

CAT CHAT

The Official Journal of The Catfish Study Group (UK)

IN THIS ISSUE

Corydoras geoffroy and Cataphractus punctatus

By
Isaac Isbrücker

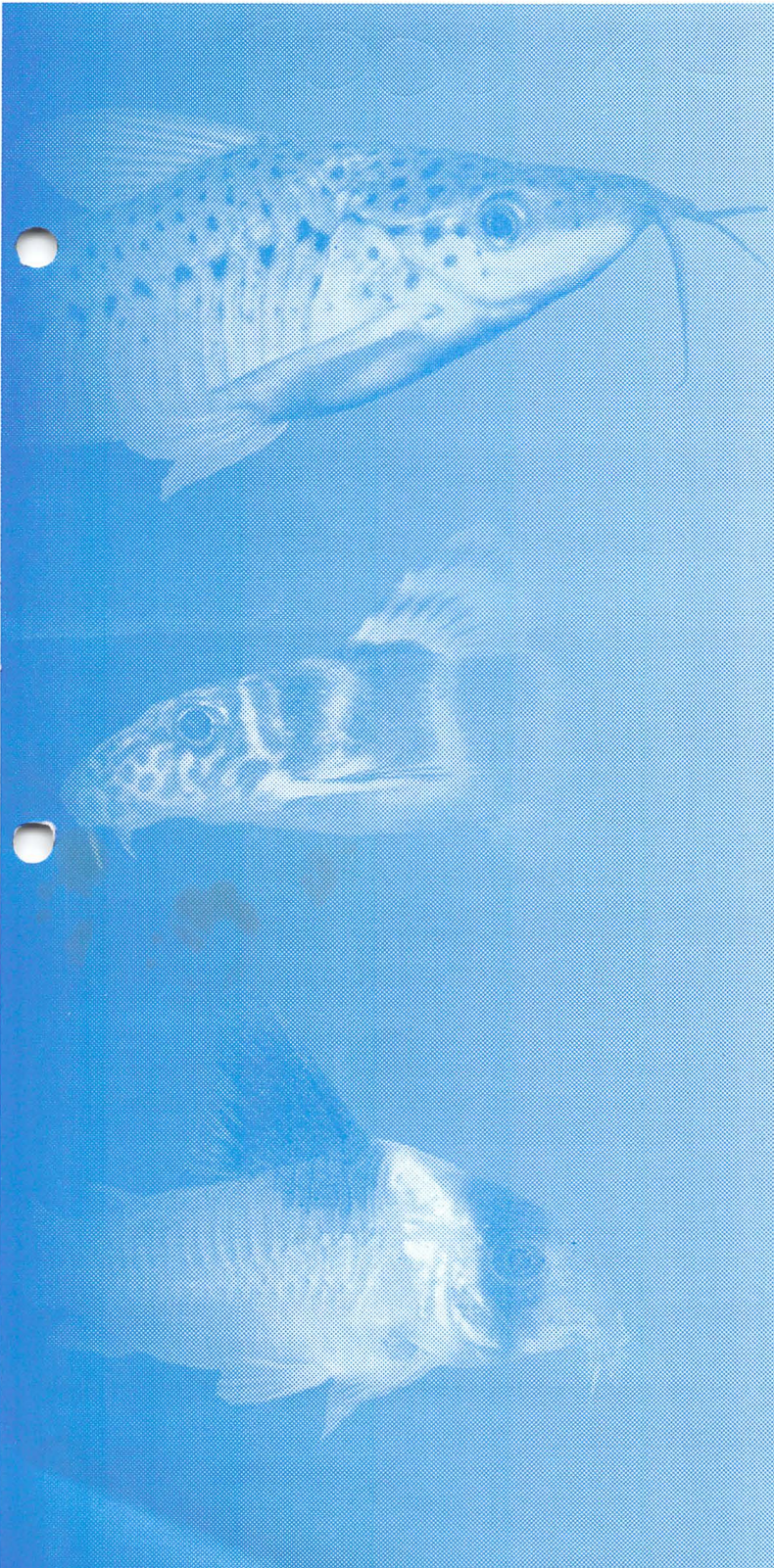
Our Breeding Experiences with *Sturisoma aureum*

By
Kevin and Karen Goodrum

Catfish of Asia

By
Shane Linder

Volume Number 1 Issue Number 1



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Dear Members

We apologise in advance for any mistakes that you may find in this Journal. Due to this being the first 'CAT CHAT' and following on so quickly from the AGM and the excellent Convention, it has not been proof read prior to printing. This will not happen again providing that we receive your articles in plenty of time.

Isaïc Issbrücker has offered (and we have accepted) to proof read all articles submitted but unfortunately, this issue had to be distributed by the end of March so he didn't get chance to see it.

There is only one article in hand for the next issue. Please send yours as soon as possible.

Humour, facts, figures or anything that may be of interest can be submitted, even if it's controversial.. At least it should invite a reply from interested or even offended parties (but we don't want a war).

Thank you for supporting the Catfish Study Group (UK) and we hope that you will also support our Journal.

Ed.

ACKNOWLEDGEMENTS

The photographs submitted with Catfish of Asia and Corydoras geoffroy articles are by Erwin Schraml.

The alleged Common Carp photograph on page 4 is with compliments of The Angling Times.

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TREVOR (JT) MORRIS
 the first
HONORARY PRESIDENT of the CATFSIH STUDY GROUP (UK)

After the Catfish Association of Great Britain was formed some 20 odd years ago, it was decided that a local group was needed in the north of England. From this idea, the Northern Area Catfish Group (NACG) was formed in 1979. I joined the Group right at the beginning and I have seen the membership rise and fall and bounce back again. I held various positions on the Committee but for the past nine years I was the Honorary Chairman.

The CAGB folded in 1993 but the NACG remained and became the main catfish group in the country.

In England, the club scene has seen a gradual decline so it was decided, in 1996, that there was a need for a more national/international catfish body to get like minded people together and to get away from the localised image that the NACG seemed to generate.

The end result of our numerous discussions is the newly named **Catfish Study Group (UK)** which has attracted a lot of interest. We always had links, one way or another, with catfish hobbyists around the world and we have had some very interesting speakers (hobbyists and scientists). at our annual conventions. We hope that this excellent liaison will continue.

We will, for the foreseeable future, continue to meet in the more centralised Wigan area, just off the M61 (J6)

because it appeals to people who travel a fair distance (from both the north and the south) to our meetings. It is also less than one hour to/from Manchester Airport.

For members who cannot attend the meetings, it is our intention to try to make the quarterly journal 'CAT CHAT' an interesting and informative read with articles from hobbyists, scientists and the internet.. We appreciate constructive criticism but as the saying goes "You can't please all of the people all of the time....". We will try to satisfy the needs of the members and hope that you will reciprocate by sending us your articles.

For people who have joined us from the NACG, thank you for your continued support and for the members new to us, we hope that you will not be disappointed.

JT
 Hon President

SCIENTIFIC AND COMMON NAMES OF THE MADTOM CATFISH

From an article by Shane Linder

We appreciate that common names can be extremely confusing particularly as we move from wholesaler to wholesaler. Not all the fish listed below are seen in the shops because when they grow, sometimes in excess of two feet, they are disposed of in local rivers. This is one reason why their import is restricted in certain countries.

Brindled Madtom	Noturus miurus	Freckled Madtom	Noturus nocturnus
Tadpole Madtom	Noturus gyrinus	Brown Madtom	Noturus phaeus
Stonecat	Noturus flavus	Freckle-belly Madtom	Noturus munitus
Yellowfin Madtom	Noturus flavipinnis	Ouachita Madtom	Noturus lachneri
Slender Madtom	Noturus exilis	Orangefin Madtom	Noturus gilberti
Pygmy Madtom	Noturus stanauli	Mountain Madtom	Noturus eleutherus
Northern Madtom	Noturus stigmosus	Broadtail Madtom	Noturus sp.
Smoky Madtom	Noturus baileyi	Carolina Madtom	Noturus furiosus
Margined Madtom	Noturus insignis	Speckled Madtom	Noturus leptacanthus
Neosho Madtom	Noturus placidus	Least Madtom	Noturus hildebrandi

Our Breeding Experiences With *Sturisoma aureum*

(Steindachner 1900)

By

Kevin & Karen Goodrum

After setting up Karen's 6-foot tank for Discus, P.H. 6.5 using R.O. water at a temperature of 82F, filtered by both air and powerhead U/G filters and a prime 20 external canaster. On a bit of an impulse I ordered six whiptails from a local fish shop (Fishiz, Luton) to my delight they turned out to be *Sturisoma aureum* I rushed home with them and introduced them to the tank. They settled in well and began to grow, soon to be joined by 4 Rineloricaria sp. red, all was well for several months, all the fish growing well eating a varied diet with favourites of cucumber, algae wafers and live bloodworm, which are sucked up like spaghetti with great interest.

Then one, or possibly two, of the *Sturisoma* developed a taste for discus mucus swimming up against the side of the discus and taking a snack they could not be deterred from doing this even when I tried tapping them on the nose. After a few weeks and a tank of very jumpy stressed discus added to several bouts of earache from the Mrs, all the *Sturisoma* were removed and, I confess, dumped into a 24, 12 by 15 'hospital' tank with tap water at 78F. Within 4 days the first batch of eggs was laid, about 100 in all, the male guarding and cleaning the eggs, just as it says in the books, some did hatch but all the fry either died or were eaten within the first two weeks.

