

**TAMPA BAY
AQUARIUM
SOCIETY**

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**ST. PETE/TAMPA
FLORIDA**

THE FILTER



KILLIFISH ISSUE

Fish Shown

***Fp. gardneri* Misaje**

October 2019

Volume 29 Issue 3

Photo Mike Jacobs . . . 2011

TBAS . . . Since 1992



TAMPA BAY AQUARIUM SOCIETY

“THE FILTER”

Tampa/St. Pete, Florida

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Hi folks . . . the killifish club I belong to in Florida, Suncoast Killifish Society (sks1.com) was talking at our last meeting about promoting the killifish hobby to the tropical fish world! So here we are and here we go! TBAS is taking the lead and starting with the TBAS October bulletin, “The Filter”.

I know all of the negatives you have heard about killifish . . . they are small, they only live 2 months, they only eat live foods and they are impossible to spawn. You have to learn a bunch of latin names because they NEVER go by their common name and all the killifish hobbists are crazy and they don't like the rest of the tropical fish or the other tropical fish keepers!!! ABSOLUTELY NONE OF THAT IS TRUE. I have been keeping killifish since about 1968 and I think I am normal, I like all of you folks and I have 85-90 tanks at my house and only 10-15 or so are devoted to killifish.

Killifish are simple very, very pretty and they involve a little bit of tender loving care . . . just a “bit” more than the other tropical fish.

Come with me on a journey in the next couple of months, and we will investigate the killifish . . . not to the degree of this bulletin , , , but we will talk about killifish and allow you to maybe get your questions answered!!!



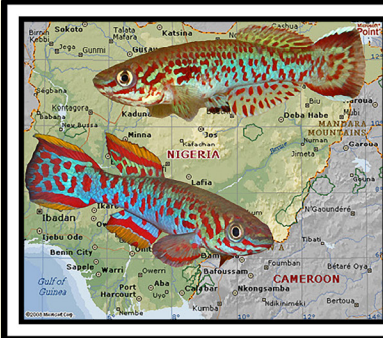
Mike

Mike Jacobs, Editor TBAS Filter

Nemadoras leporhinus

Mouse Catfish

Photo by Mike Jacobs 2019



**Captain R.D. Gardner
and His Killifish:
*Fundulopanchax
gardneri***

by
Mike
Jacobs

Photos by
Mike Jacobs

Nigeria, well, let's see. If you go south from Miami to Brazil and then go to the way northern tip of Brazil there is a country called French Guiana. Once you have gotten to French Guyana go to the beach and look east you will be approximately on the 3° North Latitude; now start swimming East, swim a bunch, no-no a BUNCH, all the way across the Atlantic until you run into the African continent. If you weren't too unlucky with the currents you will be now standing on the beach of Nigeria and you have arrived. South of you will be Cameroon and to the northwest of you will be Benin, Togo, Ghana, take your choice, they are all African countries about the size of Main, USA. Nigeria is the 8th most populous country on earth with 140 million people stuffed into an area the size roughly of Texas (24 million people) and is known, in a few words, for its oil: Nigeria is the 12th largest producer of petroleum in the world and the 8th largest exporter of oil, and has the 10th largest proven reserves of oil . It also has by the way, killifish in its streams and ponds and creeks.

In particular, the killifish in question is *Fundulopanchax gardneri*. Actually, Captain R.D. Gardner dipped this little fish out of a stream in 1911. It was then named *Fundulus gardneri*, after the good Captain, of course, and despite all of the scientific name changes this fish would endure, Captain R.D. Gardner's name would be forever linked to this wonderful little gem. And as is so true in the general aquarium hobby, everyone starts pretty much at the same place, guppies, and sooner or later everyone returns to guppies . . . if not several times . . . in killifish most of us started with *Fp. gardneri* and almost all of us, sooner or later, come back to the *Fp. gardneri* . . . maybe several times depending on how long you stay in the killifish hobby.

