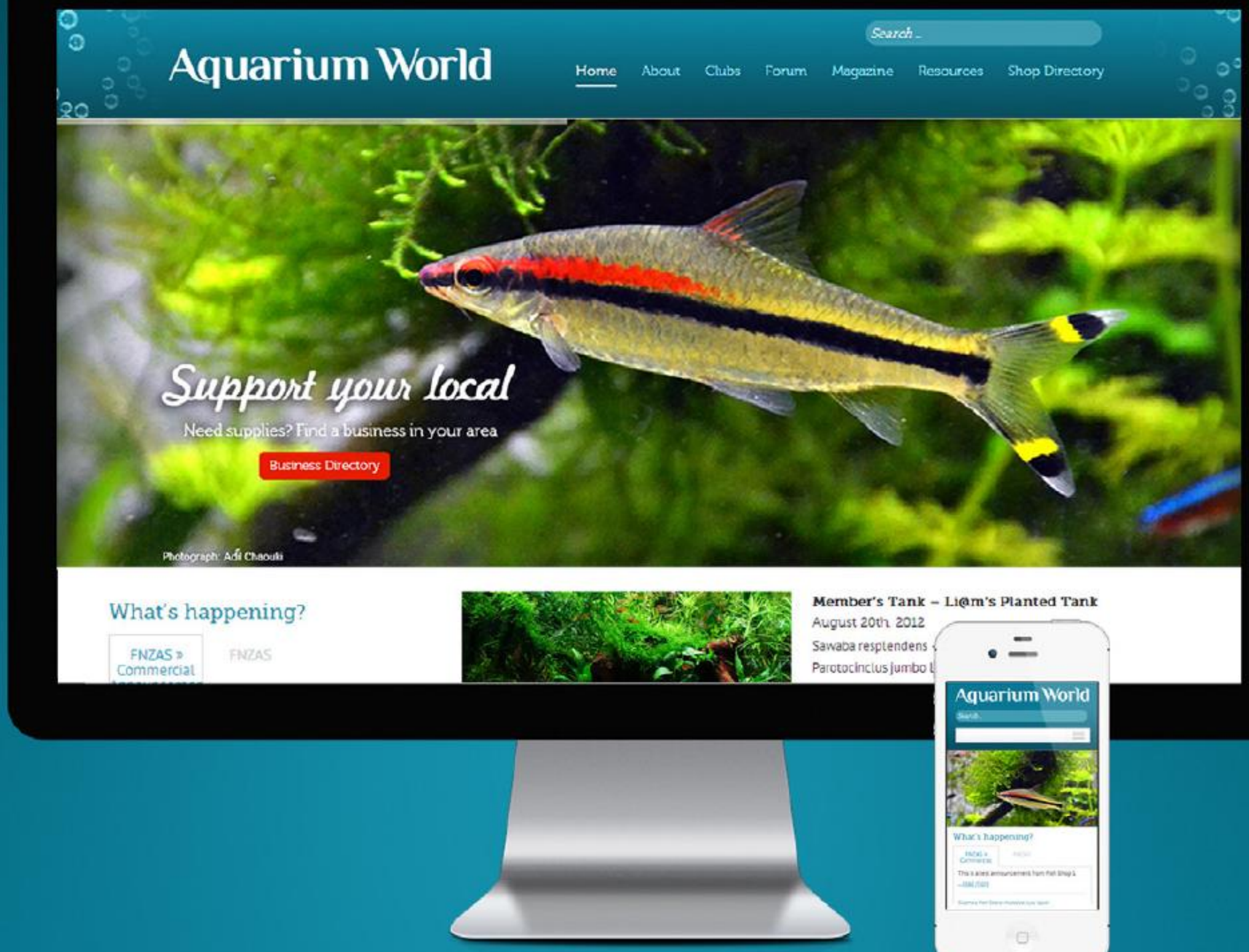
Aquarium World
magazine

Volume 60 Issue 3 February 2014

bumper pleco issue



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COVER
Female (top), juvenile female (middle), and male (bottom) Leopard cactus plecos *Pseudacanthicus* cf. *leopardus* (L114, LDA07)
Photos: Darren Stevens

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EDITORIAL

This issue we are starting something new. Once a year, we will have a special focus on a fish family. This issue, we are covering plecos and we have a rich selection of feature articles to showcase these popular fish. Our vice-president Geoff Haglund has recently returned from his second L-Number Days, an international catfish conference in Hannover, Germany, and he shares his experiences at the conference. We also provide a couple of articles on breeding plecos along with how to make a Gerd box for your fry.

Also in this issue is a very interesting shop tour from New Zealand's only specialist marine retail shop. This shop is new but is already establishing itself as an impressive new venture. There are exciting things coming for this shop and we will be closely watching it in the months to come to see how it develops.

This issue our interesting imports article looks at the wide variety of small attractive, well priced, and generally well behaved fish that are available from the importers.

If you live in New Zealand you will be certainly thinking about getting ready for winter, and if you have a pond, your pond also needs to be prepared for winter. This issue has a timely and important article about how to get your pond ready for the colder months to help ensure the health and wellbeing of the fishes and plants that you might be keeping there.

We hope you enjoy this issue.

Jennifer Hamlin
FNZAS Editor & President

L140 pleco juveniles
Photo: Darren Stevens

CONTRIBUTORS

Geoff Haglund

Geoff began keeping tropical fish in 2006. Since then his obsession with plecos has grown and he now has 24 tanks and 15 species. He constantly strives to create an environment for them to reproduce and he has successfully bred a number of desirable species. Geoff is vice-president of the FNZAS and an active forum member and contributor to the FNZAS website, Planet Catfish, and Pleco Planet

James Cooper

James started keeping fish early in life and had his own tank at five. At age seven he became fascinated with NZ Native fish when he 'discovered' a population in his local creek. James has worked as a commercial tropical fish farmer, then in commercial aquaculture in Australia, before returning to tropical fish retail. He is currently studying to pursue his passion for NZ Native Fish and Reptiles with a Bachelor in Environmental Management.

Adrienne Dodge

Adrienne has been in the hobby for 32 years. She has bred betta splendens and currently has a high tech planted rainbow tank. She recently spent seven months working for a specialist fish shop which she says has increased her knowledge and has given her valuable insight into the wholesale/retail industry and the challenges faced. Adrienne is the FNZAS Secretary and MAC member.

Robert Beke

Robert was born in Serbia and moved to New Zealand where he worked in the pet industry. Although his background is in chemistry he has been working as a professional fishkeeper since 1996. He currently has one tropical fish tank at home. His interests include ichthyology and particularly fish macro photography.

Darren Stevens

Darren is a marine biologist who has worked for NIWA for about 20 years. He regularly participates in sea trips for research surveys having been around much of New Zealand as well as Oman, and the Ross Sea, Antarctica. In his spare time he enjoys fishing, and is a particularly passionate pleco keeper. Darren has been an active participant in his local clubs and he is also vice president of the FNZAS.

Amelia Morris

Amelia is a Christchurch based 22 year old aquatics enthusiast with a particular interest in community and biotope tanks. Starting the hobby only 3 years ago, she has taken a keen interest in planted tanks and aquascaping. She currently maintains a South American cichlid tank, a South East Asian Biotope community and Tanganyikan shell-dweller tank..

Jennifer Hamlin

Jennifer is a lecturer of veterinary technology. She trained in the USA majoring in Neurobiology, Physiology & Behaviour with a degree in chemistry. She has been keeping fish since she was a child and has a particular interest in planted tanks. She is also current president of the FNZAS.

Caryl Simpson

Caryl has held various offices in the Marlborough Aquarium Club over 24 years. She was involved with the FNZAS as editor for 16 years, and archivist for 8, and is a founding member and global moderator in the FNZAS Fishroom forum. She currently has one tropical community 4ft tank and a pond.

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BACK ISSUES Caryl Simpson caryl@simtronics.co.nz

Every second year since 2009 there has been an L-Number days – an international catfish convention, held in Hanover, Germany. The convention is named after the identification number given to new pleco varieties before they are scientifically described. The 'L' standing for the scientific family Loricariidae to which all plecos belong. The 3rd International L-Number days was by far the biggest of the L-Number days conventions, with 164 participants from 15 countries.

This year's conference was focused on the Rio Xingu in Brazil and the small black and white L-Number plecos of the genus *Hypancistrus* that are found there. This focus is because of the Belo Monte Dam, a large hydroelectric dam being built on the Rio Xingu that will destroy vast amounts of land, and also potentially dry up part of the Rio Xingu known as the "big bend". Of course the "big bend" won't dry up straight away but in the dry seasons following the construction of the dam there will be significantly less spill over from the dam, in addition to the massive flooding upstream of the dam covering huge areas of rain forest and destroying both aquatic and land based habitats.

This article is not about the Belo Monte Dam, but some background information can be found here:
http://amazonwatch.org/work/belo-monte-dam
The "big bend" is home to several varieties

Geoff Haglund attends an international catfish convention in Hannover that leaves him

L-Number Dazed

of *Hypancistrus* that we love to collect such as king tigers *Hypancistrus* sp. L066 and zebra plecos *H. zebra*, L046. It is also a waterway that, in some cases, separates the home grounds for some fish species from their breeding grounds. Anyway back to the convention.

Day 1

Friday is registration day and the first of the talks.

Registration is always somewhat hectic, but much better this year than the 2011 conference; however there was no-one really directing the traffic, to speak of, so it took longer than had been anticipated. After registration was the opening dinner,

Hypancistrus zebra L046
Photo: Andrew Coffey

but it takes time to reassemble 160+ people and by the time everyone was seated in the conference room we were already behind schedule.

The first talk was about the biodiversity in the clear waters of the Brazilian shield, which was very informative to a non biologist such as myself, and this was complimented with the second talk which was about the issues surrounding the Belo Monte dam complex and the programmes that have been established to document the diversity and distributions of the fishes in the lower Xingu. The third talk for the evening was

Hypancistrus sp. L066
Photo: Aakash Sarin

by Julian "Jools" Dignall who is the owner of the PlanetCatfish website (http://www.planetcatfish.com), in regard to an initiative he has started to raise funds to undertake some complementary research on the Rio Xingu, in effect creating a bridge between the aquarist and scientific communities.

The concept of a closer relationship between an aquarist and an ichthyologist is not as strange as it sounds, as more and more aquarists strive to understand the ecosystems that they create.

It was a great evening where information was presented in such a way as to be both informative and thought provoking.

Needless to say we ran over time by an hour or so. This did not, however, shorten the post opening night drinks and there were some people who were not seen again until late the following day. I was not one of those people, but it did make it obvious to me that these types of events happen several times a year in the northern hemisphere, so it is a very social event for a lot of the people in attendance, who have these speakers attend their local events.

Day 2

Saturday was already off to a bad start with some of the participants still wandering into the conference hall at 9:15am, and we had not yet started. This did not bode well for the afternoon / evening talks as the schedule of talks ran right up until dinner at 8:00pm

The first talk titled: "An Eschatological Look at the Xingu's Big Bend: Volta Grande" was a great talk which got the grey matter working. These scientific discussions were about informing and making you think. As with all scientific discussions, a number of facts were presented and a number of hypotheses were proposed. Essentially the

The big bend section of the Rio Xingu
Image: https://www.google.com /maps

speaker told us that not enough is known about this area to scientifically describe it. After all it is only through scientific study that the impact of the Belo Monte dam project can be quantified.

A pilot expedition to the lower Xingu was completed in 2012, with the help of the local fishermen. The full project to document and analyse the diversity of fishes, crustaceans, molluscs and physical habitats in the lower Xingu has been funded by the US National Science Foundation, and the first man made changes to the Xingu's natural flow are expected to occur sometime in 2014 when the Pimental dam's reservoir begins to fill, so time is running out to understand this unique ecosystem.

Moving on, and even further behind time the next talk was an interesting talk on the "evolution" of the ornamental fish collection and export industry from the Rio Xingu.
In the early days (1998!) due to electricity supply it was difficult to collect fish for longer than 10 days if you did not want to lose the fish caught in the first few days, and economical freight rates were only possible if the shipment was upwards of 300kg in weight. Plecos were often added to shipments as fillers to reach the weight requirements.

A benefit of having an exporter who was able to export directly from the river to Germany was that the catch locations were easily able to be confirmed, and this helps with the identification of a species.

Today exporting and importing restrictions are far greater and require more accurate identification of the species being exported. This has also bought additional costs to the exporter, and has led to the closing of many smaller export facilities. Additionally the

cost of scientific collecting trips has greatly increased and in conjunction with the slim budgets of the scientific institutes there are far fewer scientific collections being made.

The next talk was a look at the behaviours that had been observed in plecos that live in "high flow" water, which the "big bend" has an abundance of. Pleco shape and colouration has been driven by evolution. Their body has been shaped to allow water to pass over it, and their colouration patterns make them nearly invisible to birds looking through the rippling water. High flow water is necessary for these specialised fishes.

