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The journal on fishes with eggspots

No. 5

In search of haplochromines in Egypt - 2. On the road to Alexandria

A previously unknown cichlid from Lake Malawi

An expedition through Uganda - 1. Lake Victoria

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Editorial

So far more than 10,000 downloads of the last issue! We are immensely pleased that eggspots has achieved such a large readership even though it is a very specialised journal. But unfortunately we also have to contend with the Internet mentality which thinks that information should cost nothing, with even Wikipedia financed by donations. To date too few people have been prepared to pay a small fee for eggspots, although the amount requested is no more than loose change. For this reason, this time we are experimenting with offering a free-download version with just the texts as a "taster" for the paid-for version containing the photographs.

In this issue of eggspots we continue our journey through Egypt, again including the discovery of a new species. There is a world-first report on a previously unknown cichlid from Lake Malawi. Since the last issue of eggspots a whole series of haplochromines have been newly scientifically described, and we bring them to you in words and pictures (in the paid-for version!). And finally, we discuss the true *Ctenochromis pectoralis* from Tanzania, and conclude the issue with the first part of a report on an expedition through Uganda and our regular excursion into the magazines of the past few months to list material on haplochromines published elsewhere.

In this regard, I hope you will read this fifth issue with great interest!

Erwin Schraml

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Cover photo: *Abactochromis labrosus* male

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In search of haplochromines in Egypt
- 2. On the road to Alexandria

by Erwin Schraml

(*Continued from* **eggspots** *no. 4*)

For our second expedition we broke down our tents in Cairo and headed in the direction of the Mediterranean coast. We had booked into a hotel in Alexandria for the following night. But first of all we wanted to investigate a number of waters that crossed the road to the city.

The road – mainly the Cairo-Alexandria Desert Road – is a very well-constructed motorway-like link between the two metropolises, whose edges have been slowly but surely "colonised" by all sorts of shops, filling stations, and even leisure parks. Because this road runs roughly along the western edge of the Nile Delta and hence lies in the moist zone, there are a considerable number of irrigation canals there. But a lot of those that had looked very promising in the satellite photos of Google Earth, which we had used when planning our trip, turned out not to satisfy the criteria for a fish biotope when inspected on the spot. In one case what had appeared on the satellite photo as a collection of small pools was now a leisure park. The canals were often too modern, ie they were too smoothly concreted and the current in them was too great. To the west of the road there was a chain of small lakes (from Lake Ga'ar to Lake El-Fazda), but there was no vegetation discernible around them in the satellite photos, suggesting that they were soda or salt lakes. These

Many of the canals that we crossed en route from Cairo to Alexandria were too modern like that shown here, with sides consisting entirely of smooth concrete and in addition with a strong current. Not a suitable biotope for fishes.

Some of the canals that we crossed en route from Cairo to Alexandria looked very promising for collecting fishes, and that also proved to be the case in practice.

Google Earth maps now have "Panoramio" links, that is photos of people who have already visited these places, and these confirmed our previous supposition and our decision to visit these lakes only if we had sufficient time on the way back – which in the event wasn't the case.

Of the canals that we passed on our way to the Mediterranean coast, there remained just one next to the road that looked to be of interest for fishing, about two kilometres south of the Africa Leisure Park. Because of a z-shaped bend the current was virtually non-existent, and because the banks were unconcreted there was vegetation both above and below water. It was possible to spot small fishes in the fairly clear water at the very first glance. And to our great pleasure there was something there for both of us. ANDREAS DUNZ, my travelling companion who was researching for a work on tilapias, found his "dream fishes", and I my *Haplochromis*. In addition there were once again *Hemichromis letourneuxi*, the usual gambusias, and yet again *Procambarus clarkii* crayfishes.

***Hemichromis letourneuxi* from the canal we fished next to the road to Alexandria.**

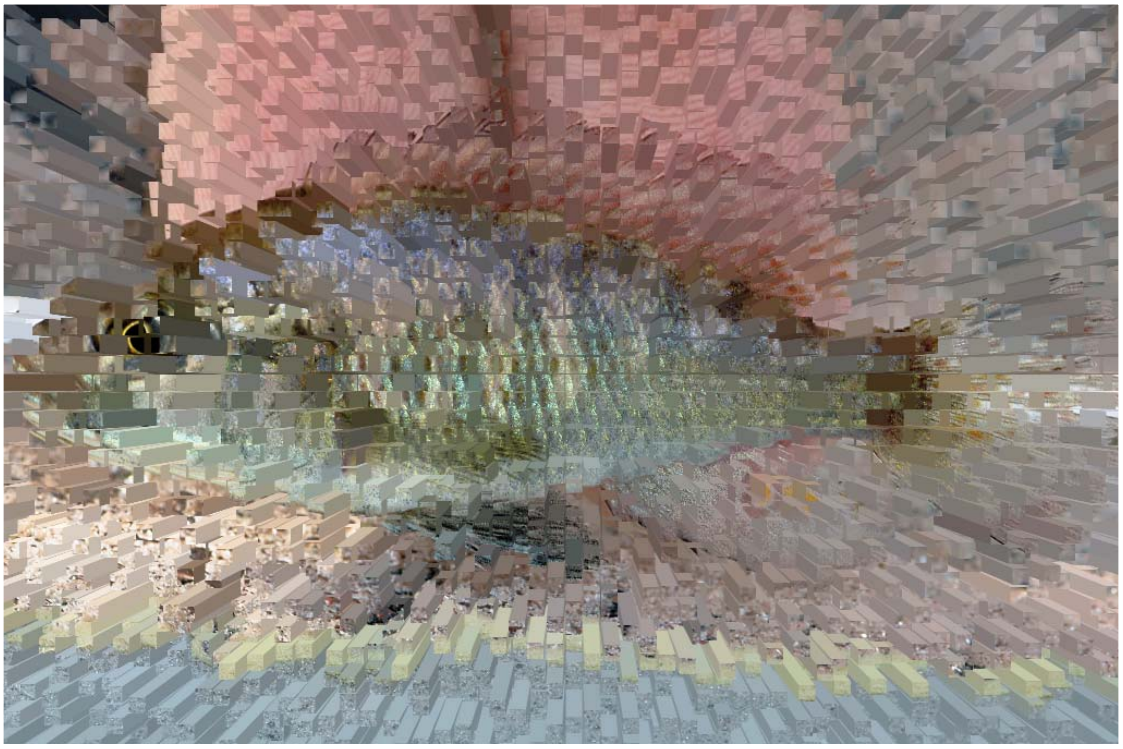
The *Haplochromis* were by far the commonest fishes in numeric terms. In a relatively short period of time we were able to catch some of them

to take with us and photograph them immediately on the spot. This was the first time during our trip that we noted with surprise that there were no other fish species – such as small barbs or catfishes – to be found. At that time we as yet had no idea that this wouldn't change appreciably for the whole of the rest of our trip. We didn't neglect to make rough measurements of a number of water parameters in the canal with the aid of a Multi-Test strip, on the basis of

***Above*: North American crayfishes of the species *Procambarus clarkii* are widespread in Egypt. Again found in the canal by the Cairo-Alexandria Desert Road.**

***Centre*: Small *Tilapia zillii* with numerous skin inclusions.**

***Below*: The *Haplochromis* species from the canal. Note the numerous red-brown dots in the soft-rayed part of the dorsal fin and the caudal fin in males.**



Female of the *Haplochromis* species from the canal by the Cairo-Alexandria Desert Road, in the photo cuvette immediately after capture.

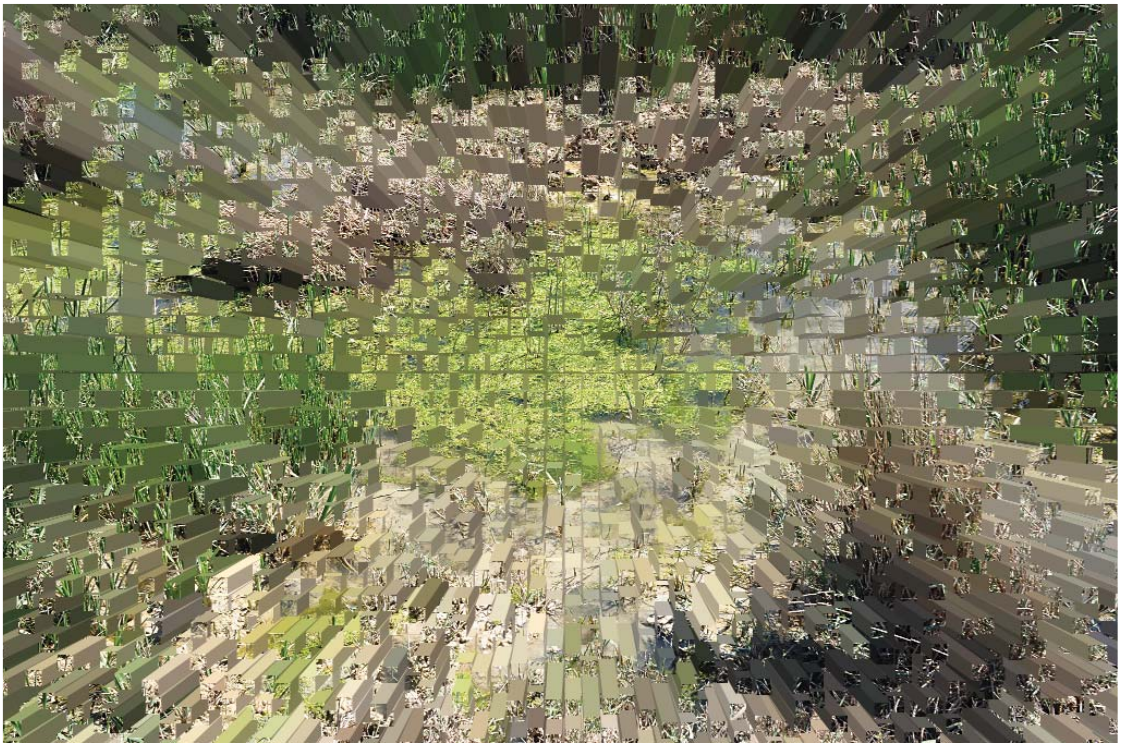
which we recorded a pH of 7.2, a carbonate hardness of 6.2 °dKH, and a general hardness of more than 21 °dGH. The water temperature measured 17 °C.

We had a lot planned for that day and so we didn't want to stop too long in one place. The westernmost goal of our trip was a few small sites that looked like small wet biotopes on the satellite photos available back then, which didn't provide such high resolution as nowadays. One of these, which had a diameter of around 300 metres, lay at the north-western edge of the village of Bahig, less than six kilometres from the coast. In practice it turned out to be a small swamp. We could actually see a number of fishes flitting around in the few centimetres of water, and we managed to catch one of them with some difficulty. To Andreas' great joy it was good-sized *Tilapia*. The water parameters here were pH 7.2; carbonate hardness 20 °dKH; general hardness >21 °dGH; water temperature 21 °C. South-east of the village the satellite photos showed several artificial rectangular bodies of water, but also a number of what appeared to be natural pools. Unfortunately these turned out to be receptacles for some sort of waste water that couldn't be more accurately identified using the naked eye.

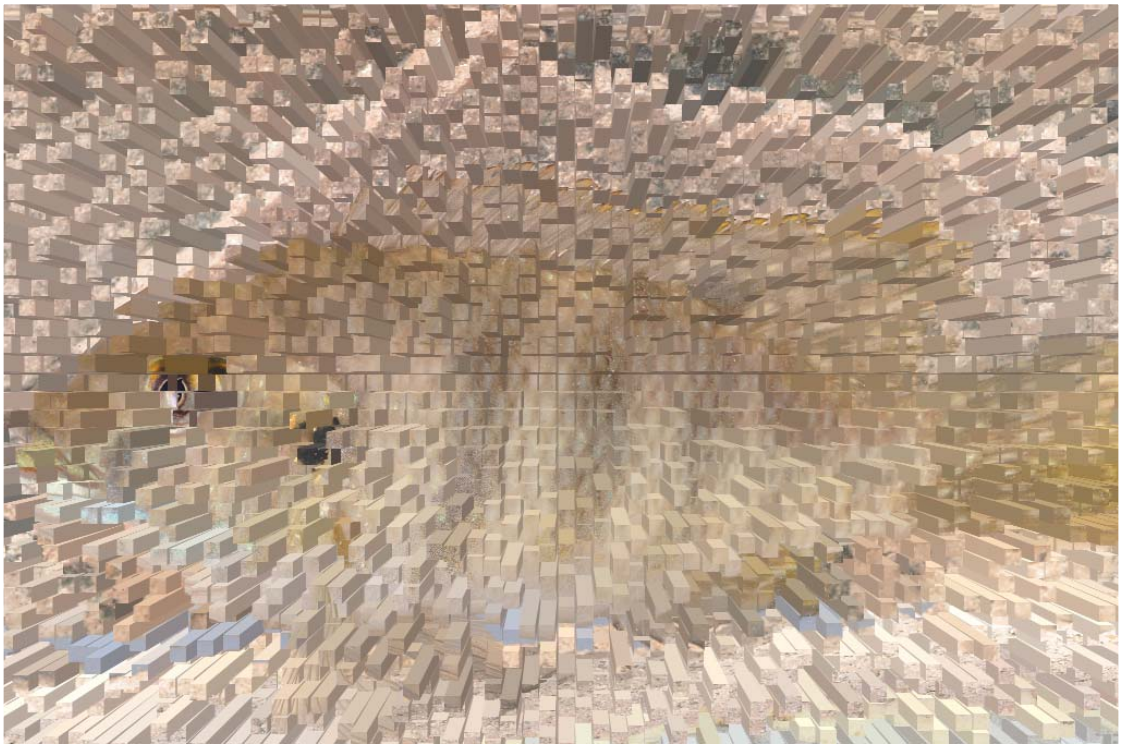
Lake Maryut still remained on our list for the day on our way to the hotel. We have already reported on collecting *Pseudocrenilabrus multicolor* there in **eggspots** no. 3, and the next issue will contain a detailed report on the *Haplochromis* species found there.

Aquarium observations on the *Haplochromis* from the canal by the Cairo-Alexandria Desert Road

Unfortunately this *Haplochromis* species turned out to be an exceptionally aggressive member of its genus. Despite its small size it wasn't possible to keep several specimens

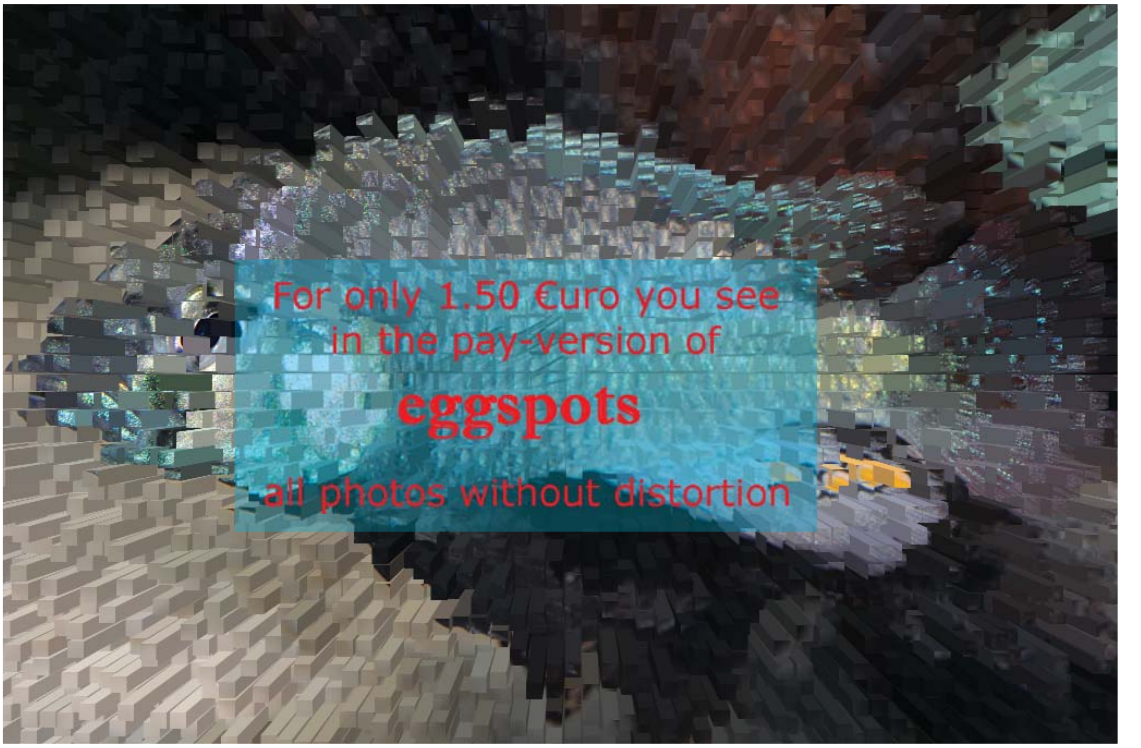


Wetland biotope at the village of Bahig near the Mediterranean, where we caught the *Tilapia* species pictured below.



