

The Cichlids of Lake Malawi: Peacocks - the Genus Aulonocara

Among the enduring classic fish from Lake Malawi are these striking beauties.

By Mark Smith

The peacocks of Lake Malawi — all of which are currently found in the genus *Aulonocara* — have long been favorites among rift lake cichlid hobbyists for a number of good reasons. First, the great majority of the *Aulonocara* are brilliantly colored. Second, they seem to have a rather mild temperament, at least when compared to the other groups of Lake Malawi cichlids. And, finally, most are small cichlids that don't need large aquariums in order to thrive. Seems like the description of an ideal aquarium fish.

The peacocks also create the most controversy when it comes to species identification. No two books seem to be in agreement as to how to classify the numerous color varieties that have made their way into the hobby. Some authors are, however, more consistent in their approach to classifying the various species in the genus *Aulonocara* — although even they have left at least a few questions unanswered.

The good news is that despite the fact there are far more species and/or color variants — described or undescribed — making their way into the hobby, we are a lot closer to classifying them than ever before. Ad Konings' recent work, *Malawi Cichlids in their Natural Habitat*, 2nd Edition, provides a clearer picture of several of the *Aulonocara* species, although it has raised additional questions, which I will cover in more detail later in this article.

Table I provides a list of all the currently recognized species, as well as those undescribed species that are clearly distinct from the described ones. This table does not contain several new, exclusively deep water *Aulonocara* species that have recently been found. They were trawled up from very deep water — some were more than 330 feet deep (Lundblad 1995)! Very little is currently known about these species, nor how many have been found. It is quite clear that the list of *Aulonocara* species will expand in the years to come.

Because the vast majority of species in this genus are small, ranging from 3½ to 5 inches, smaller aquariums of about 30 to 40 gallons should suit most of them. However, a much larger aquarium (70 to 100 gallons) will be needed to successfully maintain the largest species, *A. rostratum*, which can attain a length of 8 to 9 inches.

The aquascaping of the tank will depend on whether the type of peacock you're maintaining is a rock-dwelling or a sand-dwelling species. In the wild, nearly all of the known species of this genus are found in areas of the lake where the rocks meet the sand. Thus, both rocks and sand, in varying proportions, will be important components in the aquascaping.

What actually differentiates a sand-dweller from a rock-dweller is the fact that a sand-dweller spends most of its time over the sand and only occasionally around the rocks. Rock-dwellers have their territories in the rocks, coming out onto the sandy/muddy floor nearby to forage. These rock-dwelling *Aulonocara* will flee back into their rocky habitats whenever danger threatens.

For those species that are predominantly rock-dwellers, large piles of rocks with ample caves would be ideal. There should be a small open sandy area. The rocks should be smooth — avoid jagged rocks, like lava stone, to prevent possible injury to their relatively large eyes. For sand-dwelling species, the aquascaping should consist of a sandy bottom with a few rocks piled to form a cave. Whether sand or rock dwellers, all peacocks (except for perhaps *A. rostratum*) spawn in or adjacent to rocks.

Aulonocara species can be maintained in a Malawi community, but care must be taken when choosing tankmates for them. Ideally, the utakas (genus *Copadichromis* and *Nyassochromis*) get along well with *Aulonocara* species, as do the smallest of the mbuna, the *Labidochromis* species. The larger mbuna of the *Pseudotropheus*, *Melanochromis*, *Cynotilapia* and *Petrotilapia* genera and similar genera) should definitely not be housed with the placid *Aulonocara*. For the most part, peacocks should be the dominant inhabitants of the aquarium in order for them to function normally with a minimal amount of stress.

In the wild, *Aulonocara* species feed on the micro-invertebrates found hidden in the sand. The sensory pores located on the lower parts of the head act as sonar and enable the fish to detect the movements of their intended prey items as they hover motionless over the sand. As soon as movement is detected, they quickly plunge their snouts into the sand and

capture their prey.

Although this situation cannot be duplicated in the aquarium, Aulonocara are adaptable and will accept a wide variety of commercially prepared foods. Supplement their diets with readily available live foods on a regular basis in order to mimic their diet in nature. Live baby brine shrimp, micro worms and Daphnia are all excellent live foods for peacocks.

It is important not to feed your peacocks too much food. Attempts to cause the fish to grow faster and bigger more typically results in hideously large, overweight specimens that may be inhibited from breeding. Peacocks should not be fed more than twice daily, with small amounts of food at each feeding. They should look like they would in the wild in body shape, size and color.

Breeding peacocks in the aquarium poses no problems as long as their basic husbandry needs are met. Because they are relatively easy to keep and breed, these cichlids are one of the first Malawi cichlids I recommend.