This set back only made me more determined to raise these beauties, so the pair were moved into a 30 inch tank with under-gravel filter and left to their own devices, while I figured out what to do next, the *Sturisoma* had other ideas a second batch of eggs were laid and as before the eggs hatched and the fry all perished, after about 6 weeks this time. Advice from members of the Dunstable & District Aquarist Society spurred me on to try again.

A second 24 inch tank purchased and set up with a simple corner filter and heater the water tested as follows:- PH 7.6; temp 80F; GH 14-21; KH 10, NO₂ 1.0mg/l and NO₃ 10mg/l. a few days later we noticed both the male and the female had turned darker in colour and three days later they laid another batch of eggs about 50 this time again up the side glass of the tank.

After two days we started to add Optima, a fish supplement, about 25 drops in all, the eggs were beginning to hatch, a process that took nearly 3 days, the fry were about 5mm on hatching.

The female was removed and the male left with the fry which after using up the remains of their egg sack started to feed on tinned sliced green beans straight from the tin and slices of cucumber. These were left with in the tank for a few days and seemed to be eaten with relish as they began to break down, I tested the water conditions regularly over this period. Approximately 16 days after the eggs were laid a second dose of 25 drops of Optima was added to the tank. Many weeks of careful cleaning, gentle water changes and lots of TLC resulted in the first batch of *Sturisoma aureum*, the first whiptails in fact, being entered for auction as part of the DDAS Breeders Award Programme fetching the respectable sum of £12:00. The rest of the fry were already spoken for before they had reached 10 weeks old.

The parents laid about 50 eggs again soon after being put back together and this time we did not add the Optima, the resultant fry did not do so well slower growing and far more losses, in fact we only raised 6 of this batch. Another batch of eggs were laid early December this time Optima was added and as a result we have a tank with 30 young *Sturisoma aureum* eating all the cucumber and beans they can find.

In conclusion it appears to us that the addition of Optima makes the difference between a 'normal spawning but difficult to rear' and 'success'. I hope to be able to bring some of these fry to one of the auctions this year to allow other members the opportunity to breed these fantastic fish.

P.S. It is interesting to note that the spelling of the generic name in Baensch is *Sturisona aureum*

References:

Baensch H.A. Rudiger R. : *Aquarium Atlas Vol 2 Tetra Press 1997 (2nd English edition)*

Sands D.D.: *Catfishes of the World Vol 4 (1985 supplements) Dunure Publications 1985*

Family:	Loricariidae	Sub Family:	Loricariinae
Species:	<i>Sturisoma aurum</i>	Country of origin:	Colombia
Habitat:	Fast flowing streams	Size:	to 300mm
Temp:	72F-80F	P.H.:	6.4-7.5
Feeding:	Vegetables, algae and small invertebra		



DR PETER BURGESS
 the first
VICE PRESIDENT of the CATFISH STUDY GROUP (UK)

I would like to thank everyone for voting for me. It is a great honour and I hope to meet you all at various aquatic events. As some of you know, I am based down in the South but I do hope to head North from time to time.

Many people ask me how I got involved with fishes. Well, my interest goes back many years to the day my parents presented me with a tropical aquarium for my sixth (or was it seventh?) birthday. I think my encounters with catfish began with the acquisition of a few bronze corys back in the early 1960's. However, the fish I REALLY wanted at that time was a large plec which was for sale in Denson's Tropicals in Battersea (South London) - but it would have cost my parents a few days wages to buy it!

With a couple of biology degrees under my belt, my fish hobby developed into a full-time profession which I enjoy immensely. Many of you will know that I am a consultant to Aquarian, but I also have many other fishy jobs, including editing an aquarium science journal, writing aquarium books, and teaching aquarium fish husbandry at various colleges and universities, notably Plymouth University.

My first encounter with wild catfish was back in the early

1980's when I was travelling through Peru. It was a small river-side market in Iquitos where I happened to glance at a local Peruvian who was slurping some soup. I noticed a familiar looking caudal fin drooping over one side of the soup bowl and discovered to my amazement that plecostomus soup was on the menu! Some of my other encounters with wild catfish have been more intentional, such as when I undertook the Aquarian Expedition to Trinidad to search for wild guppies. Whilst in the Caribbean, Stan McMahon, the aquarium curator at Plymouth University, and I surveyed the freshwater fish of Trinidad and we found beautiful bronze corydoras, a few loricariids, and the best-tasting fish on the island - the "cascado" or Hoplosternum as we know it. The hoplo commands a higher price than any other freshwater or marine fish to be found in Trinidad. Pity I'm a vegetarian!

Anyway, I look forward to many more encounters with catfish and of course with the catfish enthusiasts who share my fascination for this very special group of fishes.

With my best wishes to you all,

Peter (Dr Peter Burgess)



**APRIL FOOLS DAY?
 NO CHANCE!**

This common Carp was caught in a match in Thailand and weighed in at a massive 242 lbs. English angler Stuart Brewster saw the fish when a friend landed it at Tosak Dam. He also reports weighing in catfish at over 300 lbs. This picture is by courtesy of Angling Times (An English Angling Magazine)

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The Catfishes of Asia

Family Bagridae part one

by R. Shane Linder

shane@planetcatfish.com

Author's Note: This series was originally written in early 1997. Since that time there has been enough taxonomic work done on the family Bagridae to warrant an update. At Ian Fuller's urging, I have updated the series as a whole for the millennium rather than just issue an article containing corrections. The updated series contains not only taxonomic changes but also identification corrections and a host of other new information.

Of all of the catfishes in the world, hobbyists are probably the least familiar with those species that come from Asia. These days even general pet stores often carry a wide assortment of loricariids, pimelodids, and *Corydoras* from South America. Catfishes from Africa that used to be considered rare, such as *Synodontis angelicus* and *S. multipunctatus*, can now be found with little effort. However, try find a single Asian catfish, other than a Glass cat (*Kryptopterus bicirrhis*) or Iridescent Shark (*Pangasius hypophthalmus*), and the hunt is on! Multitudes of barbs, danios, rasboras, and gouramis from Asia are widely available in our hobby and yet the catfish that share habitats with all of these common fish are rarely available. It is the purpose of this series of articles not only to inform the reader, but also to pique more interest in this understudied area of our hobby.

Asia, including the subcontinent of India, is home to wide variety of catfishes. Catfishes from the families Cranoglanididae, Siluridae, Schilbeidae, Clariidae, Akysidae, Amblycipitidae, Heteropneustidae, Parakysidae, Chacidae, Pangasiidae, Plotosidae, Ariidae, Sisoridae, and Bagridae can all be found in Asia. One of the largest families in Asia is the family Bagridae. Bagrids are of special interest to us because more species of this family are available in the hobby than of any other Asian catfish family.

The family Bagridae has a huge range and members of this family can be found throughout all of Asia, Africa, and the Middle East. The bagrids are also a very diverse family ranging from *Bagrus meridionalis*, the largest fish native to Lake Malawi, to the diminutive *Hyalobagrus ornatus* of Southeast Asia that rarely exceeds one inch. Bagrids are sometimes referred to as Old World pimelodids and many bagrids do in fact look very similar to some pimelodids. Perhaps it would be fairer though to refer to pimelodids as New World bagrids since many scientists believe that several other catfish families evolved from a bagrid-like ancestor. More than one aquarium book has a photo of a pimelodid that is mislabeled as a bagrid. However, bagrids with barbels can be distinguished from

pimelodids easily as pimelodids always lack nasal barbels.

At present, Bagridae is divided into two subfamilies. The subfamily Bagrinae includes: *Bagrus* (restricted to Africa), *Aorichthys*, *Bagrichthys*, *Bagroides*, *Batasio*, *Hemibagrus*, *Horabagrus*, *Hyalobagrus*, *Leiocassis*, *Mystus*, *Neotropius*, *Olyra*, *Pelteobagrus*, *Pseudobagrus*, and *Pseudomystus*. The second subfamily, Ritinae, includes: *Rita* and *Nanobagrus*. This arrangement follows the 1991 revision of the family by Tianpei Mo. Much of Mo's work has been recognized as valid, but some of it has not. Mo placed *Horabagrus* in the family Schilbeidae, but subsequent authors have moved this genus back into Bagridae. Mo also moved *Neotropius* from Schilbeidae to Bagridae, but later authors have not followed this placement. Mo's decision to retain *Bagrus* in Bagridae is also problematic. Mo recognized that all the other African genera belonged in their own families and created the African families Claroteidae and Auchenoglanidinae. With the exception of this one genus, Bagridae is an entirely Asiatic family.

Let us begin our tour of bagrids imported for the aquarium hobby with the three closely related genera: *Batasio*, *Chandramara*, and *Rama*. At various times these three genera have been retired or resurrected and the species in each have been placed in the others. The most recent work, Jayaram 1999, resurrected *Chandramara* and *Rama*. The genus *Batasio* presently contains three species. Members of this genus are mainly found in India and it is likely that there are valid members of this genus in Southeast Asia currently placed under *Batasio tengana*. Although not common, the Southeast Asian species placed in *Batasio tengana* are the most widely available in the hobby. The photo on page 307 of Baensch's *Aquarium Atlas III* labeled *Batasio tengana* is actually a photo of *Leiocassis micropogon* from Southeast Asia. The reason for differentiating between the *Batasio tengana* of India and that of Southeast Asia is because the two fish look very different and, in my opinion, represent two or more distinct species.

