

CICHLIDAE

Spring 2023

Volume 44, No 1



The British Cichlid Association:



Professor George Turner – President



Brian Downing – Chairman: britishcichlid.chairman@gmail.com



Mark Breeze – Secretary: britishcichlid.secretary@gmail.com



Thom Williams – Cichlidae Editor:

britishcichlid.cichlidae@gmail.com

Vacant – Technical Editor – please email the chairman



Peter Clarke – Publicity Officer: britishcichlid.publicity@gmail.com



Membership Secretary – Mark Jones:

britishcichlid.membership@gmail.com

Treasurer (vacant) – please email the chairman

Cover photo: *Lethrinops* sp. 'Chilingali' by George Turner

CICHLIDAE

Spring 2023

Volume 43, No 3

CONTENTS

- 4 Notes from the Editor
- 5 *Lethrinops* sp 'Chilingali' by George Turner
- 14 Recent Research Review by Ian Watson
- 16 Aquariums and the Dreaded Utility Bill by Brian Downing
- 21 *Cryptoheros spilurus* by Teresa Clare
- 25 The trade in wild caught fish: will it be banned in Scotland by Ian Watson
- 32 Chairman's Corner

The views expressed in *Cichlidae* are those of the individual(s) concerned and not necessarily those of the Editor or the British Cichlid Association. While every attempt has been made to ensure accuracy, The British Cichlid Association and its contributors disclaim all liability for any loss, injury, or other problem arising from the use of information contained herein.

Unless otherwise stated, *Cichlidae* remains the copyright of the British Cichlid Association 2022. All rights reserved. None of this publication may be reproduced, transmitted, or stored in an information retrieval system, in any form or by any means, without the express permission of the copyright holders.

Notes from the Editor

Since December, we have experienced a few very cold spells (well for the UK anyway) and this will make any people reconsider the number of aquariums they wish to maintain, especially with the ongoing energy crisis and the often astronomical bills we must all be receiving. To this end our Chair, Brian, has written about his experience and expense in running his fishroom; interesting reading indeed. We are also honoured that our President, George Turner has provided a fascinating article about the *Lethrinops* species found in lake Chilingali, a small satellite lake of lake Malawi. It is important we maintain this species which is now on the brink of extinction, if not already extinct. Teresa Clare has provided a great article on *Cryptoheros spilurus* in the wild and Ian Watson has highlighted the concerning events in Scotland which may see the banning of keeping wild fish and a severe limitation on what will be available in the future. It makes worrying reading.

As always, text may be submitted hand written or typed and sent by mail or electronically to the editor at: britishcichlid.cichlidae@gmail.com.

All illustrations, photos and/or drawings, should be submitted to the editor separately in high-resolution electronic format (.jpeg, .tif). Original images may be submitted to the editor for conversion into electronic format. Photographic contributions without text are also welcome. Articles and images published in *Cichlidae* remain the intellectual property of the originator (author, photographer, artist etc) and may not be reprinted without the contributors' written permission. All material should be submitted to the *Cichlidae* Editor using the contacts provided above.

Thom

***Lethrinops* sp. 'chilingali'**

George Turner



***Lethrinops* sp. 'chilingali' male in aquarium: the iridescent blue-green breeding dress is clear, but other colour elements are rather subdued.**

Lethrinops sp. 'chilingali' is a Lake Malawi cichlid that has never been found in Lake Malawi and is probably extinct in the wild. I first discovered the species in 2004, along with Martin Genner, now a Professor at Bristol University. We had been in Malawi to sample pelagic cichlids: *Rhamphochromis* and *Diplotaxodon*. On a previous trip, we had seen Lake Chilingali from the air, flying from Lilongwe to Likoma Island and thought it would be interesting to visit sometime. We arrived late in the afternoon, and poked around with handnets in the shallow areas, and didn't find much of interest, but as we were leaving, we noticed some fishermen using a seine net and stopped off to see what they got. It included tiny *Rhamphochromis* with orange lower fins, suggesting they were adult males. We photographed and