An interesting video was shown of a large *Panaque* (?royal pleco) sitting in the current. A predator (in the form of a diver) approached and the *Panaque* raised its large dorsal fin, much like a sail on a sail boat, and with almost no other effort it was whisked away by the strong current. The diver was secured to a rock, via a rope, so that they could obtain the footage. The question of course is what happens when the currents are no longer there?

In the aquarium there are no predatory pressures but in nature, when a biotype changes the old inhabitants will move away, starve, or be eaten. Will this be the fate of the resident plecos when the Belo Monte dam is completed? In the wild many pleco species are visible in the day and have large "flight distances", but in the aquarium this is usually not possible and the behaviour of the fishes changes. The "escape" happens a different way with panicked, strong beats of the caudal fin and banging into the décor and glass, instead of being carried away and around obstacles by the current.

The next talk was an extensive overview of the genus *Hypancistrus*. This talk covered the distribution of the species, their natural waters, temperature, breeding, dietary requirements and was really a concise overview of the species that were the focus of the conference.

Following on from this was a presentation on a scientific study of the genus *Hypancistrus*.

Representation of the Belo Monte Dam project
Image: https-www.flickr.com-photos-pacgov-6171897177-sizes-l-

Baryancistrus xanthellus
Photo: Jennifer Hamlin

There are only six scientifically described species of *Hypancistrus*. This genus is unique due to their exuberance and diversity of colour. Often colour and patterning are used by aquarists to identify different varieties (L-Numbers), but these are not always useful characters to separate out different species. For example, Gold Nugget Plecos *Baryancistrus xanthellus* have three distinctive colour morphs but they are all thought to be the same species. The speaker also referred to a case study from the Uatuma River, were 22 plecos with several different colour patterns were all shown to be the same species.

In the last few years a lot of field data has been collected and the real distributions of some forms of *Hypancistrus* have been established. This data shows the colour forms of the *Hypancistrus* evolving through different locations in the river. But are they the same species? Are they hybridising? Are all the "worm lined" *Hypancistrus* the same hugely variable species?

The following talk was from a commercial breeder of *Hypancistrus zebra*. This was interesting in regard more to the techniques of fry rearing than it was to what was being bred. In essence a giant version of many fish rooms, with a commercial precision that not many aquarists achieve. This talk generated quite a number of questions as the scale of this operation has not really been displayed before.

Hypancistrus sp. L236 was the topic of the next three talks. L236 is a hotly debated variety, which was originally imported from the Rio Iriri, which in itself is contentious as a previous talk regarding the scientific study of the genus *Hypancistrus* found that there are no *Hypancistrus* in the Rio Iriri. Fisherman sometimes give false locations for their catch in order to preserve the secrecy of their fishing grounds. The talks also covered the line breeding and husbandry of L236.

Flash pleco *Panaqolus albivermis,* L204 a member of the proposed 'white spotted pleco' species group
Photo: Darren Stevens

At this point it was already after 9:30pm and the open panel discussion was cancelled as there was just no time left.

Some interesting bits from Day 2:

About 500 fish species inhabit the Rio Xingu and approximately 25% of these are endemic to the area.

Some Discus are collected at a depth of 20 metres.

Instead of the waterfalls in the "big bend" separating different species, the type of rock may actually form the natural boundaries.

Day 3

Sunday started with a very complete talk about the genus *Panaqolus*. The genus includes many small species that used to be included in the genus *Panaque* such as clown plecos, tiger plecos, and flash plecos, and is related to the genus *Peckoltia*. I found this talk quite exciting as *Panaqolus* are one of my personal favourites. The speaker proposed that the *Panaqolus* genus be split into the following groupings: Dwarf, Lyre tail, White Spotted, and the tigers.

The next talk was potentially the most thought provoking - an obvious intention by the speaker. The talk mainly focused on misinformation in the hobby, often due to cross breeding by aquarists to produce desirable colour patterns and/or a lack of scientific information.

Pleco guru Ingo Sediel presented Geoff Haglund with the book 'Amazon: Below Water' written by Oliver Lucanus, a stunning book showing life below the surface in the Amazon. Geoff was presented this book for travelling all the way from New Zealand to attend the second L-Number Days conference in Hannover, Germany.

Ingo Sediel, left, who gave presentations on the genus *Hypancistrus* sp. L236 at the conference.

Photo: Andreas (Andi) Tanke

Iquitos tiger female, *Panaqolus changae*, L226, a member of the proposed 'tiger pleco' species group
Photo: Darren Stevens

Clown pleco male, *Panaqolus* aff. *maccus*, a member of the proposed 'dwarf pleco' species group
Photo: jfishfanatic

The most memorable part for myself, was the hypothesis that natural colour evolution is occurring rapidly in front of our eyes. If this talk was at the start of the conference then there may have been a different reaction, but since this idea had been touched on in other talks it really got you thinking!

Following this talk there was a number of breeders' talks presenting interesting species they had bred. There were some interesting hints and techniques they had tried to trigger breeding and then to raise the offspring.

My talk was about the benefits and limitations of breeding Plecos in New Zealand. If it made some people think how lucky they are, then that was good enough for me.

By the time I spoke we were already running a couple of hours late, and people had to leave to catch flights etc.

In Summary; the 2013 conference was better than the previous one, incredibly informative and thought provoking.

This conference is getting better every time it is held. (Unlike my German…)

Geoff Haglund
- a sucker for suckerfish

by Darren Stevens

I first met Geoff at the 2013 FNZAS conference in Auckland, where he was the guest speaker. Geoff gave an interesting and very entertaining talk on his experiences with keeping and breeding plecos, an area in which he has been very successful. Later that day we were invited back to his fishroom, an impressive array of 24 aquaria which hold about 2400 litres of water and contain 15 species of pleco.

Geoff's obsession with plecos started in 2006 when he purchased a house, and soon after his first aquarium. After a few hiccups he purchased his first pleco, a flash pleco *Panaqolus albivermis*, L204 a species which he still keeps. After doing a bit of research he realised that he was keeping it in the wrong conditions so he altered his tank set up, which is fish keeper code for "had to get" another tank. He also realised that he would like to learn a lot more about fish keeping so he completed courses in aquariums and advanced aquariums at the Mahurangi Technical Institute. Armed with a solid theoretical background and a growing fascination with small plecos his aquarium empire grew.

Geoff's philosophy is that if you provide an environment in which your fish thrive then not only will they be happy and healthy, they will often breed as well. To achieve the best environment he can, Geoff spends a lot of time observing his fish, making detailed

notes of their likes and dislikes (diet, substrate, furnishings, lighting, cave preferences, etc.), and he also regularly checks water parameters (Temperature, pH, TDS, nitrates, etc.). Through his attention to detail and desire to create the perfect mini-ecosystem, Geoff has successfully bred and raised a number of small plecos including the popular bristlenose and GBA's, clown plecos, tiger plecos *Panaqolus* sp. L002, chocolate zebras *Hypancistrus* sp. L270, Columbian zebras *Hypancistrus debilittera*, L129, 'big-band tiger plecos' *Peckoltia* sp. L140, and zebra plecos *Hypancistrus zebra*, L046. Geoff's most impressive achievements have been the regular breeding of medusa plecos *Ancistrus ranunculus*, L034 and blue-fin Panaques *Baryancistrus beggini,* L239, species which are very rarely bred in captivity.

Geoff is vice-president of the FNZAS and an active member of Auckland Fishkeepers Association. He is an active forum member and contributor to the FNZAS website (www.fnzas.org.nz), and two international pleco websites: Pleco Planet (www.plecoplanet.com) and Planet Catfish (www.planetcatfish.com). Geoff's fascination with plecos and his desire to learn from the experts has led him to the 2nd and 3rd L-Number Days in Hannover, Germany. There he met a number of pleco gurus including Ingo Seidel and Hans-Georg Evers (editor of Amazonas magazine). He presented a talk at the 3rd L-Number Days on the New Zealand pleco scene, and his experience at the conference are the subject of this issues feature article.

Harlequin Rasbora

FISH MINI PROFILE

Harlequin Rasbora *Trigonostigma heteromorpha* Originating from Asia these charming fish are easy to keep and thrive at average tropical conditions, but don't live long at higher temperatures around 29-30 C. They are relatively small, reaching a maximum length of 4-5 cm and are quite active, yet peaceful. They look great in larger schools and are hardy enough for beginning fishkeepers.

Photo: Robert Beke

Geoff Haglund

Breeding Plecos in New Zealand

This article is based on a presentation delivered at the '3rd international L-Number Days' convention in Germany, November 2013.

New Zealand is an island country in the south-western Pacific Ocean.

Because of its remoteness, it was one of the last lands to be settled by humans. During its long isolation, 80 million years, New Zealand developed a distinctive biodiversity of animal, fungal and plant life. The country's varied topography and its sharp mountain peaks owe much to the tectonic uplift of land and volcanic eruptions.

Because of the biodiversity of our animal life New Zealand has very restrictive importation regulations; not only regarding what organisms can be imported, but also the lengthy quarantine period.

For ornamental fish, which is the importation category in which pleco's are included, this quarantine period is not less than four weeks.

The list of ornamental fish that can be imported into New Zealand can be found by following this link: http://www.biosecurity.govt.nz/files/ihs/fisornic.all.pdf

Due to the fact that New Zealand is a small island, with a limited number of international ports and a small number of legal importation facilities, it is more effective to enforce these restrictions in New Zealand than in other countries that have land based borders.

Young chocolate zebras L270
Photo: Darren Stevens

The long quarantine period, the costs associated with the distance of transportation and the enforcement of the regulations obviously affects the cost of the fish to the consumer.

As an example an imported juvenile *Hypancistrus zebra* will cost the consumer $750.00 NZD

It is rare for an adult specimen L-Number fish to be imported. I am not 100% sure why this is, but I suspect the reason is due to a combination of the wholesale cost of the specimen and the number of specimens that can be included per shipping box.

The 4 week quarantine period does have a positive side, in that it is very rare for a fish to reach the consumer suffering from anything except malnutrition.

Whilst this is a good thing, there is in fact a downside to this. The downside is that it is not possible to

obtain any medications, like antibiotics, without a prescription from a veterinarian.

Therefore in order to be a successful breeder, good animal husbandry is a necessity, as curing any ailment that requires antibiotics is virtually impossible. Prevention is far superior to cure as a husbandry strategy.

The jewel in the crown of Pleco breeding in New Zealand is the water. Typically, throughout the New Zealand, the tap water has a pH of 7.0-8.0, with almost no hardness. If left in an aquarium without hardening agents the pH can easily drop to 5.0. The volcanic history of New Zealand, lack of pollution, and population density no doubt contributes to the natural water quality in New Zealand.

I believe a successful method of Pleco breeding is made up of the following factors:

Hypancistrus zebra L046
Photo: Reece Addison

Research:

Research what has been discovered in countries where "trial and error" is possible, as any trial in New Zealand where the error may be fatal to the fish (e.g. temperature extremes) will end the breeding attempt as it is more than likely the adult fish cannot be replaced.

Observations:

Observe your fish.

How do they behave when doing a water change?

How do they behave when it is warmer/cooler?

How do they behave when the furniture (rocks, wood, plants etc.) is changed?

As I write this, I have just performed a water change, and am observing the pre spawning behaviour of my *Peckoltia* sp. L140, where the female is trying to back herself into the cave and the male places his stomach over the female's head and attaches his mouth just in front of her dorsal fin. He then turns her until her tail is pointing into his cave.

She pulls away, and he darts into his cave but stops when his head is in the entrance.

He pulls out and they repeat this "dance".

She backs into his cave and he moves in to stop her leaving.

Now he is fanning his pectoral fins like a humming bird beating its wings.

He lets her out, and then checks for eggs.

Now they repeat this process.

It's ok, she is not gravid enough, and usually they start their spawning cycle in October.

At least she is willing.

Consistency:

Be consistent. How can you change something, to induce a spawn, or correct an issue/potential problem, if every day is different?

I water change my fish once per week, on the same day, with the same amount of water.

Create a natural habitat:

We can't do this in the home aquarium!

But there are things that we can do. As far as I know the sun isn't suddenly bright in the sky, and it suddenly doesn't just "go out" at night, so why should it in the aquarium?

The Circadian rhythm of your fish may be important for health and breeding. If you can't have natural light, have sunrise and sunset lighting, to lessen the impact of the going from complete dark to full light.

By observation and research provide furniture that suits your fish, from substrate to shelter, to breeding sites, temperature and current flow. It all makes a difference.

Make notes, take recordings:

This is how academics "do their business". It can't be an entirely foolhardy approach.

It also enables the identification of potential triggers and also alerts you to potential problems.

For example, I have recorded over 60,000 data points relating to atmospheric pressure over the last 4 years, and can show that there is virtually no correlation between the drop in air pressure and the onset of rainfall in New Zealand. Potentially an interesting artefact in itself; however in the context of the Amazon and rainfall, accompanied with the associated cooling of the water as a spawning trigger, rushing home to perform a water change just because it is raining outside in New Zealand may just confuse your wild caught fish, if in fact the preceding drop in air pressure is part of the spawn triggering cycle.

