groupers hanging out in the cave. With decent hand nets we might have been able to capture some, but we had none. I had come prepared to photograph fish, not catch them.

Back in the boat we reluctantly decided to use the rotenone. Rotenone is a fish poison that kills every fish in the area. I didn't like using such an indiscriminate fish poison in this pristine spot, and neither did Steve. But on this trip science came first. In camp, we took a sturdy plastic bag and mixed quantities of the gray brown powder with seawater. The finished product was like mud. The idea was to spread the rotenone in the cave where some of the anthias had to be hiding. "Take a fistful and reach as far back in the cracks and crevices



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as you can," Dr. Randall had advised. "It takes about ten minutes to work. You won't believe all the fish that'll come out."

Returning to Hole-in-the-Wall that afternoon we followed his directions. The cave was open at both ends, however, and the slight current sweeping through carried away the cloud of the rotenone before it could take effect. Not very many fish came out. For those that did, we had to compete with the waiting groupers, who snapped them up far faster than we could.

That evening over a plate of Steve's fiery chili prawns we pondered the situation. "Maybe," I proposed, "we could just go back with the rotenone when there isn't a current." Steve disagreed: "There's always a current out there, mate," he said. We lapsed

into silence. Stars shone brilliant in the cloudless Arabian sky. The fire crackled. Inspired, Steve gestured toward a fine mesh beach seine. "All we really need is a piece of that fish net over there," he said. "Remember that gully next to the cave? We'll stretch it across and drive the buggers into it."

I remembered the gully. I also remembered the fish net. Several days earlier Dr. Randall had sent me out with it to get some anchovies he had seen in a cove near camp. But the net snagged easily on my flipper buckles and I had got hopelessly tangled. Luckily, I was only snorkeling in shallow water. We cut off about six feet of netting and the next morning set off once again for Hole-in-the-Wall.

Descending to the cave, I carried camera and specimen jars while Steve took the net. I figured I'd get some photos while he set it up. As soon as we reached the top of the drop-off an especially beautiful male anthias beckoned me over the edge. I followed with camera, breaking the cardinal rule of diving: never leave your buddy.

Half a roll of film later I popped back up to check on Steve. He was still fiddling with the net. "What's taking so long?" I wondered, and went back to my photography. Those active anthias were very difficult to keep in the viewfinder let alone keep in focus. Finishing the roll I returned to a puzzling sight: Steve was sitting on the bottom with all his scuba equipment removed. Luckily, the regulator (his air supply) was still in his mouth. "What's going on?" I thought, irritably. "Has he gone completely insane?" I could see Steve still fiddling with the wretched net, which for some reason seemed draped over his equipment. Then it clicked: My buddy had become hopelessly tangled. No one was there to free him, so he was doing it himself.

"It's just as well," I reflected, keeping my distance. "Two divers caught in a net are worse than one." And indeed, cool-headed Steve seemed to have everything under control. In due course he freed himself, donned his gear, and stretched the net as planned across the gully. I herded a group of anthias up into the net, we picked them off and put them carefully into jars. Mission accomplished.

The mission had been accomplished, but at a price. For the rest of the trip Steve (after making sure I was within hearing range) regaled anyone who would listen with the shocking story of the dive buddy who wandered off to take pictures, leaving him tangled in a fishing net.

The captured anthias — pinkish orange with tinges of lavender — looked stunning in the bright sunlight. Everyone in camp crowded about to admire. What a pity we had no aquarium in which to keep the "Marcia fishes," as everyone began calling them. Instead, we put the specimen jars in the ice chest and closed the lid. It was the most humane way.

We dived in that area for another two weeks. I had plenty to do getting photographs for the book and recording species previously unknown from Oman. During this time my dive buddies and I searched every crack and crevice for toadfishes without success. One day we came close: David Cochran (another British expatriate diver) and I found a large frogfish sitting on a ledge in about 15 feet. Superbly camouflaged, it was almost invisible.