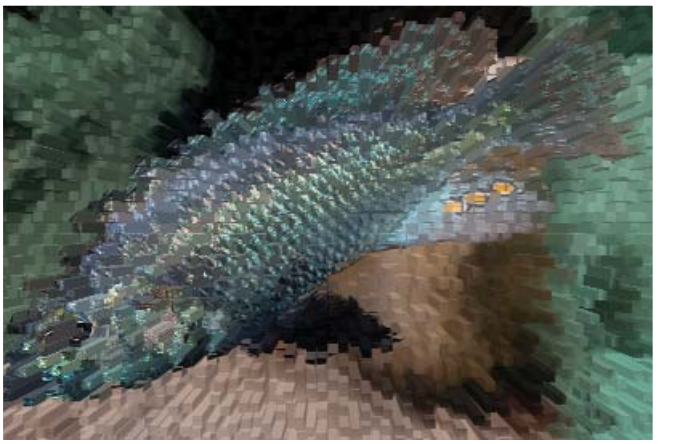
***Tilapia zillii* from the wetland biotope pictured above at the village of Bahig not far from the Mediterranean coast. Taken in the photo cuvette.**

together in a 60-litre aquarium. Even the inclusion of all sorts of hiding-places for subordinate conspecifics didn't deter the dominant male from hunting down first of all his rival, then the females one by one, attacking them relentlessly and eventually killing them unless they were removed from the tank. Attempts to provide the male with a mate in the small tank foundered each time on the violent manner in which he attacked the female. Hence because I didn't have a larger aquarium available I was unable to breed this population. When it comes to food these fishes can, as might be expected, be satisfied completely without problem as they will consume all types of the usual live, frozen, and dried foods. The species can be kept at normal room temperature without any additional heating of the tank.



***Above* and *below*: Two different males of the *Haplochromis* species from the canal by the Cairo-Alexandria Desert Road. The specimen in the upper photo (the fish at the front, that in the background is another species) has a greenish-yellow base colour, while that in the lower photo is bluish, regardless of mood. The different number, and in particular the different arrangement, of the eggspots on the anal fin is noteworthy.**

Morphological characters of *Haplochromis* sp. "Desert Road"



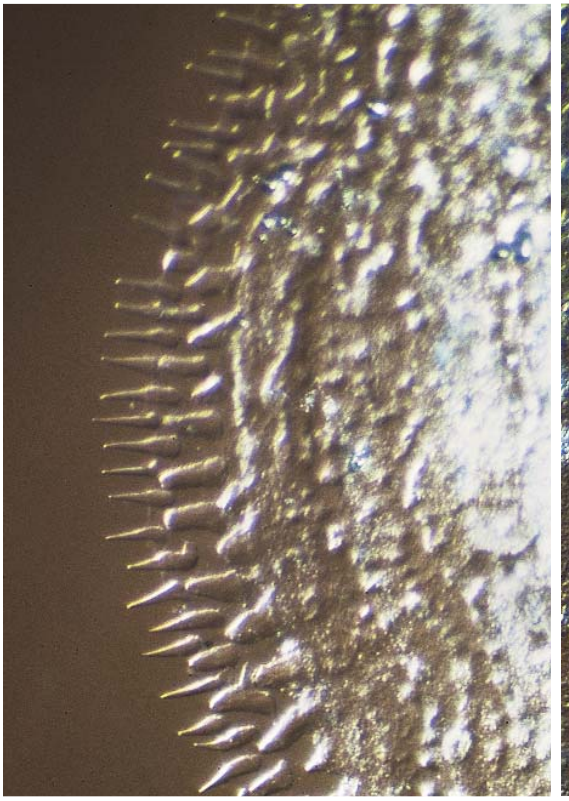
I have already compared (in issue 4 of **eggspots**) the population from Ismailia with the two northerly *Haplochromis* species long known to science. On purely geographical grounds it is relevant to compare the new species, *H*. sp. "Desert Road", presented here for the first time, with *H*. sp. "Ismailia", even though

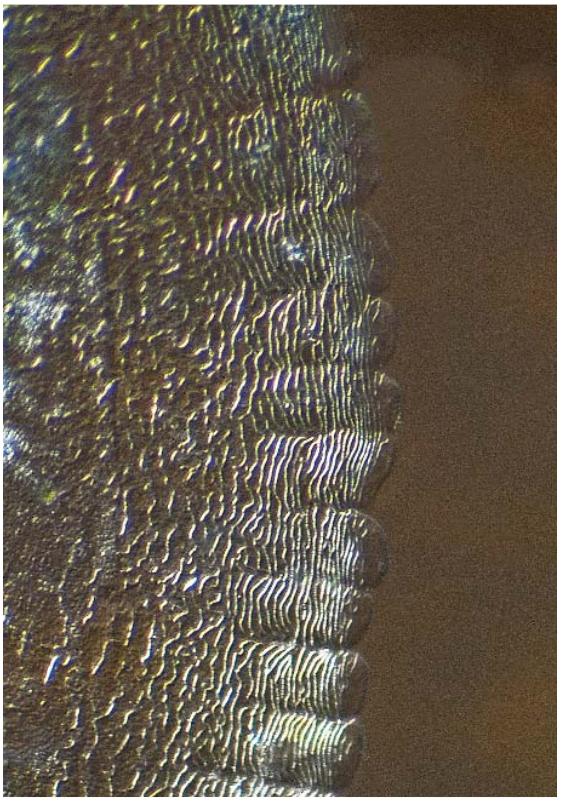
in terms of body proportions it exhibits general similarities to the species from the Levant, *H. flaviijosephi*. For this reason it is appropriate to now compare these three species with one another.

The flank scales of *H.* sp. "Desert Road" exhibit ctenii (teeth) along the entire exposed edge, but only in two to three series. Those of the outer series are very slender, pointed, and straight. By the second series they have a much broader base and are also less pointed. Those of the third series are even broader and sometimes also significantly shorter. The opposite side of the scale exhibits short radii (rays) with short tongues terminating the inter-radial zones, whose first circulus (circumcentric line) is straight. The focus of the scale is invisible as it is completely covered in irregular granulae (grains).

The mouth of the male contains almost exclusively unicuspid teeth. Those of the

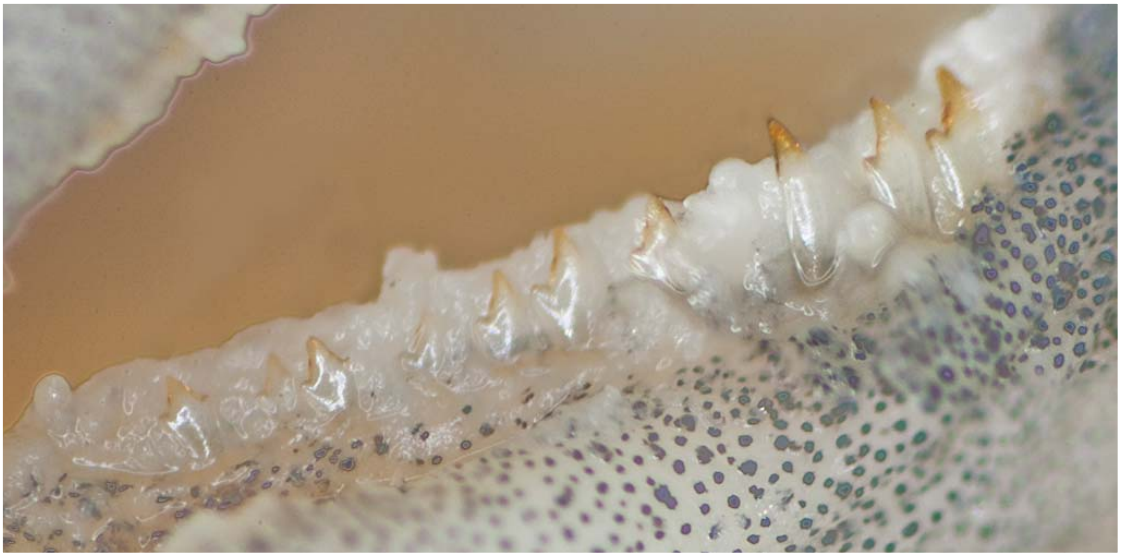
***Above*: Flank scale of *H.* sp. "Desert Road". *Below*: Close-up photos of the ctenii (left) and radii (right).**





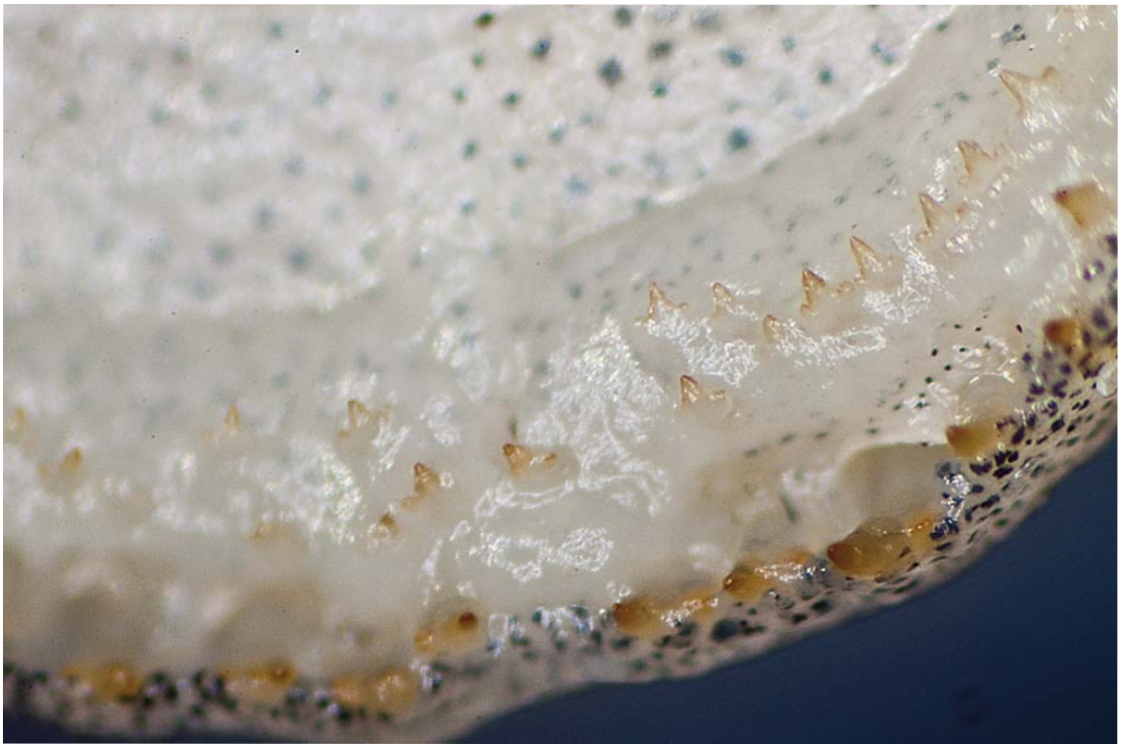
***Above*: This angled view from above of the lower jaw (right-hand half) of a male of *Haplochromis* sp. "Desert Road" clearly shows the relatively wide-spaced teeth in the anterior series and the predominantly unicuspid teeth of the two posterior series, as well as the wide gap between the latter and the outer series. *Below*: Lateral view – the anterior teeth are rather long and slender, while further back in the mouth the teeth abruptly become shorter and are then also sited closer together.**

outer series are long and slender anteriorly, becoming abruptly shorter laterally. They are sited wide apart, especially anteriorly, such that an additional tooth could easily fit into the space between. Males have two inner series of teeth anteriorly, but only one posteriorly. Some of the teeth of the inner series have a crown steeply sloping on one side. The distance between the outer and the first inner series is so great that an additional series could fit in between without problem.

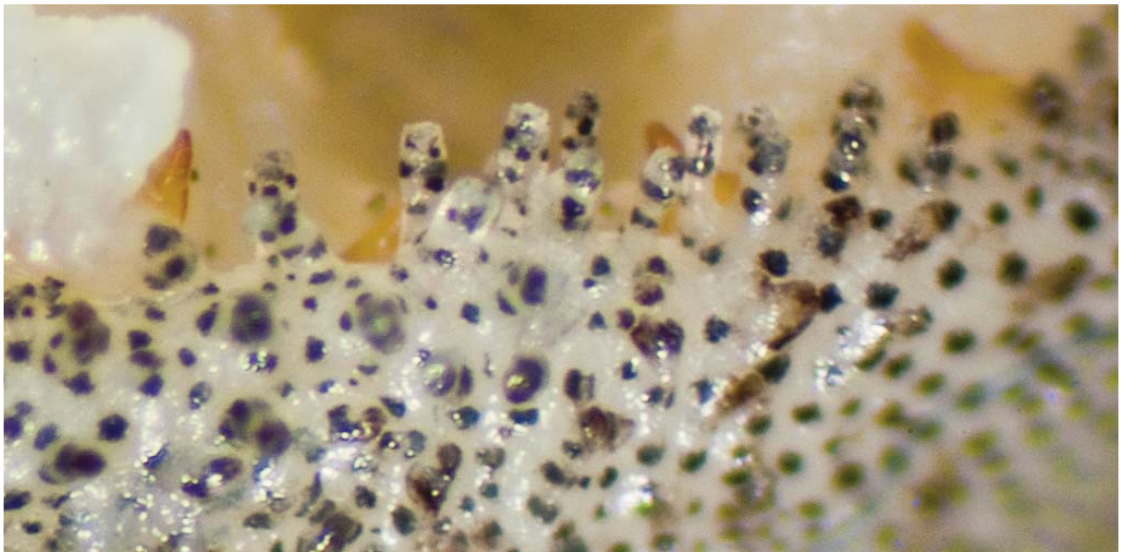


Lateral view of the lower jaw (*right*) of a female *H.* sp. "Desert Road" showing the predominantly bicuspid teeth (*front*), the singular unicuspid tooth at the corner, and the tricuspid teeth in the posterior part.

Females, on the other hand, have bicuspid teeth in the outer anterior series (as in all the haplochromines from northern Africa discussed), and these are also more close-packed than in males. Only at the anterior corner is there sometimes also an unicuspid tooth, and there may even be tricuspid teeth in the posterior part of the lower jaw. The teeth of the inner series are also tricuspid, although only a short area anteriorly has more than just a second series.