Start out with at least a half- dozen specimens, either juveniles or adults. If possible, members of the group should be obtained from different sources in order to increase the genetic variability of the resulting fry. One male to several females is the ideal. If space and money are inhibiting factors, then a single pair can suffice. In very large aquariums, two males can be housed together and should display full breeding colors and even breed. In small aquariums — anything under about 60 gallons — there should be only one male.

All that is necessary for breeding to take place is to maintain good water quality via regular partial water changes. Proper water chemistry includes relatively hard water and a pH ranging from 7.8 to 8.4. The water temperature should be a consistent 78 degrees Fahrenheit. Be patient and in time the fish should breed.

Anyone keeping tropical fish should regularly spend time observing the fish. By doing this you can learn a great deal about them, and will be able to detect if something out of the ordinary is happening.

Perhaps the most obvious sign that your peacocks have bred is a bulge that will be visible on the throat of the female, which is an indication that she is holding a batch of freshly laid eggs in her mouth (mouthbrooding). Brooding females should be given some kind of refuge to hide in, especially in smaller aquariums, or the male may still attempt to breed and harass her. Section off the aquarium to keep the breeding male away from the brooding female, or remove the female to another smaller aquarium for the duration of the brooding period.

It takes approximately 18 days for the eggs of most Aulonocara species to develop into free-swimming fry. If you are able to determine when the fish spawned, counting out 18 days from that point will give you a good idea of when the juveniles will be ready to be expelled from the mouth of the female.

Some aquarists choose to "strip" the fry from the brooding female at this time and raise the juveniles separately. Others will leave the female alone and allow her to release the juveniles into the breeding aquarium. Either approach is acceptable. I recommend against stripping females that have just bred. In my opinion, it's far better for the female to brood the eggs than for the hobbyist to do so.

Often, first-time spawnings will result in the female expelling the spawn prematurely, or consuming them. In this case, the female should be allowed to spawn several times without hobbyist intervention. Sometimes after giving the female a more secure, less stressful environment, she may begin to hold the eggs successfully. If nothing seems to work over time, then stripping would be appropriate.

Newly released juveniles can immediately eat. Offer live baby brine shrimp, crushed flakes and any other prepared foods small enough for them to fit into their mouths.

Described Aulonocara Species	Aulonocara aquilonium	Aulonocara auditor	Aulonocara baenschii
Aulonocara brevinidus	Aulonocara brevirostre	Aulonocara ethylwynnae	Aulonocara gertrudae
Aulonocara guentheri	Aulonocara hansbaenschii	Aulonocara hueseri	Aulonocara jacobfreibergi
Aulonocara kandeense	Aulonocara korneliae	Aulonocara maylandi	Aulonocara nyassae
Aulonocara rostratum	Aulonocara saulosi	Aulonocara steveni	Aulonocara stuartgranti
Aulonocara trematocephala			

Undescribed Aulonocara Species	Aulonocara sp. "Chitande type Kande"	Aulonocara sp. "Chitande type Masinje"
Aulonocara sp. "Chitande type Mozambique"	Aulonocara sp. "Chitande type Nkhomo"	
Aulonocara sp. "Chitande type north"	Aulonocara sp. "Jalo"	Aulonocara sp. "Lemon" aka "Mamelela"

Aulonocara sp. "Lupingu"	Aulonocara sp. "Lwanda"	Aulonocara sp. "Maleri" aka "Chipoka"	Aulonocara sp. "Mbenji" aka "Regal"
Aulonocara sp. "Trematocranus Masinje"	Aulonocara sp. "Nhkata Bay white dorsal"	Aulonocara sp. "Nyassae Mumbo"	Aulonocara sp. "yellow collar"
	Aulonocara sp. "Walteri"		

I would hope that the primary reason we, as hobbyists, maintain our fishes and even breed them is the joy it brings us. Unfortunately, some hobbyists breed their peacocks to make money no matter what the consequences.

While I'm not against making money, I do object to breeding profuse numbers of cichlids without concern for the overall quality of the fish being bred! This type of indiscriminate breeding has led to all sorts of aberrant peacocks popping onto the market. The worst examples can be seen in aquarium hybrids.

Some breeders have crossed an albino Aulonocara species with an electric blue (*Sciaenochromis fryeri*) and then taken the offspring of this cross and crossed them back to another electric blue for several generations until the body shape is close to that of the true electric blue, all the time selecting for the albino quality. These hybrids have then been sold as albino electric blues.

Perhaps the most outrageous hybrid appeared several years ago and had no connection with an actual Aulonocara species. It was sold as a "marmalade cat peacock." This unfortunate hybrid appeared to be a cross between *Otopharynx lithobates*, also known as the red top *Aristochromis*, and a *Pseudotropheus* species, probably *Ps. zebra*.

Others have crossed different naturally occurring geographical color variants of a particular species, especially *A. stuartgranti*, to come up with "new strains." Or some of the yellow Aulonocara species have been crossed to "improve the color." I could go on and on, but suffice it to say it's of questionable value to "improve" on the fish that occur naturally in the lake.