The *Batasio tengana* from Southeast Asia has been bred in captivity. The fish spawned in soft neutral water, but raising the 200 plus fry proved difficult. *Batasio*, like most other bagrids, are easy to sex. The male has a visible genital papilla just fore of the anal fin. I have also observed that gravid female *B. tengana* (SE Asian form) are easy to identify because the pink eggs can be seen through their semi-transparent belly when they swim near the aquarium light. Both *B. tengana* do well in captivity. It appears that all *Batasio* are rapids dwellers and need a lot of current and a high oxygen content. The temperature for the Indian species should remain between 68-72F. The Southeast Asian form will tolerate slightly warmer waters. In Malaysia, the Southeast Asian form was collected with below a waterfall along with *Glyptothorax* species and hill stream loaches. Another species of *Batasio* found in the hobby, if you have a good eye, is *B. batasio*. This fish hails from northern India where it shares its habitat with another bagrid *Mystus vittatus*. *B. batasio* bears a remarkable resemblance to *M. vittatus* and it takes some practice to tell the two apart. The relationship between these two fish really needs further study because it appears that *B. batasio* is a sort of "imitator" catfish like members of the genus *Brachyrhamdia*. The best way to tell these fish apart is to look at the barbels. Those of *B. batasio* do not extend beyond the head. *B. batasio* reaches a maximum length of about four inches. The final *Batasio* species, *B. travancoria*, is rare in its natural habitat and has only once been imported to the U.S. The fish is an overall golden brown with a dark streak along the lateral line. I found this fish very difficult to maintain and believe they may be a specialized feeder. In captivity my specimens slowly lost weight over six months and perished one by one. They were treated for internal parasites, but the main problem was that they showed little interest in all foods offered. If this species is imported again hobbyists will need to experiment to find the proper diet to maintain this fish in captivity.

Chandramara chandramara may also be found occasionally. This fish is constantly moved from genus to genus. Just as the hobby was becoming used to the

name *Batasio chandramara*, Jayaram moved the fish back to *Chandramara*. It should also be noted that Talwar and Jhingran placed this fish in *Rama*. So in the last ten years this wonderful little fish has been in three genera. *C. chandramara* is a pretty little catfish with a semi-transparent speckled body. *C. chandramara* comes from India and is fully-grown at just over two inches. This small schooling bagrid is often referred to as the Asian *Corydoras*. It also needs cooler temperatures. The final member of this group, *Rama rama*, does not appear to have been imported. It looks very much like *Chandramara* but lacks the spots.

The genus *Pelteobagrus* consists of about twenty species that are found mainly in China, Korea, and other parts of Northern Asia. Sadly, only one species of this genus makes it to the American aquarium trade, *P. fluvidraco*. It is most often found under the name "Chinese Dragon Catfish". This fish comes from northern China and southeast Siberia. It is not a tropical fish and requires cooler temperatures. This fish is a good candidate for the outdoor pond.

In 1998 Ng Heok Hee and Maurice Kottelat created the genus *Hyalobagrus* for the small SE Asian bagrid known to the hobby *Pelteobagrus ornatus*. During their research, Ng and Kottelat discovered that there are actually three dwarf bagrids from SE Asia that belong to *Hyalobagrus*. These wonderful little transparent catfish are mid-water swimmers. They seem to do best in a heavily planted tank with tankmates that will not out compete them for food. These fish relish frozen bloodworms and will gorge themselves on them. All *Hyalobagrus* are sexually dimorphic, males possess a genital papilla, and gravid females are easy to spot since their blue-green eggs are visible through their bellies. To my knowledge none of these species have been bred in captivity, but this would certainly be a worthwhile project for the advanced aquarist.

In the next installment we will finish up the remaining genera of Bagridae imported for the aquarium hobby with the exception of the complex genus *Mystus* which deserves its own column.

Below is the current status, as of January 2000, for the above genera:

Batasio Blyth, 1960

Batasio batasio (Hamilton & Buchanan, 1822) India: Teesta River, North Bengal & Bangladesh

Batasio tengana (Hamilton, 1822) India (Bangladesh?)

Batasio sp aff tengana SE Asia, the fish from Malaysia and Thailand appear to be distinct spp.

Batasio travancoria Hora & Law, 1941 Southern India

Chandramara Jayaram, 1972

Chandramara chandramara (Hamilton, 1822) North India & Bangladesh

Rama Bleeker, 1858

Rama rama (Bleeker, 1858) India: Assam

Pelteobagrus Bleeker, 1864

Pelteobagrus sp. prox. crassirostris noted by Jayaram, 1968 China

Pelteobagrus crassilabris (Gunther, 1864) China

Pelteobagrus eupogoides (Wu, 1930) China

Pelteobagrus eupogon (Boulenger, 1892) China

Pelteobagrus fui Miao, 1934 China

Pelteobagrus fluvidraco (Richardson, 1845) China, Japan, & Siberia: Amur basin

Pelteobagrus hoi (Pellegrin & Fang, 1940) China

Pelteobagrus microps (Rendahl, 1933) China: Chungking, Foochow

Pelteobagrus nitidus (Sauvage & Thiersant, 1874) China

Pelteobagrus nudiceps (Sauvage, 1883) Japan River Azusa, Biwa Ko, Himeji, Matsubara, Okayama, Sasayama

Pelteobagrus ransonnetii (Steindachner, 1887) Japan: Biwa Ko, Kochi, River Kyoto, Osaka

Pelteobagrus tenuifurcatus (Nichols, 1931) China: River Tsien Tang, Chungan Hsien, Suifu

Pelteobagrus vachellii (Richardson, 1845) China & Siberia

Pelteobagrus virgatus (Oshima, 1926) Hainan Island: River Kachek, Nodoo

Pelteobagrus wangi (Maio, 1934) China

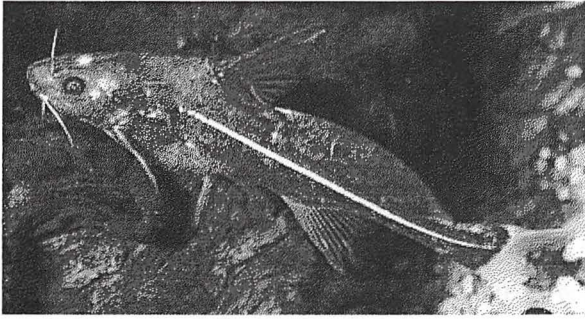
Pelteobagrus wittenburgii (Poopa, 1911) China: Hangchow, Tient-sin Siberia: Rivers Amur, Sungari

Hyalobagrus Ng & Kottelat, 1998

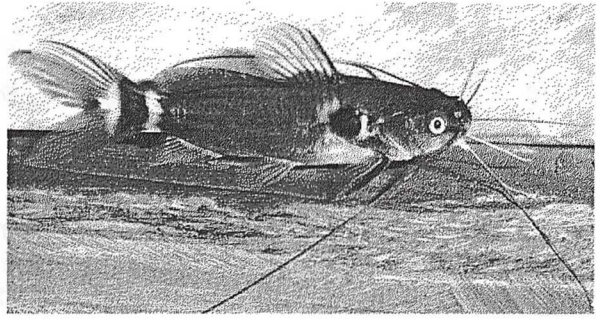
H. flavus Ng & Kottelat, 1998 Sumatra and

H. leiacanthus Ng & Kottelat, 1998 Central Borneo

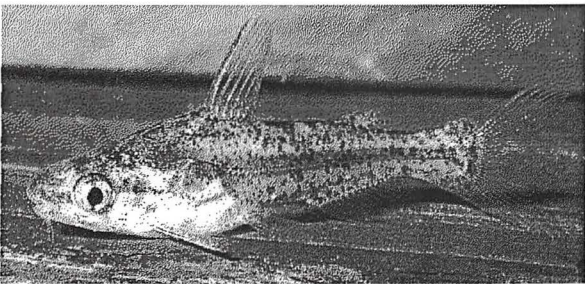
H. ornatus (Duncker, 1904) Southern Malay Peninsula



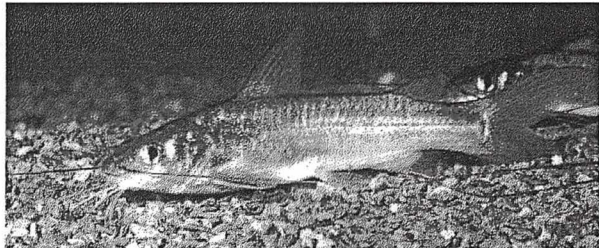
Bagrichthys macracanthus



Mystus bimaculatus

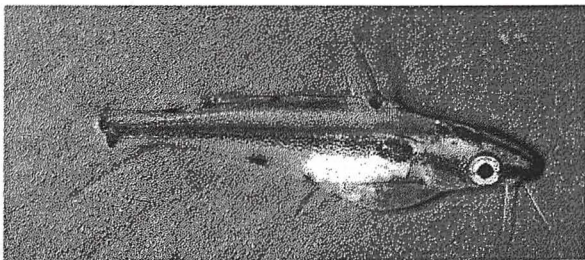


Chandramara chandramara



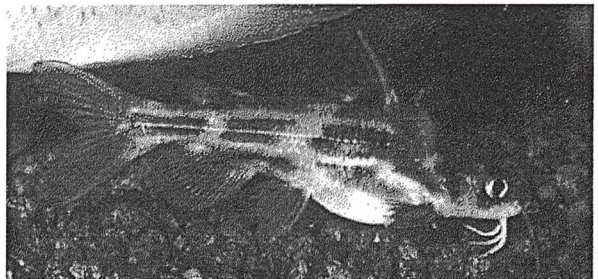
Mystus gulio.