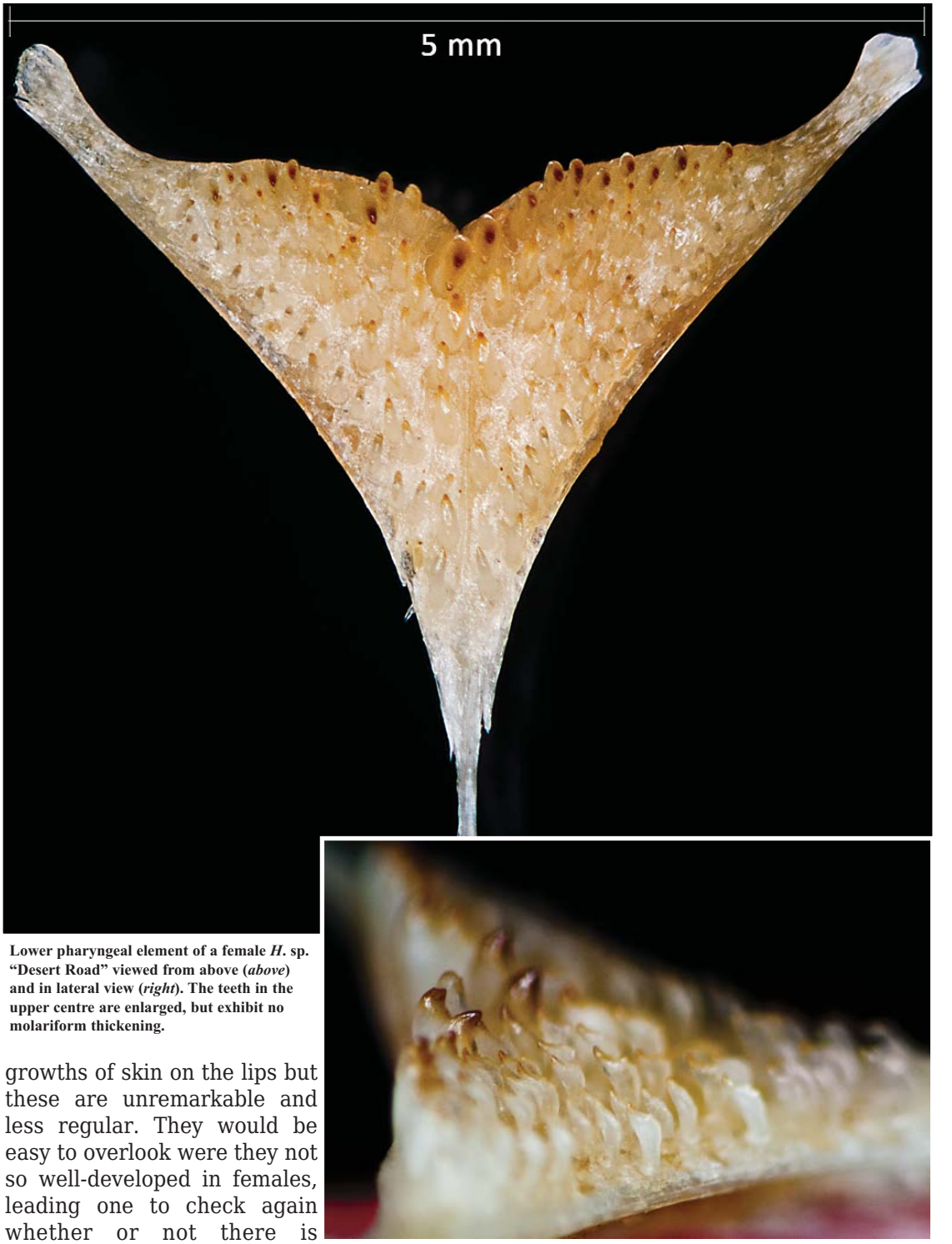
This view from above of the lower jaw of a female *H.* sp. "Desert Road" shows the inner bicuspid teeth located in a single series except for a double row right at the front.



Females of *H.* sp. "Desert Road" have strange papillose structures anteriorly on the lips. These structures are not developed equally strongly in all individuals, and in some specimens they may even be concealed by a layer of skin.

Females alone possess a remarkable papillose structure, individually very variable in its scope, on the lips, and then only anteriorly. This consists of tiny "buds" of skin, sometimes prolonged into small rod-like structures. Something similar is also found in some species with hypertrophied lips, but *H.* sp. "Desert Road" doesn't belong to these. It may nevertheless be hypothesised that these structures possess the same function and are equipped with a particularly large number of taste buds. Males may also exhibit small

Lower branch of the first gill arch of a female *H.* sp. "Desert Road" showing the slender gill rakers (the first two on the left actually belong to the upper branch).



Lower pharyngeal element of a female *H.* sp. "Desert Road" viewed from above (*above*) and in lateral view (*right*). The teeth in the upper centre are enlarged, but exhibit no molariform thickening.

growths of skin on the lips but these are unremarkable and less regular. They would be easy to overlook were they not so well-developed in females, leading one to check again whether or not there is anything of the sort in males.

The first gill arch has seven gill rakers on its lower part, those at the bottom relatively small, the remainder long and slender.

The pharyngeal dentition is very unremarkable, with larger teeth in the upper centre, all unicuspid and forward-curving, and not exhibiting any tendency to molariform. The smaller teeth are slender, oblique, essentially bicuspid but usually with only one cusp deserving of the name and the other often rounded downwards. Overall they give the impression of small sickles.

A direct comparison of the morphometric data of *H.* sp. "Desert Road" with *H.* sp. "Ismailia" and *H. flaviijosephi* reveals significant differences in values, but demonstrates that while the two Egyptian species possess more similarities overall, there is nevertheless greater agreement with the species from the Levant in the case of some individual values. The table shows the cases where this applies (only those values that exhibit major differences are listed). In each case the close correspondences are marked in green. But note that in each case only one male of similar size was used for the comparison, which thus cannot be taken as representative overall.

	flaviijosephi	**Desert Road**	**Ismailia**
Percentage of SL			
Body depth	35.3	41.1	40.4
Head length	37.6	38.0	33.9
Head width	16.2	19.7	20.1
Caudal peduncle length	18.3	15.8	14.7
Dorsal fin base length	53.3	58.8	57.3
Predorsal length	39.2	36.1	35.6
Prepectoral length	36.7	35.8	33.9
Prepelvic length	41.8	38.2	39.4
Percentage of HL			
Snout length	31.8	26.1	28.6
Snout width	30.0	32.8	36.7
Head width	43.1	51.8	59.1
Eye length	26.6	30.8	29.7
Cheek depth	28.1	24.5	23.9
Lower jaw width	24.0	29.6	27.0
Interorbital distance	19.9	25.7	25.1
Premax. pedicel length	27.7	26.5	20.8

References:
Lippitsch, E. (1990): Scale morphology and squamation patterns in cichlids (Teleostei, Perciformes): A comparative study. *Journal of Fish Biology*, 37 (2): 265-291.
Lippitsch, E. (1993): A phyletic study on haplochromine fishes (Perciformes, Cichlidae) of East Africa, based on scale and squamation characters. *Journal of Fish Biology*, 42: 903-946.
Schraml, E. (2010): A comparison of *Haplochromis* sp. "Ismailia" with other North African species. *eggspots*, 4: 12-24.

A previously unknown cichlid from Lake Malawi

by Thomas Lepel and Guido Müller

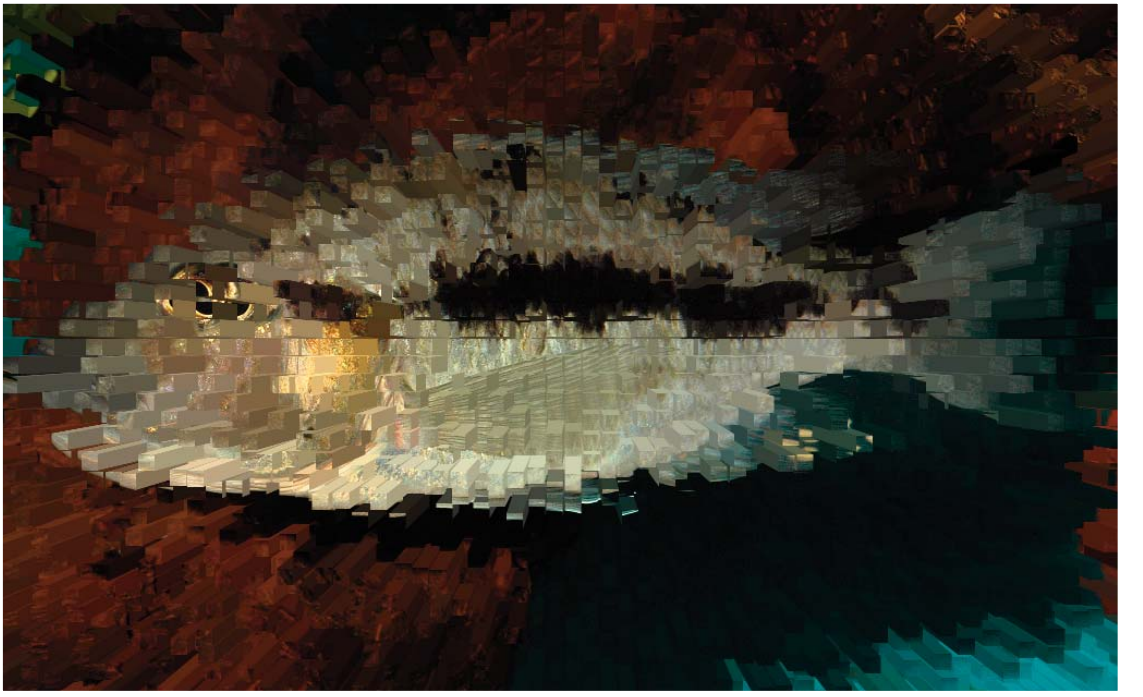
In February 2006 our company (Cichlidenstadl / Bühl / Germany) received an import consignment from Lupingu in Tanzania, which was found to contain a single male cichlid that we couldn't initially assign to any known species. When, in April 2006, we received a second single specimen in a further consignment, and this turned out to be a suitable partner of the opposite sex, Guido Müller attempted to breed the species in the aquarium. The pair were placed alone by themself in a 525-litre aquarium containing a number of hiding-places in the form of rocks, wood, and plants. The temperature was a constant 25 °C, and a water change of up to a third was performed every 14 days using our mains water, which has roughly the following parameters: hardness 12 °dGH, pH 8.2. Successful breeding took place after around six months. The female suddenly had her mouth full at the evening feeding time after work. After 16 days I separated her off and after a further five days she released 35 fry from her mouth for the first time. As long as they remained with the female they were taken back into her mouth for protection. Subsequent rearing proved problem-free: the young grew rapidly on a diet of *Cyclops* and *Artemia*. After around eight weeks the female again had eggs in her mouth.

We subsequently came across a photo of a preserved specimen of *Otopharynx brooksi* Oliver, 1989 in Snoeks's book (2004), and this fish appeared to resemble ours in form. And eventually *O. brooksi* was depicted alive in a photo in Konings (2007). The similarities were striking, but *O. brooksi* appeared to have a somewhat longer lower jaw than upper, while in our fishes the two jaws were the same length. Because *O. brooksi* has apparently been found exclusively in the southern part of Lake Malawi to date (Thumbi West Island, Makokola Reef, and Boadzulu Island are cited in the literature), but our specimens originated from much further north, there was some doubt as to whether they could be the same species.

Cleaver *et al*. (2009) described a further species, *Otopharynx antron*, which exhibits certain similarities to our fishes, although it has a somewhat more slender head with a strikingly protruding lower-jaw symphysis. In addition, *O. antron* (formerly known as *Stigmatochromis* sp. "modestus eastern") also originates from a more southerly region of Lake Malawi (to date it has been found only along a 20-kilometre stretch of the east coast between Gome and Nametumbwe).

When a half-grown specimen (from one of the broods produced by our fishes) died for unknown reasons, this provided us with the opportunity to send it to Erwin Schraml for detailed examination, in the hope of obtaining information about the identity of the species. Schraml told us the following (*translated*): "The fish sent me is a young male with a standard length of 106.2 mm. The type series of *O. brooksi* comprises specimens measuring from 101 to 123 mm SL, so direct comparison is possible. And there is in fact extensive agreement in body proportions, for example as regards head length and body depth in relation to standard length, or eye length and interorbital width in relation to head length. Nevertheless it is also possible to detect sufficient differences to make it clear that the fish in question is a member

Male (*above*) and female (*below*) of the new *Otopharynx* species from the Tanzanian part of Lake Malawi.



of another, as yet undescribed species. Thus the preorbital, at 23.1% of head length, is longer than in *O. brooksi* (19-21%), and in addition the premaxillary process, at 30.6% of head length, is outside the range for *O. brooksi* (25-27%). The matter becomes even clearer on examination of the teeth, which may be similar in form (as this was a relatively young male it can be assumed that not all the teeth of an adult fish are visible, hence numerous bicuspid teeth are still present in the anterior part

of the jaws, while a number of unicuspid teeth are already to be seen laterally), but significantly fewer in number, as regards both the teeth of the outer series in the upper jaw (44 versus 69-87) and the number of series of teeth (2 in the lower jaw vs. 3-4 and only one in the upper jaw vs. 3-5). *O. antron* also possesses more teeth in the outer series (30-38) of the lower jaw. In comparison to the specimen I examined, *O. antron* also exhibits a shorter caudal peduncle (12.4-13.6% vs. 15.9% of SL) and has a shorter snout (29.1-30.7% vs. 37.6%), a shorter preorbital (14.9-17.4% vs. 23.1%), a longer eye (31.4-34.7% vs. 28.8%) and a shallower cheek (16.0-21.7% vs. 28.5%), in each case in relation to head length.

***Above*: Jaw teeth at the right anterior corner. *Below*: the lateral teeth.**

"Unfortunately the lower pharyngeal bone was damaged during dissection, hence the relevant photo conveys only a rough impression of the pharyngeal dentition. It is, however, possible to discern enlarged teeth on the upper margin and especially towards the centre, albeit with a reduced tendency towards the molariform.

"The lower branch of the first gill arch has 10 gill rakers, the upper ones elongate and slender, the lower triangular.

"The flank scales are characterised by a single band of small ctenii on the free margin, followed by around five rows of cushion-like structures arranged like roof tiles. Next, in the direction of the focus of the scale, there is a segment of a circle with rod-like structures, arranged close together in lines. The focus of the scale is partially covered by these rods for half its width. The radii on the opposite side, which are normally covered by the next scale, extend to the centre. The outermost interradial circulus is only very slightly convex and terminates in a very short tongue. The form of the flank scale is termed pentagonal rounded with a caudally-sited focus by KUUSIPALO (1998)." And that concludes SCHRAML's analysis of the results of his examination of the specimen provided.

The genus *Otopharynx* is defined mainly on the basis of its melanin pattern, which consists of a supra-pectoral, a supra-anal, and a precaudal spot. Although in the new species the spots are usually joined together to form a line, the latter becomes wider at the points where the spots should be. The new species is thus best assigned to this genus at present, given that the similar species *O. brooksi* and *O. antron* are also included there. Because our species currently has no name, we

***Left*: "Failed" dissection of the pharyngeal dentition.**
***Below*: First gill arch showing the 10 gill rakers on the lower branch.**

would like to suggest that it should for the time being be termed *Otopharynx* sp. "Brooksi Tanzania", referring to its similarity to *O. brooksi* and its provenance.

The examinated specimen of *O*. sp. "Brooksi Tanzania" is stored under the number ZSM 40689 in the Bavarian State Collection of Zoology.