preserved some specimens, but obviously it was interesting enough to come back the next day! As well as the *Rhamphochromis*, we also found specimens of *Lethrinops* that looked a lot like *Lethrinops lethrinus*, but were mature at very small sizes. Over the next couple of years, Martin got live specimens of the *Rhamphochromis* back to our lab at Hull University, and carried out experiments testing the Chilingali fish against a 'main lake' population of *Rhamphochromis longiceps*. If the main lake males were much bigger they dominated the smaller chilingali ones, but if they were around the same size, the females of each kind always mated with males from their own population, so we reckoned this was good evidence they were different species and wouldn't mate with each other if they lived in the same place. We published this, along with lots of morphological and genetic data in the journal "Proceedings of the Royal Society of London B" in 2007. Around that time, I moved to Bangor University and I revisited Lake Chilingali in 2009, with another team. We got hold of live *Lethrinops* from Lake Chilingali from Stuart Grant's collecting team, and my PhD student Alexandra Tyers did a similar mate choice experiment comparing these to *Lethrinops lethrinus* from Lake Malawi, at Mazinzi Reef. Again, fish of each population preferred to mate with their own kind. It took a long time to get the *Lethrinops lethrinus* to breed and for us to rear young to about the same size as the chilingali fish so we could carry out the experiments. This paper came out in the journal "Evolutionary Biology" in 2014 and included data on morphology, genetics, diets etc collected by undergraduate students on the expedition. Anyhow, we were now pretty confident we were dealing with a species unique to Lake Chilingali: it has still never been found in Lake Malawi.



***Lethrinops* sp. ‘chilingali’ male in aquarium: the angle of the light doesn’t show off the metallic green colour, but the other elements of his breeding dress are clear.**

So, how come I said it was extinct in the wild? I need to explain the background to the lakes. When we visited Lake Chilingali between 2004 and 2009, there was a single large lake, about 5.5 x 1.5km located about 12km west of Lake Malawi, inland from the town of Nkhotakota. You can still see this on Google Earth’s satellite image from November 2010 (you can go back in time on Google Earth!). It looked like this on Malawi’s national maps dating back to the 1990s, but maps from the 1880s up to the 1980s told a different story: there were several lakes in the area, the two biggest being called Chilingali and Chikukutu (or something like that: Chiningara and Chukuputu and among other alternative spellings!). The lakes lay on the Kaombe River, which flowed north through Chikukutu and into Chilingali, before running down some rocky rapids into a fertile lowland valley. In the 1990s, a dam was built at the top of the rapids to create a single larger lake. I was told that the dam was supposed to be used to control the flow of water downstream to irrigate the rice plantations that had been

cultivated in the valley below: but I couldn't see any mechanism for controlling the flow! Anyhow, it established a sizable lake exploited for fishing by the local community.

But when we visited in 2009, it was clear that the dam was eroding. We wrote to contacts in Malawi, and wrote articles about it, but nobody did anything and the dam broke sometime around 2011 or 2012. You can see smaller separate lakes on the Google Earth image from 2013. I finally managed to visit the area again in 2016, and we found at least 3 very small shallow weedy lakes. We paid local fishermen to go fishing and show us their catch, but there was no sign of the *Lethrinops* or the *Rhamphochromis*. When I showed them photos, they recognised the fish, but said they hadn't seen them since the dam burst. There were other fish left, like *Oreochromis shiranus*, *Astatotilapia calliptera*, *Pseudocrenilabrus philander*, *Clarias gariepinus* and various small barbs (*Enteromius* sp.), but no sign of the endemic cichlids. Then around 2020, I had heard that the Malawi Government were rebuilding the dam and now it is back to much as it was in 2004-2009. I knew there was a trip to the area in spring 2022 with colleagues from Antwerp University and Chancellor College Malawi, and they collected specimens: definitely no sign of the *Rhamphochromis*, but there was something that looked a lot like *Otopharynx tetrastigma*, which had never been seen in the lake before. Maybe it had been accidentally introduced along with tilapia in some attempt at 'restocking' the lake. I couldn't see any definite *Lethrinops*, though. Anyhow, we need to take a proper look some time: we have breeding stocks of both the *Lethrinops* and the *Rhamphochromis* in captivity, and now there are some in Chester Zoo as well. If it does turn out that neither species remains in the wild, maybe we can help to restock the lake with its unique native species.



***Lethrinops* sp. 'chilingali' females and a subdominant male showing characteristic broken horizontal stripes. Lowest fish is in late stages of mouthbrooding.**

So what do we know about *Lethrinops* sp. 'chilingali'? We've looked at the stomach contents of some of the specimens we sampled in 2009, and they'd mostly been feeding on chaoborus larvae and pupae ('glassworms'), along with cladocerans (daphnia) and other larger invertebrates, including dragonfly nymphs and caridinid shrimps. We didn't find much mud, which suggested they might have been feeding more in midwater than is usual in *Lethrinops* species, which are typically bottom feeders that randomly pick up bits of mud or sand and sift out prey items. The behaviour of the species in wild has not been observed, as the water of Lake Chilingali was highly turbid when visited during the original collections.