Mystus gulio, as presently understood, is a collection of brackish *Mystus* that likely represent many valid species.



Hyalobagrus flavus.

Gravid female. Note clearly visible eggs (greenish in colour).

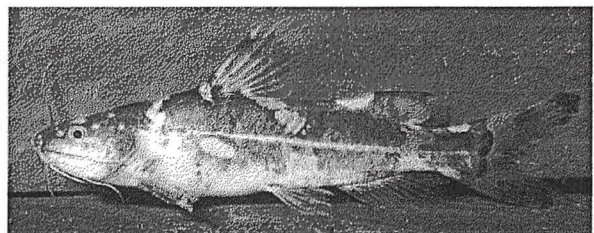


Pelteobagrus fluvidraco



Mystus cf. albolineatus.

This fish matches the color description of *Mystus albolineatus* but the body shape is very different than the described species. The true *Mystus albolineatus* has a very high and long adipose. This appears to be an undescribed species



NOT *Pseudomystus siamensis*.
This appears to be the Malaysian form of *Pseudomystus stenomus*

From the Chair

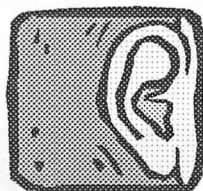


Welcome to a new Century of Fishkeeping with the Catfish Study Group (UK) and, as far as all of us Catfish enthusiasts are concerned, a new era. We now see the recent formation of The Catfish Study Group (UK) together with its voice, the official journal 'Cat Chat', as a step forward in our hobby.

My name is Ian Fuller and I come from Kidderminster in the West Midlands in England. Some of you may know me personally or know of me because I write articles for the aquarium hobby magazines. I am a self confessed Corydoras 'nut' and have been so for over twenty-five years. However, I do keep other fish like the ever-popular Loricariidae and some of the Asian Bagridae species.

It is intended, through the medium of the Journal, to get members to interact by exchanging humorous,

Name that Tuna !!



I've Lost My Sense of Herring

Aquatic hobbyists may be more in tune with their fish than meets the ear, according to research.

Scientists have found that humans' love of loud music is down to a unique hearing mechanism inherited from prehistoric fish.

Researchers at Manchester University discovered that humans benefit from a pleasure-inducing hearing mechanism passed down from fish to humans over millions of years of evolution.

The primitive system, a tiny part of the inner ear known as the sacculus, was discovered to be sensitive only to loud noises over 90 decibels—volumes found in rock concerts and night clubs. Similar volumes trigger the mating instinct in cod and haddock.

Neil Todd, who led the research, said: " This mechanism seems to give that 'buzz' we get from rock and dance music.

practical, theoretical and scientific articles – dare I say it - in writing (and not in any particular order). The aim is to produce an interesting and valuable source of information, which satisfies the most discerning hobbyist and/or scientist.

In this first issue, I hope we have given you an insight of things to come and to the best of your ability; there will be four issues each year. I say to the best of your ability because it is not just up to the editorial team to produce the journal, it needs input from you, the members and as much of it as you can write. There can never be too many articles. It is not important how large or small an article is or how well you write it (there are people who can sort it out – editors for example because that is what they do), it can be several pages or just a few lines it matters not - send them in. The Journal will be sent out in March, June, September and December even if it's only the front cover!

There will be a monthly information sheet but these will be distributed quarterly with each journal (three per issue). Each one will carry a line drawing, colour pictures (if available) and as much information on keeping the species as possible, including practical tips. This again is where you come in, because it is you who are keeping all these weird and wonderful little gems, that only get talked about and never seen. If you keep a fish that you think is of interest, send us a picture with as much information as you can about how you keep it or breed it and we will use it, either for an article or to compliment an information sheet. All due credit will be given for the article.

For local members who cannot get to our monthly meetings and of course, for those of you who live in weird and wonderful places, or even overseas, I will be writing a regular article of events. This will keep all members informed of our activities.

Watch this space for reports from the chair.

Best regards to one and all

Ian Fuller

Corydoras geoffroy and *Cataphractus punctatus*

History of both earliest discovered species of the subfamily *Corydoradinae*

(Actinopterygii, Siluriformes, Callichthyidae)

by

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La Cepède, a celebrated French naturalist (born 26 December 1756 in Agen, France, deceased 6 October 1825 in Épinay-sur-Seine, France), was initially baptised as Bernard-Germain-Étienne de la Ville-sur-Ilion, Count of La Cepède. During the French revolution, however, he was deprived of his full name and title and was called simply *le citoyen* (= the citizen) Lacépède. Under this notation he became and still is best known in ichthyology. In 1803 he established the genus *Corydoras*, with only one species, *Corydoras geoffroy*.

Following rules that did not exist in La Cepède's time, *Corydoras geoffroy* is now termed type species of the genus, by so-called monotypy, because *Corydoras* was based on a single species.

According to the Glossary in the current International Code of Zoological Nomenclature (1999: 108), monotypy is the situation arising when an author establishes a nominal genus or subgenus for what he or she considers to be a single taxonomic species and denotes that species by an available name (the nominal species so named is the type-species by monotypy); or when an author bases a nominal species-group taxon on a single specimen but does not explicitly designate it as holotype (holotype by monotypy).

The original description of *C. geoffroy* was not only brief but also it was inadequate to such an extent that the species was hardly if at all identifiable at the time without an examination of the specimen. La Cepède did not provide any illustration of his *C. geoffroy* and an interpretation of just text often is quite difficult. Once the described species is recognised, however, it is possible to better judge such a poor original description. Some of the already few details in La Cepède's brief first description were obviously inaccurate. Unfortunately, the holotype (by monotypy, because there was only one specimen at hand) got lost one way or another, probably around 1840. From the beginning of our revisional studies on members of the Corydoradinae, early in the 1960s, we have ever been alert to trace this eminently important fish's mortal remains. This included repeated searches for it in its maternal museum and in other collections inside and outside

Europe, but always in vain. It is fortunate that its loss occurred after Achille Valenciennes (born 9 August 1794 in the Muséum National d'Histoire Naturelle in Paris, France, deceased 13 April 1865 in Paris, France; Appel, in Gillispie, 1976: 554-555) had re-examined the hitherto only known specimen of *C. geoffroy*. Valenciennes (1840) published fragmentary though imperative additional details of some of its characteristics.

Note that La Cepède - in the same volume of his *Histoire naturelle des poissons* (= Natural history of the fishes) which contained the description of *Corydoras geoffroy* - also included a description of *Cataphractus punctatus* Bloch, 1794. His observations about this latter fish apparently were not based upon examination of specimens, but drawn from the original description by Bloch which is in German but was subsequently translated into French. *Cataphractus punctatus* was even assigned by La Cepède (1803: 124-128) to an unnamed "second subgenus" of *Cataphractus*. This demonstrates that he was well acquainted with the appearance of *Cataphractus punctatus*.

This species obviously must have had some important characteristics distinguishing it from his *Corydoras geoffroy*. I have previously co-authored some papers in which *Corydoras geoffroy* was considered a synonym of *Cataphractus punctatus* (Nijssen & Isbrücker, 1967 and on). This synonymy was first suggested by Valenciennes, in Cuvier & Valenciennes (1840) and, with an exception of Eschmeyer & Bailey, in Eschmeyer (1990: 105), and Eschmeyer et al., in Eschmeyer (1998: 1902) continually was fully accepted until last year. Still, I had already for some decades been in doubt of the reason why La Cepède would describe *Corydoras geoffroy* even in a genus distinct from Bloch's *Cataphractus*, if these two nominal species would really turn out to be only synonyms. Besides *Cataphractus punctatus*, Bloch's genus also comprised two other species. One (the type species, designated by Jordan, 1917: 51) is now known as *Callichthys callichthys* (Linnaeus, 1758), the typical callichthyid, whereas *Cataphractus costatus* of Bloch, 1794 is currently known as *Platydoras costatus* (Linnaeus, 1758), a doradid. Evidently, La Cepède must have had at



least one reason not to even associate his new fish with *Cataphractus*. Generic limits were substantially broader in La Cepède's time than they are today. Therefore, I re-examined the case (Isbrücker, 1999) and offered the solution of the problem of the identity of the nomenclaturally most important species of the genus *Corydoras*.

My translations of the essential French texts into English were kindly checked and commented upon by Dr Maurice Kottelat of Cornol, Switzerland.

The genus *Corydoras* was originally diagnosed by La Cepède (1803: xxiii, and p. 147) as follows: "Large blades at each side of the body and of the tail; the head covered with broad and hard pieces; the mouth at the end of the snout; no barbels; two dorsal fins; more than one ray in each fin of the back. Species [singular]. The *Corydoras geoffroy* (*Corydoras geoffroy*). Characters. Two spiny rays and nine articulated rays in the first dorsal fin; the caudal forked."

La Cepède (1803: 148-149) described his new species in the following words:

"The *Corydoras geoffroy* [here intended as a vernacular name] [this marks footnote 1, giving the latinized name, in this case not different from the vernacular name].