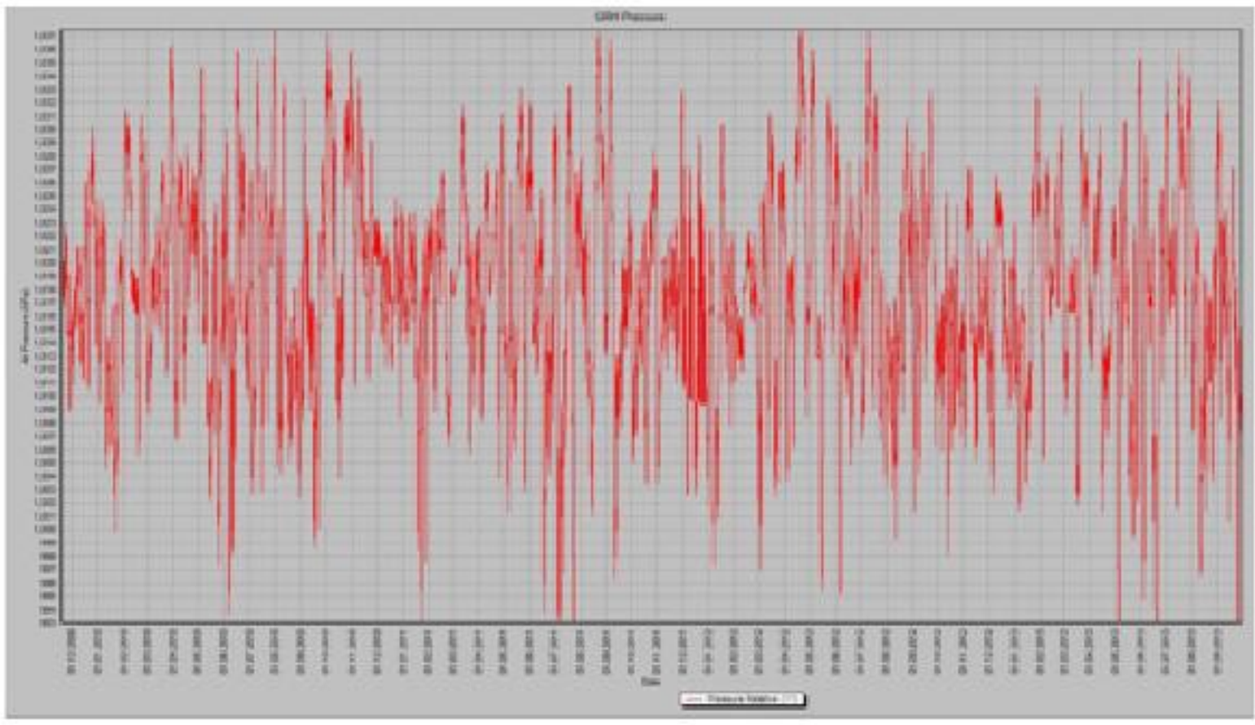


Chart of air pressure readings since November 2009

Feeding:

Feed high quality prepared foods.

Feed fresh foods.

Feed the appropriate food for your fishes' digestive abilities.

Don't force your fish to spawn:

Typically in the wild there is a season for spawning, and whilst it is possible in the aquarium to replicate these conditions all year round, it is not healthy for the fish (in my opinion).

To summarise thus far;

The breeding of pleco's in New Zealand is not that different to breeding pleco's in other countries once the advantages and limitations of being in New Zealand are accepted.

It is extremely unlikely that you will be able to walk into a shop and obtain a group of mature fish, and

Blue Fin Panaque *Baryancistrus beggini* L239
Photo: Darren Stevens

just start your breeding attempt. Therefore breeding pleco's is more than likely a long term activity. This however gives you plenty of time to observe and condition your fish.

Because you are most likely unable to replace a mature fish, if it dies, with another mature fish you learn to take care of your fish. Because the water in New Zealand is so good for breeding pleco's you have the opportunity to be rewarded by your pleco's breeding just by being a good aquarist, and developing good aquarium husbandry skills.

Tiger pleco female ***Panaqolus*** sp. L002
Photo: Darren Stevens

Peckolita **sp.** L140 in Geoff Haglund's tank
Photo: Caryl Simpson

Using the above techniques I have been able to breed the following: *Hypancistrus* L046, L129, L270, *Panaqolus* L002, L104, *Peckoltia* L134, L140, *Ancistrus ranunculus* L034 and *Baryancistrus beggini* L239.

Future of Pleco breeding in New Zealand:
I have grave concerns for the future of Pleco breeding in New Zealand. Two years ago there were easily 12 Pleco breeders in New Zealand. Today I have struggled to identify 3.

The cost of these fish and their natural tendency to hide away has meant that there seems to be very little interest is this type of fish. To the untrained eyes, I have fish in only 1/3 of the tanks in my fish room.

It is difficult to obtain new specimens and species of L-Number fish in New Zealand, and the likelihood of new specimens and species being imported into New Zealand appears to be diminishing as there is no business return for the importers.

Keeping & breeding king tigers

Photos and article by Darren Stevens

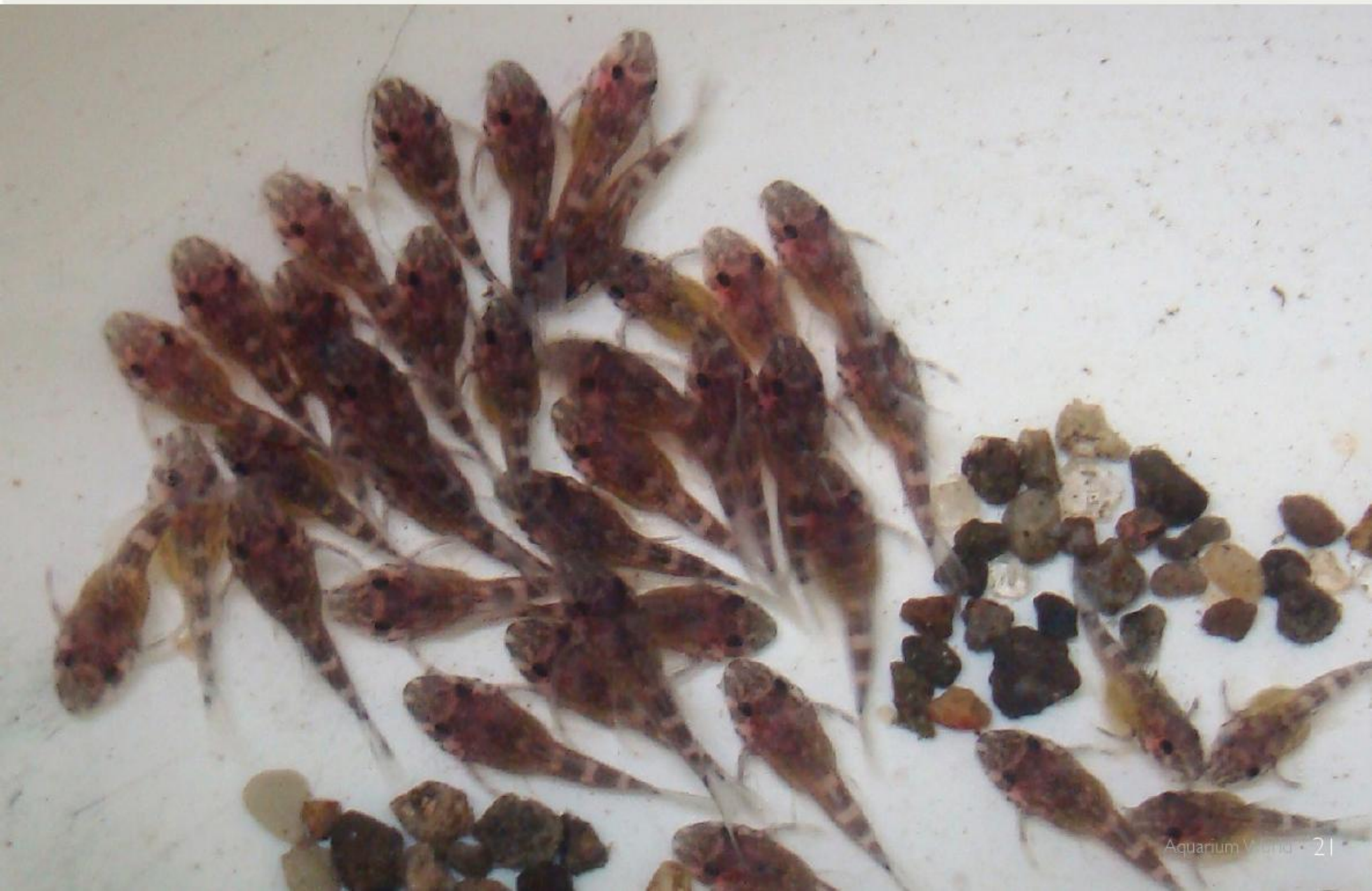
King tigers *Hypancistrus* species L066 are one of my all time favourite plecos. They are a striking pale grey to off-white, sometimes yellowish, pleco covered with a network of fine dark grey to black scribbles. They grow to about 15cm in length (males are generally larger than females) and originate from the lower Rio Xingú and Rio Tocantins in Brazil. They are similar to other co-occurring black scribbled *Hypancistrus* (L236, L333, L399, L400) and preliminary genetic data suggests they may all belong to a single species complex (Camargo et al. 2013). King tigers appreciate good water quality and flow, and high dissolved oxygen levels. They are largely carnivorous. I feed mine mainly on JBL NovoTab and Hikari carnivore tablets with the occasional feed of shrimp or trout pellets, and the occasional treat of shrimp tails or bloodworms. They are suited to pH's of 5.8 – 7.0 and temperatures of 26 – 30°C.

This article could have easily been called the trials of keeping king tiger plecos, for while I have had some success breeding them I have also had my share of hiccups along the way. My king tigers first bred just before I moved house. It wasn't until I was breaking their tank down that I noticed they had spawned. Not surprisingly, the eggs didn't survive the move. They spawned a couple of times after I moved but unfortunately the male ate his eggs on one occasion and his wrigglers on another after I shone a torch in his cave. I now only use a torch occasionally and very briefly when looking in a cave.

Top left: King tiger male

Bottom left: three month old fry

Below: eight day old fry



King tigers can play rough and get a little carried away. Over three years my males have eaten into the backs of 3 trapped females when breeding. The females all got fungal infections in the exposed tissue and were removed for treatment in a hospital tank, one of them died. The males, thankfully, seem to have settled down a little but I still keep an eye out for stressed or wounded fish. To try and minimise aggression I only keep two males in with several females. I also provide them with plenty of caves and hiding places.

My king tiger colony is housed in a 100 x 50 x 50 cm tank furnished with a fine gravel substrate and a selection of bamboo, and home made, tile caves topped with a pile of bogwood. pH is 6.4 – 7.1, TDS are 110 – 140, and the temperature is generally 27 – 29°C. For filtration I use a Fluval 4 plus internal filter and a 600 litre/hour power filter fitted with a venturi to raise the dissolved oxygen levels.

After several hiccups and false alarms I have had a few successful spawnings. I take the young from the male when they have used most, or all, of their yolk sacs. My caves (bamboo and tile) have tile backs so I remove the cave, place it in a bucket with tank water, and gently prise the back off the cave. It's a delicate operation and it pays to remove the male quickly but I have never lost any young removing them from the cave. I then place the young in a home made 'Gerd box' (see make your own 'Gerdbox') - a crude version of the real thing but it does the job. I could leave the young with the male but he has a dodgy history and I like to be able to provide them with ample food without fouling the water. I feed the young each evening on JBL NovoFect and JBL NovoTab (breaking the food tablets into quarters) and clean them out every morning. I also give them a small feed to eat during the day. If the Gerd Box looks dirty I clean them out again that evening. With good feeding, and regular big water changes, the young grow quickly, losses are minimal, and in 4 - 5 months they are a saleable size.

I don't actively trigger spawning but do a 20% water change most weekends and the high dissolved oxygen levels, low TDS, and the powerhead no doubt help to trigger spawning.

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One month old fry
Photo: Darren Stevens

The Brown Bullhead

- our very own catfish pest

Although many aquarists will have a common bristlenose or Corydoras catfish in their tropical tanks there are no native freshwater catfish (Siluriformes) in New Zealand. In contrast, our Australian neighbours have about 18 freshwater catfish species. We do however have an introduced species, the brown bullhead *Ameiurus nebulosus* a stocky dark brown to greenish-olive catfish with 4 long whisker-like barbels, speckled with gold, pale olive, and grey. Brown bulheads are generally found in slow flowing, often weedy, streams and around the sandy shallow margins of lakes and lagoons. In New Zealand they commonly grow to 30cm but have been reported to grow to about 45cm and 2kg. They eat a wide range of food including freshwater insects, snails, crustaceans including koura, plant material, detritus, and small fish. They are a problem in our waters as they compete with, and eat, native species, including small native fish and koura. They also reduce water quality by stirring up mud.