***Lethrinops lethrinus* is very similar to *Lethrinops* sp. 'chilingali', but has a longer snout and females/ immature males show a stronger, less broken horizontal stripe. Photo: Alexandra Tyers.**

In captivity, females, non-territorial males and juveniles tend to aggregate in loose groups, feeding not only in the sediment, but on objects such as rocks or plants, or even at the surface. When you try to catch the fish, they often dive into the sand, turning sideways and completely burying themselves: this has been reported to occur in the wild in the Malawian cichlid *Fossorochromis rostratus*, but not in any other species, so far as we know. Dominant males are territorial and actively court females in typical haplochromine style: fins wide open, body horizontal or head-up, making rapid darts to the spawning site and back to the female, with spawning taking place amid bouts of circling and quivering, while alternating head-to-anal-fin 'T-positions' on the substrate. Dominant male coloration and aggression vary a lot, appearing to peak when females are

approaching spawning, but are otherwise often quite subdued. During persistent bouts of courtship or aggression, the dark elements of the male colour are emphasised, particularly the lachrymal/eye stripe, dark pelvic and anal fins, dark upper and lower margins of the caudal fin and even faint vertical barring on the flanks. Even in a large tank with a high density of fish, there is usually just a single dominant male: this is similar to *Astatotilapia*, which tend to be solitary breeders. Communal lek breeders, such as *Oreochromis* will usually divide up a tank into numerous smaller territories and engage in frequent boundary disputes. This suggests that *Lethrinops* sp. 'chilingali' were probably not communal lek breeders in the wild. I've never seen them build any kind of spawning pit or structure when a sand or gravel substrate is provided: dominant males usually try to lead females to a slight depression near to an object such as a rock or piece of wood: in a bare tank, the focus would probably be the tank bottom near one of the corners or a wall near a heater or filter inlet. This is very different to reports of *Lethrinops lethrinus* where complex bowers have been recorded in the field, out over open substrate. In *Lethrinops* sp. 'chilingali', the construction of the depression seems almost haphazard: I've not seen males show consistent bouts of digging. Instead, they spend most of their time chasing, then returning to the territory focus next to the rock/object. When they come back to their territory 'focus', they often make a 'feeding movement' of picking up a mouthful of substrate, moving forwards and ejecting it through the mouth and/or opercular openings at a slight distance away. This occurs all over the vicinity of the side of the object they are defending, but there seems to be a slight bias towards a certain point up against the object, which almost accidentally becomes a shallow depression. Females are maternal mouthbrooders, brooding young until they are capable of independent feeding. There is no indication that females guard free-swimming fry or permit them to return to their mouths. As fry complete the

absorption of the yolk, they show through the female's buccal membrane as a dark area, but she does not develop the 'warpaint' typical of fry guarders, such as *Astatotilapia* or *Oreochromis*: dark eyes, lachrymal stripes and forehead stripes. This non-guarding behaviour is similar to other known shallow-water *Lethrinops* species.

In captivity, *Lethrinops* sp. 'chilingali' thrive in large open tanks with a sandy bottom and a few rocks or plastic plants. They'd probably be fine with tough plants like *Anubias*, hornwort or Java Fern. I've not tried them with softer things like vallis. If you need to keep them with other fish species, they are fine with *Rhamphochromis* sp. 'chilingali', but I would avoid keeping large numbers of aggressive mbuna or *Astatotilapia calliptera* which would be likely to intimidate them. I would also steer clear of morphologically similar species, such as *Lethrinops lethrinus*, *Protomelas kirkii* / *P. similis* or *Otopharynx tetrastigma*. The males of these would probably compete and you might end up with just one dominant per tank and this might lead to hybridisation. Other smallish, peaceful sandy shore Malawi cichlid species might be OK, but not many of these are common in the aquarium trade. More common peaceful rock species, such as the smaller *Copadichromis* of the *C. mbenjii* group might work. *Lethrinops* sp. 'chilingali' aren't really very predatory, but they are lively. Other suitable tankmates would include lively hard-water tolerant medium-sized shoaling fish like congo tetras, larger danios, medium barbs, rainbow fish etc and various smaller catfish such as *Ancistrus* and smaller *Synodontis*. These might seem unnatural companions, but they naturally co-exist with equivalent species that are rarely seen in the aquarium trade: *Brycinus*, *Opsaridium*, *Enteromius*, *Labeobarbus*, *Labeo cylindricus*, *Synodontis njassae* etc. I would avoid slow-moving species or fussy feeders, like mormyrids and spiny eels. Like other Malawi cichlids, they are happy with 25-28C and neutral to alkaline water: I live in a soft-water area, so I usually buffer with bicarb

to prevent acidification. They eat standard flake food, but if you want to grow them quickly or breed them, they avidly consume defrosted bloodworm or mashed up prawn. As the females don't care for free-swimming fry, it is best to strip them when they are showing dark throats. Juveniles can be fed on ground up granule or flake food, although like all cichlid babies, they appreciate newly hatched brine shrimp. They don't seem particularly prone to disease: I have never seen them get Malawi bloat, although sometimes older fish might waste away. I've heard they can get *Lymphocystis*. They can be a bit jumpy, so the modern fashion for open-topped tanks is a bit risky.