We have found in the collection donated by Holland to France, an individual of this species yet unknown to naturalists. The generic name by which we believe to have to distinguish it, indicates the cuirass and the helmet [casque] which it has received from nature" [footnote 2]; and we have dedicated it to our colleague Geoffroy, who has so well deserved the acknowledgement of all those who cultivate natural history, for the observations which he has made in Egypt on the various animals of this region, and particularly on the fishes of the Nile.

The blades which protect each side of this bony [fish] are arranged in two rows; moreover, they are very broad and hexagonal. A rather long membrane separates the two rays which support the second dorsal fin. The first ray of each pectoral is bristling with very small points. The second ray of the first dorsal fin is dentate on one side only. The first one of this same fin does not show dentations; it is even very short; but one can notice its strength. Each nostril has two openings. One sees a large blade above each pectoral" [footnote 3].

[Footnote 1] *Corydoras geoffroy*.

[Footnote 2] *Corys*, Greek, means helmet [casque]; and *doras*, cuirass.

[Footnote 3] 11 rays in each pectoral of *corydoras geoffroy* [La Cepède never mentions Latin names in text, according to Dr Kottelat].

2 in the second dorsal.

6 in each pelvic.

7 in the fin of the anus.

14 in that of the tail.

This completes the entire original description.

The observations of La Cepède that *Corydoras geoffroy* has no barbels and that it has two rays in the second dorsal (= adipose) fin, are inaccurate (Valenciennes, 1840: 321; Myers, 1940: 11). However, particularly already La Cepède's description of the first pectoral fin ray (= pectoral fin spine: "The first ray of each pectoral is bristling with very small points") gave me a clue to the identity of his fish. La Cepède did neither bother to describe the colour pattern nor the pigment of his specimen. This can be explained best by the assumption that he did not describe characters that were not obvious. This means that his specimen most likely just did not possess pigmentation in any clear-cut pattern. Note that Valenciennes (1840: 321-322) quoted all essential characters from La Cepède. La Cepède did not mention the provenance of his specimen, only that it was found in the collection donated by Holland to France. It is known (after all, the collection to which it once had belonged was warbooty) that it had been part of the Cabinet (a rich collection of natural history objects) owned by Stadtholder Willem V, Prince of Oranje and Nassau (born 8 March 1758 in 's Gravenhage, the Netherlands, deceased 9 April 1806 in Braunschweig, Germany). I think that this cabinet did not consist exclusively of specimens from Surinam, but the conclusion of Valenciennes that the specimen came from Surinam was correct. For example, Pieters, in Sliggers & Wertheim (1994: 46) wrote: "The South American animals [in the Cabinet of Willem V] originated above all from Surinam, some from Brazil and Mexico [...]." There must have been some record of essential data about the provenance and other details accompanying the moved material, but such has subsequently never been encountered. Pieters (1980: 541, see also notes 36 and 44) contended that "Aernout Vosmaer (* 23.10.1720, † 14.1.1799) drew an inventory of the Stadholder's natural history cabinet which was used by French officials in charge of arranging its transport to France."

Corydoras geoffroy was named in honour of "our colleague Geoffroy." This was Étienne Geoffroy Saint-Hilaire (simply called *le citoyen* Geoffroy during the French revolution, born 15 April 1772 in Étampes, France, deceased 19 June 1844 in Paris, France); both he and La Cepède worked in the Muséum National d'Histoire naturelle in Paris (Bourdier, in Gillispie, 1972: 355). Étienne Geoffroy Saint-Hilaire's name should not be tangled with that of Étienne-François Geoffroy Saint-Hilaire, born 13 February 1672, deceased 6 January 1731 (see Geoffroy Saint-Hilaire, 1847: 2; Smeaton, in Gillispie, 1972: 352). This Étienne-François was one of his ancestors. Among the numerous publications of Étienne Geoffroy Saint-Hilaire (erroneously all indicated as if written by



Étienne-François Geoffroy Saint-Hilaire), Dean (1917, reprint 1962: 448-449) listed the '*Dissertation sur l'organe de l'ouïe de l'homme, des reptiles, des poissons*' first published in 1778. The person after whom *Corydoras geoffroy* was to become named then was an only 6 years old boy! The real author of the mentioned Dissertation was Étienne Louis Geoffroy (without Saint-Hilaire), who lived from 2 October 1725 to 12 August 1810 (Théodoridés, in Gillispie, 1972: 354). I have seen several more inaccuracies in the rich bibliographies of various learned members of the Geoffroy Saint-Hilaire family, but this is not the place to highlight these.

Lemire, in Sliggers & Wertheim (1994: 93, see also note 1) wrote: "Étienne Geoffroy Saint-Hilaire, who had obtained the chair of Zoology through the reorganization of the Muséum d'Histoire Naturelle, [...] was conscious of the great scientific importance of all this richness [of the Cabinet of Willem V] for the national collections. From the moment that the French army was winning the battle, [Geoffroy] Saint-Hilaire submitted his ideas in a hasty notice and elucidated that this was a stroke of luck." This indicates a reason why La Cépède named one of the scientifically unknown species from this collection in Geoffroy's honour.

The collector of the holotype of *Corydoras geoffroy* has never been mentioned in published literature and remains a mystery. In vain I have attempted to trace him (assuming that the collector was a man). Still, after having read several 18th century books about travels to and about residence in Surinam (see references in Holthuis, 1959), I learned that the number of collectors was limited. Collecting naturalia in those days apparently never was the main goal of their sojourn. The Cabinet of the Stadtholder of Holland in 's Gravenhage was famous, and an opportunity to contribute to this collection was no doubt propitious for mere mortals. Travellers generally were also well aware of the vivid interest in any exotic fish of Marcus Elieser Bloch from Berlin (born 1723 in Ansbach, Germany, deceased 6 August 1799 in Karlsbad, Germany). Bloch had sought the assistance of everybody who could possibly provide him with preserved fishes or even just drawings of them (see the prefaces in his works of 1782-1795), which he intended to describe in the still upcoming volumes of his *Oeconomische Naturgeschichte der Fische Deutschlands* (= Economical natural history of the fishes of Germany), 3 volumes (1782-1784), and his *Naturgeschichte der ausländischen Fische* (= Natural history of the exotic fishes), 9 volumes (1785-1795; together with the first 3 volumes subsequently called *Allgemeine Naturgeschichte der Fische* [= General natural history of the fishes]). It can not have been ac-

cidental that the specimens a) on which Bloch based his description and illustration of the then new *Cataphractus punctatus* in 1794 and b) the specimen, confiscated by French troops from the Cabinet of the Stadtholder of Holland in 1795 (the specimen later described by La Cépède as *Corydoras geoffroy*) both came from Surinam. Collection details of the specimens from the Cabinet have been lost, but there has been a list specifying the known data that accompanied the booty to Paris. I do not only think that the Surinam samples were collected by one and the same person, I also believe that they were collected at about the same day, at about the same spot.

John Gabriel Stedman (born 4 April 1744 in Dendermonde, the Netherlands, deceased 7 March 1797 in Tiverton, England; Stedman spent five years in Surinam, 1773-1778), (1796, reprint 1972: 49, 51) referred frequently to "Lieutenant Freidrecy," and on p. 147, 151, 152, 153, 337 to "Captain Fredericy." Both times the quoted name obviously is an alternative for De Friderici. Stedman wrote (1796: 153): "Various and innumerable indeed are the butterflies with which the forests of Guiana abound; some people, in fact, who make fly-catching their business, get much money by it; and having arranged them in paper-boxes, with pins stuck through them, send them off to the different cabinets of Europe." Although this does not explain specifically the vicissitudes of the specimens we try to trace back, it certainly shows that there was generally interest in the matter at the time. In his figure 66 (between pp. 348-349) two fishing instruments used in this region, are shown.

From Stedman's (1796) memoirs we know that, for example, Juriaen François de Friderici (born 7 December 1751, Cape of Good Hope, South Africa, deceased 11 October 1812, Paramaribo, Surinam) frequently collected natural history material which he shipped to Europe. For sure, De Friderici supplied Bloch with various freshwater fishes from Surinam, but his name is not always mentioned as sender of the specimens in the different descriptions. I have found the following eleven examples of fresh water fishes described by Bloch (1794, 1795) (at least in part) from Surinam without mention of the collector:

* he (1794: 21) described his *Silurus militaris* [= *Ageneiosus armatus* La Cépède, 1803, Ageneiosidae, not *Silurus militaris* Linnaeus, 1758 = *Osteogeneiosus militaris* (Linnaeus, 1758), Ariidae], and remarked: "Linné has described it first, and indicated Asia as its fatherland; mine, which I have introduced diminished, has been sent to me from Surinam;"

* on p. 23, following the description of *Silurus inermis* [= *Ageneiosus inermis* (Linnaeus, 1766), Ageneiosidae], he said: "Also this fish stays, like the preceding (viz., *Silurus militaris*, just mentioned), in the rivers of Surinam;"



* on p. 33, after describing *Silurus herzbergii* [= *Selenaspis herzbergii* (Bloch, 1794), Ariidae], Bloch wrote: "This fish I obtained from Surinam;"

* on p. 91, after the description of our "punktirte Kürassier," *Cataphractus punctatus* [= *Corydoras punctatus* (Bloch, 1794), Callichthyidae], he indicated: "Its stay is in the fish-rich rivers of Surinam;"

* on p. 64, following the description of *Platystacus verrucosus* [= *Bunocephalichthys verrucosus* (Bloch, 1794), Aspredinidae], Bloch recorded: "As I have obtained this fish from a Dutch auction, I therefore can not indicate its stay with certainty. Probably it is home in Surinam;"

* under *Salmo melanurus* [= *Bryconops melanurus* (Bloch, 1794), Characidae], p. 104, Bloch said: "This salmon is native to Surinam;"

* about *Salmo unimaculatus* [= *Hemiodus unimaculatus* (Bloch, 1794), Hemiodontidae], p. 106, he said: "Its flesh is white, scaly and good of taste, that's why it also belongs to the favourite foods of the Brazilians and the Surinamese;"

* on p. 111, after his description of *Salmo bimaculatus* [= *Poecilurichthys bimaculatus* (Linnaeus, 1758), Characidae], Bloch said: "We encounter this fish in the Ambonian [that was incorrect] and Surinamese rivers;"

* then, under *Salmo rhombeus* [= *Serrasalmus rhombeus* (Linnaeus, 1766), Characidae]: "We encounter this fish in the Surinamese rivers;"

* in his next volume, Bloch (1795: 87) gives the locality of his *Synbranchus marmoratus* Bloch, 1795 [Synbranchidae]: "I have obtained two pieces, of the size as here figured, from Surinam;"

* and about its synonym, *Synbranchus immaculatus* Bloch, 1795, he said on p. 88: "I have obtained it from Surinam and from Tranquebar [?] in the size and colour here indicated."