In New Zealand brown bullheads are not well studied although they appear to be fast growing, reaching 8cm in their first year, and 33cm by their fourth year, and they may live for up to 8 years. They mature at age 2 or 3 (at about 180-200mm TL) and pair up and spawn during spring. They lay several hundred to over 6000 golden eggs in a shallow depression in mud or sand. Initially both sexes guard the eggs and young but as the young develop it is generally the male that will guard the young for several weeks.

Brown bullheads were introduced to New Zealand from California in 1877 and initially became established in the lower Waikato River and in Lake Mahinapua near Hokitika. They are very adaptable and are able to survive for long periods out of water. Unfortunately this makes them easy to accidentally transfer to new waterways in fyke nets or on boat trailers, and they are now reported from a number of waterways including the Whanganui River, Ruamahanga River, and Lake Taupo. At times they can very abundant with a single overnight fyke set in Lake Taupo catching 639 catfish. To help prevent further spread if you catch a brown bullhead you must kill it immediately. The penalty for possessing a live bullhead catfish is $750.

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McDowall, R. M. (1990). *New Zealand Freshwater Fishes: A natural history and guide*. Heinemann Reed, Auckland.

Darren Stevens

Photo: © Noel Burkhead

Breeding *Peckoltia* sp. L140

Article & photos by Geoff Haglund

In 2009 I purchased 6 rather attractive yellow plecos covered with black stripes from the LFS. They were labelled as 'big band tiger plecos' L288, a *Peckoltia* species, but they just didn't quite look like right so I did some research. After several months they were identified by an expert as *Peckoltia* sp. L140 from the Rio Tapajos in Brazil. Apparently this species is commonly exported as/with Peckoltia sp. L288.

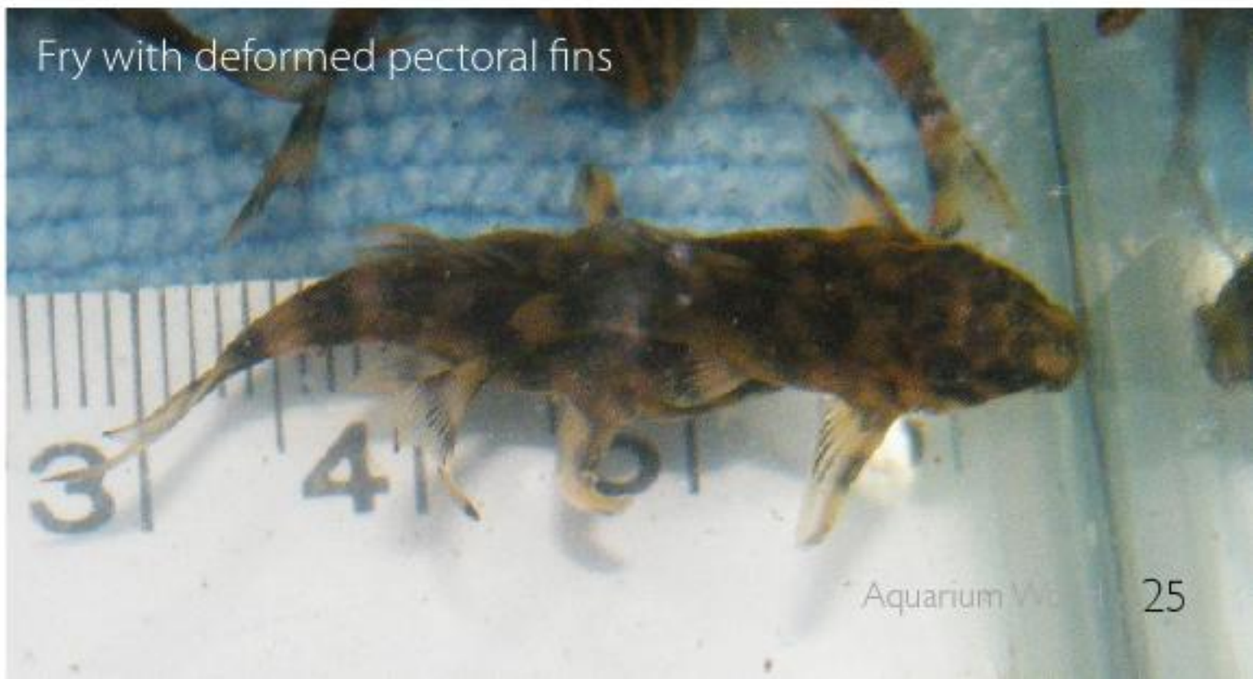
I put them in a 72 x 60 x 35cm tank with an Aqua clear 110 for filtration. They also have a power head at the left of the tank which blows water from left to right, breaking the surface at the centre of the tank. I furnished the tank with wood, as I would with a *Panaque* species such as L002. *Peckoltia* are omnivores so I feed them on a varied diet of JBL Nova-fect and Zucchini. I got these little guys in an attempt to set up a breeding colony but I could not find a reference to these being bred in captivity, although this may have more to do with their misidentification rather than it not being done before or just not documented in English on the internet.

After a couple of months I became rather concerned at the size of a couple of the females. I mean, I don't play golf and there are no golf balls in my house, so how was it that a couple of the females looked like they had swallowed a golf ball? After a little more research I discovered that *Peckoltia* look like this when the females are full of eggs.

It looked like I had one male, but I suspected he wasn't quite "manly" enough for the job, as he had not yet developed a full set of bristles down his flanks. So I went back to the LFS to see if they had any more in stock. Luckily at the back of one of the tanks was a hairy little fellow that looked like he would do the job, so he came home with me to look after the harem of ladies. I presented them with a variety of caves, bamboo, resin, and PVC, and the PVC seemed to be the winner.

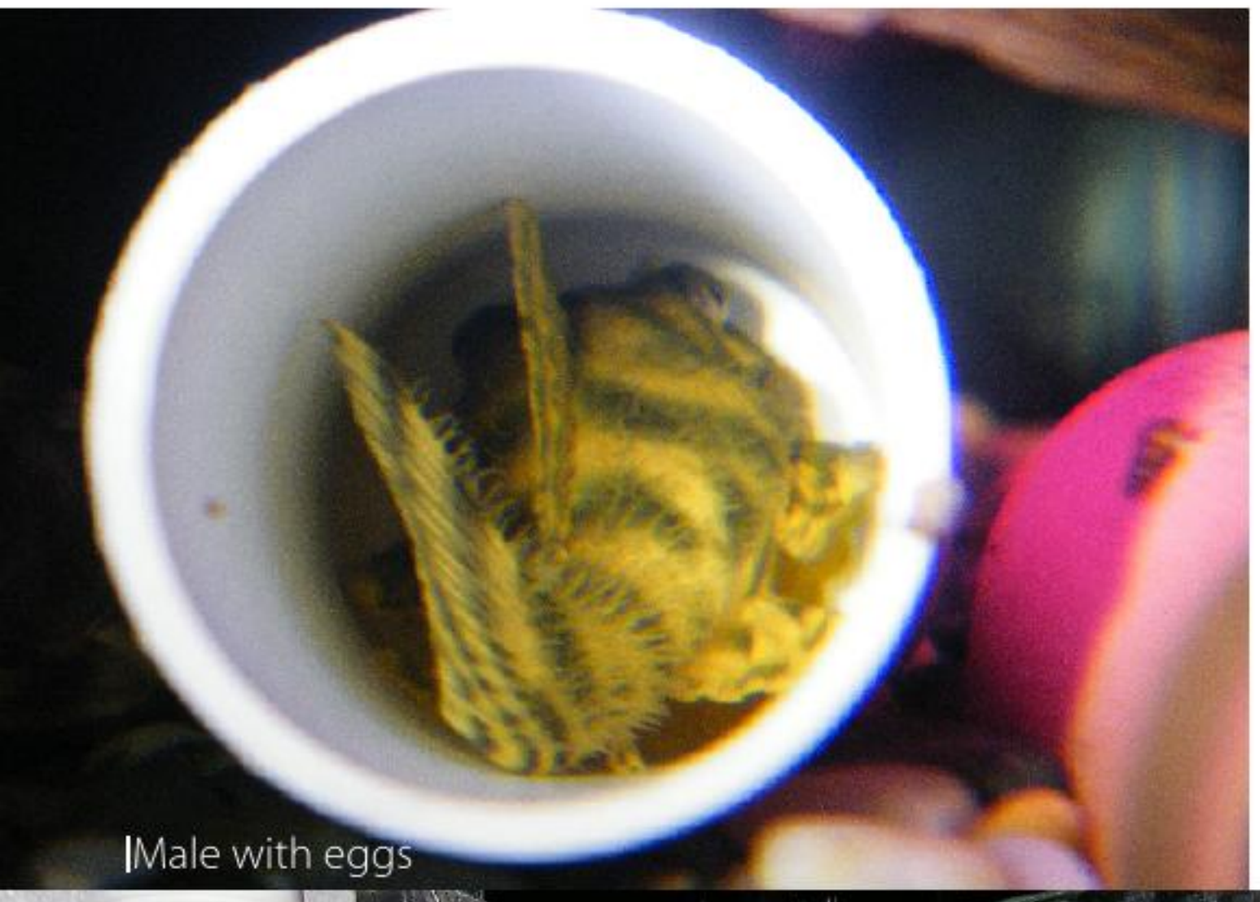
A week later, after a water change, they had their first spawn. The male kicked out the eggs and I had to rescue them. I must admit I was pretty inexperienced at rescuing eggs, so there was only one survivor from that spawn. A couple of weeks later and I was presented with another opportunity to rescue some more eggs. More survived this time (8) however all of that spawn had a deformity to one or both of their pectoral fins. They looked like they had a broken "wing".

As both the males and the females have an attraction to caves, I wondered if the females were causing too much disturbance in the caves and this was causing the males to displace the


Fry with deformed pectoral fins

eggs. The PVC pipes were all "roughed up" on the inside, with sand paper, so the surface would not be smooth and this would allow the eggs a surface to stick to.

I decided to remove all but two of the caves so that the male could take over one cave and then maybe things would settle down. Unfortunately removing the caves did nothing but set the scene for a fight club! The next day every fish was carrying scars down their flanks. So I put all the caves back and the females were all happy in their caves again.



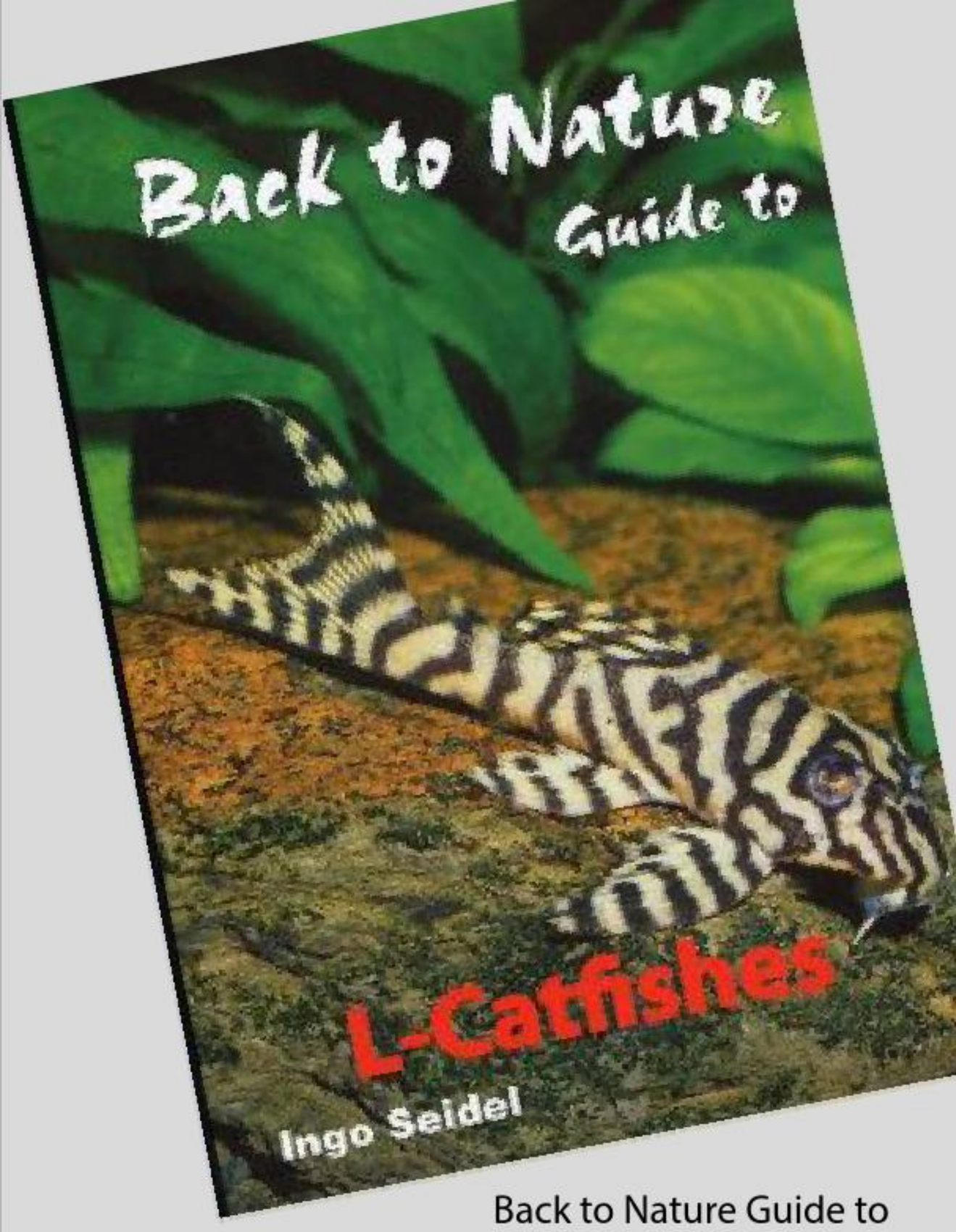
Male with eggs

These guys spawn regularly and I now just leave the male with his eggs. He is doing a much better job and he regularly raises 15–25 young in a batch. They seem to spawn every 2 weeks from December until April and as they were so regular I did not think that anything I was doing was playing a big part in their spawning cycle.