Anyhow, *Lethrinops* sp. 'chilingali' is an attractive, small, hardy, fairly peaceful species with the added interest of being extinct in the wild. I am hoping to complete a formal species description soon.

References

Genner MJ, Nichols P, Carvalho GR, Robinson RL, Shaw PW, Smith A & Turner GF (2007) Evolution of a cichlid fish in a Lake Malawi satellite lake. *Proc. R. Soc. Lond. B.* 274, 2249-2257.

Turner GF, Ngatunga BP & Genner MJ (2019) The natural history of the satellite lakes of Lake Malawi. *EcoevoRxiv*. <https://ecoevorxiv.org/sehdq/> 131pp.

Tyers AM, Bavin D, Cooke GM, Griggs C & Turner GF. (2014). Peripheral isolate speciation of a Lake Malawi cichlid fish from shallow-muddy habitats. *Evolutionary Biology* 41, 439-451.

Recent research review

By Ian Watson

G. F. Turner, D. A. Crampton, B. Rusuwa, A. Hooft van Huysduynen · H. Svardal (2022) Taxonomic investigation of the zooplanktivorous Lake Malawi cichlids *Copadichromis mloto* (Iles) and *C. virginalis* (Iles) *Hydrobiologia*
<https://doi.org/10.1007/s10750-022-05025-1>

The authors set out to resolve some long-standing problems over the identify of *Copadichromis virginalis* and *C mloto*. Both are zooplankton feeders from Lake Malawi and are substrate spawners. There are some behavioural differences between the two species as *C virginalis* males build their spawning bowers on soft substrate against rocks whereas *C mloto* build theirs on more open sand habitat. In addition, *C virginalis* was reported to spawn from May to June whereas *C mloto* was reported to spawn from August to November. That said, the first problem to be resolved is exactly what is *C mloto*?

The original description of *C virginalis* by Iles included reference to two forms. Kaduna and Kajose. There were a number of problems raised by this. The original description for both species was based on specimens collected from Nkhata Bay, but differences were noted between the Kaduna and Kajose forms. Comparing the two species was complicated by the fact that while male breeding colour was noted for *C virginalis*, the type series of *C mloto* appears to be based on non-reproductive males making comparison between the species difficult. Given the observations on the spawning periods, this is a puzzling omission from the original

description. Based on the type series and morphological and genetic analysis of freshly collected specimens from a range of locations the authors were able to show that *C virginalis* Kajose should be assigned to *C mloto* but *C virginalis* Kaduna should remain as *virginalis*. Given how often the name *C virginalis* has been incorrectly applied has consequences not only for the aquarium trade but also for fisheries management. Genetic analysis shows that *C virginalis* is a “good” species with all the specimens examined falling into a single clade.

Not so for *C mloto* unfortunately as that seems to resolve into two clades, indicating that (at least on the basis of the specimens used on this analysis) there may well be two species included under that name. There is also the question of what exactly are *C sp* “firecrest mloto” and *C ilesi*? The authors do not have enough evidence to conclusively show where these two species should be assigned and suggest that *C sp* “firecrest” should be used as it cannot be positively assigned to any described species and might actually be a colour morph of *C virginalis*. They suggest that *C ilesi* is so close to *C virginalis* that it maybe be a junior synonym although further work would be needed to confirm that. There are also a number of other colour forms which need investigation and may be assigned to one of these two species or may be new species.

The authors also looked at when these species might have evolved. Genetic clocks tend to have a very wide margin of error but their best estimate is that they differentiated about 50k years ago (range 40-115 kya) which is a pretty short time in geological terms but does fit in well with the history of L Malawi. The last major refilling of the lake was about 100 kya which would have provided a significant expansion in new niches to cichlids to utilise and to evolve into new species.