Well, why not? It is a very pretty fish. There are reds, blues, yellows, blacks, silvers and greens and they are sometimes all on the same fish. It is a smallish fish with the males varying a bit but they range from 35 - 70 mm (1 cm = 10 mm and 1 centimeter = 0.4 inches meaning that the *Fp. gardneri* males range from 1.4 to 3.75 inches, females a bit smaller. The sexes are very dimorphic so it's easy to tell males from females at a reasonably early age. Males are not really terribly pugnacious so you can keep several pair in a well planted 10-20 gallon

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tank, and that can make the usual uninteresting killifish tank into a very beautiful aquarium with plants abounding and growing aplenty. Sometimes the killifish will even reproduce in these conditions.

There seems to be some argument as to the number of *Fp. Gardneri* subspecies. Most people put the list at four, with various locations associated with each. They are as follows, in alphabetical order:



Fp. gardneri gardneri

Fp. gardneri lacustrus

Fp. gardneri mamfensis

Fp. gardneri nigerianus

The disagreement is focused around *Aphyosemion gardneri clauseni* (Scheel 1975), *Aphyosemion nigerianum meridionale* (Kottelat 1976) and *Aphyosemion biafranus* (Kottelat 1976) but it is not within the scope of this article to run or re-run that argument. This is said with the full understanding that Ken Lazara, in KMI IV-2000, also listed *Fp. gardneri clauseni* and *Fp. gardneri obuduensis* as sub-species. What is probably for sure, however, is that the type of fish Captain R.D. Gardner netted out of that stream in 1911 was the species *Fp. gardneri gardneri* with a location of maybe Nsukka or Lafia or Udi Mountain (I won't make much of a money bet on that but it seems pretty good odds).

Just exactly where is this article going, if not to argue about sub-species . . . the care of a particular species of *Fp. gardneri* that the Suncoast Killifish Society (SKS) has adopted for the Killifish Conservation Committee (KCC) . . .

Fp. gardneri nigerianus 'Misaje'.

Fish Arrival:

For starts, caring for the *Fp. gardneri nigerianus 'Misaje'* may not be the absolutely easiest thing to accomplish if you have never done it before. You need fish; we received them through the KCC *Fp. gardneri nigerianus 'Misaje'* group and its head man Doug Ebling. The all-call went out and within 3 weeks our club had 10-12 young pair of *Fp. gardneri nigerianus 'Misaje'*, just like the KCC is suppose to work. All of the pairs were sexed but most were not of an age that they would be giving eggs, much less viable eggs. There was time to worry about

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eggs later . . . for the moment we had to give them a place to live in 8-10 new homes. Most of the SKS guys that received the fish put them into 2-5-10 gallon tanks with bare bottoms, a filter and yarn mops, and started feeding them in hopes of getting and reproducing the *Fp. gardneri nigerianus* 'Misaje' as per our agreement with the American Killifish Association's Killifish Conservation program. We know how to keep the fish alive in tanks, but how do we get the eggs and how do we raise the fry ?

Food: Once the fish are of age to give up their precious eggs, the work really begins. However, the foods you use just prior to the 'age' will determine the amount and fertility of the eggs. For starters, for me, live baby brine just doesn't do it in its entirety. I know that a lot of people use live baby brine for 95% of their feeding. However I have not had much luck getting eggs from good sized semi-adult to adult fish. *Fundulopanchax* species fed baby brine shrimp. To bring the female into egg production you are going to have to use one or all of the following foods, in no particular order:

Frozen blood worms

Live Black Worms

Live Grindal Worms

The idea here being that you may get some eggs from the female with live baby brine but you will not keep her in 'season' with the baby brine. She will go off production in a heartbeat if something with a bit of 'meat' in it is not added to their diet at least 3-4 times a week. And if you are looking for more than 2-3-4-5 eggs at one time, then you need to get the 'meat' out for food. Don't take good quality food lightly when you are looking for good viable eggs!

Eggs: Once you have adult fish and have the female plump with eggs, then the production of eggs from the pair should begin to happen. When the pairs are young don't expect too many eggs, just a smattering at first . . . 2-3- 4-5 a week. As the pair gets larger and they start really taking in the food then a pair may produce up to 6-7-8 eggs per day. How are the eggs dealt with? Well, for as many people that are raising *Fp. gardneri nigerianus* 'Misaje' there are that many potential methods to handling the eggs. But let me give you a few of the most common methods of hatching the eggs. If you were using yarn mops then, of course, you will either pick the eggs from the mops, or not.