I don't think that I do anything to trigger them into spawning. I do regular and consistent water changes, and provide good quality food. The TDS in the tank is quite low (about 110) and it is possible that this plays a significant part in spawning. I keep the tank at 27–28o C and the pH ranges from 6.5 - 5.4

One point of note is that I am never quite sure what the baby plecs feed on in the transition from the egg yolk to the real food. I have found that for rescued fry if I keep them in a fry saver device that I have had soaking in a mature tank for 7-10 days, then they seem to make the transition better. I suspect that they are eating some microscopic "things" that are living on the surface of the fry saver.

This article was originally published in Pleco Planet



Back to Nature Guide to L-Catfishes by Ingo Seidel

I probably have far too many aquarium books, many of which are hardly used, but there are a few gems in my collection – one is the Back to Nature Guide to L-Catfishes by pleco guru Ingo Seidel.

In this excellent guide Ingo introduces the reader to L-Catfishes in a highly readable and informative style. The 'L' stands for the scientific family Loricariidae, a family which includes over 700 species, many of which are commonly called plecos.

The first 53 pages provide a wealth of information on their natural habitats and collection from the wild and their care, maintenance, and breeding in home aquaria. This section is very well written and provides the information needed to keep these popular catfish.

However what really interests me is the second section which showcases the remarkable diversity of L-Catfishes by presenting 390 of the most interesting or frequently imported species in the hobby. Although we only see a subset of these species in New Zealand there are many spectacular plecos in this guide that are allowed to be imported.

In this section the plecos are ordered alphabetically by genus (the first part of the scientific name) and then by scientific name or L-number. This works well but for those less familiar with scientific names you may need to use the index. There is a trap. Some genera (plural of genus) used in the guide may differ from those used in other references as scientific opinions differ as to which genera are taxonomically correct. For example, in the guide red spot and gold spot plecos are placed in the genus *Glyptoperichthys* while common plecos are placed in the genus *Liposarcus*. Some researchers believe these two genera are not valid and that only *Pterygoplichthys* should be used. So in the literature you may see red spot plecos referred to as *Glyptoperichthys gibbiceps* or *Pterygoplichthys gibbiceps*. In the guide Ingo also provides the alternative genus as a subheading in brackets.

For each genus information is provided on the number of species, recognisable characters, sexual differences, distribution, diet, and maintenance in the aquarium. High quality images and more specific info (maximum size, tank size, water parameters, etc.) are provided for each species. Additional useful facts such as trade names, breeding and rearing info, and similar species are also provided for many species.

The Back to Nature Guide to L-Catfish is reasonably priced (I haven't seen it in NZ shops so you'll have to order it from an online bookseller), very well written, easy to use, and beautifully illustrated, and provides a wealth of information that will appeal to beginners as well as more advanced aquarists. If you have more than a passing interest in L-Catfish (plecos) this book is a must have.

Darren Stevens

A royal wood-eater

The royal pleco ***Panaque nigrolineatus***, L190 is a stunning large pleco that can grow to about 40 cm. Royal plecos (and their ***Panaque*** and ***Panaqolus*** rellies) are highly specialised wood and algae eaters, and are among the very few fish that are able to consume and digest wood. They have an oval sucker mouth armed with a V-shaped row of spoon-shaped teeth in each jaw for chiseling wood and scraping algae. Specialised gut bacteria and a very long intestine enable them to digest it.

Large royals require a very large tank with good filtration as their fondness for devouring wood means they deposit a lot of "top soil". They can also be territorial and aggressive so they may not be a great option for many fish keepers. However their much smaller ***Panaqolus*** rellies (e.g. clown plecos, flash plecos, and tiger plecos) are peaceful and a good 'wood-eating' option for smaller tanks.

Photo: Darren Stevens

HOW TO

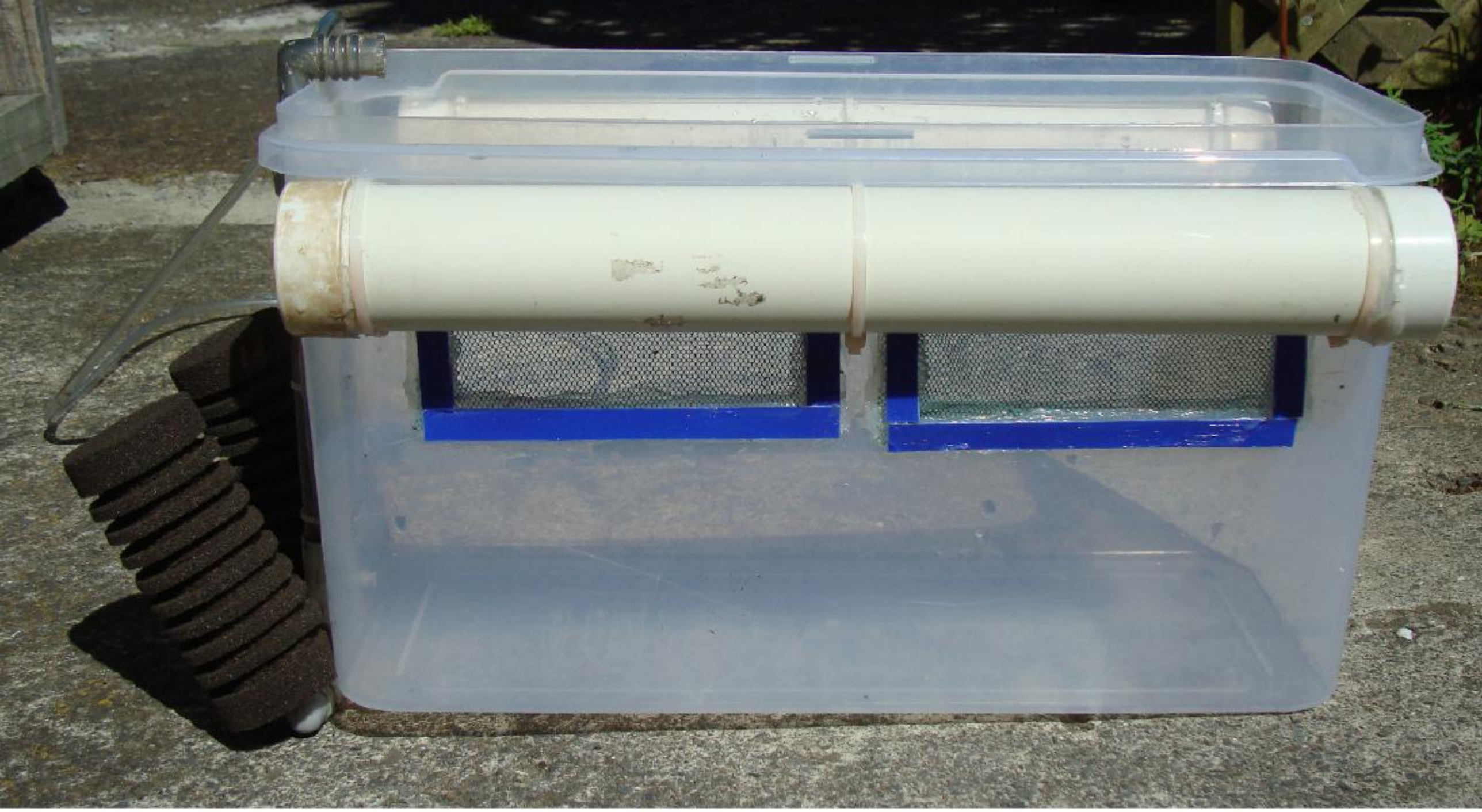
make your own GERD BOX

by Darren Stevens

One of the dilemmas when breeding plecos is whether to leave the fry in with their parents or remove them to a separate rearing container: either suspended in the parents tank or another small tank. Some breeders have great success leaving the young with their parents while others prefer to rear them separately. This can depend on the type of pleco you are rearing and both methods have their advantages. I have had good success with rearing young pleco fry in a basic homemade 'Gerd Box'.

Gerd Boxes (or Gerd-Kasten in German) are named after their creator Gerd Arndt. They come in a range of models for a variety of species and rearing strategies (see the German website www.aquarienbastelei.de) but in their most basic form they are simply a small filtered container suspended in the parents tank. Gerd boxes have been used successfully by overseas breeders for many years and they offer several advantages. Not only do they save tank space but the young can be raised in the same stable water parameters they developed in, safe from other tankmates. Young plecos also seem to do much better when they are close to food. If left in the parents' tank they may struggle to get enough to eat unless you overfeed. Obviously overfeeding can reduce water quality and this will in turn affect the adults and fry. Overfeeding is not an issue in a Gerd Box as long as you clean it regularly.

There are several ways to make a Gerd Box but this method worked for me. All you need is a clear plastic container, a cheap two sponge or similar



air filter and some fine netting or good quality aquarium foam. Pick a plastic container that is suited to the type of fry you want to raise.

1. Mount the sponge filter stem (i.e. less sponges and suction cups) to one end of the container so that the sponge filter outlet is hanging just over the inside of the container. To do this I cut a slot out of the outer edge of the container rim so that the sponge filter stem could lie flat along the wall of the container. I then drilled two small holes below the slot to match the plastic suction cup mounts and then fixed the sponge filter stem in place with aquarium silicon. Leave to dry and put the sponge(s) back in place.

2. Create an outlet for the airlift water. You can do this several ways but as long as there is good water flow through the outlet and the fry can't get escape it should work. I cut two rectangular holes on the long edge of the container and then siliconed some aquarium netting over the holes. I then siliconed small strips of plastic over the netting border to help secure it. Alternatively you could cut a hole in the opposite end of the container to the airlift and insert a snug fitting piece of aquarium foam over the hole. Just make sure the fry can't get out.

3. Find a way to float the Gerd Box or to secure it to the side of the tank. I choose to float mine as the rims of my tank are wide and it would be difficult to secure it. I also think that floating the Gerd Box is a safer option. I made two floats from 40mm PVC tubing and then siliconed end caps on each one. Once dry I cable tied a float to each side of the container. This works well but it is relatively expensive. High density foam might also be a good option.

To use the Gerd Box simply float it in a tank and connect the sponge filter up to an air pump. If you've got enough air going through the sponge filter, aquarium water will be drawn through it and into the Gerd Box via the sponge filter outlet. Young plecos seem to do better if they have somewhere to hide so I usually add a few small bits of bogwood to the Gerd Box. I also put a thin layer of fine gravel in the bottom. If the water flow slows down its time to clean the sponges in the sponge filter. I usually clean the sponges twice a week and clean out the Gerd Box once, sometimes twice, a day.

FISH PROFILE

Chelmon rostratus

***Chelmon rostratus* (Copperband butterflyfish, Beaked butterflyfish, Beaked coralfish, or Orange stripe butterfly)**

Classification Order: Perciforme

Family: Chaetodontidae

The Copperband butterflyfish has yellow-orange vertical bands with black and a false eyespot on the rear of the dorsal fin. It has a long, narrow snout and small delicate mouth used for hunting and removing invertebrates in crevices and holes and is unlikely to be mistaken for any other fish

Distribution: *Chelmon rostratus* has a widespread distribution covering many of the major sites used for collecting fish intended for the marine hobby including Indonesia, Melanesia Solomon Islands and Australia.

Habitat: The Copperband butterflyfish is found in a variety of habitats including coral reefs, rocky shorelines and the murky waters of river estuaries at depths from 1 – 25 metres. They are a diurnal species which actively searches for food during the day. At night they rest in sheltered spots on the cliffs of the reef. They can be seen singly or in pairs

Maximum Length: Normally grows around 20cm

Life Span: 4 years or longer

Aquarium Size: The Copperband butterflyfish is a popular species which is best housed in a very large reef tank or in a peaceful community tank of at least 500 litres. While this sized tank may seem excessive, due to the size of the fish, the additional space helps to slow parameter changes caused by the excessive feeding required.