References:

Cleaver, R. M., Konings, A. F. & Stauffer, J. R. Jr. (2009): Two new cave-dwelling cichlids of Lake Malawi, Africa. ***Ichthyological Exploration of Freshwaters*****, 20 (2): 163-178.**

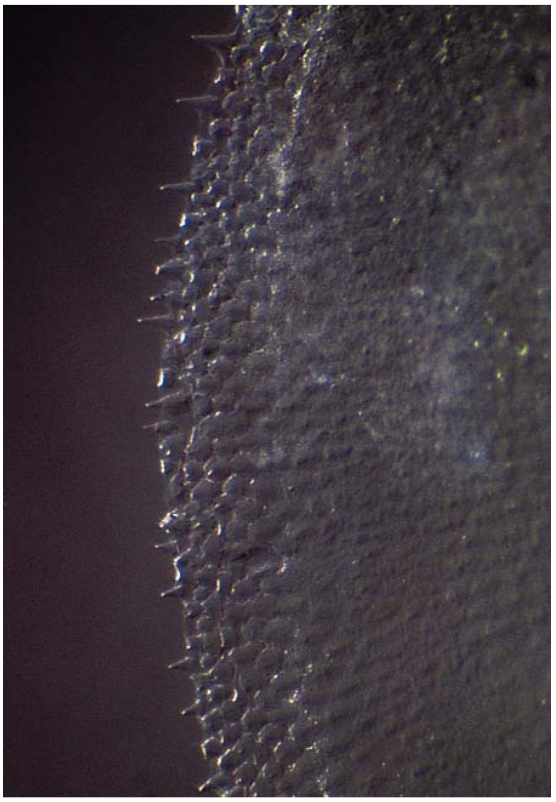
Eccles, D. H. & Trewavas, E. (1989): ***Malawian cichlid fishes. The classification of some Haplochromine genera*****. Lake Fish Movies, H. W. Dieckhoff, West Germany.**

Konings, A. (2007): ***Malawi cichlids in their natural habitat,*** **fourth edition. Cichlid Press, El Paso, Texas. 424pp.**

Kuusipalo, L. (1998): Scale morphology in Malawian cichlids. ***Journal of Fish Biology*****, 52: 771-781.**

Snoeks, J. & Hanssens, M. (2004): Identification guidelines to other non-mbuna. Pp. 266-310 in: Snoeks, J. (ed.): ***The cichlid diversity of Lake Malawi/Nyasa/Niassa: identification, distribution and taxonomy.*** **Cichlid Press, El Paso.**

***Above*: Lateral scale from the new *Otopharynx*. *Below*: Close-ups of the ctenii (*left*) and radii (*right*).**



Abactochromis - a new genus name for a cichlid with hypertrophied lips from Lake Malawi

by Kurt F. Dreimätz

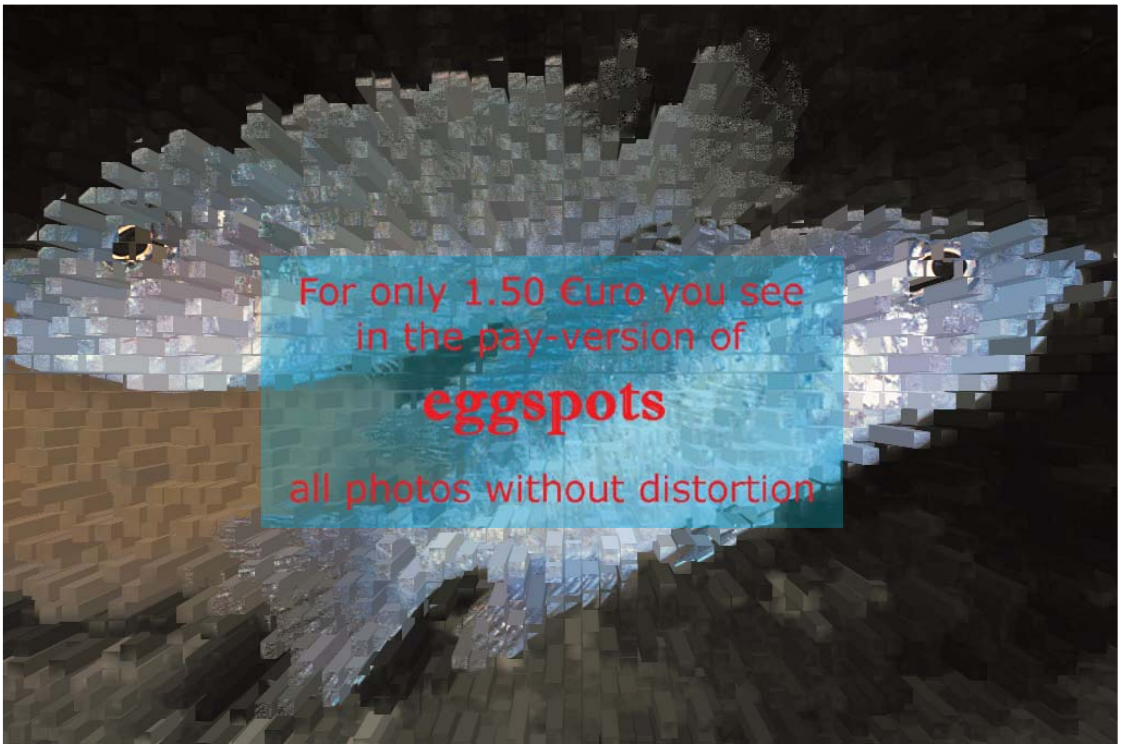
Several times in their evolutionary history and completely independently, cichlids have developed the special morphological character of hypertrophied lips, undoubtedly as an adaptation related to the search for food. Such cichlids are well known from Central America and from the Great Lakes of the African Rift Valley - lakes Malawi, Tanganyika, and Edward. And there are also species with hypertrophied lips in Lake Victoria and even in one river, the Cunene in Namibia. Lake Malawi is home to a particularly large number of such species. There has even been a genus erected for a number of species from this lake – *Eclectochromis* Eccles & Trewavas, 1989 – that contains exclusively cichlids with moderately hypertrophied lips[1]). Additional thick-lipped Lake Malawi cichlids are to be found in *Lichnochromis* (*L. acuticeps*), *Otopharynx* (*O. pachycheilus*), and in the monotypic genera *Cheilochromis* and *Chilotilapia*. All these species belong to the so-called Malawi *Haplochromis* and not to the Mbuna. The only species with thickened lips from Lake Malawi that is assigned to the Mbuna by most authors is *Melanochromis labrosus* Trewavas, 1935. But it has always been regarded as a special case, as it doesn't possess the *Melanochromis*-typical melanin pattern and the counts for its gill-rakers and vertebrae do not accord with the criteria for the genus.

In 2010 Oliver & Arnegard addressed the problem of this species and, after 75 years of unsatisfactory taxonomic assignment, erected a genus of its own for it. They called this genus *Abactochromis*, from the Latin word *abactus*, which means, loosely, driven away, excluded, banished, or expelled and relates both to the solitary, wandering and non-territorial lifestyle of adult individuals and the fact that the species has now finally been taxonomically removed from its former genus. In addition the species has been redescribed on the basis of all the specimens deposited in museums as well as new material collected specially for the purpose. However, the authors also used observations in the field and evaluated photos, for example for the description of coloration. They have established that the species is widespread throughout the entire lake (with the exception of the two southern arms) but nowhere common, although collections made using poison produced more specimens than were seen while diving. They also present the results of histological studies relating to the enlarged lips.

Konings (most recently 2007: 157) writes (without naming his source), that prior to the description of *O. pachycheilus* histological studies of the lips of thick-lipped species revealed no sensory structures. For this reason he is of the opinion that the function of the greatly hypertrophied lips is to serve as a suction cap to seal off any small opening in a substrate and enable the fish to suck out any prey organisms therein. It had previously been postulated (Fryer & Iles, 1972) that the lips were particularly

1) However, not only the status of the genus, but also the species contained therein, have been the subject of dispute. The genus was originally restricted to *Haplochromis ornatus* Regan, 1922 (the type species), *H. festivus* and *H. lobochilus* (both described by Trewavas in 1935), but Spreinat (1994), for example, is of the view that *Cyrtocara milomo* Oliver, 1984 would be better accommodated there than in *Placidochromis*, as previously suggested by Eccles & Trewavas. Spreinat is, however, also of the opinion that the three original *Eclectochromis* species probably represent just a single taxon. Konings (1995) likewise initially considered *H. lobochilus* to be a synonym of the type species, but recognised *H. festivus* as distinct, while Snoeks & Hanssens (2004) on the other hand regarded the latter as the synonym. Konings (2007) states that both are now considered synonyms. Snoeks & Hanssens regard the status of *Eclectochromis* as unclear, but as this also applies to its relationship to other Lake Malawi cichlids they choose to retain the genus. By contrast Konings (1995) regards it as a synonym of *Protomelas*.

Male *Abactochromis labrosus* with six eggspots; the species normally exhibits only two to four smaller spots.



Two females of *Abactochromis labrosus*.

sensitive to stimuli and thus facilitated the detection of prey. The work on *Abactochromis* confirms this hypothesis (following investigation of *O. pachycheilus* for a second time), as numerous taste buds were found in the lips of *A. labrosus* as well.

The authors have established that *Abactochromis labrosus* is most similar to the members of the genus *Labidochromis* out of all the other Mbuna. However, in *Labidochromis* species the mouth is much smaller, the premaxillary pedicel and the jaws shorter, the teeth in the jaws generally different in form and fewer in number, and the gill-raker count also lower than in *Abactochromis*.

In addition the authors discuss extensively the characters – both morphological and DNA – that define the Mbuna as a group, in each case with regard to *Abactochromis* as a potential member of the complex. They also present a key for the identification of all 13 genera in the Mbuna group of Lake Malawi cichlids, including *Abactochromis*.

A completely black male *Abactochromis labrosus* in the aquarium.

References:
Eccles, D. H. & Trewavas, E. (1989): ***Malawian cichlid fishes. The classification of some Haplochromine genera*****. Lake Fish Movies, H. W. Dieckhoff, West Germany.**
Fryer, G. & Iles, T. D. (1972): ***The cichlid fishes of the Great Lakes of Africa*****. Oliver & Boyd, Edinburgh & TFH Publications, Neptune City.**
Konings, A. (1995): ***Malawi Cichlids in their natural habitat, second edition.*** **Cichlid Press, St. Leon-Rot, Germany.**
Konings, A. (2007): ***Malawi Cichlids in their natural habitat, fourth edition*****. Cichlid Press, El Paso, Texas.**
Oliver, M. K. & Arnegard, M. E. (2010): A new genus for ***Melanochromis labrosus*****, a problematic Lake Malawi cichlid with hypertrophied lips (Teleostei: Cichlidae).** ***Ichthyological Exploration of Freshwaters*****, 21 (3): 209-232.**
Snoeks, J. & Hanssens, M. (2004): Identification guidelines to other non-mbuna. Pp. 266-310 in: Snoeks, J. (ed.): ***The cichlid diversity of Lake Malawi/Nyasa/Niassa: identification, distribution and taxonomy.*** **Cichlid Press, El Paso.**
Spreinat, A. (1994): ***Malawisee-Cichliden aus Tansania*****. Unitext-Verlag, Göttingen.**
Trewavas, E. (1935): A synopsis of the cichlid fishes of Lake Nyasa. ***Annals and Magazine of Natural History*****, (10), 16 (91): 65-118.**

Five additional *Metriaclima* species described

by Kurt F. Dreimätz

The not universally accepted genus *Metriaclima* (the *Maylandia* vs. *Metriaclima* has already been discussed in earlier issues of **eggspots**) has recently been expanded by the formal description of five additional species. This is fundamentally the publication of a thesis submitted back in 2008 by one of the authors, Patrick Ciccotto, for his Master of Science degree in Wildlife and Fisheries Science at Pennsylvania State University. For this formal publication of the work Ciccotto has now taken on board two scientists, the well-known Lake Malawi cichlid researchers Ad Konings and Jay Stauffer Jr., as co-authors. All the new species have been known, at least among Lake Malawi cichlid enthusiasts, since 2001, when they were pictured in the third edition of Ad Konings' book *Malawi cichlids in their natural habitat*, but under "working names". All the species are members of the so-called *Metriaclima aurora* group. Two of the five previously described species already assigned to this group, *M. aurora* and *M. chrysomallos* (the other three are *M. barlowi, M. benetos*, and *M. hajomaylandi*) are re-examined in greater detail. The work concludes with an artificial identification key to the *Metriaclima* species, based on colour characters, and the previously postulated synonymy of *M. sandaracinos* with *M. pyrsonotos* and *M. melabranchion* with *M. zebra* is confirmed.

Editorial note: The name *Metriaclima* is etymologically Greek in origin. The second part of the name, which determines its grammatical gender, derives from *klima*, which is neuter. Hence adjectival specific names used in combination with *Metriaclima* are required to take the appropriate neuter ending. This affects only the new species (herein amended to the correct form) *M. mossambicum* and *M. nkhunguense*, plus the older taxon *M. cyneusmarginatum*. All these taxa were originally described incorrectly as masculine.

The new taxa are as follows:

***Metriaclima glaucos* Ciccotto, Konings & Stauffer, 2011**

This species has hitherto been known as *Metriaclima* sp. "aurora blue". It is known only from the type locality, Cobwé (also spelled Cobue) in Mozambique, where it is found in the intermediate zone between Lumbaulo and Mara Point. The species name is from the Greek glaucos meaning "blue-grey" and refers to the body and fin coloration in males. The new species closely resembles *M. chrysomallos* of the populations from Gome and Ntekete. *M. glaucos* is distinguished from the latter species by having generally fewer teeth in the lower jaw (14-19 per side vs. 15-25). The females are indistinguishable in coloration from those of the majority

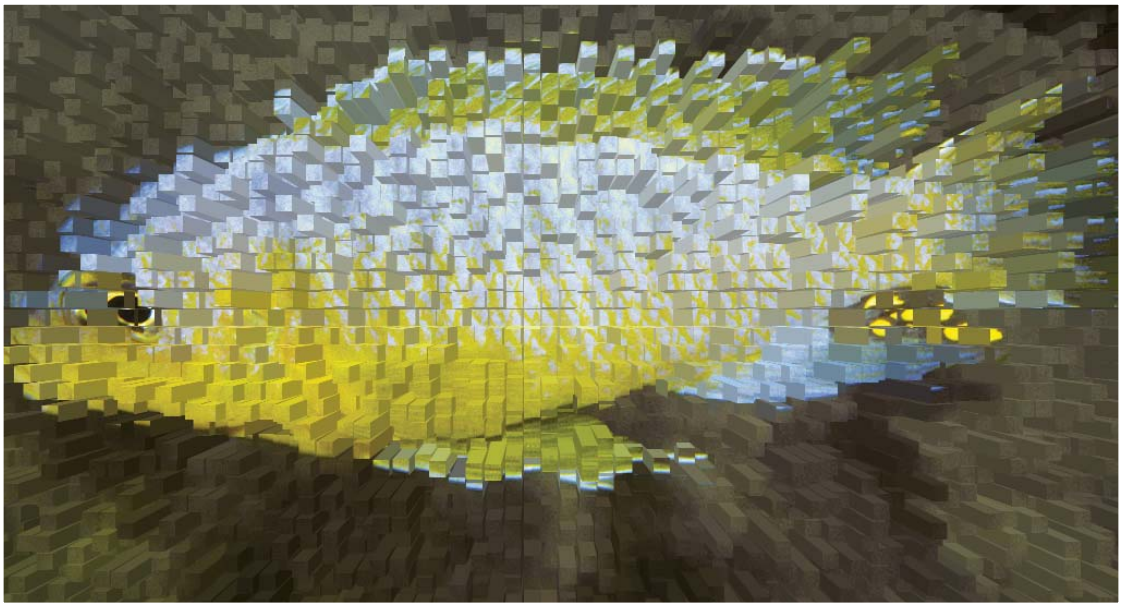
***M. glaucos* female with eggs or larvae in her mouth, photographed in the natural habitat.**
Photo: Ad Konings

***Metriaclima glaucos*, male from Cobue.** **Photo: Ad Konings**

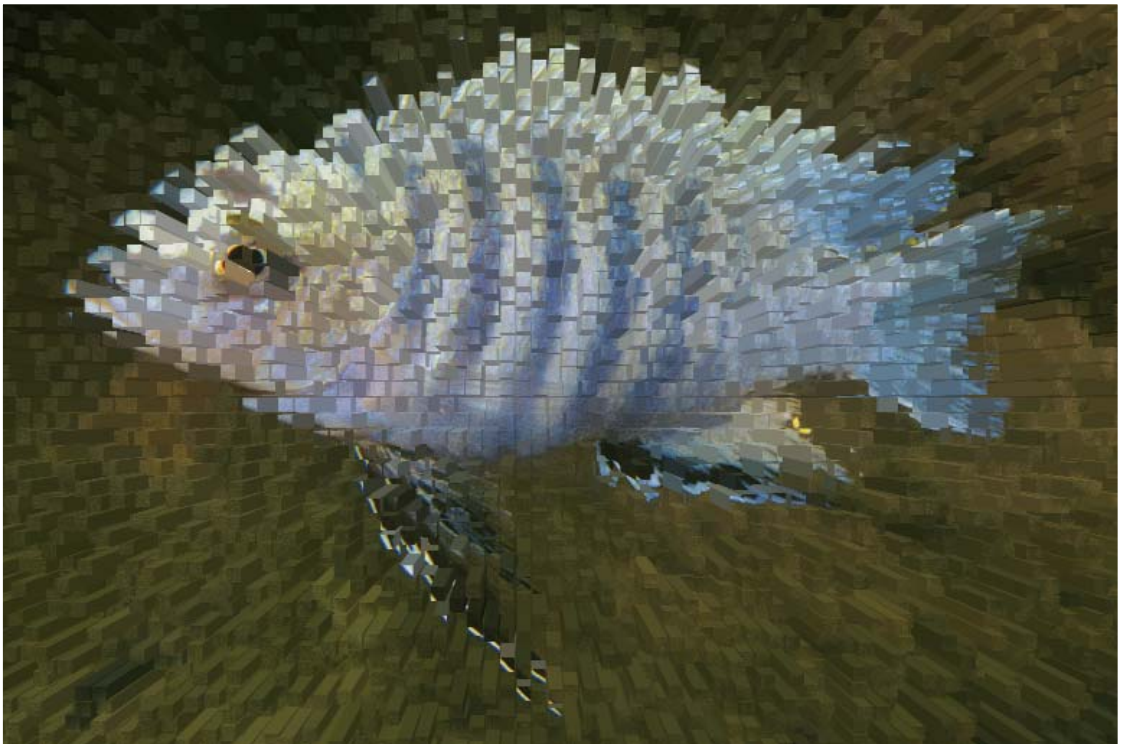
of the other species of *M. aurora* group. *M. glaucos* remains relatively small in the wild, with a standard length of barely 7 cm.