Frogfishes, sometimes called anglerfish-

es, are masters of the ambush. To attract other fish close to their capacious mouths they use a modified spine, like a fishing pole, at the end of which dangles a fleshy lure. Although frogfishes rarely move there is nothing sluggish about their eating habits. With one of the fastest reflexes in the animal kingdom — far faster than the human eye can follow — a frogfish can swallow anything up to its own size in a matter of milliseconds.

Gustatory acrobatics, however, could not save this frogfish. Dr. Randall, I knew, would want the specimen, so having taken its picture I merely picked it up. Although frogfishes can barely swim and do not have spines, they are immensely strong and can inflate to the size of a basketball. Successfully wrestling this one into the boat gave me no satisfaction; I'd much rather just take pictures. Anyway, Dr. Randall would not be content for long with a mere frogfish; he wanted Mr. Toad. The next day we moved camp.

Our new site lay in a beautiful rocky cove with a sandy beach. At its back rose the 6000 foot escarpment known as Jebel Samhan, a wild mountain region still inhabited by leopards and wolves. Nearby, mounds of stone rubble marked the site of an old fishing village, abandoned several centuries ago when slavers from Abu Dhabi (we were told) had carried away most of the inhabitants. Thick mats of seaweed, most unusual for a tropical location, lined the rocky shore. The continental shelf, according to our charts, lay close by, maximizing the influence of the cold upwellings. With lots of crevices and holes, the local rock promised to be ideal toadfish territory.

Our first several dives, along the left side of the cove, produced some interesting finds: two dragon morays (*Enchelychore pardalis*) and a golden butterflyfish, (*Chaetodon semilarvatus*). The dragon moray is very rare in the Indian Ocean, and this particular butterflyfish, surely one of the most beautiful in the world, is supposed to be found only in the Red Sea and Gulf of Aden. No one had ever recorded one so far from home; it was obviously a stray. Interestingly, other fish in the area harassed it unmercifully, as if they knew it didn't belong here.

I also saw a pair of tiny yellow blennies peering out of a hole. Each had a U-shape mark on the top of its head. I immediately recognized them as *Oman ypsilon*, a species known only from Oman and never before photographed underwater. Unfortunately, I had the wrong lens for close-ups. I took some pictures anyway, then carefully memorizing the spot, started the long swim back to shore to change lenses.

Returning, I found the blenny hole empty. "They have to be around here somewhere," I thought, peering under nearby ledges. Suddenly, a tiny snakelike fish darted out and took shelter in the spines of a sea urchin. It was unlike anything I'd ever

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seen: white with striking black spots and lines. I managed to fire off a couple of shots at this strange "stars-and-stripes" creature before it wriggled out of sight. "I'll bet Dr. Randall would like a specimen of that," I reflected, briefly considering going back for some quinaldine. But it was a long swim. "I'll catch it the next time," I rationalized, and proceeded with the dive.

Of course, there was no next time. What with one thing and another, I never did get back to that spot. Steve, who earlier had brought the rubber zodiac 20 miles up the coast through rough seas and against a strong headwind, had been scouting for offshore sites. "I've found a nice little pinnacle and wall for you, mate," he announced. "I think you'll like it." I quickly forgot the "stars-and-stripes" fish in my eagerness to dive Steve's new spot.

Dropping straight to the bottom of the wall at about 40 feet we found a number of promising ledges and caves. In one I was pleased to find several pinecone fish (*Monocentris japonicus*). This unusual Indo-Pacific species occasionally enters the aquarium trade, but I had never seen it in the wild. Golden yellow with large, rough scales, they are sometimes called pineapple fish. They are nocturnal predators, with bioluminescent organs on the outside of the lower jaws that possibly serve to attract prey. We had obviously found their daytime resting place.

At a slightly shallower depth of about 25 feet we found a layer riddled with unusual horizontal crevices three to four inches high and many feet deep. Peering into one I saw a squat gray creature with thick lips and widely spaced eyes staring back at me. I took out my flashlight for a closer look. What appeared as eyes were actually yellowish flaps on either side of its head, each containing a single black spot. The creature did not retreat. Holding its ground, it perched just inside the entrance to its cave.