Maintenance: Copperband butterflyfish should be added to a mature (6 – 12 months) tank stocked with plenty of live rock and while it is generally considered reef safe it pays to remain on the lookout as, if hungry, it will pick on invertebrates, especially anemones

and feather dusters. This fish requires excellent tank conditions to thrive and survive and appreciates highly oxygenated, clean water with a relatively high redox value. A UV steriliser is also recommended.

Water Conditions: Temperature: 22 – 25.5oC

pH: 8.1 – 8.4

Specific gravity: 1.020 – 1.025

Hardness: dkH 8 – 12o

Diet: In the wild the Copperband butterflyfish feeds mainly on worms, mussels, tunicates and crustaceans.

Getting *Chelmon rostratus* to feed in captivity is one of the biggest issues faced by marine keepers and this fish's refusal to eat and resulting death is widely documented. It is a shy and deliberate feeder that may need a variety of foods offered to it to start feeding. When purchasing it is advisable to ask to see this fish being fed while in the shop tank and on taking the fish home you should keep the Copperband butterflyfish in a tank on its own to get it eating without competition from other tank mates.

The reason many aquarists purchase this fish is because it will eat many invertebrates including the common glass anemone (*apitasia*) (Parasitic anemone). However given a choice, *Apitasia* is the least favoured food. Feed a variety of live items, such as mysids, brine shrimp, and/or clams. Even living freshwater insect larvae, such as bloodworms or glassworms, may be readily accepted. Once your Copperband butterflyfish readily accepts these offerings you can attempt to move them on to frozen food. The laterally compressed copperband does not carry much in the way of excess muscle or fat therefore if you add it to an aquarium where the emphasis is on nutrient control and minimal fish feed the fish is likely to lose weight.

Feed twice a day. If small or a juvenile feed 3 – 4 times daily.

Behaviour and Compatibility: Copperband Butterflyfishes are semi-aggressive and best kept in peaceful community tanks. They are not overly aggressive but are very territorial particularly with their own kind and sometimes other butterflyfish in the same genus, *Chelmon*.

One butterflyfish per aquarium is recommended. Compatible fish are the smaller and non-aggressive fish like cardinalfish, gobies, dragonets and fairy wrasses.

Reproduction: Like many species of butterflyfish, copperbands can form monogamous pair bonds. These bonds can last from a few months to life. They have similar appearances however the male's forehead is steep and the snout is more horizontal than the female's. An individual will tolerate the presence of its mate but will aggressively defend its territory from other butterflyfish. Because of this reason, and possibly others, butterflyfish are not successfully bred in captivity. Females release their eggs into the water which form part of the plankton. When the eggs hatch the fry develop armoured plates on their bodies to protect them while they are so vulnerable. As the fry get older these plates disappear.

Adrienne Dodge

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Chelmon rostratus

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NZ NATIVE

Native Glass Shrimp

Parataya curvirostis

Max Size: 9cm
Temperature: 5 – 26°C
pH: 6.5-8.5 (high reading due to marine larval stage, 6.5-7.5 best for adults.)

These peaceful detritivores are great as a clean up crew for an aquarium, especially for their ability to consume Black Beard Algae. Quite common New Zealand wide, even on Stewart Island, they can also penetrate inland quite far but their full range has never been investigated. This shrimp has a marine larval stage so is unable to be bred in the home aquarium without specialised equipment. They are easy to collect by sweeping a net through stream-side vegetation. Glass shrimp are less common in waterways that have been infested with Gambusia.

Sex is determined by size, the larger specimens over 5cm being female. Please release all larger specimens that have been caught to ensure future generations of shrimp.

They are quite happy in tropical tanks as long as the temperature does not rise above 26°C at which point a very high mortality rate is recorded. They are very sensitive to ammonia so should be added to mature systems.

There are several different colour morphs recorded such as black, green or red, which seem related to diet but in the wild they are normally a clear yellow colour with slight coloured speckling (colour depends on locality of capture). Lifespan is estimated to be about 2 years (Carpenter 1983) and they die after approximately 6-8 months as a female.

James Cooper

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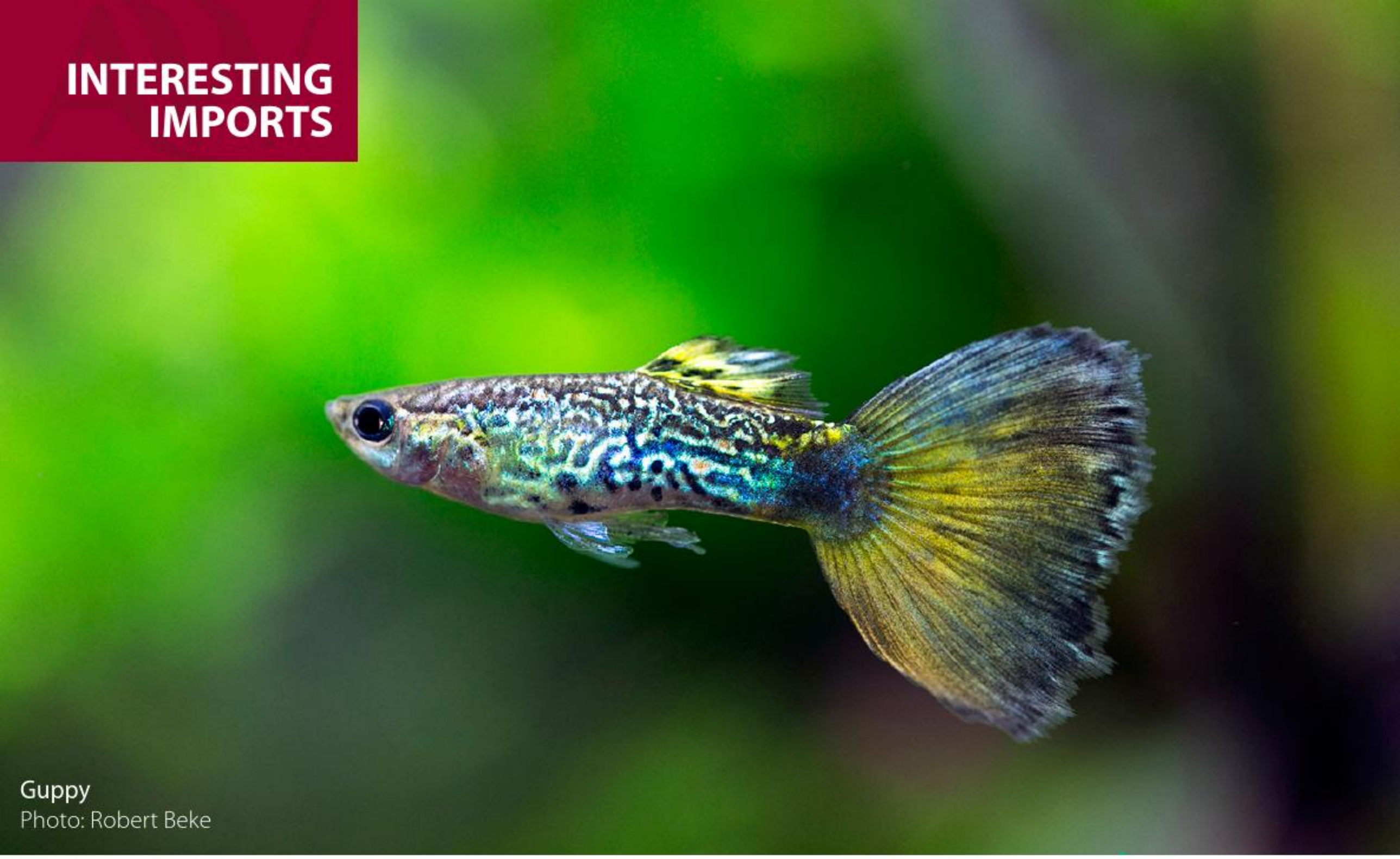
Alan Carpenter (1983): Population biology of the freshwater shrimp *Paratya curvirostris* (Heller, 1862) (Decapoda: Atyidae), New Zealand Journal of Marine and Freshwater Research, 17:2, 147-158

INTERESTING IMPORTS



Guppy
Photo: Robert Beke

Given the heavy pleco theme in this issue we thought we would concentrate on some of the small, well priced, and generally well behaved candidates for your community tank. Many of these species are very attractive and deservedly popular and the majority do best in schools of 6 or more fish.

First up it's hard to go past the ever popular livebearers. Male guppies are available in a wide range of colours and varieties with intriguing names such as blue lyretails, cobras (in gold, green, neon, and red), diamond, German yellows, marigold, lazer, leopard, sunset, tuxedo, and Micariff orange sunset. Platies can be ordered in calico, dust, glowlight, red tigers, red wags, sunset, yellow comets, and hifin red wags, while their swordtail relies are available in calico koi, gold, pineapple, red, and lyretail varieties. If you're after livebearers with a little more attitude then why not try a bumblebee, gold, or black lyretail molly, or a black, gold, or silver sailfin molly.

Danios are a good option for most community tanks as they very active and often swim near the surface. There are several nice options such as Burmese neon blue metallic danios *Devario shanensis*, kyathit, leopard (in regular and long-finned), pearl, and zebra danios (in

Red tiger platy
Photo: ©susanne.lajcsak

regular, golden, and long-finned), and if you want something a bit larger then giant danios are available.

Rasboras have a loyal following and there are several species available. The tiny (to 2.5 cm) chili rasbora *Boraras brigattae* or even smaller (to 2 cm), stunning emerald dwarf rasbora (actually a *Danio* but formerly placed in *Microrasbora*) are perfect candidates for a nano tank, while the popular harlequins *Trigonostigma heteromorpha* and *T. henglei*, or emerald eye and red-stripe rasboras (all grow to about 6 cm) are great candidates for a well planted community tank. And if you have a larger community tank with peaceful fish then the very active scissortail rasboras which grow to about 15 cm are a nice option.

Chili rasbora
Photo: Diane Wilkie

And last but certainly not least there are a great range of tetras, with over 30 species on the importers lists. Many people will be familiar with the popular favourites such as black neons, black widows, cardinals, glowlights, lemons, neons, or penguins tetras, but why not try a blue emperor, Cochu's Blue, Columbian, diamond tetra, gold, rummynose tetra, or white spotted dawn tetra. There are also a few cool selectively bred varieties such as albino glowlights, diamond head neons, gold pristellas, long-finned black widows, and veiltail serpae tetras, and if you are after something a little a little bizarre then how about a blind cave tetra!

Lemon tetra
Photo: Robert Beke

The editorial team

Emerald eye rasbora
Photo: Robert Beke

Rummynose tetra
Photo: Robert Beke

COLDWATER

12 Step Programme for Pond Cleaning

by Caryl Simpson

Pond before the clean...

Labour weekend 2013 was approaching and the weather report said "Fine" so we decided it was a good time to clean out our pond. Built 7 years ago (the process was catalogued in the NZ Aquarium World magazine, May 2006) it had never been cleaned out since. At roughly 3m x 9m and varying depths up to 400mm, we estimate it to hold around 7,000L.

It was built partially under a Chinese Silk Tree, *Albizia julibrissin*. I know you should not build a pond under a tree but we figured this particular species had fine narrow leaves so would break down quickly. Besides, we have a reserve next door with lots more trees so leaves were always going to be an issue. Earlier this year I realised the detritus on the bottom of the pond had reached a depth of 10cm so something needed to be done, preferably before the goldfish started spawning and we had fry to contend with as well. I did not want the warming weather to create pockets of bad bacteria in the muck breaking free and poisoning the fish.

Step 1; Set up a container to hold the fish

Luckily we had a 1.2m diameter x 400mm deep stock trough to use so situated it near the pond and filled it with pond water.

Step 2; Start draining the pond

We have a good sized external pump to run the filter and waterfall so this was utilised to pump out the water (into the next door reserve – very convenient). This proved problematic as the pump was strong and the muck very fine so the 300mm outlet pipe kept clogging very quickly despite having a long tube over the end with holes drilled through to catch the larger stuff.

Grant then drilled a lot of holes in a bucket, wrapped wind break material over it then duct taped it down and held the pipe inside this

with the top of the bucket above water level to stop a lot of the debris being sucked in. This worked reasonably well for a while until we finally admitted defeat and decided bucketing the remaining water and silty muck was the only way to go. We were getting worried about the fish as the water was now so black and thick with muck you could not see a thing. We thought they might get their gills clogged.

Catching them before this was impossible as they move a lot faster than us. There were so many plants, despite having hauled out a lot of the oxygen weed before we started, nets got hooked up quickly and there are overhanging decks at either end so plenty of places for the fish to hide. Luckily our neighbour, Alice, came over to help. A fish catcher extraordinaire, often with bare hands rather than a net!