Metriaclima mossambicum Ciccotto, Konings & Stauffer, 2011

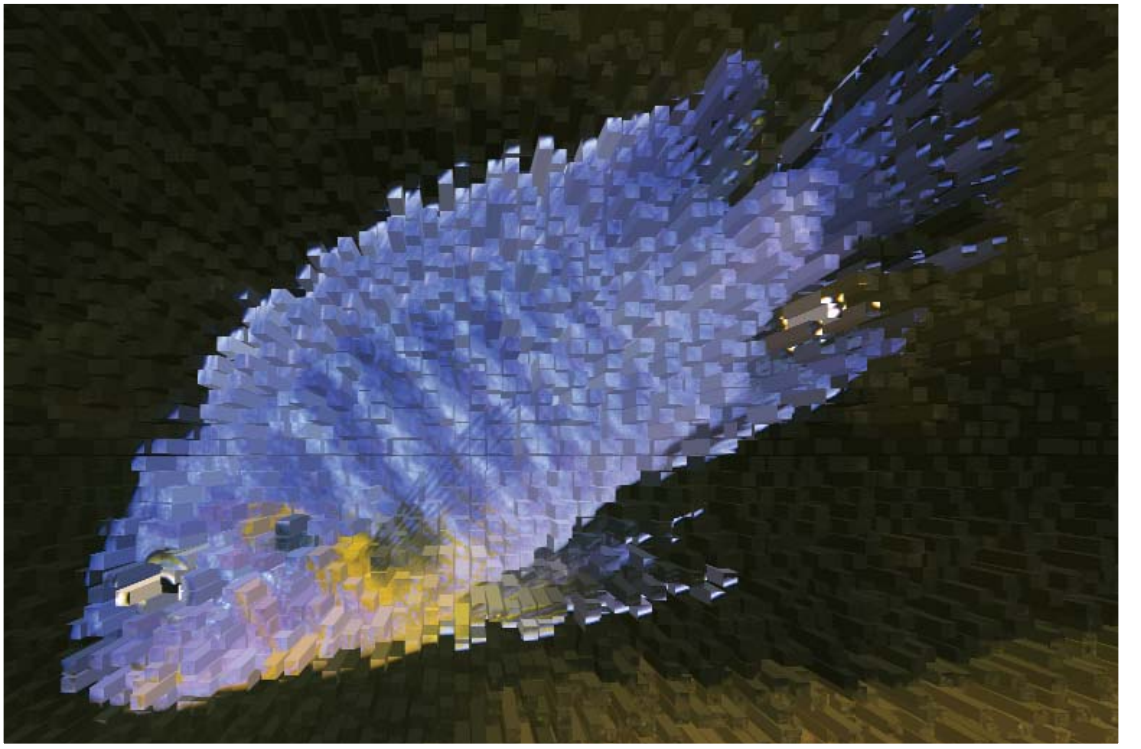
As the name suggests, these fishes are found along the Mozambique coast, specifically between the Chiloelo River and Chinuni (a distance of some 20 kilometres). There are actually three relatively different populations within this short stretch of coast, and for this reason the authors originally believed that they might even be dealing with three different species. In Konings (2001) these were given the working names *Metriaclima* sp. "aurora chinuni", *Metriaclima* sp. "aurora black tail", and *Metriaclima* sp. "aurora yellow". But statistical evaluation of their morphometric data produced complete overlap for all values,



***Metriaclima mossambicum*, male of the Lumessi population.** **Photo: Ad Konings**



***Metriaclima mossambicum* - this is what males look like at Chinuni, north of the Chiloelo River.** **Photo: Ad Konings**



***Metriaclima mossambicum*, male of the population south of the Chiloelo River.** **Photo: Ad Konings**

so the assumption is that they represent just a single species with differently coloured populations. However the variation in colour applies only to males, and the females of the

different populations are indistinguishable. North of Chinuni, in a bay north of the Lumessi, there is a population in which the courting male is predominantly yellowish in colour (hence the former designation of *M.* sp. "aurora yellow"), particularly intense on the throat and breast and in the pectoral-fin area, but with a light blue "blaze". It is superseded somewhat further south, as far as the Chiloelo River, by the population formerly known as *M.* sp. "aurora chinuni". In this form the males have a light blue base colour with seven grey vertical bars on the flanks, ventral fins with a white margin and black membranes in the anterior part, and likewise a black submarginal area in the anterior part of the anal fin, which is otherwise light blue, as are the dorsal and caudal fins. South of the Chiloelo there is then a population formerly termed *M.* sp. "aurora black tail". In this form courting males are medium blue with black membranes and blue rays in the caudal fin. The dorsal and anal fins are predominantly light blue, the ventral fins sooty black with white margins and orange at the base. The throat is also orange, as are the area of the body around the pectoral-fin insertion and the anterior edge of the operculum. The females of all three populations are light brown with yellowish fins. *M. mossambicum* grows to around 8 cm long (SL) in the wild.

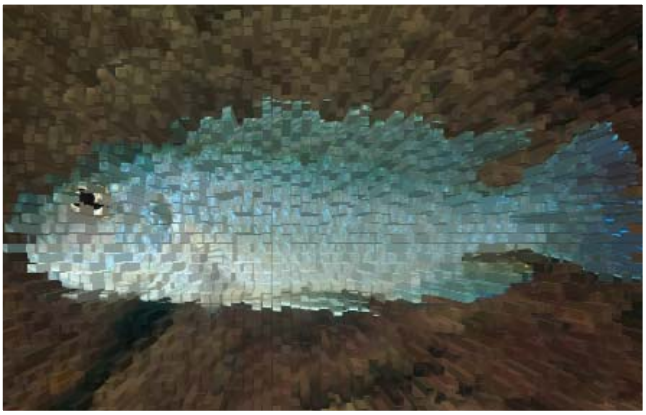
M. mossambicum **female with eggs or larvae in her mouth, photographed in the natural habitat south of Chiloelo.** **Photo: Ad Konings**

Metriaclima nkhunguense Ciccotto, Konings & Stauffer, 2011

On viewing the photo of the brilliant light blue *M. nkhunguense* you might think you were looking at a Bright Blue Zebra (*M. callainos*). This new species previously bore the working

Metriaclima nkhunguense, **male.** **Photo: Ad Konings**

name *M.* sp. “blue reef”. AD KONINGS (2001) writes that STUART GRANT had observed some years previously that males supposedly of the Red Zebra (*M. estherae*) actually represented two different species: one, with a broad mouth and yellow dots in the soft-rayed part of the dorsal fin, that courted only red females, and the other, with a narrower mouth and tiny orange spots on the outer margin of the dorsal fin, which displayed only to blue females. KONINGS in turn established that there were morphological differences between the different coloured females. *M. nkhunguense* exhibits similarities to *M. callainos* and *M. chrysomallos* in particular, but males can be distinguished by the presence of yellow pigmentation at the base of the pectoral fins. The new species is found only at Nkhungu Reef and Minos Reef, and the species name also derives from the former. The type series consists of six specimens, the largest of which measures 7.28 cm (SL).

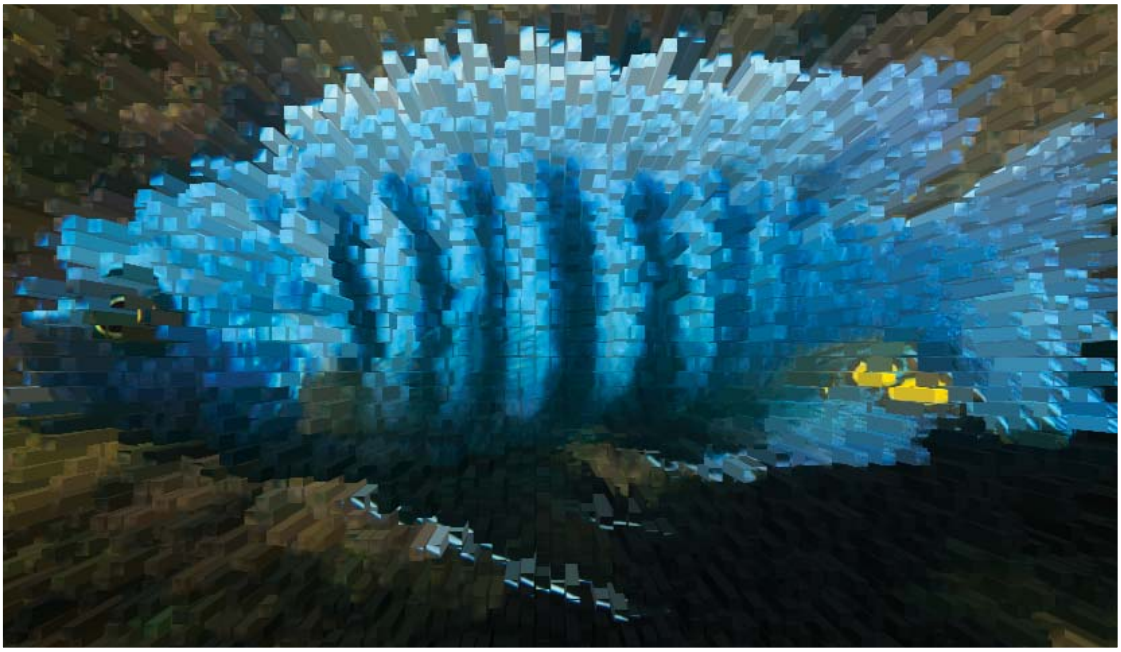


M. nkhunguense **female with eggs or larvae in her mouth, photographed in the natural habitat.** **Photo: Ad Konings**

Metriaclima sciasma CICCOTTO, KONINGS & STAUFFER, 2011

This species is known to Malawi cichlid enthusiasts under the names *Pseudotropheus* sp. "kingsizei north" (KONINGS, 2001) and *Metriaclima* sp. "aurora north" (KONINGS 2007). The

M. sciasma **female in the natural habitat.** **Photo: Ad Konings**



Metriaclima sciasma **was formerly known as** ***Pseudotropheus*** **sp. “kingsizei north” and** ***Metriaclima*** **sp. “aurora north”.** **Photo: Ad Konings**

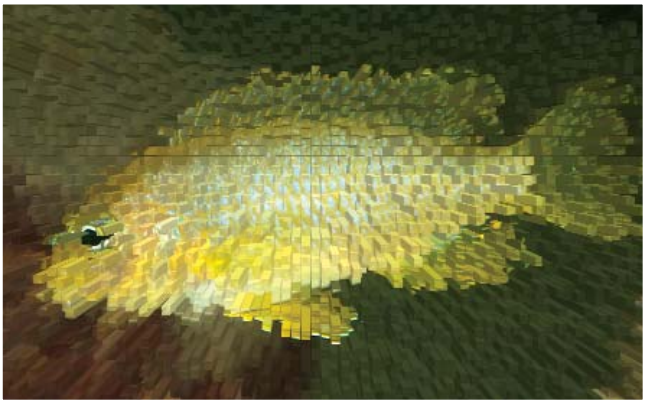
species name derives from the Greek and means “shadow”, a reference to the black ventral fins of the male. *M. sciasma* is widespread in the north-east of Lake Malawi, north of the Ruhuhu River. The species is found from Matema to somewhat north of Lupingu and also from Ngwazi to Manda. The Ruhuhu and the sandy coast south of Mbamba Bay form a geographical barrier between *M. sciasma* and other members of the *aurora* group. The species can attain a length of just over 7 cm (SL) in the wild.

Metriaclima xanthos Ciccotto, Konings & Stauffer, 2011

In Konings (2001) this species is termed *Metriaclima* sp. "aurora lumbaulo". As this working name suggests, it is found at Lumbaulo in Mozambique and along the coast somewhat further north, and nowhere else to date. The new species name *xanthos* is the Greek word for yellow and refers to the colour of the belly and the dorsal fin of males in

Metriaclima xanthos, **male at Lumbaulo, at present the only known location for this species.** **Photo: Ad Konings**

courtship coloration. These fishes have been seen at somewhat greater depths, between 15 and 25 metres, in the wild, while the similar, true *M. aurora* is found in 2 to 10 metres of depth. There is, however, a population of *M. aurora* at Mbweva and Tumbi Point which is characterised by the absence of dark pigmentation in the anal fin. *M. xanthos* remains relatively small at 5 cm in length (SL).



M.xanthos **female in the natural habitat at Mesuli.** **Photo: Ad Konings**

Refrences:
Ciccotto, P. (2008): Descriptions of five new species in the genus *Metriaclima* (Teleostei: Cichlidae) from Lake Malawi, Africa. Master of Science Thesis in Wildlife and Fisheries Science. Pennsylvania State University, 128pp.
Ciccotto, P. J., Konings, A. & Stauffer, J. R. Jr. (2011): Descriptions of five new species in the genus *Metriaclima* (Teleostei: Cichlidae) from Lake Malawi, Africa. *Zootaxa*, 2738: 1–25.
Konings, A. (2001): *Malawicichliden in ihrem natürlichen Lebensraum*. Dritte Auflage. Cichlid Press, El Paso. 351pp.
Konings, A. (2007): *Malawi Cichlids in their natural habitat* (4th edition). Cichlid Press, El Paso, USA. 424 pp.

