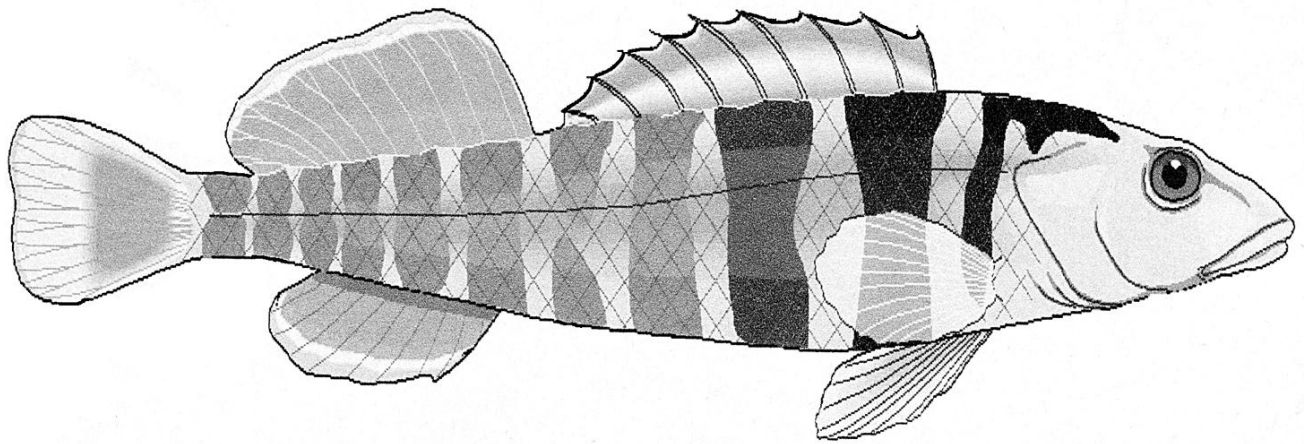


The Darter

July - August 2011



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St. Louis, Missouri

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MASI's official web page: www.missouriaquariumsociety.com

Join the all-new MASI FishHeads Forum. See web page for instructions.

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Places to Be / Things to See

SUNDAY August 14, 2011

Auction @ Gardenville Masonic Hall

THURSDAY August 18, 2011

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

THURSDAY September 15, 2011

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

SUNDAY October 2, 2011

Swap Meet @ Gardenville Masonic Hall

THURSDAY October 20, 2011

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

SUNDAY November 13, 2011

Auction @ Gardenville Masonic Hall

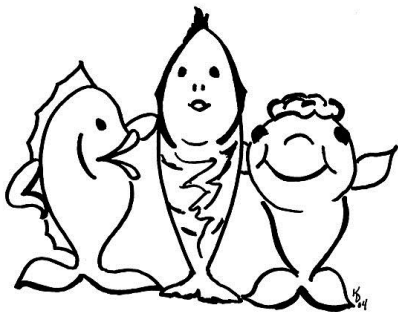
THURSDAY November 17, 2011

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

THURSDAY December 15, 2011

General Meeting, 7:30 PM @ Dorsett Village Baptist Church

Membership



Yearly membership in the Missouri Aquarium Society, Inc. is \$20 per calendar year. Membership includes the Darter subscription for the year, which is currently 6 issues. New memberships and renewals can be submitted at club functions such as meetings and auctions, or by contacting Ron Huck, our membership chair.

Keeping & Breeding *Hemirhamphodon kuekenthali*, The Tri-Blue-Spot Halfbeak

By Kurt A. Zahringer

Introduction

Although usually referring to members of the families *Poeciliidae* and *Goodeidae*, the “livebearers” *sensu lato* encompass a few other “odds ‘n ends” in the fish world; one of the more significant groups being the halfbeaks. These species, members of the family *Hemirhamphidae*, are livebearing species native to Southeast Asia. Like many fish from that region, these fish are members of a much larger, primarily marine order. The relative minority of all species that do bear live young and reside in freshwater are the species we encounter in the aquarium hobby (and I shall be referring to these species hereafter when saying “halfbeaks”).