Let me explain. There are a lot of people that raise mop spawning killifish by just putting the entire mop, with the eggs unpicked, but the water squeezed out, into a plastic fish bag and tie the top shut, label the bag with the necessary date and type of fish, and store. If you have fish that are really pumping out some very fertile eggs, this is a real winning method. When you are ready to wet the eggs you just open the bag and pop the mop into the water and wait for the hatch. Most all of the fry will hatch at the same time and that is an additional motive



However, most of us don't have breeders that are getting 90+% of eggs that will hatch, so there are two different methods developed that work just fine.

Step One: When you pick the eggs from the mops, you just put the eggs into a smallish plastic cup half filled with water that has a top on it. When you are through picking, just put the top on it. When picking eggs for several days, each day put them into the same plastic cup. Just be sure you mark the species and date picked on the top of the cover of the dish. For *Fp. gardneri nigerianus* 'Misaje' the water incubation should take 14-21 days depending on your temperature. This method also allows you to pick out the fungused eggs from the cup on a daily basis to keep the fungus



from reaching the other eggs. Also, some people like to change the water in the dish every 4-5-6 days, giving the eggs some fresh oxygen. **Step Two:** Some people like to pick the eggs from the mops like above but instead of water incubating the eggs, they choose to put the individual eggs on a layer of damp/wet peat moss. Now, some people swear by this method. They say that this



method actually helps keep eggs from fungusing, but I am not too sure. However I have used the 'top-of-peat' method and it does seem to work, but not necessarily any better than water incubation. To do the 'top-of-peat' method, use the same plastic cup you used for water incubation and fill it with some boiled peat moss that has almost, but not all, of its water removed. This is a learned technique and some people like the peat wetter than others. But the times I did the peat

method I could press the top of the peat ever so slightly and the water would show and be quite obvious.

Now the trick is to place the eggs all over the top of the peat with nothing over them. Put maybe 15-20-25 eggs in the cup and wait for the hatching time. Then, if you have timed it right, dunk the peat in water and the young fry will pop out like pop corn. You can keep an eye on the fry within the egg with a magnifying glass, and when you see a golden ring around the eye, the eggs are ready to hatch. With *Fp. gardneri nigerianus* 'Misaje' that should be 18-24 days, a bit longer than water incubation.

Lastly, there are some people that will just spawn *Fp. gardneri nigerianus* 'Misaje' and other *Fp. gardneri* types of killifish over peat moss just like the *Nothobranchius* species. This works but you really don't know what is going on and how many viable eggs you have and when they are ready to hatch. The method is exactly like your basic *Nothobranchius* except the dry time is not so long . . . maybe 3-4-5 weeks for *Fp. gardneri nigerianus* 'Misaje'. I did hear a story however about a neat trick to try if you are having fertility problems with *Fp. gardneri*. If your *Fp. gardneri* comes from the northern areas of Nigeria where it is dryer than southern Nigeria, the eggs show a tendency towards going into diapause. These are the species from north of a line from the Niger to the Benue rivers. It is suggested you use the "spawning directly into peat" method and let the eggs rest in dried peat moss for 6-8 weeks. Killifish south of the above line can usually be successfully 'water' or 'on top of peat' incubated.



Fp. gardneri nigerianus 'Misaje'

Fry: Regardless as to how you keep the eggs, eventually you will need to deal with newly hatched fry. This is the part of *Fp. gardneri* that becomes rather easy, comparatively speaking. From the day they hatch, the new fry are able to take either micro worms or live brine shrimp. Make sure you keep up on your water changes and keep the fry containers clean. After maybe 1 1/2-2 weeks the fry

can be transferred to a 2-5 gallon tank depending on how many fry there are. But once again, the water changes are a requisite for good fry growth. Growth is rapid, and within 4-5 weeks you can see a difference in the sexes of the fry. The males will start to show their colors on the unpaired fins but the females won't. It may be another 2-3 weeks until you can tell for sure if a fry is a male or not. But once they start showing colors, it won't be too long before it all starts happening

again and you will be into your second generation of *Fp. gardneri gardneri*.