Aquariums and the Dreaded Utility Bill

By Brian Downing

It distresses me that hobbyists are talking about emptying their tanks or closing their fish rooms. Money is tight these days but does an 80 litre tank really cost that much to run? Well, I'm no expert on power usage, but I'll try to shed some light on the power consumption. My entire household electricity bill for December (with sub-zero temperatures) was £200 for a 31 day month, and it is often under £100 during the summer. Of course, your bill will depend on the size of your home, local rates and power usage habits. I have a fish house with 20+ aquariums in a 25 year old draughty shed. It uses no gas, only electricity. So how much is my hobby costing me (other than fish and supplies)?

I've always been careful to check the wattage of anything that I buy for the fish shed. My dehumidifier uses 230 watts to run, but it isn't normally on all day. Most of the year it provides enough heat to keep the fish happy without the need for individual heaters. I did go to the appliance store a few weeks ago and found a more powerful model that would dry out the air the best. Luckily, I asked about the wattage. This model used 780 watts, more than three times the wattage of my current unit. So, let's break this down. My electricity is currently billed at 35.4p per kilowatt-hour, yours may be higher.

I'll compare all equipment from here on as if it runs 24 hours per day. The current (please excuse the pun) dehumidifier:

$(24 \text{ hours} \times 230 \text{ watts}) / 1000 \times 35.4 \text{ p per kilowatt hour} =$
£1.95 per day

New Turbo Model:

$(24 \text{ hours} \times 780 \text{ watts}) / 1000 \times 35.4 \text{ p per kilowatt hour} =$
£6.62 per day

That's quite a difference! One could argue that the new model might not have to work as many hours, but this is to illustrate a point.

So next, let's look at some other equipment that you might use.
Space Heater, 1500 watts (if run all day/night):

$(24 \text{ hours} \times 1500 \text{ watts}) / 1000 \times 35.4 \text{ p per kilowatt hour} =$
£12.74 per day, OUCH!

200-Watt Aquarium Heater (Thermostat running time each day depends on volume and air temperature)

$(24 \text{ hours} \times 200 \text{ watts}) / 1000 \times 35.4 \text{ p per kilowatt hour} =$
£1.70 per day **max if run all day**

Using a smaller wattage heater may be a false economy, as a lower wattage heater will need to be on longer to heat the same amount of water. In addition, the thermostat may become damaged and stick on permanently. Small air pumps may use as little as 3 – 8 watts, so they are fairly inexpensive to run (3p to 10p per day).

Now, let's look at my fish room. I did say it was a draughty shed but the insulation within works very well. I have 10cm thick insulation on all 4 sides and above, with no gaps (taped). I use thick rubber mats on the floor (Halfords interlocking workshop grade). Basically, the room is a giant cooler, only in

reverse. I can't emphasise this enough...GOOD INSULATION IS A MUST!



***Ptychochromis grandidieri* from Southern Madagascar – do we switch our focus to cooler temperature cichlids such as this.**

So, what does my fish room cost to run? Now back to approximate real running hours per day. Best case is in summer. My fish room is run by one 35-watt air pump, which runs 30 sponge filters with no problem. To purchase the correct one, I looked at the output per watt.

$(24 \text{ hours} \times 35 \text{ watts}) / 1000 \times 35.4 \text{ p per kilowatt hour} = 30\text{p}$
per day, every day = £9.30 per month.

This, plus my dehumidifier is all I use for heat in summer. Assuming that the dehumidifier is turned on by the humidity level for 12 hours per day, my cost is just over £30 per month, plus the pump at £9.30, for a total cost of less than £40 per summer month for 20-25 tanks.

In winter there's a different story. During the shorter days of the year, I run an 18 watt LED light for 3 hours per day to simulate a longer day and encourage spawning. In summer I rely on light through the triple glazed window.

$(3 \text{ hours} \times 18 \text{ watts}) / 1000 \times 35.4 \text{ p per kilowatt hour} = 2\text{p per day, every day} = 62\text{p per month.}$

Except for when the temperature is less than 10 degrees C, I use no additional heat and my room stays at 23-24 degrees C. With outside temperatures under 10 degrees, I do add individual heaters to every tank, which is far from efficient. I have 2300 total watts of individual heaters plugged in for a few months per year as an emergency measure. I'd have a scary bill if they always stayed on.