Step 3; Haul out all the plants

The lilies were huge and oxygen weed had covered just about all the water surface. The fish just about had to walk over it. We had turned off the filter over winter (it had clogged) and so a fine algae had grown over all the oxygen weed. It was decided to throw it all out and get new (the advantage of having 3 rivers full of the stuff running through your town). We had also discovered a red eared slider had taken up residence and could be seen sunning itself in the middle of the pond on a sunny day. We had no idea where it came from, nor where it went as it disappeared overnight as we drained the pond and hasn't been seen since.

Step 4; Catch the fish

This was easier said than done, especially as the bronze ones were adept at hiding as they blended so well with the surroundings. We had to watch for ripples in the remaining mud then scoop underneath and hope there was a fish (or several fishes) caught in the net. We needed to

sort through it fast so the fish did not suffocate. All seemed to survive the ordeal and we were amazed at how fast they could still swim through thick silt. Along with the silt were leaves and branches, large and small. We scooped up handfuls and checked each one for fish before throwing it out.

Step 5; Clean the now empty pond

All we did was hosed down the sides to get most of the muck off. We did not scrub the side algae off as we knew the fish and other critters would want to graze on something. Hearth shovels came in handy for getting the last of the dirty water out.

Step 6; Sort out the plants

As said, we threw out the oxygen weed (it is now drying out in a hidden corner of the garden. Can't throw it away anywhere as it turns out to be the illegal species and, although it is obviously all through our local waterways, we do not want to contribute to its further spread.) We cut the dead leaves off the lilies and pulled off a lot of extra root systems, which had got way out of hand. I was going to re-pot them but decided to let them sit free on the bottom of the pond, with a few rocks holding them by some roots to stop them floating, since they outgrow their pots anyway. A trip to the river sourced more oxygen weed. At this point we took the opportunity to prune back the hebes which had grown a lot and were now overhanging one whole side of the pond.

Step 7; Start to refill the pond

This was done via the garden hose plus a ballcock system we have under the deck for topping up the pond when the water level drops.

Step 8; Put the plants back in

Before the water level gets higher than the gumboots. Anchor them down (the plants, not the gumboots).

Step 10; Clean up the surrounding area and set the filtration system up again

The external filter is housed, hidden in a box, beside the pond. Water is pumped out of the pond, through the filter, and returns down a waterfall at the far end of the pond. The filter gets cleaned out semi regularly but does not get much build-up inside it. Grant built a cage to go around the inlet hose hoping it will stop it from clogging so quickly, and often. Because our

pump needs to be manually primed, which was always difficult to do, Grant inserted a T section with a short vertical pipe that he could connect the garden hose and fill the inlet pipe and prime the pump. However, to do this, a tap needed to be inserted between that pipe and the inlet filter, otherwise the water from the hose would go straight back out the inlet and not up to the pump so it wouldn't get primed. A tap was also inserted on the hose used to prime the pump otherwise it would just suck air straight in rather than water through the inlet pipe. The trick is to have the inlet pipe tap off and the other tap on so you can force water through using the garden hose. When the pump is primed you then turn the inlet tap on and the priming tap off quickly so that the water keeps flowing and no air is sucked through the pump. This normally results in the garden hose being, from its own pressure, forced out of the priming inlet and spraying the operator with great quantities of water! Bad language then ensues. Proper fittings would probably stop this from happening but because the system works otherwise, it will probably be another 7 years before these are installed.

Step 11; Wait for the water to warm up enough for the fish

The trough was sitting at around 24°C so when the pond reached 20°C we decided that was close enough.

Step 12; Put the fish back, all 70 of them

Caught one by one, they were checked for damage or disease before being put back in the main pond.

I was expecting an algae bloom due to the amount of plant removed and the total exchange of water but was pleasantly surprised when this did not happen. The water has remained crystal clear. This may be due to more than half the water surface being shaded by the messy silk tree. We have bought a shade sail we hope to attach to the far end of the pergola then to the silk tree itself in an attempt to stop a lot of the leaves falling into the water. Time will tell if this helps, once Grant gets around to figuring out the best way to anchor the sail securely.

Here is the pond late February 2014. The hebes have already recovered from their pruning. The water lilies have flowered almost continually and although the one closest to the verandah seems to be dying off in sections, the others have started growing out again.

The filter has not blocked, nor needed cleaning, since we put the large cage around the inlet. This makes a nice change from previously having to unblock it weekly! It is nice to sit at the end of the pond, either under the tree or on the sofa on the verandah, and watch the fishes while enjoying a cup of tea.

PLANT PROFILE

Water lilies

Profile and photo by
Caryl Simpson

Waterlilies come in two main types, hardy and tropical. This profile is for the hardy variety. *Nymphaea* are hardy and easy to grow in the right conditions. Plant them in large plastic baskets specifically designed for aquatic plants. They need lots of room for the rhizome to spread. A wider pot is better than a deeper one. If the holes are large enough for the soil to fall through, line them with hessian or landscape fabric.

Ensure any soil used does not have herbicides or pesticides added. Some regular garden potting mixes also have fertilisers that lead to algae and toxic conditions for fish so check for suitability. Daltons Aquatic Mix would be a good choice.Plant the rhizome in the middle of the pot, resting slightly above the soil level, then fill with soil to 30mm from the rim. Cover the soil with gravel, small stones, or a layer of sand. Slowly immerse the pot in the water. Depth can vary from 50mm from the top of the container to 915mm but 300mm – 400mm suits most lilies.

Stand the basket on a brick or something until the shoots reach the surface then lower it until it sits on the bottom of the pond.

Make sure lilies get as much sunlight as possible – 6+ hours per day.

Fertilising monthly during the growing season will promote flowering and growth.

Keep lilies away from moving or splashing water.

It is suggested you re-pot lilies every 1 – 2 years. Do it when the plant outgrows its basket.

Remove any dead leaves and flowers to promote new growth. Follow the stems down as far as they go then either cut them or snap them off with your fingers.

Each flower lasts around 3 - 5 days. They open during the day and close at night. Once the flower is finished, it will slowly sink. Seed pods form and the ripe seeds fall into the soil below. To ensure many blooms, cut the dying flowers as they sink below the surface as the seed production takes up a lot of the plants' resources, to the detriment of its flowering.

FISH FAMILY PROFILE

Severums

Amelia Morris

Red Sevrum
Photo: Amelia Morris

The humble Severum is a truly understated fish which is commonly found in aquariums around New Zealand and the world. Although the natural and most common colour variety is the Green Severum, several tank bred variations exist such as the popular Gold Severum and the less familiar but striking Red-Spotted Severum. Hardy, inexpensive and peaceful compared to many similar species of cichlid hailing from the Americas, Severums make an excellent gateway species for beginners to cichlid husbandry, as well as for more experienced aquarists.

Heros efasciatus (Severum, Banded Cichlid)

(Note: There is some controversy as to which species severums fall under. It seems that there are two very similar but distinct species which are often confused, and although the Severum that appears in the aquarium industry is usually sold as *Heros severus*, it's actually *Heros efasciatus*. The true *Heros severus* is rarely exported from it's homeland, and for this reason *Heros efasciatus* will be discussed in this article.)

Classification Order: Cichlidae

Family: Cichlasomatinae

Distribution: Found throughout the Amazon River basin, Orinoco River basin, upper Negro River basin, rio Solimoes and sometimes rio Xingu. Wildcaught specimens are rare in New Zealand.

Habitat: Prefers deeper calm waters with many submerged branches and tree roots, and is native to slow moving rivers and floodplain lakes.

Maximum Length: 15-25cm although some specimens may exceed this.

Life Span: 10-15 years should be expected but some individuals have been known to live much longer.

Aquarium Size: 120x45x45 is the bare minimum that should be considered, keeping in mind this cichlid's large adult size and territorial behaviors.

Maintenance: The Severum is a relatively hardy fish and will usually thrive where they have adequate space. If you are attempting to mimic the natural habitat in the home aquarium the tank should be decorated with bogwood in the form of roots and branches. Sand substrate is preferred, as these cichlids like to sift through it for food, but not essential. Dark coloured substrate will also enhance the colour of *Heros efasciatus* as it makes the fish feel more comfortable. Plants would be appreciated but will likely be eaten by most individuals, although tougher less palatable plants such as Java Fern and Anubias may be ignored. Specimens raised in

Green Severum
Photo:

planted tanks from juveniles are more likely to leave plants alone. Dimmed lighting is appreciated as these fish can sometimes be shy.

Water Conditions:

Temperature: 22C - 29C.

pH: 5.5-7. A higher pH will be tolerated but for it to thrive this fish should be kept in acidic water, making it inappropriate for most African tanks.

Hardness: 1-8°H.

Nitrates: Should aim to keep nitrates under 20ppm, and should never exceed 40ppm. Lower nitrates are always preferred and will promote healthier growth.

Diet: This fish is omnivorous and very unfussy in the home aquarium. Will enjoy anything from flake food to pellet type foods, and also enjoys most varieties of live or frozen food. Vegetables are also appreciated, such as peas or blanched spinach. Spirulina should be included in the diet as plants and algae are a big part of this fish's diet in the wild. A varied diet and good quality cichlid food are essential.

Behaviour and Compatibility: Ideally *Heros efasciatus* should be kept with conspecifics as they have a social nature. They can be mixed with many South American or Central American cichlids of a similar size or temperament. Sajica Cichlids, Chocolate Cichlids, Eartheaters and Oscars all make acceptable tank mates. Although there are sometimes exceptions to the norm, *Heros efasciatus* are usually peaceful so can be mixed with robust community fish such as larger tetras, rainbows, many species of catfish and larger Loricariids. They should not be mixed with fish small enough to become food for the Severum. If breeding, it is best to keep these fish on their own as they will guard their young aggressively and tankmates which may previously have been ignored may no longer be tolerated.

Reproduction: *Heros efasciatus* can be harder to pair up than many other species of pair forming cichlid, and even when paired can be difficult to coax into spawning. Breeding is usually most successful when the water in the aquarium closely mimics the natural habitat, soft and acidic, and a cool water change can sometimes encourage a pair to spawn. The best way to obtain a breeding pair if an existing one cannot be sourced is to raise a group of juveniles together. When courting a pair will lip-lock and display tail slapping; although this may seem like aggressive behaviour this is a normal part of the breeding process. Severums are substrate spawning cichlids and will dig a hole in the substrate or clean a flat section of stone or glass on which to lay their eggs. Both parents will guard the young aggressively. Hatching should take 3-5 days, and any eggs that are unfertilised will turn white in 1-2 days. Hatched fry can be removed from the tank and raised by the fishkeeper or left for the parents to take care of. Note that the first few spawns are usually unsuccessful as the parents often end up eating their fry or fail to guard them from predators. With practise the pair usually end up capable of raising the fry properly. The fry can be fed brine shrimp or microworms.

References:

http://www.seriouslyfish.com/species/heros-efasciatus/
http://www.fishbase.org/summary/3617
http://www.aquaticcommunity.com/cichlid/severum.php

FNZAS

Conference 2014

Please note: Registration forms must be returned prior to 1 April 2014

For those of you arriving on Friday you are invited to Shona's house, 59 Goodall Street, Mosgiel from 7pm for hot drinks and juice.

The weekend starts at 10am on Saturday 12 April with Registration at the AGM venue – South Dunedin Town Hall, side room.

The AGM will commence at 10.30 am. We will break for lunch at 12 noon – there are plenty of places to eat near the venue and then, if necessary, the AGM will continue in to the afternoon.

On completion of the AGM and subsequent Executive meeting we will depart in DAPS member's cars for a mystery tour.

The evening meal will be at a local restaurant (details to follow shortly)

For those of you who are remaining in Dunedin on Sunday, club members will take you to the Otago Museum $10pp and the Dunedin Chinese Garden $9pp. Pay on the day. Please indicate on the registration form if you will be participating on this day.

Register ASAP as it will be first in first served with 'stay with a friend' billet accommodation.

Click here to download your registration form

Registration forms to completed and posted to

Dunedin Aquarium & Pond Society
C/- Shona Downs
59 Goodall Street
Mosgiel
Dunedin 9024

SHOP TOUR

Hollywood Fish Farm Mt Roskill

36 Frost Road, Mt Roskill, Auckland 1041
Phone 09 620 5249

Hours: 10am – 6pm daily

Facilities: 90+ tropical freshwater tanks
25 coldwater tanks
14 tropical marine tanks
2 tropical display tanks
1 marine display tank.

Hollywood Fish Farm Mt Roskill is located in the small block of shops at the roundabout on the corner of Carr Road and Frost Road, Mt Roskill and is the largest specialist fish shop in Auckland. This shop is a well-established business, having been under the same ownership for over 25 years. 60 minute angle parking is available directly outside the shop however the schools across the road make parking difficult to find for around 30 minutes at the end of the school day. There is also a small amount of parking for customers at the rear of the shop (enter off Carr Road).