Of these species, members of the genera *Nomorhamphus* and *Dermogenys* are encountered with some regularity, and to a lesser extent, the species of *Hemirhamphodon*. The six known species of this genus are known as the “Forest Halfbeaks”, so-called because they inhabit deeply-shaded waters under dense canopies. These species, with their especially slight build and long beaks, are considered the more delicate of the halfbeaks.

Though described by Steindachner in 1901, *Hemirhamphodon kuekenthali* had not been commercially imported to the Western world until very recently. This species originates from the state of Sarawak, on the island of Borneo, like all members of the genus, where it resides in slow-moving or still waters. The males reach a size of approx. 4 inches, with the females being slightly smaller. Their delicate bodies, no larger than a pencil, may give completely healthy fish the appearance of being underfed.

This is what I’d have to call a subtly beautiful fish: its coloration wouldn’t catch your eye from across the room, but upon closer inspection, these fish are quite spectacular. Both genders possess bright blue eyes and three faint blue spots on their sides, giving them their common name. The males have a yellow, flame-like dorsal fin and turquoise margins on their pectoral fins that they erect when displaying.

Husbandry

Captive care for this species is quite simple, given certain accommodations. They seem to be unparticular in terms of water chemistry, obviously avoiding extremes in pH or hardness and seem happiest at 74-76°F. These fish prefer low turbulence, preferably no more than a small sponge filter.

As they hardly ever venture below the top four inches of the water column, the width of their aquarium is more important than height. If maintained by themselves, a half-full tank would suit them well. These fish are not active swimmers, but lie in wait to pounce on insects that fall to water. Thus, they don’t require vast swimming area. However, these fish are quite skittish, and sudden movements can spook them into frantically dashing around the tank. This can often damage their lower jaw, so be mindful when feeding or cleaning their tank. Painting or covering the back and sides should make them feel more secure.

These fish are not picky eaters and will consume most standard aquarium fare. They’ll consume flakes and pellets, but relish frozen food and especially live foods. The perfect food for them is flightless fruit-flies. It’s amazing to watch them silently cruise under a fly then suck it down faster than the eye can see. For information regarding culturing of fruit flies, refer to Mike Hellweg’s book Culturing Live Foods, or any source on dart frog maintenance.

This species can be combined safely with almost any bottom or mid-water dwelling species, so long as they're not too large or aggressive. These halfbeaks are very enthusiastic feeders and will have no problem competing for food in a community setting and actually, can become rather aggressive when feeding. They can and will consume very small fish if given the chance, so don't keep them with anything less than ¼ their length.

Although these fish are relatively hardy in the aquarium, one major difficulty is that they do not tolerate shipping well. This is due in part to their requirement for high levels of dissolved-oxygen. Although these fish come from slow-moving or still waters where DO is not necessarily high at all, they reside right below the surface. There, right at the air-water interface, DO is always high, even in otherwise hypoxic habitats. Consequently, in the closed system of a bag, they can succumb to respiratory distress more quickly than other fish. Sealing a bag with oxygen would be ideal, but I've transported several of these fish successfully by bagging them in over-sized bags with an especially large airspace.

Reproduction

During courtship, the male displays perpendicularly in front of the female with fins splayed. His colors intensify, with iridescent blue stripes appearing across his face. After a few moments, the male moves alongside the female and hugs her with his dorsal and anal fins. Halfbeaks have a structure called an andropodium, similar to the gonopodium in poeciliids, but less developed, which essentially funnels the sperm into the female. Even on immature fish, the presence of the andropodium is made apparent by a small pointed lobe immediately anterior to the anal fin. Copulations lasts 2 or 3 seconds before the female jerks away.

Unlike other genera of halfbeaks, as well as poeciliids and goodeids, whose abdomens swell with their brood and suddenly give birth to numerous fry, pregnancy is scarcely noticeable in this species. Fry are born head-first, only one or two per day, over the course of 1 – 2 weeks. Since they mate frequently and exhibit this rolling parturition it's difficult to measure their exact gestation period. Fry are approx. 8mm in length, have no "beak", and still possess a small yolk sac. Healthy fry should immediately dart to the surface, just like adult fish. I have never observed the parents attempting to eat the fry, but I still moved them to a net-breeder as soon as I found them. I suspect that, in a densely-planted tank, colony-raising this species would be feasible.

