

Leafish or Waspfish?

Can you say cockatoo waspfish?

By Scott W. Michael

Q: On a recent trip to my local pet store I fell in love with a comical saltwater fish labeled a "leaf fish." The store had very little information on my new fish so I pored through every book I could find from the local libraries. After reading some 20 fish books, to my surprise I discovered my little buddy was poisonous.

The fish is *Amblypistus binotatus*, a member of the family Tetragidae. It loves live worms and spends some of its time hiding and the rest of its time begging by rolling from side to side and lurching around on the bottom of the tank trying to look like a decomposing leaf. It feeds from my hand, but I am cautious now that I know the fish is toxic. Can you provide more information on this fish?

A: First I must commend you on your enthusiastic attempt to find out what your new fish actually is, as well as something about its biology and behavior. Too many people fail to research the needs of a new fish, especially if it is not common in the hobby.

From the drawing you sent (which is quite good, I might add), it appears that your fish is *Ablabys taenianotus*, the cockatoo waspfish. This fish is placed in the family Tetragidae (note the correct spelling) or Scorpaenidae, depending on which ichthyologist's systematics you ascribe to.

Two other waspfish may occasionally make it into the aquarium trade, but are much less common. These are the Indian Ocean waspfish (*Ablabys binotatus*) and the spiny waspfish (*A. macracanthus*).

You asked for information on your waspfish, so here we go. The cockatoo waspfish is known from the tropical west Pacific, where it has been reported from southern Japan to Australia (Kuitert and Debelius 1994). On the reef, the waspfish is a very cryptic (secretive) fish that is often found hiding among stands of macroalgae, like *Padina* and *Gelidium*. They seem to prefer protected areas of the reef where there is limited wave action and lots of algae debris and rubble on the bottom (Moyer et al. 1985).

References

Kuitert, R. H. and H. Debelius. 1994. Southeast Asia Tropical Fish Guide. IKAN-Unterwasserarchiv, Frankfurt. Pp. 321.

Moyer, J. T., T. Yoshikawa and K. Asoh. Spawning behavior and social organization of the congiopodid fish *Ablabys taenianotus* at Miyake-jima, Japan. *Japan J Ichthyol* 32:265-267.

Not only does this fish look like the algal debris, it acts like it! As you pointed out in your letter, this fish will sway from side to side, often to the point of almost laying on the bottom, like a piece of flotsam reacting to water movement. This mimicry behavior helps it to eat and avoid being eaten. Prey species, like small crustaceans, do not perceive it as a threat and predators do not recognize it as food!

The color pattern of this waspfish is like a fingerprint, with no two individuals sharing the same number and shape of white blotches and spots. However, they are consistent enough in placement that they can be used to distinguish the sex of an individual, at least in those specimens from Japanese waters (Moyer et al. 1985).

It turns out that females have single white spots or blotches above and below the lateral line on each side of the body, while males lack those above the lateral line on one or both sides. Males also have one or two white spots on the distal margin of the operculum (gill cover) on one or both sides (Moyer et al. 1985). From your drawing, it would appear as though your specimen is a male. This species attains a maximum length of at least 4 inches, and may reach 6 inches. Studies have shown that females grow larger than males (Moyer et al. 1985).

This species feeds primarily during the day and at dusk on bottom-dwelling invertebrates (e.g., shrimp, crabs) and small fishes. Each specimen occupies an exclusive home range of about 32 x 45 feet or larger, but they have never been observed to aggressively evict intruding conspecifics (Moyer et al. 1985). Instead, they just seem to avoid one another! Nevertheless, their home ranges do not overlap and they patrol them throughout the day.

Females that are in spawning condition will change color from brown to jet black by the middle of the day, and begin to swell with eggs by late afternoon (Moyer et al. 1985). As sunset approaches the ripe female will move into the male's home range and rest near the spawning site. The male and female will lie next to one another just before courtship takes place — then the foreplay begins!

The male will move past her and brush her side with one of his pectoral fins, and will occasionally circle in front of her, making more tactile contact with his dorsal and paired fins. As passions rise, he moves along side her and remains motionless, with his body touching hers. After a minute or more, the mating march starts — the female begins to move forward along the bottom, closely followed by the male.

During this procession the male may circle her until she begins to swim up into the water column (this is known as the upward rise). The male will swim beside her into the water column until they are about 3 feet above the bottom. At this point they perform a loop-to-loop, shedding their gametes when upside down and at the apex of each loop (Moyer et al. 1985). The eggs, which are spherical, buoyant and about 1.2 millimeters in diameter, are broadcast into the water column and are carried away (Moyer et al. 1985).

This is a good aquarium fish as long as it is not kept with fish species that feed on sessile invertebrates (e.g., angelfishes, triggerfishes, pufferfishes, porcupinefishes), which may nip at it and cause lethal injuries. Large herbivores may also pick at it, because it looks so much like plant material!

It is true that the spines have an associated venom gland. However, they do relatively little to dissuade nipping fish because they cannot be wielded like daggers. Instead, they are important in preventing larger fish from trying to swallow the waspfish whole.

Because this fish is so cryptic, it is easy to overlook and bump into when you are cleaning the glass or moving rocks or corals around. This can result in a very painful sting that should be immersed in water so hot that you can barely stand it! Although rarely if ever fatal, these stings should be inspected by a physician as soon as possible. Hand-feeding your fish is not without risk — not because the fish is going to intentionally stick you with one of its spines, but because you could be stung accidentally when the fish lunges forward to take the food.

A quick word about semantics. The term poisonous is more appropriately applied to something that contains a harmful substance (i.e., poison), like the flesh of some types of fish or a berry, whereas venomous refers to an animal that injects a toxin (i.e., venom) by way of a stinger, teeth or spines, like a scorpion, rattlesnake or a waspfish.

Because it is best to duplicate a fish's natural social structure in the aquarium, I would recommend you keep only one specimen per tank, unless you want to add a male and female to a larger aquarium and try inducing spawning behavior. The best food for these fish are ghost shrimp, lug worms and, for smaller specimens, live blackworms. They will also eat feeder fish, but these are not a good staple food unless they are a marine species. If you have more active carnivores in the aquarium it may be difficult to feed your waspfish because they hunt by ambush or slowly stalking their quarry and take some time to get to and ingest food items.

As far as water parameters are concerned, you should keep the ammonia and nitrite levels at 0, and the water temperature between 68 to 80 degrees Fahrenheit. Nitrates should not be a problem if you do regular water changes.

These fish can suffer from parasitic infections, which are often hard to see due to the fish's variegated color pattern. Besides being able to see cysts on the waspfish's body, two other signs of possible parasitic infection include, increased respiration rates and cloudy eyes. The common antiparasitics (e.g., copper) can be used to successfully treat waspfish.

Many scorpionfishes (e.g., lionfish — *Pterois* spp., leaf fish — *Taenianotus triacanthus*) shed the outer layer of skin to rid their bodies of algae and sessile invertebrates that may grow on them. I have never seen a waspfish do this, nor are there any reports of it in the literature, but it is highly likely that they do. So keep a close eye on him and let me know if he does shed. Best of luck with your unusual fish, and keep up that enthusiasm!