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Butterflies and Peacocks (The small Aulonocaras)

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Lake Malawi is renowned for its spectacular cichlids. Their vibrant colour, especially in males, has made them amongst the most sort after fishes in the modern aquarium. One genus which epitomises this, is the Aulonocaras or as they are sometimes known the Peacock Cichlids.

The group or genus falls into basically two recognised categories, the larger species i.e. *Aulonocara rostratum* with its open sand dwelling habit and the smaller species which tend to inhabit an area where the sand meets the rocky zone. This group comprises of species such as *Aulonocara stuartgranti*, *baenschi*, *jacobreibergi* (including species known as *walteri* and *lwanda*), *korneliae*, *ethelwynnae* (and other *chitande* types) *kandeensis*, *maylandi* and *saulosi*. There are other variants, which have yet to be formerly identified but at least one species is to be found on every rocky costal region of the lake.

Characterised by what is probably best described as a natural sonar system, *Aulonocara* posses a greatly enhanced lateral line, a series of sensory pits that transverse the fishes' body horizontally. This system is most developed in the lower head region where the sensory organs can be seen appearing to be pits below the eye and on the edge of the gills. These sensory organs are used to locate food and there are eye witness accounts of *Aulonocaras* appearing to remain motionless, apparently listening for any movement, just above the bottom and then diving head long into it and re-emerging with a mouthful of sand and also their meal. They then chew the contents separating what is edible, expelling the residue via the gills and mouth.

Ad Konings, *Cichlids of Lake Malawi in their Natural Habitat* (2nd Edition) actually uses the term 'Malawi Butterflies' for the members of the group that were formerly assigned to the genus *Trematocranus*.

The reason for the 'splitting' was on the basis that the sensory pits common to Aulonocaras were smaller on this group and they appeared to primarily inhabitants of caves, the bottoms of which they scoured for food. Other species actually venture from the caves during the day and search for food in loose feeding areas. Later the Trematocranus or Butterflies were assigned them to the genus Aulonocara (Meyer et al 1987).

In the aquarium these smaller Aulonocara are by no means fussy feeders although care must be taken to ensure that they are not fed excessively. In their natural habitat the size of these fishes rarely exceeds 10cm, perhaps a little larger, but with the abundance of food both in actual amount and quantity of proteins, combined with the ease of digestion, their potential for growth is increased, some specimens being recorded at 20cm. Moreover the wild fishes tend to be less deep in their appearance than their aquarium bred relatives. The fish appear much more 'square' looking, the depth of the body from the top of the head to the underside being greater and further more this depth shows a much more gradual decline towards the caudal region than that found on the wild fishes.

In the lake these fishes breed in caves utilising the typical Malawi method of maternal mouthbrooding. Males can be found in breeding colour all year, as they do not appear to have any spawning season

With regard to an aquarium situation, Aulonocaras can be kept in a group with more than one male, as they are somewhat less aggressive than a lot of the members of the cichlids flock with which they cohabit. Despite this, however certain individuals, especially when attempting to spawn can be vindictive towards their tank mates. The group method of spawning offers a greater advantage for the aquarist in that the available DNA pool is greatly enlarged. Consequently there is a greater chance of each respective brood not being totally related as their parents will not always be the same. It is not yet known whether or not Aulonocara females actually utilise several males during spawning as has been proven with DNA analysis on a number of 'mbuna' species (females were found to be incubating fry which had obviously the same mother but up to seven different fathers). Due to the cave dwelling habits of the group it may be some time before the question is answered.

All the species in this assemblage are easily propagated in the aquarium in the usual Malawi manner. The pair locate a quiet(er) corner of the aquarium usually secured by the male who is at his most aggressive during this time. It is worthy noting that Aulonocaras are not the best combatants and as far as tank mates are concerned, smaller 'haplochromines' and the more peaceful mbuna i.e. *labidochromis caeruleus* and others of this group are ideal companions. A shallow depression is constructed or indeed just the tank bottom is utilised should there be no substrate and the male entices the female by quivering in front of her. She reciprocates and after a few dry runs the first eggs are then laid. One safely in her mouth she nudges the anal region of the male whereupon they are fertilised. After repeating process several time anything up to around thirty plus eggs can be laid although some specimens can produce more, one *A. jacobfreibergi* actually managed eighty, an incredible amount although she was an experienced mother and indeed the capacity for rearing does seem to increase with age. An interesting comparison can (the variants of the *A. stuartgranti* were from ngara). be made with *Tropheus* species of Lake Tanganyika. The young aquarium bred fishes seem to produce two or three eggs/fry whilst the more experienced wild fishes can average around fifteen. Incubation lasts on average again 19-23 days, the young being capable of consuming frozen cyclops and crushed flake upon their release. There does appear to be some aftercare, the young being taken back by the female for anything up to a week but this does seem to vary with individual fishes and not just species.

One topic concerning Aulonocaras of this group, especially, is that of whether or not they will hybridise in the aquarium. Lake Victorian Cichlids are known to use colour recognition to determine their conspecifics as indeed are certain mbuna (see Cichlidae Dec 1999 Species recognition in the Rock dwelling cichlids of Lake Malawi.) My own experiences have proved that some species of Aulonocara may also and that if kept correctly females can recognise their own colour variants or in this case species. Many years ago, just as wild imports were beginning to arrive from Lake Malawi I actually kept and spawned *A. jacobfreibergi* and *A. stuartgranti* Chiloelo (then incorrectly known as *Aulonocara nyassae* and later *A. hansbaenschi*) and more recently *A. stuartgranti* Ngara with *A. baenschi*. In these cases no hybridisation took place, but there are certain factors may prove to be of vital importance.

The first is the size of the aquarium and the actual set up. In each cases the capacity was around 100galls (450 litres) and there were numerous other 'haplochromine' fishes resident. There were also places to seek refuge although these were not utilised to the full extent by any occupant. The main factor here was that the animals had room and they could avoid each other even though there were other species.

The second consideration was that in both cases there was an appreciable colour difference. The *A.baenschi* male was primarily yellow whilst the *A.stuartgranti* male was mostly blue. Also the *A.stuartgranti* male was again predominately blue whilst the *A.jacobfreibergi* male has a golden brown dorsal area with purplish flanks. The fins are also very evident being a vivid white/light blue. (The variants of the *A. stuartgranti* were from ngara). The females again showed some differences both *A.stuartgranti* females being a plain brown with darker bands while that of the *A.baenschi* possesses a yellow sheen. The head of the *A. jacobfreibergi* is noticeably dissimilar, the eyes being larger (presumably due to the cave dwelling habits of this species) the number of and development of the 'pits' and she was also a lighter shade of brown.

One final factor which may be of the utmost importance was that in both cases the animals were all wild imports, adult fishes which had spent their time growing up in a wild environment. There is evidence that strongly suggests that aquarium bred fishes are 'weaker' than their wild cousins with a lot of genetic material being lost through each spawning. Certainly the domestic fishes do not seem to have the same sparkle or intensity of colour and they do not appear to be as lively or hungry for survival. Aquarium bred Peacocks are probably not as discerning over their choice of partner as are their wild counterparts.

A final conclusion cannot be reached without much further study being carried out, with fishes that are of the same species/group and indeed species, which are known to be distinctly separate, being confined in the same aquarium. Careful monitoring and possibly some form of identification system for those females, which are hard to discern to aquarists would be required.