After a day or two, the fry will accept live baby brine shrimp and powdered fry foods, such as Hikari First Bites. After a few weeks, frozen daphnia was added to their diet. Since they only eat at or near the surface, be sure to include some bottom feeder, or diligently siphon the bottom of uneaten food. At about 30-40 days of age, I did suddenly lose a few of the fry due to aggression, I suspect. While I never witnessed this, the smaller individuals had died, so I reduced the density of the fry which alleviated further fatalities. After 60 days or so, the fry reach a length of approx. 1 inch.

This has been a very enjoyable, and not too difficult, species to work with. Halfbeaks are rather underappreciated in the hobby, in my opinion, so I hope you might give them a try. You'll try be rewarded by their beautiful colors and unique habits.



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BAP Report

Steve Edie

Member	Species	Common	Pts	Total
<u>May 2011</u>				
Mike Hellweg	<i>Skiffia bilineata</i> “Rio Grande de Morelia” *@		45	4269
Cory Koch	<i>Thoracochromis brauschi</i> “Fwa River” *		20	1817
Cory Koch	<i>Xiphophorus helleri</i> “Cortezi Rio Tambique” *		10	1827
Rick Tinklenberg	<i>Impaichthys</i> sp. “Midnight Blue Emperor Tetra” *		20	2180
Pat Tosie	<i>Nematobrycon palmeri</i>	Emperor Tetra	15	3407
Pat Tosie	<i>Xenophallus umbratilis</i> “Arenal Volcano” #		0	3407
<u>Jun 2011</u>				
Steve Edie	<i>Labeotropheus trewavasae</i>		10	190
Steve Edie	<i>Metriaclima estherae</i>	Red Zebra	10	200
Charles Harrison	<i>Limia tridens</i>	Tiburón Limia	5	2400
Jack Heller	<i>Callopanchax monroviae</i> “Paynesville” (L97) *		25	190
Jack Heller	<i>Fundulopanchax gardneri</i> “Lacustris” (HAH-98) *		20	210
Jack Heller	<i>Pseudomugil gertrudae</i> “Aru IV” *		15	225
Mike Hellweg	<i>Pangio myersi</i> ***		35	4304
Derek Walker	<i>Characodon audax</i> “El Toboso” *@		35	1814
Derek Walker	<i>Limia</i> sp. “Tiger”		5	1819
Derek Walker	<i>Xenotaenia resolanae</i> @	Leopard Splitfin	30	1849
Derek Walker	<i>Xenotoca variata</i> “Zacapu” *		20	1869
Harold Walker	<i>Xenotoca eiseni</i> @	Red Tailed Goodeid	30	825
Kurt Zahringer	<i>Aphanius transgrediens</i> (JB SA-03) *@	Acigol Killifish	35	285

* = First MASI species spawn (5 point bonus)

** = First MASI species and genus spawn (10 point bonus)

*** = First MASI species, genus and family spawn (15 point bonus)

@ = C.A.R.E.S Species at Risk (Double base points)

= Species previously submitted = 0 points, except for C.A.R.E.S. = base point bonus

^ = Species previously submitted, limited points for additional color varieties

Sources:

Cal Academy - <http://research.calacademy.org>

CARES - <http://www.carespreservation.com>

A Heart-Felt Thank You

Kathy Deutsch

Thank you, members of MASI, for electing me Vice President two years ago. You put up with the changes I made in programs. You told me when I did well, and when something did not work. Last year I was re-elected and tried to make the programs entertaining and interesting.

Pat Tosie is your new Vice President, and he will do a great job. He has in the past, and I am sure he has a few tricks up his sleeve to surprise us all.

If you have ideas and/or comments about the programs, please let Pat know. I also welcome your comments.

EASTERN AQUATICS

717-898-7224 (leave message)

Easternaquatics@yahoo.com

LIVE CULTURED BLACKWORMS

***Cultured blackworms are blackworms that are grown under completely controlled conditions. They are grown using clean, cold water and are fed a special ground grain feed which contains no animal products or any waste products. They are not raised in conjunction with any fish or other animals. The worms are free of parasites and pathogens (disease causing) bacteria. As an extra precaution, all worms are quarantined for 7-10 days after harvesting to assure best quality and packaged in bags with pure oxygen to reduce any shipping stress.