There are five species not only described from Surinam, but also indicated to have been sent by [J. F.] De Friderici:

* after describing *Silurus fasciatus* [= *Pseudoplatystoma fasciatum* (Linnaeus, 1766), Pimelodidae], Bloch (1794: 31) wrote: "This pretty catfish I obtained from Surinam, from the Governor of that area, Mr De Friderici;"

* Bloch (1794: 94) even named a new fish in his honour: *Salmo friderici* [now known as *Leporinus friderici* (Bloch, 1794), Anostomidae]; on p. 95 he recorded: "This fish is an inhabitant of Surinamese waters. I have obtained it, with several other fishes from the Governor of that area, the Mr De Friderici;"

* next, under *Salmo fasciatus* [= *Leporinus fasciatus* (Bloch, 1794), Anostomidae]: "Also this fish I am due to the Governor, Mr De Friderici;"

* then: *Salmo edentulus* [= *Curimata cyprinoides* (Linnaeus, 1766), Curimatidae], about which he said: "Also this fish I am due to Mr the Governor De Friderici in Surinam.;"

* on p. 121, after the description of *Salmo falcatus* [= *Acestorhynchus falcatus* (Bloch, 1794) Characidae], Bloch noted: "I have obtained this fish through the Governor Mr De Friderici from Surinam."

All these examples make me strongly assume that De Friderici could well have been involved in shipping also Bloch's specimens of *Cataphractus punctatus*, as well

as the later holotype of *Corydoras geoffroy* to the Cabinet of Stadtholder Willem V in 's Gravenhage, with whom he must have been well acquainted.

De Friderici is known to have visited the Marchall Creek (Stedman, 1796), where native South Americans living along the banks of the numerous Surinamese rivers fished small invertebrates and fishes with traps (Stedman, 1796, fig. 66). It is a pity that I can not find any hard clue to prove that the scenario sketched here is any real, but it remains well possible. I restricted the type locality of the first two described members of the current subfamily Corydoradinae to this Marchall Creek (Isbrücker, 1999).

Valenciennes' description (translation from French into English by the author, kindly corrected by Dr Maurice Kottelat):

"Le CALLICHTHE PONCTUÉ [= the spotted callichthe].

Callichthys punctatus, nob[is] [= ours (as a new species, that is, for the first time transferred to *Callichthys*), pp. 318-322]; *Cataphractus punctatus*, Bl[och]; [Valenciennes, in] d'Orb[igny], Voy. dans l'Amér. mérid., Atl. ichth., pl. V, fig. 1.

After those *callichthes* with depressed head we come to those with a head compressed, or noticeable higher than broad.

Bloch has depicted one which he names *Cat[aphractus] punctatus* (pl. 377, fig. 2). Yet, we do not know if he has not somewhat enlarged it [in size], as happened with him often. His specimen came from Surinam and we have one of this colony. Mr d'Orbigny has sent the same species from Monte Video in 1827; but these samples are much smaller than the figure of Bloch.

The height of its back and the curve of its snout gives it somewhat the appearance of a *corb* [a fish of the family *Sciaenidae*, genus *Corvina* Cuvier, in Cuvier & Valenciennes, 1830, now a synonym of *Sciaena Linnaeus*, 1758] or of a *pogonias* [also *Sciaenidae*, genus *Pogonias* La Cépède, 1801. These sciaenids indeed have a high dorsum and a rounded snout].

Its height at the dorsal is three and a half times in its length; the head till the gill opening is comprised four and a half times, and is as high as long, but a quarter less wide. Its profile descends in a convex curve, and the tip of the snout is obtuse. The eye is lateral, and is more than a quarter the length of the head in diameter. The distance to the other eye is hardly two diameters. The two openings of the nostril are before the eye, in a part not covered by blades. There is an oblong continuing structure [the fontanel] between the eyes, but somewhat above. The occipital process is triangular, and its tip reaches that of a small, triangular shield; but it [the occipital process] has at each side two large plates with which it completes the helmet. The humeral plate is very wide, rounded behind, and garnishes below only the side of the breast. The mouth is very small, pierced under the snout, and reminds of that of a tadpole of the frog. Its barbels are thin; the longest one hardly exceeds the gill open-



ing. The pectoral spine, a quarter of the total length, is strong, compressed, very sharp, slightly rough on the outer edge, finely denticulate on the inner one, and in a manner that its teeth are directed towards the tip. In the dorsal there is first the very small spine, then the usual spine, as strong as the pectoral and similarly toothed posteriorly. With a magnifying glass, moreover, one sees on its posterior half traces of the articulations of which it is composed. The adipose has its ray strong and pointed; the caudal occupies more than a quarter and less than a third of the total length, and is divided in two very pointed lobes. The first ray of the anal [fin] is pointed and somewhat hairy, just like the extreme ones of the caudal. The pelvics, shorter than the pectorals, also have the outer ray strong and somewhat hairy.

Dorsal fin 1 spine, 7 rays, the last of which double, [the adipose fin spine:] -1; anal fin 8 rays; caudal fin 14 rays; pectoral fin 1 spine, 9 rays; ventral fin 6 rays.

The series of dorsal plates is twenty-one, that of the ventral plates twenty; at the end of each series there are three rounded ones [plates]: one sees three unpaired in front of the adipose. Our individual from Surinam, originating from the Cabinet of the Stadtholder, appears to be an uniform fawn, and has white and transparent fins.

The one from Monte Video, whose spines are proportionally slightly less long, but which otherwise resemble the first one in all things, is brown reddish with some blackish clouds on the back, greenish on the sides, and reddish under the belly. The head is more coloured [darker] than the back. Its dorsal [fin] is reddish, margined by a broad black band; there are traces of blackish dots on the last rays. The caudal has four vertical black bands, and a well pronounced, black, triangular blotch on the base of the middle rays; there is a wide black band on the anal, whose ground colour is yellowish and dotted with black. One sees also some blackish on part of the pectorals and a black spot on the adipose. The ventrals are yellow.

Our samples are only two and a half to three inches long. We have had made a good illustration of it in the Atlas ichthyologique of Mr D'Orbigny, pl. V, fig. 1.

After the long search we made to find again the corydoras of Mr de Lacépède, we convinced ourselves that it is the individual without spots we have just discussed, which has been the object of his item about the genus corydoras; but it is difficult to explain how he saw a ray at the posterior edge of the adipose, and at the same time how he has not seen the barbels. These illusions, however, have not been impossible if he has described his fish without removing it from the jar." [Valenciennes then quoted much of the original description of *Corydoras geoffroy* which is here omitted, because it is already quoted and translated above]. Valenciennes continued: "He does not speak, for that matter, neither about its colour, nor about its size, and only says that it came from the collection of the Stadtholder. Mr de Lacépède never put a label nor added entry to the objects of the Cabinet that he has described in his works, and one can not believe how much this carelessness gave us trouble to find again his fishes, inasmuch as very frequently it [the carelessness] reigns in his very descriptions."

Dr Kottelat notes (in litt., email 26.06.1998): "I think that Valenciennes' comment is not fair. La Cépède wrote his text and prepared it for publication while he was hiding away from Paris during that time of the French revolution called [Robespierres Reign of] Terror. See also Cuvier & Valenciennes, vol. 1, p. 172 and especially 174-175."

Valenciennes, in d'Orbigny, 1847: 8: "Le Callichthe ponctuée, *Callichthys punctatus*, Val., Poiss., XV, p. 318; Atlas d'Orb., pl. V, fig. 3 [but it is fig. 1]." (my translation from French into English, corrected by Kottelat, then from English into German): "This species has been very important to report, for it has served to explain what Mr de Lacépède understood with his *Corydoras Geoffroy*, described after a badly preserved specimen."

The d'Orbigny material is currently identified as *Corydoras paleatus* (Jenyns, 1842), an at the time of Valenciennes' examination undescribed species, but that issue is irrelevant to the present history of *Corydoras geoffroy*.

Still, I have some difficulties to understand exactly which part of Valenciennes' description concerns the d'Orbigny's material and which part pertains to *Corydoras geoffroy*. It is likely that the descriptions got mixed up with details of both samples! Valenciennes after all did consider all of his specimens to represent a single (necessarily very variable) species, and a given character (exclusive of the colour patterns) observed from one sample apparently was not systematically checked with the other.