New haplochromine cichlid described from the Congo

by Andreas Dunz

To date only a single handful of haplochromine cichlid species (two if we include the taxa from the River Fwa) have been described from the vast Congo basin. In recent years, after a certain calming of the political situation in parts of the Congo, several ichthyological organisations have again shown an interest in researching the fishes of the Congo basin and discovered numerous new species as a result. These include a number of haplochromines, the first of which has now been scientifically described:

***Haplochromis snoeksi* Wamuini Lunkayilakio & Vreven, 2010.**

The description once again explains the unsatisfactory status of many haplochromine species at the present time, for which reason even the genus name is placed in inverted commas in the original description. On the basis of morphological characters the new species could be assigned to the genus *Ctenochromis* as redefined by Greenwood (1979). But Takahashi (2003) was unable to find any close phylogenetic relationship between the type species *C. pectoralis* and the two Lake Tanganyika species assigned to *Ctenochromis*, nor could Koblmüller *et al*. (2008) do so for *H. oligacanthus* and *H. polli*. Hence it appears certain that *Ctenochromis*, defined as the species assemblage proposed by Greenwood, represents a polyphyletic group. The new species, *H. snoeksi*, will thus undoubtedly eventually be assigned to a new, as yet undescribed genus.

It differs from other species from the Congo basin by having a partly unscaled breast, a larger number (16) of scales around the caudal peduncle (only 12 in *H. oligacanthus* and *H. polli*), and more scales in the upper lateral line (23) than in other species (for example, *H. lululae*: 17-19). The coloration corresponds to that of the other Congo haplochromines, and is a plain grey-brown, on which – depending on mood – can be seen a number of not very clearly expressed darker bars. In fact the description of coloration in live specimens excludes these markings ("No transverse bars visible on the lateral flanks"), but they can be seen quite clearly (I count at least nine transverse bars), albeit only faintly marked, in a photo taken of a live specimen immediately after capture and kindly made available by the authors. It is well known that haplochromines can express their mood in a matter of seconds via changes in coloration. For this reason a description of colour characters is usually no more than the reflection of a single moment in time. Under coloration in alcohol the authors then give six transverse bars on the flanks. As is typical for *Haplochromis* there are eggspots – in this case two or three – on the anal fin in males. The belly is yellowish, the ventrals blackish. A number of additional colour attributes of the species are visible in the photo but not mentioned in the work, for example the slightly reddish iris, bluish lips, and dark shading on the membranes of the anterior part of the dorsal fin, which doesn't, however, constitute a submarginal. Features not visible in the photo but mentioned in the work include a black spot on the base of the caudal fin and small black dots on the membranes of the caudal fin.

The species comes from the drainage of the Inkisi River in the lower Congo basin, more precisely from Ngeba and the Ngufu River. The type locality is around 95 kilometres south of Kinshasa as the crow flies.

The work doesn't mention that WAMUINI LUNKAYILAKIO found a further haplochromine somewhat further south in the Inkisi River. In his dissertation (*Ichtyofaune de l'Inkisi*), published on the Internet, he calls this species *Chetia* sp. "Inkisi". A formal description will probably follow. To date the genus *Chetia* is otherwise known only from southern Africa.

***Haplochromis snoeksi*, shortly after capture.** **Photo: Soleil Wamuini, Royal Museum for Central Africa**

References:

GREENWOOD, P. H. (1979): Towards a phyletic classification of the 'genus' *Haplochromis* (Pisces, Cichlidae) and related taxa. Part 1. *Bulletin of the British Museum (Natural History) Zoology*, 35 (4): 265-322.

KOBLMÜLLER, S., SCHLIEWEN, U. K. , DUFTNER, N., SEFC, K. M., KATONGO, C. & STURMBAUER, C. (2008): Age and spread of the haplochromine cichlid fishes in Africa. *Molecular Phylogenetics and Evolution*, 49: 153-169.

TAKAHASHI, T. (2003): Systematics of Tanganyikan cichlid fishes (Teleostei: Perciformes). *Ichthyological Research*, 50: 367-382.

WAMUINI LUNKAYILAKIO, S. (2010): *Ichtyofaune de l'Inkisi (Bas-Congo / RDC): Diversité et écologie*. PhD Thesis, Université de Liège. http://bictel.ulg.ac.be/ETD-db/collection/available/ULgetd-03152010-215757/

WAMUINI LUNKAYILAKIO, S. & VREVEN, E. (2010): '*Haplochromis*' *snoeksi*, a new species from the Inkisi River basin, Lower Congo (Perciformes: Cichlidae). *Ichthyological Exploration of Freshwaters*, 21 (3): 279-288.

Seven in one go

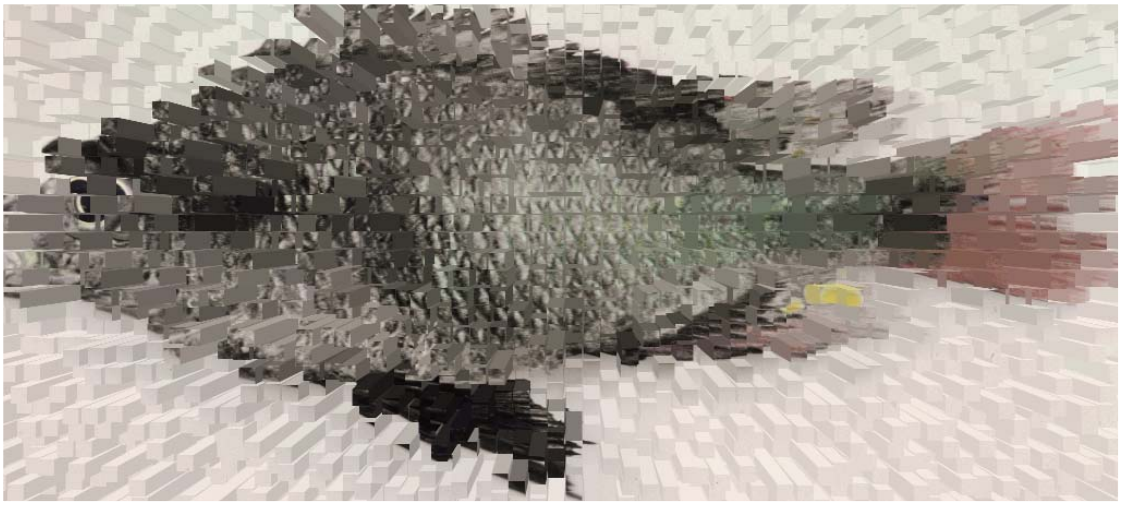
- new *Haplochromis* species described from Lake Victoria

by Paul Mazeth

However, this time it wasn't the brave little tailor who achieved this feat, but a group of authors led by Frans Witte. The well-known ichthyologist from Leiden and member of HEST (*Haplochromis* Ecology Survey Team) and his colleagues have described seven new species in the genus *Haplochromis*. Because it was not always possible to assign the species unequivocally to any of the genera suggested by Greenwood, they remain in *Haplochromis*, but in the case of three of the detritivores it was possible to establish a relatively close link with Greenwood's *Enterochromis*, which the authors thus accept as a subgenus. As a result of the decline of the *Haplochromis* species in Lake Victoria, caused by the Nile Perch boom, for a long time there was no particular pressure to produce original descriptions for fishes from the lake. But the situation has now changed again. Heavy fishing of the Nile Perch has apparently enabled populations of various *Haplochromis* species to recover. However, ecological adaptations, together with related morphological changes, have also been observed in all the species that have now reappeared. The changed environmental conditions have led to morphological adaptations, perhaps as a result of so-called microevolution and the phenotypical plasticity that characterises these fishes. Hybridisation may also have played a part.
It is probable that five of the species that have now received scientific names are still present in Lake Victoria. For this reason the authors considered it necessary to provide detailed descriptions of them from museum material in order to be better able to study any morphological changes. Below is a summary of the fishes (in alphabetical order) included in the work:

Haplochromis (*Enterochromis*) *antleter* Mietes & Witte, 2010

The specific name *antleter* originates from the Greek word for scoop or dredge, and signifies "one who scoops". The name is very appropriate for a fish that searches for



***Haplochromis antleter*, paratype, RMNH 77781, a male measuring 64 mm SL and whose coloration suggests sexual activity**
Photo ©: *Haplochromis* Ecology Survey Team (HEST)

food by foraging in muddy bottoms. The main elements of its diet were found to be detritus and phytoplankton, as well as zooplankton and insect larvae to a lesser extent. Nowadays individuals are caught occasionally that resemble *H. antleter* in appearance, but many others constitute a mish-mash of this and other species. *H. antleter* grows to around 7 centimetres long (SL), and prior to its description was given the working name *Haplochromis* "dusky wine red fin". As might be expected, it was found over muddy bottoms in the Mwanza Gulf in the Tanzanian part of Lake Victoria, at a depth of between two and 11 meters.

Haplochromis bwathondii Niemantsverdriet & Witte, 2010

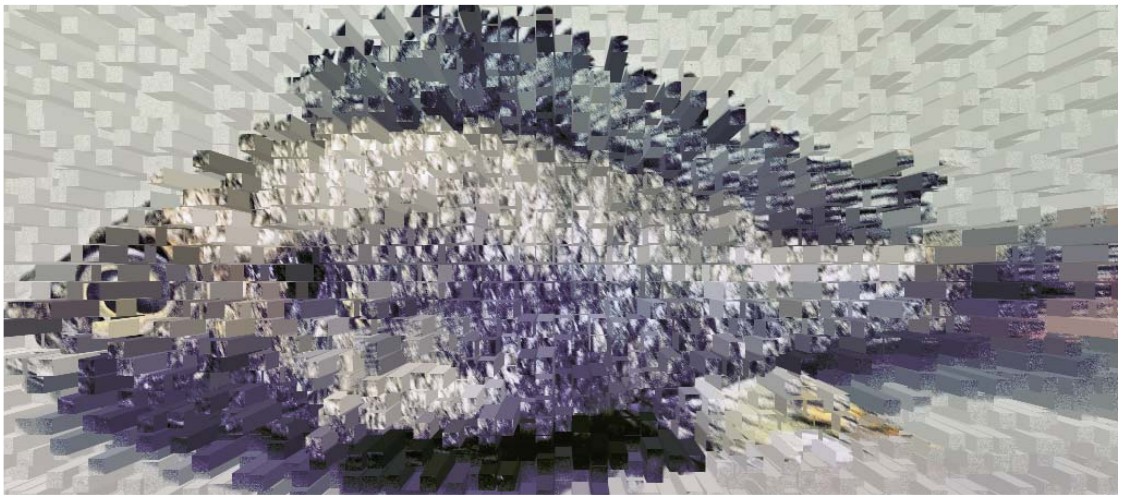
This species was named in honour of Professor Philip O. J. Bwathondi, the former Director General of TAFIRI (Tanzania Fisheries Research Institute), who headed the institute until the end of 2006. It is a phytoplankton feeder that attains a maximum length of somewhat more than 8 centimetres (SL), and which is both diurnal and nocturnal in its feeding. It supplements its diet with diatoms and insects as well as their larvae, which are snapped up from the water's surface. The species was formerly widespread over muddy bottoms in the sublittoral of the Mwanza Gulf. A residual population is known from a rocky island in the northern Speke Gulf, where it occurs near the surface. In recent years occasional specimens of *H. bwathondii* have also been caught again in the lake. Prior to its scientific description it was known as *Haplochromis* "kribensis". This name was probably chosen in reference to a certain resemblance in coloration to the well-known "Krib" from West Africa, which was for a long time known as *Pelmatochromis kribensis* (now *Pelvicachromis pulcher*). It wasn't possible to assign the new species unequivocally to any subgenus.

***Haplochromis bwathondii*, paratype, RMNH 77881, sexually active male measuring 65 mm SL.**

Photo ©: *Haplochromis* Ecology Survey Team (HEST)

Haplochromis (*Enterochromis*) *coprologus* de Zeeuw & Witte, 2010

'Garbage Collector', what a descriptive name for a detritivore that hunts for food in muddy bottoms. And that is the meaning of the Greek-derived species name of this fish,



***Haplochromis coprologus,* paratype, RMNH 80967, sexually active ♂, 71.1 mm SL.**

Photo ©: *Haplochromis* Ecology Survey Team (HEST)

formerly known as *Haplochromis* "nigrofasciatus". The species feeds predominantly by day and also consumes diatoms and copepods, with more limited feeding at night, mainly on diatoms. As is also known from other detritivores, *H. coprologus* is a seasonal breeder, in this case spawning from March to September. Sexually active males could even be found until October. The species appears to be full-grown at a length of around 7.5 centimetres (SL). It was found over muddy bottoms in the Mwanza Gulf and has now been found once again in Lake Victoria, but it seems there are also hybrids with other species.

Haplochromis (*Enterochromis*) *katunzii* ter Huurne & Witte, 2010

This species, named after Mr Egid F. B. Katunzi MSc, the current Director of the Mwanza Centre of TAFIRI (Tanzania Fisheries Research Institute), is another detritivore. It grows

***Haplochromis katunzii,* paratype, RMNH 81250, sexually active ♂, 69.8 mm SL.**

Photo ©: *Haplochromis* Ecology Survey Team (HEST)

to eight centimetres long (SL) and was known as *Haplochromis* "75" prior to its scientific description. It collects food mainly by day, eating not only detritus but also phytoplankton, insect larvae, and copepods. The habitat of this species is muddy bottoms in the Mwanza Gulf, between two and 15 metres of depth.

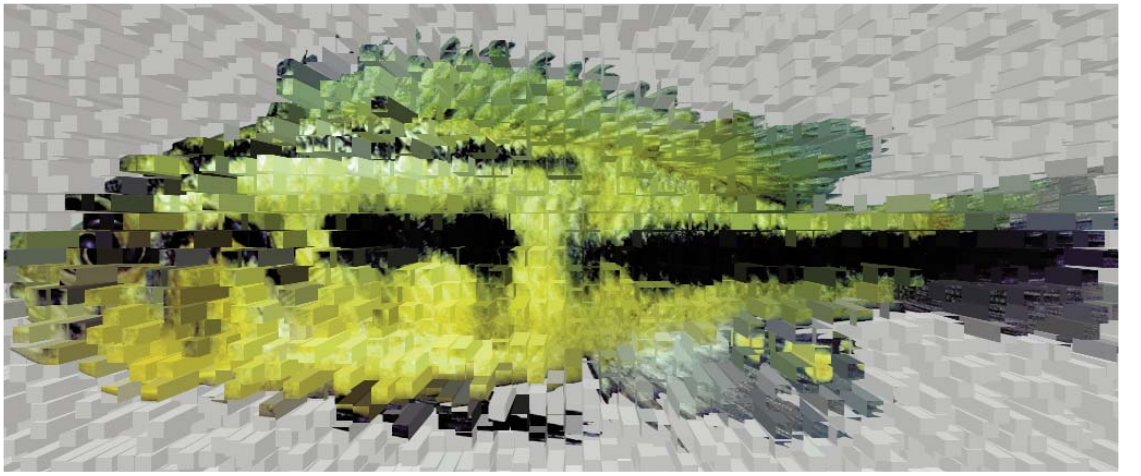
Haplochromis pancitrinus Mietes & Witte, 2010

As the name suggests, the courtship coloration of males of this small cichlid is completely yellow. Prior to its scientific description this species was known simply as *Haplochromis* "yellow". These fishes are full grown at a good 8.5 centimetres (SL). They feed mainly on phytoplankton, but gut contents also included *Chaoborus* larvae and copepods, as well as occasional detritus. They were caught by trawl over muddy bottoms in the sublittoral of the northern Mwanza Gulf, but were also found close to the surface. They also occurred in shallower water further south. So far *H. pancitrinus* has yet to be found again following the Nile Perch boom. It wasn't possible to assign it unequivocally to any subgenus.