The shop is a series of three rooms and on entering you are in the main dry goods/retail area, which is also home to tropical marine tanks holding fish, corals and invertebrates and also coldwater tanks housing small coldwater fish, goldfish, turtles, axolotls and tadpoles. Also in this room is lovely tropical marine display tank; this is currently for sale. Fish food for all the fish in the shop, ornaments, internal filters, plant requirements and medications are among the dry goods on the shelves. There is also a small stock of reptile food, lights etc. The adjoining

room hosts the tropical freshwater tanks, two display tanks and three tanks with plants for sale. Community fish of all sizes, cichlids, oddballs (birchirs, knife fish, eels), giant gourami and specialist fish ie fancy plecs, betta splenden, arowana are on display. Cannister filters, light units, pumps, gravel, plastic plants, rocks and more are also in this area. At the rear of this room is another room with a wide range of tanks only and all in one units.

Normally impeccably kept and staffed by experienced fish keepers with customer service being a priority, on the Friday I visited, the shop was a disappointment as equipment was scattered around and all the tanks required a good wipe down, particularly on the front glass. While in the shop no attention was paid to me by the two young staff present even when I spoke to one of them. Knowing this was an unusual occurance I returned again four days later, to see the tanks back to their shining best, the shop tidy and staff attentive to their customers but it is also a reminder that first impressions count.

Hollywood is a high quality shop which provides just about everything a fish keeper requires. The senior staff members have a wealth of knowledge, which they happily share. It is a shop that I will continue to visit, to recommend, and one that I remain proud to call my local.

Adrienne Dodge

Interesting species

Discus – from $109 upwards
Lambchop Rasbora – 5 for $16
Sterbai Cory – 2 for $31
Pygmy Cory $9.90
Royal Farlowella $39.90
Jaguar Cichlids $26.10

Rank	
Tropical fish	★ ★ ★ ★
Catfish	★ ★
Cichlids	★ ★ ★ ★
Oddballs	★ ★ ★
Coldwater fish	★ ★ ★ ★ ★
Marine fish	★ ★ ★ ★
Marine inverts	★ ★ ★ ★
Marine corals	★ ★ ★
Display tanks	★ ★ ★ ★
Pond plants	N/A
Tropical plants	★ ★ ★
Dry goods	★ ★ ★ ★ ★
Pond supplies	★ ★ ★ ★ ★

SHOP TOUR

Living Reef

1/38 Dakota Crescent
Wigram
Christchurch 8042

Hours: 10am – 5pm Thursday – Monday
Closed Tuesday and Wednesday

Facilities: Tropical marine tanks

Living Reef is a still relatively unknown marine only shop in Christchurch although it is rapidly establishing itself as a 'go to' shop for anyone keeping saltwater setups - both in Christchurch and throughout New Zealand. The shop itself is owned and run by Nic Hoogervorst. Nic's knowledge, friendliness and willingness to assist anyone, from experienced fishkeepers to those wondering whether or not they could manage to keep marines, has been appreciated by many. On arriving at 1/38 Dakota Crescent, one might be forgiven for thinking that the shop is not open as the door is kept closed. This is not the case and on entering the shop it is easy to see the reason behind this; a beautiful, very large, and immaculately kept display reef tank filled with corals and fish faces the entrance. There is also a smaller, but just as impressive, display tank to the left. Once you move on through this room you reach the main retail area where the dry goods are kept. There is a good variety of tanks are displayed including Red Sea Max and Living Reef. Nano tanks are also available. Salt, RO units, Protein Skimmers, lights and pumps are a few of the many items held in stock. From the dry goods area you can access the third space; this is home

to large, well maintained tanks housing many varieties of spectacular marine fish, invertebrates and corals.

Overall, this is a high quality shop that just about provides everything a marine keeper would need and it is a shop that I will continue to both recommend and visit whenever I am in Christchurch.

Living Reef also operates an online shop and the majority of items are shipped free of charge. They also have an email system where you can opt into receiving updates on stock and specials.

Interesting species

Linckia Sea Blue Star $99.00
Black & White Clownfish $99.00
Red legged Hermit crabs $75.00
Tridacna Crocea Clam $199.00
Fire Shrimps $99.00
Cleaner Shrimps $89.00
Pink Zoanthus Coral $49.00
Melon Eyes Zoanthus Coral $49.00
Orange Montipora Coral $49.00 & $95.00
Hydnophora Coral $49.00

Adrienne Dodge

Rank	
Tropical fish	N/A
Catfish	N/A
Cichlids	N/A
Oddballs	N/A
Coldwater fish	N/A
Marine fish	★ ★ ★ ★ ★
Marine inverts	★ ★ ★ ★ ★
Marine corals	★ ★ ★ ★
Display tanks	★ ★ ★ ★
Pond plants	N/A
Tropical plants	N/A
Dry goods	★ ★ ★ ★ ★
Pond supplies	N/A

Federation of New Zealand Aquatic Societies

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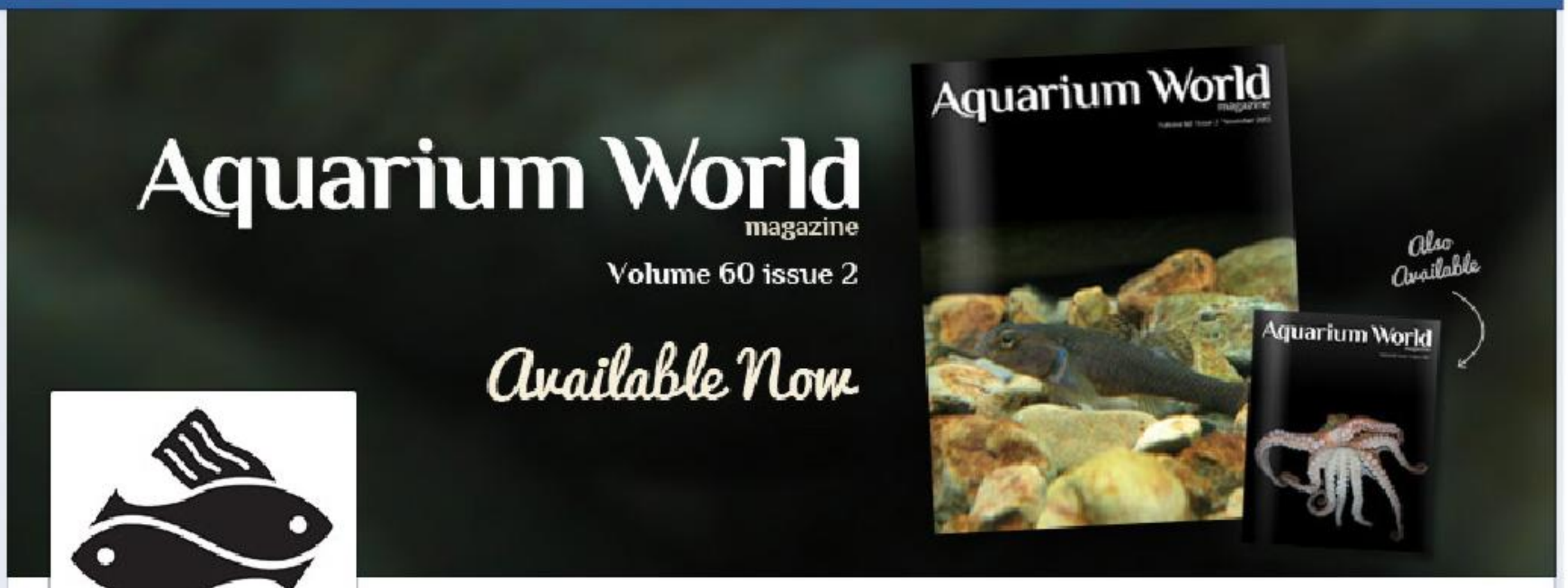

Federation of New Zealand Aquatic Societies

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The Federation of New Zealand Aquatic Societies is a group of aquarium societies/clubs that are dedicated to the improvement of the aquarium and fishkeeping hobby.

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FNZAS

The Federation of New Zealand Aquatic Societies is a group of aquarists dedicated to supporting and promoting fishkeeping as a hobby, both in our local communities and globally with regard to conservation of aquatic species and their environments. The organisation is dedicated to the improvement of the aquarium and fishkeeping hobby and it has a 60 year history of representing aquarium societies in New Zealand.
There are currently 13 affiliated aquarium clubs around New Zealand:

AUCKLAND FISHKEEPERS ASSOCIATION
Contact: Liam Winterton aucklandfishkeepers@hotmail.com

BAY FISH & REPTILE CLUB
Contact: Fiona Sytema sytema@vodafone.co.nz

CHRISTCHURCH TOTALLY TANKED
Contact: James Butler muh47_6@hotmail.com

DUNEDIN AQUARIUM AND POND SOCIETY
CONTACT: dapsdunedin@gmail.com

HAWKE'S BAY AQUARIUM SOCIETY INCORPORATED
Contact: Chris Drake cdrake@paradise.net.nz

KAPI-MANA AQUARIUM CLUB
Contact: Dominique Hawinkels kmacnz@yahoo.co.nz

MARLBOROUGH AQUARIUM CLUB
Contact: Deidre Wells deeken@xtra.co.nz

NZ KILLIFISH ASSOCIATION
Contact: secretary@fnzas.org.nz

SOUTH AUCKLAND AQUARIUM & WATERGARDEN SOCIETY
Contact: Paul Munckhof monkie@orcon.net.nz

TARANAKI AQUARIUM & POND SOCIETY - IN RECESS
Contact: Mitch Minchington & Debbie McKenzie, 21 Maire St. Inglewood 4330

TASMAN AQUARIUM CLUB
Contact: Glen George hellcazy@hotmail.com

UPPER HUTT AQUARIUM SOCIETY
Contact: Amy Curtis ayglitch@gmail.com

WAIKATO AQUARIUM SOCIETY
Contact: Zara Titko zarast@windowslive.com

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The following businesses offer discounts to our members, remember to ask politely, this is a privilege not a right. You must show your current FNZAS Membersip card at the time of purchase.

AUCKLAND

Hollywood Fish Farm - **10% discount on selected non-sale items**

36 Frost Rd. Mt. Roskill Ph 09 620 5249
10/2 Tawa Drive, Albany Ph 09 415 4157
www.hollywoodfishfarm.co.nz

The Bird Barn - **10% discount on fish and accessories**

158 Lincoln Rd. Henderson. Ph 09 838 8748.

New Pupuke Aquarium Centre - **10% Discount**

1 Lydia Ave, Birkenhead Ph 09 480 6846

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Cnr Ilam & Clyde Rd, Ilam, Christchurch. Ph 03 351 3001 Fax 03 351 4001

GISBOURNE

Eastland Aquariums - **10% discount as well as great in-store specials.**

Grey St, Gisborne Ph/Fax 06 868 6760

HAMILTON

Pet World - **10% discount on fish products**

Cnr Anglesea & Liverpool Sts. Hamilton. Ph 07 834 3426 Fax 07 834 3424

Goldfish Bowl Aquariums - **10% discount on everything.**

966 Heaphy Tce. Hamilton. Ph: 07 855 2176

World of Water

7 Kaimiro St, Te Rapa, Hamilton Ph 07 849 1117 email: info@worldofwater.co.nz

HASTINGS

Aqua Fever Aquatic Shop - **10% discount on fish and fish related products.**

Shop 3 Pacific Boulevard, 103 Market St South, Hastings. Ph. 06 8782 271

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Wholesale & Industrial Supplies - **trade price, equating between 15 - 40% off retail prices**

49 Glover Rd, Hawera Ph 06 278 7525

MT MAUNGANUI

Animal Antics - **10% discount**

3 Owens Pl. Bayfair, Mt Maunganui. Ph 07 928 9663 www.animalantics.co.nz

NAPIER

Carevets N Pets - **10% discount on fish & fish related products**

120 Taradale Rd, Onekawa, Napier Phone 06 842 2033

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TAURANGA

KiwiPetz - **10% discount**

Shop T30, Fraser Cove Shopping Centre, Tauranga Ph 07 578 8623
email kiwipetz@xtra.co.nz

Carine Garden Centre & Water World - **10% discount on fish, fish related products & aquatic plants**

Cnr SH2 & Te Karaka Drive, Te Puna Ph. 07 552 4949 www.carine.co.nz

WELLINGTON (and Greater Wellington area):

Animalz Petone - **15% off all fish and fish related products**

376 Jackson St. Petone. Ph 04 380 9827 www.animalz.co.nz

CareVets@Johnsonville Pet Centre - **10% discount**

31 Johnsonville Rd. Johnsonville Ph 04 478 3709

CareVets 'N' Pets - **10% discount**

Porirua Mega Centre, 2 - 10 Semple St. Porirua Ph 04 237 9600

Paws and Claws - **10% discount on all fish & fish keeping items**

Logan Plaza, 207 Main St. Upper Hutt. (opp. McDonalds) Ph 04 528 5548

The Pet Centre - **10% discount on all fish and aquatic products**

Lower Hutt, Harvey Norman Centre, 28 Rutherford St. Lower Hutt. Ph 04 569 8861
Upper Hutt, 82 Queen St, Upper Hutt Ph 04 974 5474
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