It will often be difficult to know which Aulonocara species you are purchasing, especially when buying juveniles. Many species look alike when young. The best way to avoid purchasing the wrong peacock is to patronize only reputable dealers. I've seen so many poor-quality specimens lately that I'm inclined more than ever to view the breeding pair before purchasing juveniles, or to insist on buying wild-caught fish only.

When hobbyists breed their peacocks to sell to others, they should make every effort to cull out any imperfect fish, no matter how small the imperfection. This should help to maintain the genetic integrity of the Aulonocara species in the hobby. A steady supply of wild-caught specimens to infuse into the hobby is also a must.

At present there are several species and color variants of peacocks in the hobby — many having arrived in the past couple of years. One of these is *A. aquilonium*, a species recently described by Konings (1995). *A. aquilonium* is found in the northwestern part of the lake, normally at a depth of 65 feet. Even though it's considered one of the sand-dwelling species, it is nearly always found in the vicinity of rocks, although never actually living within them. This species has recently been imported from the lake, primarily due to Konings' photo of a beautiful breeding male in its natural habitat back in 1991 (at that time it was mistakenly referred to as *A. auditor*).

This peacock reaches a length of about 3½ to 4½ inches in the wild, but can be a bit larger in captivity if overfed. It's a rather peaceful species that does best in the presence of its own kind. As with most sand-dwelling members of the genus, the eggs produced from a spawn are rather small in size for a mouthbrooder.

One of the most popular species is *Aulonocara baenschi*. This is undoubtedly due to its brilliant yellow coloration, the most intense overall yellow of any known Aulonocara species in the lake. It is also mild-mannered, and several specimens can be maintained in a 40-gallon tank.

Even better, this species is easy to breed. It is not unheard of for *A. baenschi* to begin reproducing at just under one year of age. Lately, some hobbyists have been selling yellow peacocks under the name of *A. baenschi*. However, when carefully examined, these are clearly not the true *A. baenschi*.

The only other nearly all-yellow peacock is the undescribed species *Aulonocara* sp. "Maleri" from the Maleri Islands and Chipoka. This species has a less intense yellow coloration to the body and also possesses a more pointed snout than *A. baenschi*, which has a noticeably rounded snout. Both species, however, do have some blue on the cheeks.

Before its formal description, another species, *Aulonocara ethylwynnae*, was and still is occasionally referred to as the northern peacock because it is found in the northern part of the lake between Chilumba and Mdoka. It too, like *A.*

aquilonium, is categorized as a sand dweller, but is also found in the immediate vicinity of rocks. It lacks the brilliant colors of its rock-dwelling relatives, but has remained somewhat popular due to its overall appearance and refined color scheme.

Another species, *Aulonocara stuartgranti*, was described from specimens from Chilumba in the northwestern part of the lake. It has an entirely blue body with some minor yellow/orange streaks in the caudal fin. In the late 1980s, when the western shoreline of the lake was being thoroughly explored, it became apparent that *A. stuartgranti* had a much larger distribution than just at Chilumba.

Starting in the northwest coast of the lake and travel southward, the color pattern of *A. stuartgranti* changes from one locality to another. Authors such as Konings have implied that the peacock commercially sold as the "flavescent peacock" or "Usisya peacock," which has a yellow body, is a geographical color variant of *A. stuartgranti*. I tend to agree with this assumption. The fact that the color pattern gradually changes from blue to yellow along an approximately 60 mile stretch of shoreline strongly indicates that the two *Aulonocara* are one species with differing color patterns.

Others, however, have noticed additional minor differences between such geographical variants and have opted to consider most of these variants as distinct species. Some notable differences can be seen in female melanin patterns, size differences between populations, and differences in behaviors of interaction and breeding. More study is needed to make species determinations more accurate.

Konings has broadened his definition of *A. stuartgranti* to include those east coast species of *Aulonocara* that have a close resemblance to the west coast populations. He has even gone so far as to maintain that *A. hansbaenschi* is nothing more than a geographical color variant of *A. stuartgranti*! As odd as this may seem, he does explain that there is a gradual change in color pattern between the east coast *A. stuartgranti* and *A. hansbaenschi* down into Mozambique. At this point, in my opinion, the intermediate forms between these two species are not clearly established, so I prefer to recognize *A. hansbaenschi* as a distinct species.

Whatever you choose to call these beautiful cichlids, it is vitally important that the hobbyist know the exact location his or her specimens originated in the wild, so accidental cross breedings of the differing color variants do not occur. Knowing the location will also help others who may want to purchase breeding stock.