***Haplochromis pancitrinus*, paratype, RMNH 73280, sexually active ♂, 51.3 mm SL. Photo ©: *Haplochromis* Ecology Survey Team (HEST)**

Haplochromis sphex ter Huurne & Witte, 2010

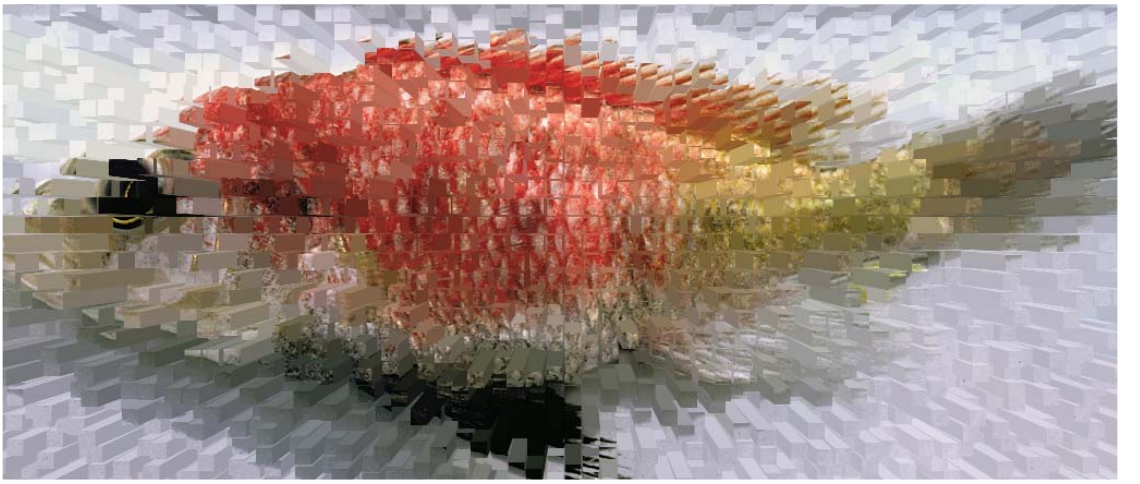
Prior to its recent description, the working name of this cichlid was *Haplochromis* "citrus". *Sphex* is the Greek word for wasp and reflects the predominantly yellow coloration with black bands seen in males in courtship dress. This species lives mainly in shallow depths of up to ten metres, chiefly over bottoms of sand and mud. It was caught mainly in the Butimba Bay area (south of Mwanza). The species grows to somewhat more than eight centimetres long (SL). It feeds mainly on phytoplankton and sometimes also copepods. Unfortunately *H. sphex* is one of the species presumed extinct following the Nile Perch boom. Whether it is still present in Lake Victoria remains unknown. It wasn't possible to assign it unequivocally to any subgenus.



***Haplochromis sphex*, paratype, RMNH 73268, sexually active ♂, 68.8 mm SL.** **Photo ©: *Haplochromis* Ecology Survey Team (HEST)**

Haplochromis vanoijeni de Zeeuw & Witte, 2010

The working name for this species prior to its scientific description was *Haplochromis* sp. "Red Tridens". The specific name was given in honour of Dr Martien J. P. van Oijen, a pioneer of HEST (*Haplochromis* Ecology Survey Team), who now works at the 'Naturalis', the Netherlands Centre of Biodiversity. This species is a detritivore, whose stomach also contained possible remains of insects or shrimps. *H. vanoijeni* was caught mainly by trawl in the Mwanza Gulf in more than ten metres of depth over muddy bottoms, in the Speke Gulf in 28 metres of depth over sandy bottoms, and in the Maisome Channel (Emin Pascha Gulf). And a single specimen was even caught by trawl in Uganda, in the Napoleon Gulf. *H. vanoijeni* is one of the species that has continued to be caught now and then following the ecological changes occasioned by the Nile Perch. The species is full-grown at just nine centimetres long (SL). It wasn't possible to assign it unequivocally to any subgenus.



***Haplochromis vanoijeni*, holotype, RMNH 81522, sexually active ♂, 68.6 mm SL.** **Photo ©: *Haplochromis* Ecology Survey Team (HEST)**

References:

de Zeeuw, M. P., Mietes, M., Niemantsverdriet, P., ter Huurne, S. & Witte, F. (2010): Seven new species of detritivorous and phytoplanktivorous haplochromines from Lake Victoria. *Zoologische Medelingen Leiden,* 84: 201-250.

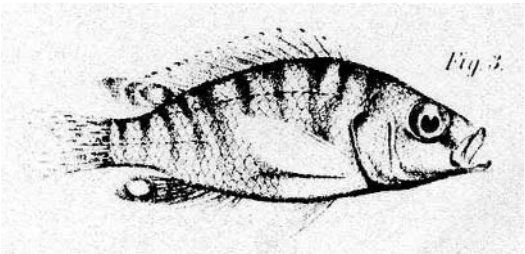
The real *Ctenochromis pectoralis*

by Job de Graaf

In the older aquarium literature, for example Sterba (1972), there are suggestions that males of *Ctenochromis pectoralis* were imported as aquarium fishes in the spring of 1911. And in fact there is an article to that effect by Rachow in *Blätter für Aquarien- und Terrarienkunde* for 1911, accompanied by a drawing that probably formed the basis for a subsequent similar illustration in Sterba. In this article, in which the species was described as *Tilapia pectoralis* (because at that time it had been re-assigned by Boulenger), it is also mentioned that the imported fishes originated from Boma, and it is stated explicitly that the latter is at the mouth of the Congo. This in turn means that the fishes were almost certainly not *Ctenochromis pectoralis*, as the species was described from Korogwe in the former German East Africa. It is pure coincidence that there is another place called Boma in the area where the species was found.

Original drawing from Rachow (1911)

It is even questionable whether the imported fishes were haplochromine rather than tilapiine cichlids at all, as the drawing by F. Mayer – purportedly of the living fishes – would seem to confirm. The similarities in fin markings to Pfeffer's original illustration (in the 1893 scientific description of the species) are, of course, striking, but leaving that aside, the body form doesn't correspond to that of a haplochromine. Very different to the drawing by Pfeffer, who captured the species very well, as can readily be seen from a comparison with the photo of freshly-caught specimens accompanying this article.



Original drawing from Pfeffer (1893)

Steffen Fick (2010) discovered a haplochromine with just a single eggspot on the anal fin, not very far from the original locality for the species. He therefore assumed that it might be *Ctenochromis pectoralis*. But that is not the case, and it is far more likely to be an undescribed species; because of the uncertainty it was actually termed "*Haplochromis*" sp. "Tanga" (after the place where it was found) in Fick's article.

The true *Ctenochromis pectoralis* isn't in fact at all uncommon, for example in the Nyumba ya Munga reservoir at the foot of Mount Kilimanjaro. I have also found it in Chemka (around 10 kilometres south of Boma ya Ngombe), where I caught it along with some small barbs.

These fishes have proved to be very aggressive in the aquarium, where they mercilessly hunted and took bites out of small barbs, for which reason I didn't maintain them for long.

Acknowledgements: Thanks to Michael Kroninger for tracking down Rachow's article from 1911, and to Max Lippitsch (DCG Librarian) for providing a copy of the original drawing from Pfeffer (1893).

***Above*: *Ctenochromis pectoralis* immediately after capture, along with sympatric small barbs. Photo: Job de Graaf**

***Right*: Photo from Fick (2010) for comparison: male "*Haplochromis*" sp. "Tanga" from locality FTZ98/7. This is certainly not *Ctenochromis pectoralis*. Photo: Steffen Fick**

References:
Fick, S. (2010): Collecting haplochromine cichlids in Tanzania – Part 1. ***eggspots,*** 3: 17-25.
Pfeffer, G. J. (1893): Ostafrikanische Fische gesammelt von Herrn Dr. F. Stuhlmann in Jahre 1888 und 1889. *Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten*, 10: 131-177.
Rachow, A. (1911): *Tilapia pectoralis* Pfeffer. *Blätter für Aquarien- und Terrarienkunde*, 22: 674-676.

An expedition through Uganda
- 1. Lake Victoria
by Erwin Schraml

In 1998 the Department of Immunogenetics of the Max Planck Institute for Biology in Tübingen made an expedition through parts of East Africa with the object of collecting the DNA of haplochromine fishes. This expedition was organised and conducted by Herbert Tichy. The relevant genetic results appeared in numerous publications and dissertations (eg Nagl *et al*. 2000, Sato *et al*., 2003, Samonte, 2004, Terai *et al*., 2004, Samonte *et al*., 2007). I was able to join the expedition on its way through Uganda (which represented only one part of the overall route) and document it photographically.

Fish market in Gabbaa, a suburb of Kampala right at the edge of Lake Victoria. The small, shaded stalls were right by the shore of Lake Victoria and sold mainly Nile Perch, tilapias, and lungfishes, as well as catfishes (eg *Synodontis* and *Clarias*).

I arrived in Uganda just a few days after Herbert Tichy in October that year. By that time he had already established personal contacts in official quarters, organised a vehicle complete with driver, and also obtained the services of a member of the Department of Fisheries Resources to catch fishes for us.

My own organisation hadn't been quite as successful, as my trunk hadn't arrived but had gone missing somewhere between Munich and Entebbe. Unfortunately it contained various pieces of equipment essential to the expedition, not to mention my

Left: The de-scaled and filleted Nile Perch were stacked on wooden tables before (*below*) being smoked over huge walled ovens.

Bottom: HERBERT TICHY in Gabbaa with a fish-seller holding a large lungfish (*Protopterus aethiopicus*) in his hands.

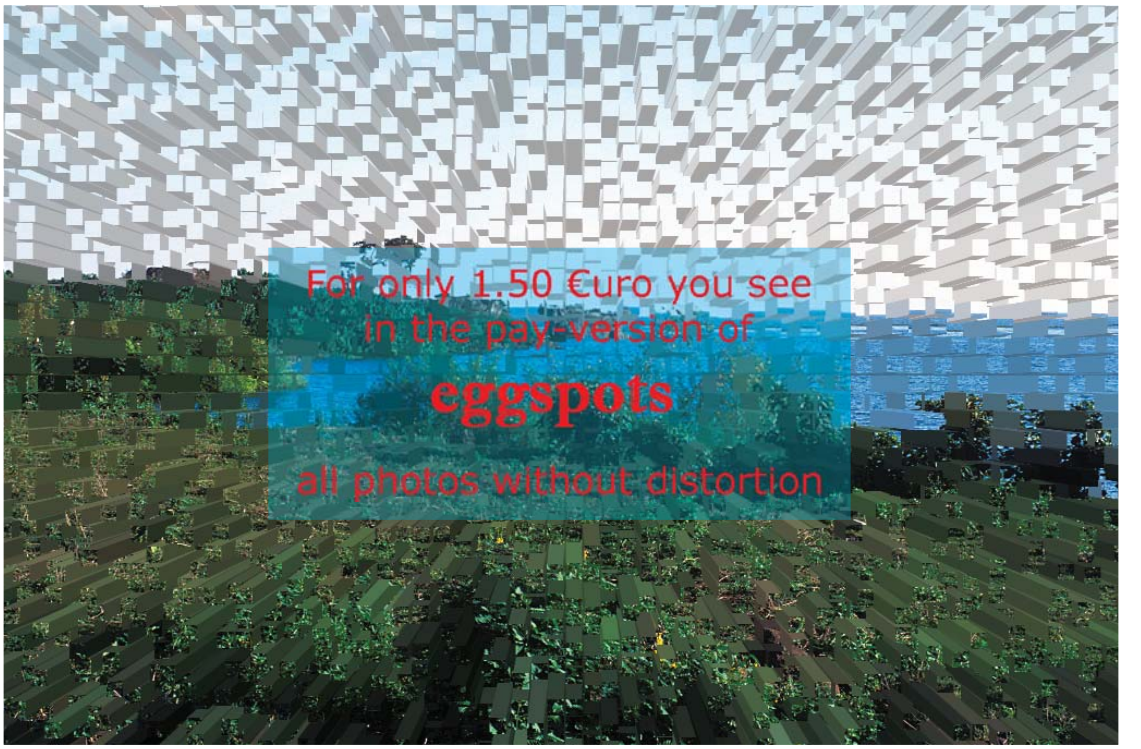
underwear. As a result the expedition couldn't set off immediately. Because we were still waiting for a number of official papers and didn't want to spend the days doing nothing, we visited *inter alia* the fish

market in Gabbaa, right on the shore of Lake Victoria, where small quantities of fishes were brought ashore, mainly to supply the local people. It is sometimes assumed that all the Nile Perch caught are exported and not destined for the consumption of the indigenous population, but that is certainly not the case! These fishes are not only offered for sale fresh-caught in Gabbaa, but a relatively large number of people, mainly women, are employed in processing Nile Perch. We saw with our own eyes how they are de-scaled, filleted, and smoked there. The smoking takes place in several large walled ovens with wood fires. The fish fillets are placed on two steel-mesh shelves, one above the other, and exposed to the hot smoke until they are

sooty black. In this way the relatively oily flesh of the fish is preserved so that it can also be transported to other parts of the country away from the lake.

I find that a fish market is always an interesting place, and you will usually see a large variety of species there. But Gabbaa was different: Nile Perch (*Lates niloticus*), lungfishes (*Protopterus aethiopicus*), tilapias (*Oreochromis niloticus*), a few walking catfishes (*Clarias* sp.), and a number of upside-down catfishes (*Synodontis afrofischeri*), and that was it. Okay, so the Dagaa (*Rastrineobola argentea*) shouldn't be forgotten either, but that was available only in dried form. No large barbs, no bagrids, and above all not a single *Haplochromis* – that was very disappointing! I already knew that *Haplochromis* weren't popular food fishes, but the absence of the other species from the market demonstrated just how badly the Lake Victoria ecosystem had been compromised.

For this reason I was tremendously pleased that we were planning to catch fishes in Lake Victoria before the expedition started. Neither Raymond Oluk, our fisherman, nor myself had previously worked with a seine net. Hence it made sense to try a few dry runs on land before using it for real. The net was 20 metres long and had a collecting bag in the middle. Tichy explained to us how we should proceed with the net in the water later on. Although it is something anyone can learn via a little trial and error, we nevertheless found that it can also be very awkward and it was all to the good to have practised beforehand. And then it was in at the deep end, in other words we went looking for a quiet bay in Lake Victoria. Ismail, our driver, knew such a spot in the vicinity of Entebbe. However the bank turned out to be relatively steep and rocky, and thus less than suitable for using a seine. We nevertheless gave it a go, but with only moderate success. So we quickly changed strategy and got out our



A quiet bay in Lake Victoria, like this one near Entebbe, was just what we needed for practising our first attempts at collecting.

fishing rods. Our bait was worms that RAYMOND knew how to find. It wasn't at all easy to put this type of worm on the hook as they had a remarkable tendency to disintegrate when handled roughly; in other words they broke into pieces and all of a sudden you had three small pieces instead of a single worm in your hand. But we somehow managed it and soon the first *Haplochromis* was flapping on the end of the line. In the next hour we captured several species of the sought-after haplochromines on this short stretch of rocky shore, the first of which I would like to discuss here.