Conclusion:

Sometimes in the aquarium hobby we just take things for granted because everyone 'says so'. I would wonder why that is? Are we so lazy as to not really check some of the 'rules of the road' so that we would know what the rules meant? How long did you really believe that there was an honest to goodness pH shock? I bought it for many, many years until I went into very real investigatory mode! Why wouldn't I buy it . . . everyone was saying it was true? Of course there is no pH shock . . . it's an osmoregulatory problem the fish is having with the hardness of the water . . . probably softer than the water he was in.

Why do people poo poo the *Fp. gardneri gardneri*? They are probably under the crude idea that they are easy and they turn up their noses at a really nifty little fish. I have breed easier *Nothobranchius* . . . when I didn't know better I breed *Terranatos dolichoferus* and had tank after tank of them until I was told they were difficult and haven't been able to reproduce the event since.

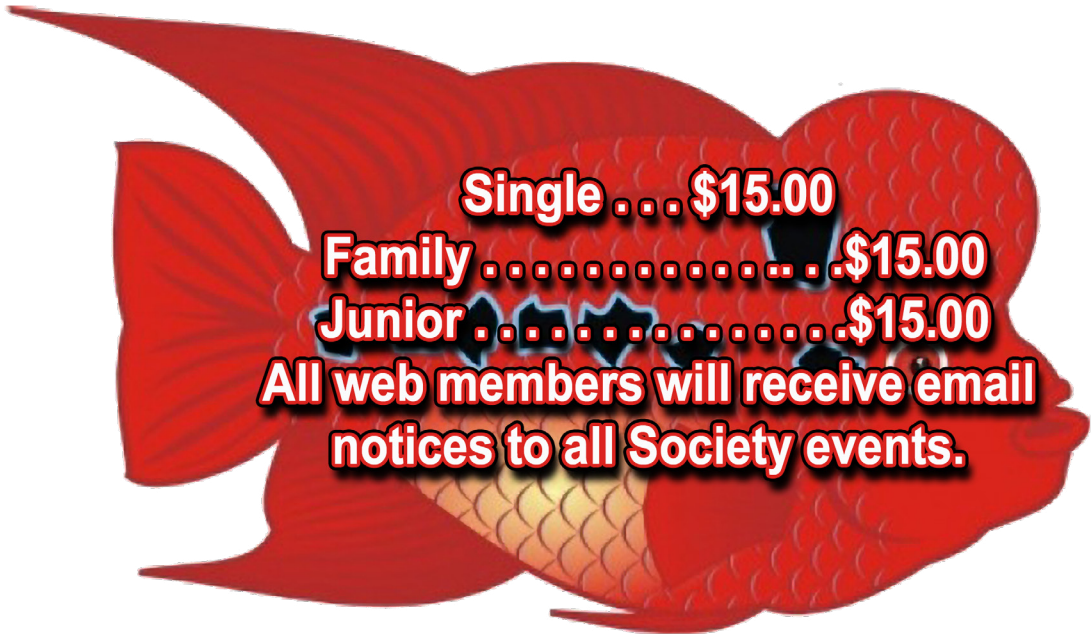


Actually some of the *Fp. gardneri gardneri* are just as difficult as the infamous Saberfin Killifish, (*Terranatos dolichoferus*). Another myth . . . or maybe just a particular happening in one of my tanks. "Don't put more than one pair of mop spanners in a tank . . . when one female is laying eggs the other is following along eating the eggs." I have

a 15 gallon tank of *Fp. gardneri gardneri* 'Udi Mountain' . . . maybe 3-4 males and 4-5 females and a sponge filter and 3 lonely bottom mops . . . NO PLANTS. Not huge, huge mops either, actually they are quite sparse mops rising maybe 1/2 " off of a third of the bottom of the tank . . . that's it . . . that's all in that tank. Any day you want I can pick up the mops and there will be enough eggs to keep the Udi going in my fishroom 15-20 eggs). So the old myth that extra fish in a tank reduces the number of eggs is at best up for question and needs an asterisk by the statement.