If I got too close it grunted a warning. Its wide, turned-down mouth wore a grumpy expression. This had to be it.

I beckoned to Steve. While he gazed at the toadfish I explored other cracks and saw several more. We had found a mother-load of toadfishes. I took pictures, then we surfaced and sped back to camp for nets and quinaldine.

As I mentioned earlier, Dr. Randall and Jonathan Mee had already discovered and collected this fish, actually bringing one back to Muscat, Oman's capital, and placing it in an aquarium. In spite of the 600 mile jeep ride over the desert it had promptly and greedily accepted hand-held flake food, showing every sign of becoming an ideal aquarium fish. Its tankmates, however, disagreed: within minutes the other fishes went into shock and died, and a starfish in the tank showed distress. The starfish was removed but was found dead the next day.

Dr. Randall was intrigued. In the name of science he cautiously tasted some of the toadfish slime, found it "horrible," and duly recorded this fact in his notebook. The original specimen was eventually preserved and shipped back to his laboratory at the Bishop Museum in Honolulu. Upon arrival it was found to have been damaged in shipment. Another specimen was needed.

Back in camp we spread the news of our find. All the divers wanted to see Mr. Toad, so we loaded the boat to the maximum and returned. Everyone peered into the crack to their satisfaction, then I took the quinaldine and squirted in a generous dose. The toadfish was soon anesthetized, and I maneuvered it out with the handle of my net and plopped it into a rectangular Tupperware box brought along for precisely that purpose. Other anesthetized fishes of little interest were now drifting out as well, but I paid them no mind as I gazed at my prize in its container.

Its squat body, gray with a yellow tinge, was exuding copious slime; the dorsal, caudal, and pectoral fins were orange-

yellow. Two short tentacles or feelers hung from either side of its mouth. Although the toadfish looked barely able to swim, I figured I'd better put the lid on the container before it regained consciousness. Doing so, I prepared to ascend when out of the corner of my eye I glimpsed something familiar drifting out of the crevice: a slender, snake-like fish with striking black spots and lines. Gleeefully, I popped the "stars-and-stripes" fish into an extra plastic bag. It had been a good day.

After everyone admired the two specimens we placed them on ice and contemplated our next move. Unfortunately, there's not enough space to tell of our further adventures: of the dhow trip to the remote Al Halaniyat Islands (marked on most maps as the Kuria Muria Islands), the gorgeous new parrotfish found there, the singing whales, the close encounter with a shark, and the storm that drove us back.

Upon returning to Honolulu I was relieved to find Dr. Randall in excellent health. He was equally pleased to receive the precious specimens and immediately began writing the formal description of *Pseudanthias marcia*, which has since been published in a French aquarium journal. When she saw a copy, the real Marcia was delighted. "How romantic!" sighed the women at work when I told them of the little surprise I had prepared for my wife.

The frogfish turned out to be the sixth known specimen of *Antennarius sarasa*, a rare species previously known only from deep water off Japan, New Zealand, and Reunion. I had picked up mine at a depth of 15 feet. Could cold upwellings be a connection?

The "stars-and-stripes" fish, said Dr. Randall is a congrogadin, or snakelet, a member of the pseudochromis family. It has since been described by Winterbottom and Randall as a new species, *Haliophis diademus*, so named because it was first seen hiding in the spines of a long-spined sea urchin (genus *Diadema*).

Mr. Toad was turned over to Dr. David Greenfield of the University of Hawaii who will describe it as a new genus and species of the family Batrichoididae. Although the scientific name is not yet official, rumor has it that roughly translated from the Latin or Greek it will mean "two-faced toadfish" because of the two false eye flaps on either side of the head.

Dr. Randall also went through all my slides and identified over 50 species not previously known from Oman. It had been a successful trip in spite of his absence. If I could find this much on my own, how much more could we have found together?

"We've got to get back," said Dr. Randall, and I agreed. We did not know then that within six months we would again be camping on the desert shores of southern Oman in search of more unusual fishes. But I'll save that story for another time.

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