Haplochromis sp. "HT-8601"

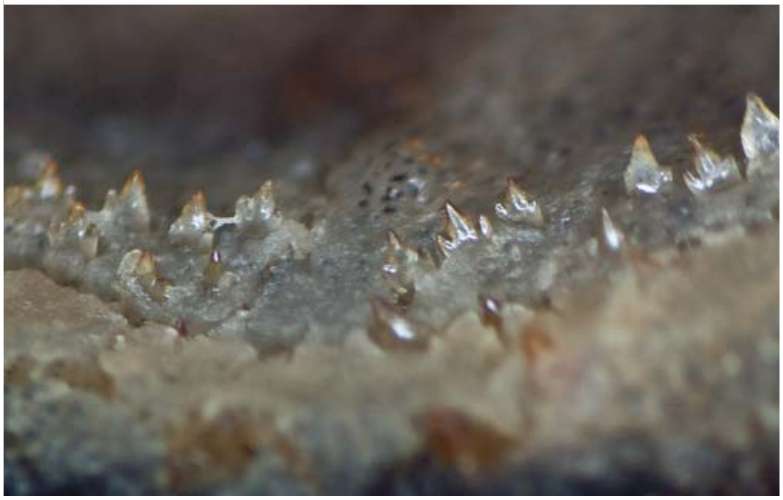
We were able to catch only a single specimen of this species, a female, which was stored under the number HT-8601 in the private collection of HERBERT TICHY. It has a standard length of 108 mm. Important morphometric values are shown in the table, which also includes the corresponding data for similar species (insofar as these are available from the literature) for comparison. Values where a match exists are marked in green.

	empodisma	HT-8601	*saxicola*
Percentage of SL			
Body depth	33.0-43.8	39.5	34.8-42.5
Head length	33.3-39.4	36.6	35.3-42.5
Head width		19.8	
Caudal peduncle length	14.5-20.0	15.3	13.1-17.7
Caudal peduncle depth		13.1	
Anal fin base length		20.6	
Dorsal fin base length		54.8	
Predorsal length		35.9	
Preanal length		68.3	
Prepectoral length		40.7	
Prepelvic length		48.6	
Percentage of HL			
Snout length	27.5-37.2	33.9	34.0-41.8
Snout width		41.3	
Head width		54.2	
Preorbital length	15.1-20.5	17.7	15.2-19.0
Eye length	24.4-34.0	27.3	20.4-26.8
Cheek depth	23.5-31.4	26.3	21.4-26.2
Lower jaw length	39.1-48.7	38.5	39.7-46.5
Lower jaw width		26.8	
Premax. pedicel length		22.5	
Interorbital distance	20.6-28.6	27.6	23.9-29.8
Proportional Measurm.			
Lower jaw length/width	1.5-2.3	1.4	1.5-1.9
Caud. ped. length/width	1.3-1.7	1.2	1.0-1.5
Total counts			
Gill rakers	7-10	10	6-9
Lateral line	30-33	33	31-34

There are 30 robust unicuspid teeth in the outer series of the lower jaw and two inner series of teeth that are for the most part tricuspid. In the upper jaw there are 40 robust unicuspid and bicuspid teeth in the outer series and three inner series of tricuspid teeth. Inspection of the pharyngeal teeth with an otoscope revealed that they are neither molariform nor enlarged in any other way. There are 21 scales in the upper lateral line, 12 in the lower, and 29 in the median lateral series. The flank scales are pentagonal rounded with short, pointed, conical ctenii (teeth) on the exposed side. The centre of the scale is completely cov-

***Haplochromis* sp. "HT-8601". We were able to catch only one specimen of this species.**

Lower-jaw dentition. Robust unicuspid teeth in the outer series (the photo shows the anterior right-hand corner).



Tricuspid teeth in two inner series (photographed from in front).

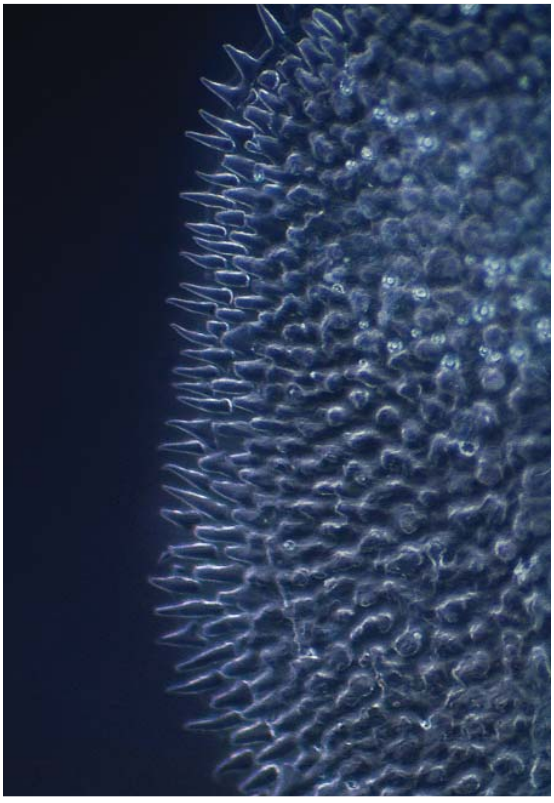
ered in irregular-shaped granulae and nodules. The radii (rays) on the opposite side are narrow and extend to the centre of the scale. The tongues along the edge are narrow but of variable width, with a straight last inter-radial circulus. There are ten gill rakers on the lower branch of the outer gill arch.

The species cannot be assigned to any of the trophic groups defined in the key in Witte & Van Oijen (1990) on the basis of morphometric data, as the lower jaw, at 38.5% of SL, is significantly below the threshold of 45%, but in order for the next threshold to apply the specimen would have to measure less than 10 cm (SL), which is not the case. If this is ignored on the basis that the length is only slightly greater, then the next stumbling block is a body depth of more than 38% of SL, which, according to the next criterion in the key, would involve molariform pharyngeal teeth, and that is definitely not the case.

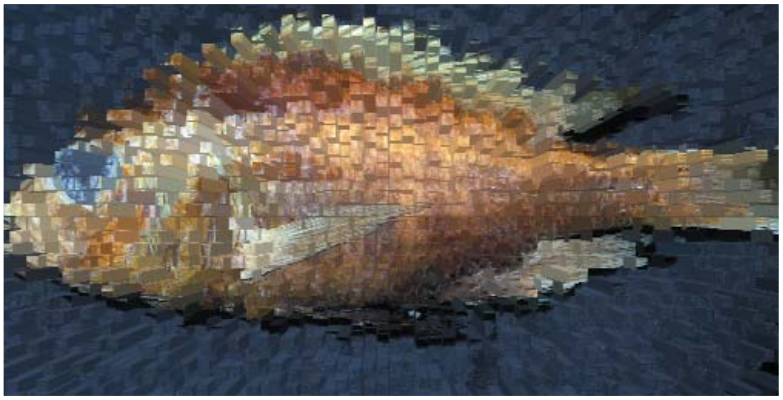
If this species is compared with *Haplochromis saxicola* and *H. empodisma*, described by Greenwood in 1960 and subsequently assigned to his genera *Psammochromis* and *Gaurochromis*, then overlaps in

numerous morphometric values become apparent (see table p. 43). The species can be differentiated from *Psammochromis* in general by, for example, the absence of thickened lips and the fact that the teeth of the outer series are not slender. The teeth of the genus *Gaurochromis* are also defined as fine, slender, and close-packed, none of which applies to the dentition of HT-8601. HOOGERHOUD (1984) and HOOGERHOUD & WITTE (1981) have published important works on *Gaurochromis*, which, *inter alia*, have led to VAN OIJEN (1996) recommending that for the time being *Haplochromis* should once again be used as the genus name for the haplochromines of Lake Victoria. The illustration of the holotype of *Haplochromis empodisma* in GREENWOOD (1960) generally exhibits certain similarities to HT-8601, but is a poor representation of its actual appearance when compared to the specimen itself or a photo of it. Specifically the steeply descending upper head profile is

***Above*: Flank scale of *H.* sp. "HT-8601". *Below*: Close-ups of the ctenii (*left*) and radii (*right*).**



***Haplochromis saxicola* holotype BMNH 1959.4.28.249**



***Haplochromis empodisma* holotype BMNH 1959.4.28.170**

not a good match for that of HT-8601. In addition HT-8601 lacks the characteristic given by HOOGERHOUD & WITTE (1981) for the entire *H. empodisma* group (which also includes the species *H. hiatus, H. iris*, and *H. obtusidens*), namely that the eye is positioned so high on the head that it extends to the line of the upper head profile. In some respects HT-8601 possesses characteristics of both groups, ie *Psammochromis*-type species and those of the *H. empodisma* group. It is probably a new species, whose male will hopefully also become known to us one day. And its intermediate generic position once again accords with VAN OIJEN, who advises a conservative classification for the haplochromines.

Specimen HT-8601 is stored under the number ZSM 40688 in the Bavarian State Collection of Zoology.

(*to be continued*)

References:

GREENWOOD, P. H. (1960): A revision of the Lake Victoria *Haplochromis* species (Pisces Cichlidae) Part IV. *Bulletin of the British Museum (Natural History) Zoology*, 6 (4): 227-281.

HOOGERHOUD, R. J. C. (1984): A taxonomic reconsideration of the haplochromine genera *Gaurochromis* Greenwood, 1980 and *Labrochromis* Regan, 1920 (Pisces, Cichlidae). *Netherlands Journal of Zoology*, 34 (4): 539-565.

HOOGERHOUD, R. J. C. & WITTE, F. (1981): Revision of species from the "*Haplochromis*" *empodisma* group. Revision of the haplochromine species (Teleostei, Cichlidae) from Lake Victoria. Part 2. *Netherlands Journal of Zoology*, 31 (1): 232-274.

NAGL, S., TICHY, H., MAYER, W. E., TAKEZAKI, N., TAKAHATA, N. & KLEIN, J. (2000): The origin and age of haplochromine fishes in Lake Victoria, east Africa. *Proceedings of the Royal Society (Biological Sciences)*, 267 (1447): 1049-1061.

SAMONTE, I. E. (2004): *Phylogenetic Relationships of Endemic Lake Victoria Cichlids Inferred from Mitochondrial and Nuclear DNA Data.* Dissertation der Fakultät für Biologie der Eberhard Karls Universität Tuebingen zur Erlangung des Grades eines Doktors der Naturwissenschaften. 98 pp.

SAMONTE, I. E., SATTA, Y., SATO, A., TICHY, H., TAKAHATA, N. & KLEIN, J. (2007): Gene flow between species of Lake Victoria haplochromine fishes. *Molecular Biology and Evolution*, 24 (9): 2069-2080.

SATO, A., TAKEZAKI, N., TICHY, H., FIGUEROA, F., MAYER, W. E. & KLEIN, J. (2003): Origin and speciation of haplochromine fishes in East African crater lakes investigated by the analysis of their mtDNA, Mhc genes, and SINEs. *Molecular Biology and Evolution*, 20 (9): 1448-1462.

TERAI, Y., TAKEZAKI, N., MAYER, W., TICHY, H., TAKAHATA, N., KLEIN, J. & OKADA, N. (2004): Phylogenetic relationships among East African haplochromine fish as revealed by short interspersed elements (SINEs). *Journal of Molecular Evolution*, 58 (1): 64-78.

VAN OIJEN, M. J. P. (1996): The generic classification of the haplochromine cichlids of Lake Victoria, East Africa. *Zoologische Verhandelingen, Nationaal Natuurhistorisch Museum, Leiden*, 302: 57-110.

WITTE, F. & VAN OIJEN, M. J. P. (1990): Taxonomy, ecology and fishery of Lake Victoria haplochromine trophic groups. *Zoologische Verhandelingen, Nationaal Natuurhistorisch Museum*, Leiden 262, 15 (11).

Eggspots Elsewhere

Articles on cichlids with eggspots elsewhere in the recent literature

Period October 2010 - March 2011

Amazonas (http://www.ms-verlag.de/AMAZONAS.121.0.html)
6 (5), No. 31, September/Oktober 2010:
- Szillat, K.: Arterhaltung im Wohnzimmer. (*Yssichromis piceatus*) Pp. 58-59.

Aqualog News (http://aqualog.de/news/alle_news.htm)
No. 94:
- Schäfer, F.: *Placidochromis* cf. *phenochilus* "Tanzania" - nicht nur schön, sondern auch friedlich. Pp. 24-25.

Buntbarsche Bulletin (Journal of the American Cichlid Association, www.cichlid.org/index.php?pageid=buntbarsche_bulletin)
No 261, December 2010 (Whole issue on Lake Malawi trip by various ACA members)
- Turner, T.W.S.: Diving Taiwanee Reef. pp. 8-9. (various species)
- Konings, A.: Saulos's mbuna. pp 10-11. (*Ps. saulosi*)
- Lundblad, S.: Kande Island. pp. 12-13. (various species)
- Martin, R.: Diving Lake Malawi. pp. 14-15. (various species)
- Chin, P.: Chitande Island. pp. 21-23. (various species)

Cichlidae (Journal of the British Cichlid Association, www.britishcichlid.com)
Vol. 31, No. 3, October 2010:
- Watson, I.: review of Cleaver, Konings, & Stauffer's 2009 description of 2 *Lithobates*. p.3.

Cichlidae (Nederlandse Vereniging van Cichlidenliefhebbers NVC; www.nvcweb.nl/portal/)
36 (5) 2010:
- Spreinat, A.: De nog altijd populaire Dolfijncichlide [*Cyrtocara moorii*]. Met enkele Opmerkingen betreffende het Commensalisme in het Malawimeer - Aflevering 1. Pp. 15-23.
36 (6) 2010:
- Spreinat, A.: De nog altijd populaire Dolfijncichlide [*Cyrtocara moorii*]. Met enkele Opmerkingen betreffende het Commensalisme in het Malawimeer - Aflevering 2. Pp. 14-21.
- Dunz, A. & Schraml, E.: Vers Bloed uit Egypte. *Pseudocrenilabrus multicolor*, na Jaren weer ingevoerd - Aflevering 1. Pp. 22-26.
- Geerts, M.: De *labrosus* eindelijk onderdak. Pp. 27-28.
37 (1) 2011:
- Dunz, A. & Schraml, E.: Vers Bloed uit Egypte. *Pseudocrenilabrus multicolor*, na Jaren weer ingevoerd - Aflevering 2. Pp. 12-16.
- Geerts, M.: Enkele cichliden van het Victoriameer. Pp. 24-28.

Cichlid News (Aquatic Promotions Inc., Miami, USA, www.cichlidnews.com)
19 (4) October 2010:
- KONINGS, A.: *Pseudotropheus elegans* rediscovered. Pp. 14-17.
- VAN HEUSDEN, H.: *Orthochromis* from Tanzania: Report of a Collecting Trip to the Malagarasi Basin – Part 2. Pp 20-27.
- ANDERSEN, T.: Observations on *Limnochromis staneri* POLL, 1949. Pp 6-12.
20 (1) January 2011:
- STEEVES, G.: *'Haplochromis' cyaneus* SEEHAUSEN, BOUTON and SVENNES, 1998. Pp. 20-23.
- KONINGS, A.: A new genus for an old mbuna. Pp. 31-33. (*Abactochromis labrosus*)
- DEMASON, L.: What's new. Pp. 35-36. *Ctenochromis horei, Tropheus moorii, Pseudotropheus elegans, Labidochromis caeruleus* 'blue-white', *Lethrinops* sp. 'longipinnis ntekete', *Mylochromis* sp. 'lateristriga makanjila', *Tropheops* sp. 'mauve yellow', *Lethrinops marginatus*.
- Anon.: Parting shot. p. 38. Photo of *Cyathopharynx foae*.

DCG-Informationen (Deutsche Cichliden Gesellschaft e.V.; ISSN 0724-7435; www.dcg-online.de/noFrames/files/index.html)
41 (10) 2010:
- MORGENSTERN, R.: *Astatotilapia calliptera* (GÜNTHER, 1893). Der "andere" Malawisee-Cichlide. 2. Teil. Pp. 243-248.
41 (11) 2010:
- WUKASCH, H.: Vergessene Schönheiten: Victoriasee-Cichliden. Pp. 258-266.
41 (12) 2010:
- SCHRAML, E.: Heureka, der Eureka! Pp. 274-278.
- GABLER, G.: Fern der Zivilisation: M'Buna Bay Lodge. Pp. 290-293.
42 (2) 2011:
- SPREINAT, A.: *Aristochromis christyi*: der "edle" Räuber aus dem Malawisee. Pp. 25-36.

Die Aquarien- und Terrarienzeitschrift (DATZ) (Ulmer Verlag; ISSN 1616-3222; www.datz.de/)
63 (12) 2010:
- SCHRAML, E.: Buntes für jedermann. Pp. 4-6 in *Aquarien-Praxis*.
64 (2) 2011:
- STAECK, W.: Empfehlenswerte Buntbarsche für mittelgroße Aquarien (I). Pp. 10-13.
64 (3) 2011:
- STAECK, W.: Empfehlenswerte Buntbarsche für mittelgroße Aquarien (II). Pp. 28-31.
- SPREINAT, A.: Weg mit den Großrevieren! Pp. 4-6 in *Aquarien-Praxis*.