Fp. gardneri gardneri is a wonderful little killifish that all killifish keepers should keep every once in a while. The SKS affiliate club to the AKA has chosen the Captain's fish so as to get the club started 'in mass' into the KCC program. It's not the most difficult fish in the world but what it is now is a part of the SKS's fiber and part of the discussions we have at our meetings . . . and that is a good thing!

MEMBERSHIP DUES!!!!



Membership Dues for TBAS are due on the anniversary of your sign-up date every year. Please make sure you check the “sign-in” list on the table at every meeting to check your “Dues-Date” . . . Thanks!!!

USE PAYPAL ON THE TBAS WEBSITE . . . TBAS1.COM . . . !!!!!

Let's All Take A Look At Some Killifish!!!

photos by Mike Jacobs

Folks . . . killifish are among the most colorful tropical fish in the world. There are some small “brown” ones but generally they are really this colorful. Read about the killifish in the bulletin and enjoy . . . and ask questions!!



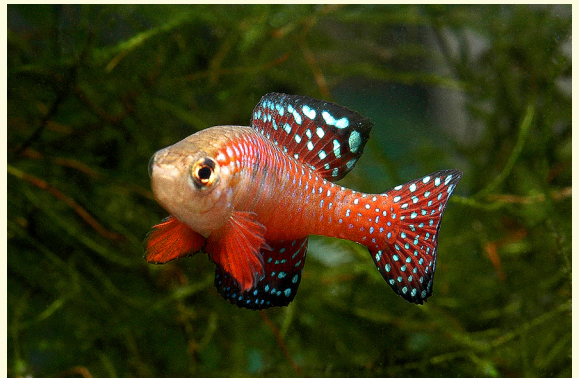
Nothobranchius kilomberoensis



Fundlopanchax gardneri



Aphyosemion Elberti



Simpsonichthys picturatus

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Nothobranchius ravchovii



Fundulopanchax gardneri



Nothobranchius guntheri



Nothobranchius kafuensis



Nothobranchius foerschi



Fundulopanchax sjoestedti Dwarf Red

Nothobranchius rachovii 'Beira 98'



<http://www.sks1.com>

Did you ever think of KILLIFISH???
Come find out about them at the
SKS meetings!!! See the ad to
the left!