There is a new peacock that has entered the hobby over the past couple of years from Undu Point in Tanzania. It is referred to as *Aulonocara* sp. "lemon," or "Mamelela." This species is reminiscent of *A. jacobfreibergi* and is occasionally referred to as the "lemon Jake." Even though it is also referred to as *A. stuartgranti* by Konings, it clearly has a different snout and a body shape, similar to *A. jacobfreibergi*, as well as a color pattern that strongly suggests it is a new species.

This beautiful peacock is yellow overall, with blue highlights on the face and lower part of the body that make it a very striking animal. Some specimens from Tanzania have greater or lesser degrees of yellow diffused over the body, but usually the back two-thirds is a darker yellowish-brown color overlaid with some blue highlights. As with many of the variants we now know, it may be a while before there is a consensus as to which color variant belongs to which species, or if, in fact, it is a new species altogether.

Aulonocara sp. "Lwanda" is another new peacock that comes from the east coast of the lake. Specifically, it is found at Hai Reef in Tanzania to Chiwindi in Mozambique. Both of these locations are very close to the Tanzania/Mozambique border on the east coast of the lake. *A. sp. "Lwanda"* appears to be closely related to *A. sp. "Mamelela"* in overall shape. While *A. sp. "Mamelela"* is found just north of Hai Reef, it remains to be seen if these two species occur together in the same habitat.

This species is unique among the peacocks of the lake in that the males dorsal and anal fins have a yellowish-orange edge, with the outer sides and edges of the tail fin showing the same color. In some cases, the yellowish-orange color on the tail is absent altogether. The population at Chiwindi, Mozambique has a richer color pattern overall than the population at Hai Reef in Tanzania.

A. sp. "Lwanda" is now just beginning to make its way into the hobby. It is a rather peaceful *Aulonocara* and should pose no problem in a community setup, provided

References

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Eccles, D. H. and E. Trewavas. 1989. Malawian Cichlid Fishes. The Classification of Some haplochromine genera. Lake Fish Movies, Hertel, Germany. Pp. 334. the other fish are also peaceful species. This peacock reaches a length in the lake of around 4½ to 5 inches, and will do well in a moderate-size aquarium.

No discussion of the peacocks would be complete without mention of the "Jake," *Aulonocara jacobfreibergi*, formerly of the genus *Trematocranus*. It was placed in the genus *Aulonocara* because it has a lot more in common physiologically with that genus than it does with the other members of the genus *Trematocranus*.

In the wild it's primarily a cave-dweller that can be found at Cape Maclear, where the first specimens were collected and exported in the 1970s, and all the way up the west coast wherever rocky biotopes exist. It is also found on the east coast along most of the Tanzanian coastline.

One of the prettiest color variants can be found in the National Park at Otter Island. These *A. jacobfreibergi* have a great deal of red and blue on the shoulders and back. Other variants further north show more of a yellow and blue combination.

A. jacobfreibergi has been a mainstay in the hobby for over 15 years, and has proven to be an ideal African cichlid for beginners. It readily adapts to a variety of commercially prepared foods, and is great for the hobbyist who wants to breed cichlids for the first time. It is important to remember that this species, like all peacocks, should not be kept with more aggressive Malawi cichlids, such as the mbunas or the larger predatory haplochromines.

A species that occasionally goes under the trade name of "regal peacock" is *Aulonocara* sp. "Mbenji" from from Mbenji Island. It appears to be restricted to this island only.

Even though the males look similar to the Chilumba peacock (the all-blue variant of *A. stuartgranti*), the main difference is in the juvenile and female color patterns. *A. sp. "Mbenji"* females have broad thick bars on the body, along with irregular elongated spots in the middle of the body. In *A. stuartgranti* females there are several noticeably thinner vertical bars. *A. sp. "Mbenji"* is also isolated from all the other populations of *A. stuartgranti*, which clearly indicates an entirely different species, not a geographical color variant of *A. stuartgranti*.

This peacock is known to grow at a somewhat slower rate than the other rock-dwelling species of the genus. For anyone willing to devote additional time to his or her *A. sp. "Mbenji's,"* patience will be abundantly rewarded with a stunning rich-blue peacock!

The last peacock I will cover is *Aulonocara rostratum*. It is by far the largest peacock in the lake, with males commonly attaining a length of 10 inches and a body nearly 5 inches tall!

This sand-dwelling species is somewhat new to the aquarium hobby. Unfortunately, its popularity has waned and it is now considered an uncommon cichlid in the hobby. Its popularity may have declined as the newer, more strikingly colored species and variants from the east coast began to arrive.

When very young, *A. rostratum* looks remarkably similar in overall appearance to *Sciaenochromis fryeri* (the "electric blue haplochromis"). As it matures, it begins to develop a characteristic deep body profile and pointed snout. Care must be taken not to overfeed this fish because it is susceptible to bloat. Regular partial water changes will help to ensure the health of this species.