$(24 \text{ hours} \times 2500 \text{ watts}) / 1000 \times 35.4 \text{ p per kilowatt hour} = 30\text{p per day, every day} = £21.24 \text{ per day IF they were on full time.}$

Apparently, they're not on that often as I used 661 Kilowatts in a very cold December (my average usage is 358 Kilowatts/month), 303 watts over the average, or £107 over average. I know that we stay in, watch more TV, electric blankets, etc. when it's freezing outside, so not all of this is going into the fish room. But, for the sake of argument let's blame the fish room for an extra cost of £3.45 per day (plus the summer cost of £1.33 per day). So, what is the total? For my setup, the maximum total would be £73.03 heaters, 62p

lighting, £60.45 dehumidifier, 9.30 air pump = £143.40 for a sub-zero month for a fish room of over 20 aquariums. That's less than £5 per aquarium per month. I know my actual fish room cost is actually way less than that, as my entire electricity bill was £200.



...or do we continue to maintain warmth-loving favourites such as the Uaru

What can you do to minimize the running cost of your aquariums? Tight covers on top, lower temperature a bit, polystyrene between the aquarium and the wall, use natural light are all good suggestions. Place a towel over the aquarium at night? I'm sure that you can come up with many more ideas to save electricity. So back to the original question? What's the real monthly power cost of your 80-litre tank? £3 for the air

pump, £1 for the low wattage LED light (3-4 hours per day), £9 for the heater, and £4 for your Eheim canister filter. That's only £17 per month, much cheaper than going just once to the movies! I don't know about you, but I'm doubling the size of my fish room this summer!

***Cryptoheros spilurus* in Belize**

Teresa Clare

I spent a year in Belize (1984-85) working as scientific advisor on fishes (and general assistant) for a film project there. I had previously been carrying out research for my PhD on cichlid behaviour and ecology in Panama, and while in Belize I collected ecological data on 11 cichlid species found there. While I did present this data at a conference, I never got around to publishing any of it as my life changed direction at that point. However, I recently found some of my original hand written field notes and I thought some information on *Cryptoheros spilurus* in its natural habitat might be of interest and compliment Trevor Greenfield's recent article about this attractive species.

Belize is a small country but has a large range of different habitats in which cichlids are found. These include fast flowing upland streams and rivers, lowland limestone streams, wide turbid rivers, large freshwater lagoons, savanna floodplain pools and brackish coastal lagoons. Many of these habitats have very clear water where it is easy to observe cichlid behaviour.

Cryptoheros spilurus (which at the time I was calling at first *Cichlasoma spilurum* then *Archocentrus spilurus*) is the smallest and most widely distributed cichlid in Belize, being common or abundant and one of only two cichlid species that occurred in all of the habitat types I looked at, except the brackish mangrove lagoons, where *Mayaheros urophthalmus* was the only cichlid present. The local name for *C.spilurus* was

“scaly fish” (a name shared with *Rocio octofasciata*, the jack dempsey).

Along with *Trichromis salvini* (the other most widely distributed species), but no other cichlids, *C.spilurus* was abundant in fast flowing upland streams to an altitude of nearly 500m above sea level, no cichlids were found above this. These streams have sections of shallow, fast flowing “riffles” interspersed with deeper, slower moving pools. It was in these pools and backwaters away from the fastest flow that the cichlids were found. The pH ranged from 7.5 to 8.5, the water was clear and relatively cool (22-24 C) and there was abundant algae growing on the rocks, but no aquatic macrophytes.



Photograph by the author

The lowland streams that flowed through limestone caves were also quite fast flowing and rocky with filamentous algae growing on the rocks in the faster riffle sections and *Cabomba* and

Eleocharis in the slower regions. The water was clear with a turquoise/bluish appearance, the pH was 8 and the temperatures around 26-28 degrees C. The deep freshwater lagoons were connected to main river channels and had quite fast flowing water in the wet season (June to November) but very little flow during the dry season (February to May). These lagoons contained huge stands of submerged aquatic macrophytes and water lilies. The water was very clear and the pH was 7.

C.spilurus was very abundant in permanent but shallow floodplain pools in the savanna regions during the rainy season when these were periodically connected with main river channels, but only rarely found in these pools when they were isolated from the main rivers for longer periods during the dry season. The temperature was around 32 degrees C, the water turbid and the pH was 6.5.



Photograph by the author

When not breeding, *C. spilurus* was seen in shoals or loose aggregations, both in open water and close to the substrate. They fed mainly by browsing over the surface of stones, rocks, mud banks, roots and aquatic vegetation. In streams they very often turned over small stones and leaves to look for invertebrate prey. In lagoons I observed them breaking off small pieces of aquatic plant stems. The gut contents showed that algae, both filamentous and unicellular, as well as detritus and aquatic macrophytes formed a large proportion of their diet, but they also ate aquatic insect larvae. The proportions of these items varied by location and seasonally, with far more invertebrates consumed during the rainy season in all habitats. In the savanna ponds fine detritus mixed with unicellular algae was the main food item, in the fast-flowing streams filamentous algae and invertebrates predominated while in the big lagoons a large amount of aquatic plants were eaten.