Aphyosemion bitaeniatum



Austrolebias nigripinnis



Maratecoara lacortei



Nothobranchius symoensis

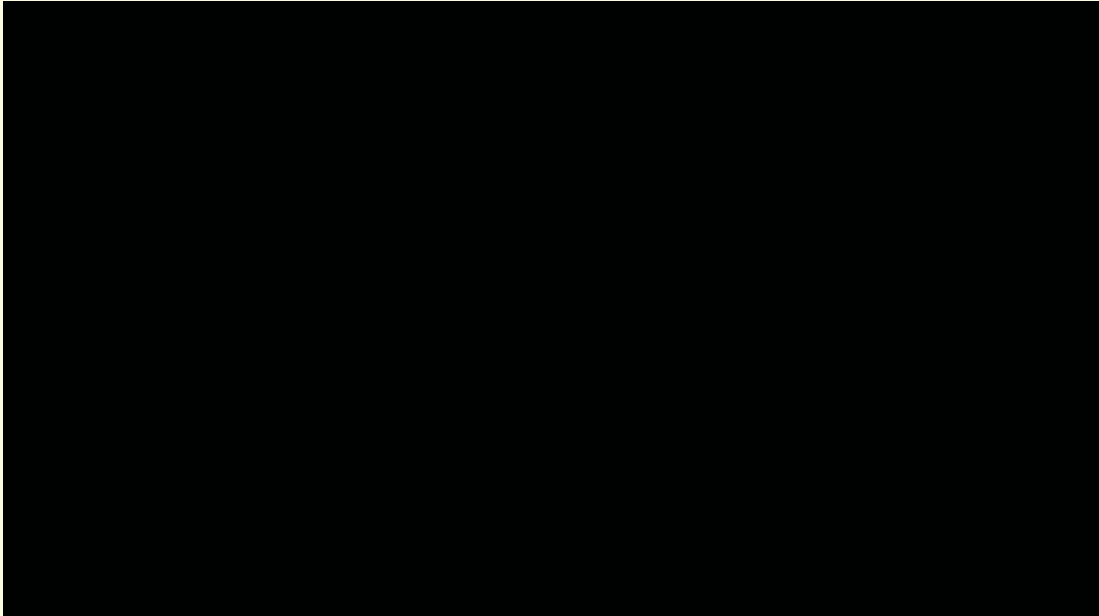


Nothobranchius rubripinnis



Aphyosemion australe

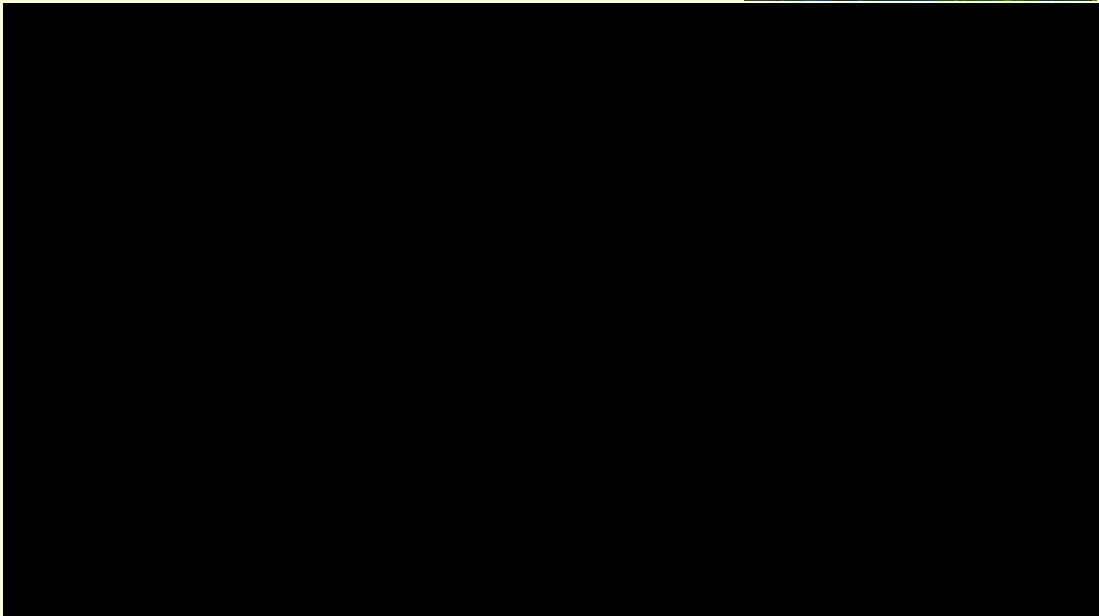
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TBAS PRESENTS IT'S 2019 ANNUAL AUCTION

WHEN: Saturday, November 16, 2019

WHERE:

**Plant City High School Community Center
605 N Collins St
Plant City, FL 33563**

Old red brick 3 story

1914 Plant City High School Building.

see www.tbasauction.com complete for directions

TIME: Doors Open 8:00am

AUCTION TIME: 10:00am - 5:00pm

INFORMATION: www.tbasauction.com

TBAS WEBSITE: www.tbas1.com

**No new or used dry goods by participants.
All species of plants and fish but no more
than 3 bags per species with the exception
of varieties.**



***Aphyocharax cf. dentatus* . . . Amazon Red Tail Tetra**

photo: Mike Jacobs 2019

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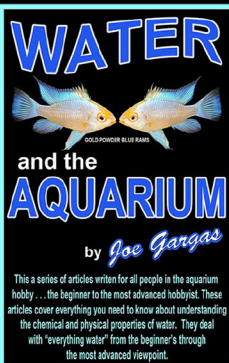


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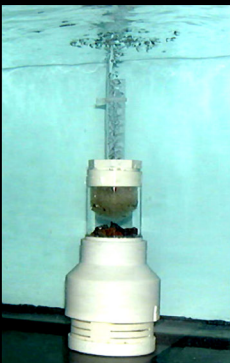


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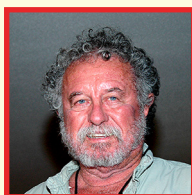
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