The Corydoradinae lost from the Paris Museum

It is remarkable that not only the holotype of *Corydoras geoffroy* and the d'Orbigny material of Valenciennes' *Callichthys punctatus*, but also the syntypes of *Callichthys barbatus* Quoy & Gaimard, 1824 (Valenciennes, 1840: 322-324), were described for the last time from the original specimens (two of the three being represented by the types) by Valenciennes (1840). They are out of sight ever since and got subsequently lost from the fish collection of the Muséum National d'Histoire Naturelle in Paris. Kottelat noticed (email 26/06/1998): "This suggests that somebody took all of them out of the collection at the same time and lost them, destroyed them, or took them on loan and never returned them. I like the last possibility. They may still be in some other major European museum, unnoticed?" However, I think they are all just lost, considering the efforts we have made in the past to trace them. Therefore, the mystery in this case can not be solved by a simple re-examination of the relevant specimens.



Sizes

Bloch's published illustration of *Cataphractus punctatus* is about 125 mm in total length, about 94 mm in standard length, much larger indeed than the two surviving specimens, presently lectotype and paralectotype, designated by Nijssen & Isbrücker (1975: 63), which have standard lengths of 41.8 and 33.9 mm, respectively.

The size of Valenciennes' "*Callichthys punctatus*" (which, as we have seen, in fact consisted of "*Callichthys*" cf. *paleatus* from Uruguay and *Corydoras geoffroy* from Surinam) was stated to be "two and a half to three [Paris] inches [1 Paris inch = 27.072 mm], " which equals about 67.7 to 81.2 mm; whether this concerns total or standard length was not specified, but assumedly the total length was generally indicated. Boeseman (1972: 295-296) stated: "...all representatives of Valenciennes' species ... are specimens reasonably agreeing in size with Valenciennes' measures of his types. It is unfortunate that here the word "reasonably" has to be used, but Valenciennes was very inaccurate in his measurements, which often seem little more than a rough estimation." Valenciennes' account anyway turned out to be the last eye-witness record of the holotype of *Corydoras geoffroy*. In the case of this fish his estimate could have been fairly accurate, perhaps the exception to the rule.

True *Corydoras punctatus* is estimated not to exceed a maximum total length of 65 mm. The largest of 1950 recorded specimens (Nijssen, 1970: 34) was 48.3 mm in standard length; I measured a fish with a standard length of 47.2 mm having a total length of 62.2 mm (in ZMA 105.111).

The largest *Corydoras paleatus* was recorded by Van der Stigchel (1946, 1947: 128) as 82 mm (obviously in total length; ZMA 104.452, locality unknown), it is now 62.3 mm in standard length, >78.3 mm in total length (rays distally broken off). Although it agreed with the size indicated by Valenciennes (1840), its characters do neither quite match the description by La Cèpède nor that of Valenciennes.

Bleeker (1858: 53) accepted *Callichthys punctatus* as understood by Valenciennes, but in 1862 (p. 4) he assigned it to the genus *Corydoras* for the first time; *Corydoras Geoffroyi* was now considered to be junior synonym of *Corydoras punctatus* "Blkr." Günther (1864: 225) reduced the level of *Corydoras* as a subgenus of *Callichthys*, but ever since Cope (1872: 282), *Corydoras* was universally accepted as a good genus, with *Corydoras punctatus* as the earliest described species and *Corydoras geoffroy* or *geoffroyi* as its junior synonym. All later authors, including myself, retained this situation. The original material of *Cataphractus punc-*

tatus Bloch was thought to be lost and twice proposed to be replaced by a neotype. The first was by Hoedeman (1952: 14), but his proposal was invalid. Hoedeman's material was subsequently described as *Corydoras dubius* Nijssen & Isbrücker, 1967, now regarded a synonym of *Corydoras trilineatus* Cope, 1872. Nijssen & Isbrücker (1967: 28) selected a neotype for *Cataphractus punctatus*, but after examination of two of Bloch's syntypes this designation was suppressed (Melville, 1979: 198, 1981: 72-73). That was in favour of the lectotype designated by Nijssen & Isbrücker (1975: 63) from these syntypes.

It lasted until 1954, one hundred and sixty years after its first description, before Bloch's species was being correctly described from fresh material (Boeseman, 1954: 20-22, in part)!

Further *Corydoras* species from Surinam

Nijssen & Isbrücker (1967) described 14 species in *Corydoras* from Surinam, 12 of which were really from that country, as: 1) *Corydoras punctatus*, 2) *C. aeneus*, 3) *C. spilurus*, 4) *C. bondi*, 5) *C. osteocarus*, 6) *C. bicolor*, 7) *C. boesemani*, 8) *C. nanus*, 9) *C. oxyrhynchus*, 10) *C. sanchesii*, 11) *C. wotroi*, and 12) *Corydoras* species. The occurrence of the thirteenth species in "Surinam," *C. melanistius*, was apparently doubtful (Nijssen, 1970: 42-43), whereas the fourteenth species, *Corydoras dubius*, turned out to be not based upon Surinamese material, but upon imported aquarium specimens, probably from Peru.

Nijssen (1970) added eight species and alleged subspecies from Surinam, viz.: 13) *Corydoras bondi coppenamensis*, 14) *C. guianensis*, 15) *C. heteromorphus*, 16) *C. octocirrus*, 17) *C. oelemariensis*, 18) *C. saramaccensis*, 19) *C. schwartzi surinamensis*, 20) *Corydoras* species [unidentified]. Subsequently, two more species were described from Surinam: 21) *C. filamentosus* (1983), and 22) *C. breei* (1992), raising the actual number of species from this region to at least twenty-two.

Traditionally, *Corydoras geoffroy* has been considered a junior synonym of *Cataphractus punctatus*, apparently only because both were originally described from Surinam. From 1794 till 1967 only two nominal species of Corydoradinae had been recorded from Surinam: *Cataphractus punctatus* and its alleged synonym *Corydoras geoffroy*. Several corydoradin species, at least twenty more than in 1840, have been reported from Surinam in and since 1967. That is why the rather automatic synonymy of *Corydoras geoffroy* with *Cataphractus punctatus* to me became increasingly unlikely. Now I am convinced that this synonymy is



incorrect. It is *Corydoras octocirrus*, not *Cataphractus punctatus* which agrees in essential details (size, colour pattern, pectoral fin spine) with the descriptions of *Corydoras geoffroy*, which must have been based originally upon a nuptial male.

Therefore, I removed *Corydoras geoffroy* La Cepède, 1803 from the synonymy of *Cataphractus punctatus* Bloch, 1794, and instead assigned *Corydoras octocirrus* Nijssen, 1970 to the synonymy of *Corydoras geoffroy*. Under the regulations in Article 75 of the International Code of Zoological Nomenclature (1985), I designated the specimen in ZMA 106.017 (also the holotype of *Corydoras octocirrus*) to be the neotype of *Corydoras geoffroy*. It is a nuptial male, 65.7 mm in standard length, 92.6 mm in total length, a size largely agreeing with that indicated by Valenciennes (1840).

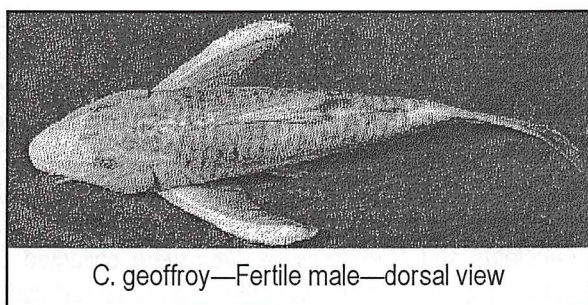
Corydoras geoffroy La Cepède, 1803

Corydoras geoffroy La Cepède, 1803,- Isbrücker, 1999.

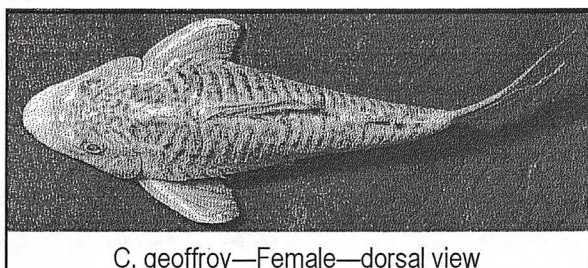
Callichthys punctatus; (not of Bloch, 1794, in part) Valenciennes, in Cuvier & Valenciennes, 1840.

Corydoras spilurus; (not of Norman, 1927, in part) Nijssen & Isbrücker, 1967.

Corydoras octocirrus Nijssen, 1970,- Isbrücker, 1971a, 1971b, figs. 3, 5, plate I fig. 5 (popular accounts; drawings after Nijssen, 1970).