Pairs and single females with fry, and females with ripe ovaries were found in savanna ponds throughout the rainy season, while in lagoons and rivers, along with most other cichlids, they started to breed at the beginning of the dry season. A female ready to breed turns very dark, almost black, and seems to initiate the courtship behaviour, displaying to attract males. Spawning occurred in holes and rock crevices, occasionally directly on the substrate, and in submerged kingfisher nests in vertical mud banks. Single females with fry were seen more frequently than pairs, suggesting that this species may not be strictly monogamous.

C. spilurus is reported to reach a size of 12cm, but the sexually mature individuals I measured were smaller, males averaged 7.26mm SL (standard length, measurement excluding caudal fin) and females 5.05 cm SL.

[10. References - Exotic pets - Scottish Animal Welfare Commission: interim report - gov.scot \(www.gov.scot\)](#)

The interim report provides the evidence on which the findings and recommendations are made. You need a good hour or two to read the interim report. Several things come out of the interim report. One is that the range of stakeholders consulted is heavily biased towards animal welfare groups. OATA, the UK trade body for ornamental fish, was consulted but only after they had pushed hard to be included. I could find no evidence that any Scottish aquarists or aquarium groups were consulted. It may come as no surprise that the final report is slanted at controls on the industry to restrict or ban the import and sale of wild caught fish. Having seen some of the references used in the interim report I am of the opinion that the findings of some of the peer-reviewed papers are overstated. There is also a tendency to generalise from a single event of bad practice to cover the entire industry. As OATA have pointed out, nobody could possibly run a business with some of the mortality rates quoted.



The banning of the keeping wild cichlids would surely have led to *Paretroplus damii* eventually becoming extinct.

Several actions are recommended. A complete ban on the trade in wild caught animals is one of them. This does not specifically refer to the trade in ornamental fish but they could quite easily get caught up in a ban simply by being overlooked. MSPs could be sold the idea of a ban with things like primates leading the way and with fish just tacked on as an apparent afterthought. More wide-reaching in principle would be a ban on the trade in “exotic” pets. Given the lack of a definition, that could be used to include practically anything. The worst and most far-reaching proposals would include the keeping of “exotic” pets. That could make it illegal to buy, sell or keep anything defined as an “exotic” pet. You may have spotted a problem here. Cichlids breed so what do you do with the offspring? There is the suggestion that anyone with a fish species which is banned can simply keep it until it dies of old age. Just so long as they don’t breed. This has already been a

problem in the US where some legislation implemented at the State level effectively banned any trade in endangered species. That was a real headache for anyone keeping corals under even half decent conditions as they keep on growing and growing. What do you do when a fish keeper dies and their fish collection includes restricted species? I would want mine to be taken by an experienced aquarist, not an animal welfare organisation.

It was also recommended that consideration be given to licencing, not just of the trade but also for keepers of “exotic” pets. To have a pet shop in England and Wales you must have a licence and OATA has been fighting for some years to get this enforced and for inspection standards to be standardised so the trade is doing its bit on that front. They even have an accredited training scheme for local government inspectors. The trouble nowadays is the large number of internet traders some of which are licenced, many of which are not. Illegal wildlife trading used to be rife on public platforms but this has now largely retreated to closed forums or even the dark net for the really bad people.



The keeping or virtually all marine fish species could be banned in Scotland under new legislation

The problem that remains is that of unlicensed and often very shoddy traders selling on the usual websites. These get the trade and the hobby a bad name which can be used to bring in tight controls or even a ban on internet sales. The report seems to include shops which carry out sales from their websites in their consideration which lumps together responsible traders with backyard cowboys. How this would affect aquarists selling excess stock via forums or even at club

meetings is not clear but, from what is said about the trade in reptiles, it can be inferred that some sort of restriction is recommended.

Vets play a role in this too. I find it very rare to meet a vet who knows anything much about keeping ornamental fish and yet they tend to promote themselves as an authority. The report took evidence that keepers of “exotic” pets should have access to qualified vets although it is not clear whether this would be compulsory or not. I am not very optimistic about finding experienced fish vets. Those who are well known tend to be experts in the diseases and welfare of aquaculture organisms rather than experts in ornamental fish.