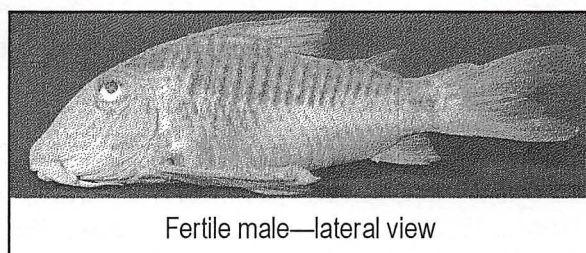
C. geoffroy—Fertile male—dorsal view



C. geoffroy—Female—dorsal view

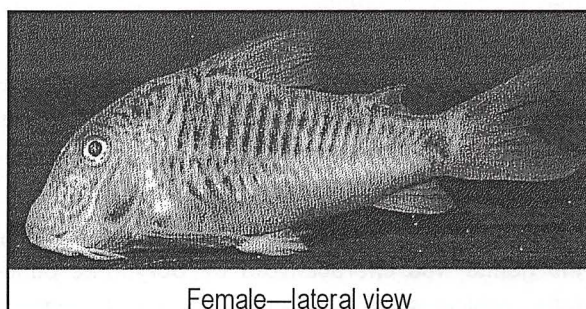
The type locality of *Corydoras geoffroy* now is that of the neotype: Surinam: district Brokopondo, Marchall Creek, E of road Paranam-Afobaka, 1.5 km N of Marchall Village; at the time of collecting - 8 December 1966 - the depth was 120 cm, running water, bottom clay and gravel. The neotype was collected by Han Nijssen, 8 December 1966, Surinam Expedition 1966/67, Field number HN 087. For further details about the characters of *Corydoras geoffroy* I refer to

Nijssen's original description of *Corydoras octocirrus* (1970: 26-29). The tenth line on his p. 29 should be corrected, however, as follows: "...third pair of rictal barbels is short, it can clearly be observed when lifting the..." *Corydoras octocirrus* was originally assigned to the *Corydoras acutus*-group of Nijssen (1970: 59). Nijssen (1970: 26) listed 28 preserved specimens deposited in the fish collections of natural history museums of Amsterdam, Leiden, Washington D.C., and Brussels, 27 of which are not only paratypes of *Corydoras octocirrus* but they are now also topotypes of *Corydoras geoffroy*.



Fertile male—lateral view

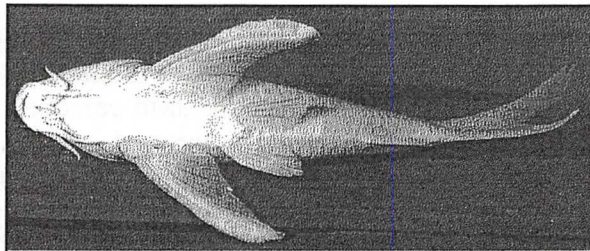
Compare *Corydoras geoffroy* with *Corydoras sararensis*, apparently its closest relative. The latter is distinguished in appearance particularly by the presence of vertical stripes on the caudal fin rays.



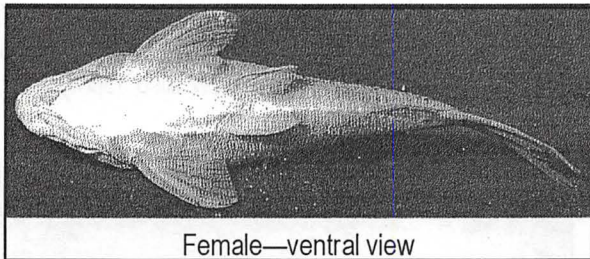
Female—lateral view

As a consequence of the neotype designation, *Corydoras geoffroy* La Cepède, 1803, belongs to the members of the former "*Corydoras acutus*-group," which are (in chronological order) as follows: *C. acutus* Cope, 1872, *C. aurofrenatus* Eigenmann & Kennedy, 1903, *C. treitlii* Steindachner, 1906, *C. revelatus* Cockerell, 1925 (fossil, synonym of *C. aurofrenatus*), *C. spilurus* Norman, 1926, *C. septentrionalis* Gosline, 1940, *C. ellisae* Gosline, 1940, *C. stenocephalus* Eigenmann & Allen, 1942, *C. fowleri* Böhlke, 1950, *C. cervinus* Rössel, 1962, *C. pastazensis* Weitzman, 1963, *C. semiaquilus* Weitzman, 1964, *C. oxyrhynchus* Nijssen & Isbrücker, 1967, *C. octocirrus* Nijssen, 1970 (= *C. geoffroy*), *C. saramaccensis* Nijssen, 1970, *C. pastazensis orcesi* Weitzman & Nijssen, 1970 (now *C. pastazensis*), *C. simulatus* Weitzman & Nijssen, 1970, *C. maculifer* Nijssen & Isbrücker, 1971, *C. blochi*



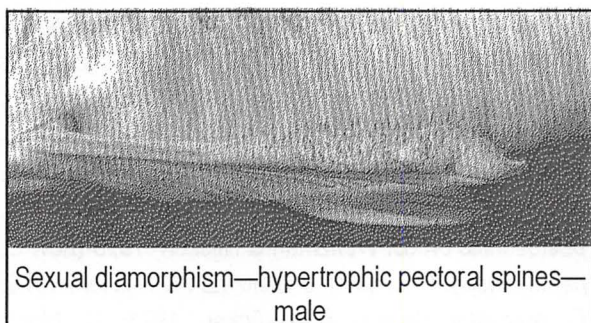


Fertile male—ventral view



Female—ventral view

Nijssen, 1971, *C. blochi vittatus* Nijssen, 1971 (now *C. vittatus*), *C. amapaensis* Nijssen, 1972, *C. ourastigma* Nijssen, 1972, *C. narcissus* Nijssen & Isbrücker, 1980, *C. prionotos* Nijssen & Isbrücker, 1980, *C. filamentosus* Nijssen & Isbrücker, 1983, *C. solox* Nijssen & Isbrücker, 1983, *C. cortesi* Castro, 1987 (synonym of *C. septentrionalis*), *C. virginiae* Burgess, 1993, *C. serratus* Sands, 1995, *C. sarareensis* Dinkelmeyer, 1995, *C. pinheiroi* Dinkelmeyer, 1995, *C. seussi* Dinkelmeyer, 1996, and *C. coriatae* Burgess, 1997. These thirty species (thirty-four nominal species) appear to represent a single lineage, all with a shared ancestor, forming a so-called monophyletic lineage. *Corydoras sensu stricto* is represented by the species just mentioned; previously the genus was characterized by *Corydoras punctatus*, which is quite different. Typical *Corydoras* now share a long, acute snout, an elongate cranial fontanel, a compressed body, and pectoral fin spines with a strongly serrated inner margin. I do not support the suggestion of Howes (1990) that all *Corydoras* are just one species. I am presently completing a review of all members of the Corydoradinae, without recognition of the previously used species groups.



Sexual dimorphism—hypertrophic pectoral spines—male

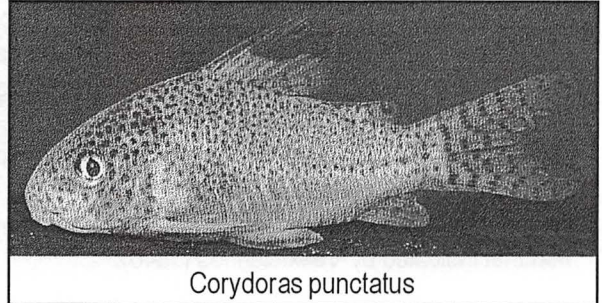
Corydoras punctatus (Bloch, 1794)

Cataphractus punctatus Bloch, 1794,- Bloch, 1795,- La Cepède, 1803.

Hoplisoma punctata; Swainson, 1838.

Callichthys punctatus; Valenciennes, in Cuvier & Valenciennes, 1840 (in part), Günther, 1864 (in subgenus *Corydoras*).

Corydoras punctatus; Bleeker, 1862,- Boeseman, 1954 (in part),- Nijssen & Isbrücker, 1967, 1975, 1980,- Nijssen, 1970,- Isbrücker, 1999.

*Corydoras punctatus*

The type locality of *Cataphractus punctatus* is: "...in the fish-rich rivers of Surinam." After Nijssen & Isbrücker (1967: 28) had designated a neotype, this species had a more restricted type locality (Surinam, district Brokopondo, Compagnie Creek, a tributary of the Suriname River), which lapsed together with the suppression of the neotype in 1981. Its type locality again was the locality of Bloch's type material. I (1999 (8): 41-42) restricted the type locality of *Cataphractus punctatus* to: Surinam: district Brokopondo, Marchall Creek, E of road Paranam-Afobaka, 1.5 km N of Marchall Village. At the time of collecting - 12 May and 8 December 1966—the depth was 100-120 cm, running water, bottom clay, sand and gravel. This restriction is in line with my conviction that the first specimens of *Cataphractus punctatus* and *Corydoras geoffroy* were collected together. Nijssen (1970: 34) listed 213 preserved specimens deposited in the fish collections of natural history museums of Leiden, Amsterdam, Washington D.C., and Vienna, which are now all topotypes of *Cataphractus punctatus*.

Acknowledgements

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References

References are mostly included in Isbrücker (1999):

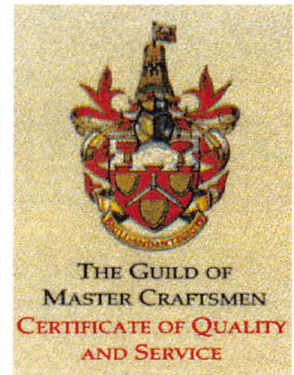
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Isbrücker, I. J. H., 1999 *Corydoras geoffroy* und *Cataphractus punctatus*. Revision der beiden zuerst entdeckten Arten der Unterfamilie Corydoradinae (Actinopterygii, Siluriformes, Callichthyidae).- Die Aquarien- und Terrarien Zeitschrift (DATZ), 52 (7 and 8): 38-43.



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