So, what can be done? This is a matter reserved for the Scottish Parliament so only those living in Scotland can respond directly. Writing to MSPs can be a worthwhile exercise but you do need to have done your homework thoroughly beforehand. You can find your MSP here:

[Current and previous Members of the Scottish Parliament \(MSPs\) | Scottish Parliament Website](#)

I have written to my local MP on this issue when it looked like the UK government might bring in controls on “exotic” pets and she passed it on to the Minister who sent back a letter in reply saying the (then) government had no plans to introduce controls. Things can change and governments can change so I will need to keep an eye on any future developments. Some years ago, I wrote to three Scottish MEPs when the issue was developing at the European level. One did not reply, one replied that as I was not a constituent they could not reply and the third replied that while he was still looking at some form of controls on the trade, he thanked me for raising some issues of which he had not been aware, notable the role of the

ornamental fish trade in supporting livelihoods in developing countries. It is always worth a try. If you stay silent and do nothing, those opposed to the trade in or the keeping of “exotic” pets will not do so. If you think nothing needs to be done, just consider the first recommendation from the final report: *A single list of permitted species of animal that may legally be kept as pets should be compiled, drawing on the experience of other countries where such lists have already been compiled and applying it where relevant to Scotland.* Are you happy to be keeping only farmed angels?

The whole issue raises some interesting issues. While controls over what can and cannot be sold in Scottish pet shops is developed to the Scottish Parliament, controls on the import and trade of ornamental fish is still reserved to the UK government so under UK trade rules, the Scottish government cannot ban their import. That could lead to Scottish aquarists heading south of the border for their fish. While the current UK government is not considering controls on wild caught fish, that does not mean that a future government will not do so. Any legislation would be a quick and easy hit. After all, who would not want to protect cute and cuddly animals? The danger there is that fish could all too easily get caught up in the argument.



www.tropco.co.uk

Chairman's Corner

With the New Year came new challenges for the world, the UK, and indeed the aquarium hobby. In this issue we're covering the possible (well-meaning but possibly devastating) legislation of the pet hobby in Scotland, and its possible negative consequences on the keeping of aquarium fish. In addition, our utility bills keep increasing, forcing us to make tough decisions to save money. Also, of consequence to our club, and indicative of the hobby in general, is the unfortunate decision of the other fish clubs not to hold another joint Extravaganza this year.

The BCA is committed to holding a cichlid event in the latter part of this year, and is considering the possibility of holding a joint cichlid event and auction in the midlands or northwest in early September. If your local club would like to hold an event any time in the future with the BCA, please contact me directly by email. While we are on the subject of aquarist gatherings, I am honoured to be giving a talk at the East Anglia Cichlid Group on Sunday 23rd April. There will be two speaker presentations and an auction. All are welcome. I hope to see you there!

I am also happy to announce that our membership continues to grow, with well over 200 full and associate members. That's a far cry from our all-time high of 800 members, but much higher than our membership just a year ago. I hope that you are taking advantage of your full memberships and checking out our website, britishcichlid.org. Please join in on our Facebook discussions, review the online sales page and explore our huge library of over 100 Cichlidae publications free to download. Write an article for our quarterly publication and get a year's

free membership! Have ideas on how to make the BCA even better? Join our management committee and help shape the future for the BCA.

We hope to be adding online meetings as a membership benefit soon, however we need an Events Secretary to help get our online meetings going. If you would be willing to help, please contact me directly. This is an important step for the BCA, one we've never taken before. The main requirement is a good internet connection. The club pays for the online meeting and I already have the speakers, but my internet connection is definitely not adequate. Don't forget that all active committee members get a free membership while they serve.

Over the past few months, we have taken an online survey on Facebook and on the BCA website regarding the subject of hybrid cichlids. As you probably know, the BCA has long discouraged the keeping of hybrid cichlids...fish purposely cross-bred between different cichlid species. With their exaggerated features these hybrids have been viewed as deformed and un-natural, with potential problems with their health and well-being. In particular, the Flowerhorn and Parrotfish have become very popular with aquarists. But should the fish be kept in our aquariums, and supported by the BCA? The opinions of our membership were definitely in favour (97%) of continuing to discourage the keeping of hybrid cichlids. However, there were also some well thought out opinions to the contrary. It definitely appears that these fish are here to stay.

Their existence may be bringing people into the hobby, and those new hobbyists will need guidance. There's no denying the popularity of Flowerhorns, and a recent cichlid gathering in the USA found that the Flowerhorn competition was the most popular event of the weekend. Food for thought! For the time being we are continuing our policy of discouraging hybrids due to the overwhelming percentage of members opposed. Please

join in by voting and commenting via the website or Facebook group.

Kind Regards,

Brian Downing
BCA Chairman



www.wharfaquatics.co.uk