**Please call or email with zip code for prices and shipping quotes.*

MASI Breeders Award Program Species List

Steve Edie, revised June 11

Family			
Genus	Pts	Species	CARES Species
Adrianichthyidae			
Oryzias	5	latipes	
	10	celebensis, melastigma	celebensis
Akysidae			
Akysis	20	prashadi	
Alestiidae			
Ladigesia	15	roloffi	
Aplocheilidae			
Aplocheilus	10	dayi, lineatus, panchax	
Pachypanchax	5	omalonotus, playfairii	omalonotus
Auchenipteridae			
Centromochlus	15	perugiae	
Badidae			
Badis	15	badis, ruber	
Dario	15	dario, hysginon	
Balitoridae			
Sewellia	20	lineolata	
Bedotiidae			
Bedotia	10	geayi, madagascariensis	geayi
Callichthyidae			
Aspidoras	15	eurycephalus, menezesi	
Corydoras	10	adolfoi, aeneus, arcuatus, axelrodi, baderi, elegans, eques, gossei, haraldschultzi, hastatus, julii, metae, nanus, oiapoquensis, paleatus, panda, pygmaeus, robineae	
Leptoplosternum	15	altamazonicum, pectorale	
Megalechis	15	thoracata	
Scleromystax	15	barbatus, macropterus	
Channidae			

<i>Channa</i>	15	<i>orientalis</i>	
Characidae			
<i>Aphyocharax</i>	15	<i>anisitsi, rathbuni</i>	
<i>Astyanax</i>	15	<i>mexicanus</i>	
<i>Gymnocorymbus</i>	15	<i>ternetzi</i>	
<i>Hasemania</i>	15	<i>nana</i>	
<i>Hemigrammus</i>	15	<i>aereus, erythrozonus, gracilis, ocellifer, rodwayi, vorderwinkleri</i>	
<i>Hyphessobrycon</i>	15	<i>amandae, anisitsi, cyanotaenia, ecuadoriensis, eques, flammeus, heliacus, herbertaxelrodi, megalopterus, melanostichos, notidanos, pulchripinnis</i>	
	20	<i>micropterus</i>	
<i>Inpaichthys</i>	15	<i>kerri, sp. "Midnight Blue Emperor"</i>	
<i>Moenkhausia</i>	15	<i>oligolepis, pittieri</i>	
<i>Nematobrycon</i>	15	<i>lacortei, palmeri</i>	
<i>Pristella</i>	15	<i>maxillaris</i>	
<i>Rachoviscus</i>	20	<i>graciliceps</i>	<i>graciliceps</i>
<i>Thayeria</i>	15	<i>boehlkei</i>	

Cichlidae			
<i>Aequidens</i>	5	<i>pulcher</i>	
	10	<i>metae, sapayensis, tetramerus, viridis</i>	
<i>Alticorpus</i>	10	<i>peterdaviesi</i>	
<i>Altolamprologus</i>	15	<i>calvus, compressiceps, compressiceps "Kalambo", compressiceps "Sumbu"</i>	
<i>Amatitlania</i>	5	<i>nigrofasciatus</i>	
	10	<i>siquia</i>	
<i>Amphilophus</i>	10	<i>citrinellus, diquis, zaliosus</i>	
	15	<i>labiatus, longimanus</i>	
<i>Andinoacara</i>	10	<i>coeruleopunctatus, latifrons, rivulatus</i>	
<i>Anomalochromis</i>	15	<i>thomasi, thomasi "Guinea"</i>	
<i>Apistogramma</i>	10	<i>agassizii, borellii</i>	
	15	<i>amoena, atahualpa, baenschii, bitaeniata "Rio Napa", cacatuoides, caetei, commbrae, cruzi, elizabethae, eunotus, gibbiceps, hongsloui, macmasteri, moae, nijsseni, ortmanni, panduro, pertensis, resticulosa, sp. "Algodon II", sp. "Rotpunct", steindachneri, trifasciata, tucurui, viejita, viejita II</i>	
	20	<i>diplotaenia</i>	
<i>Archocentrus</i>	5	<i>multispinosus</i>	
	10	<i>centrarchus, spinosissimus</i>	<i>spinosissimus</i>
<i>Astatotilapia</i>	5	<i>burtoni</i>	
	10	<i>calliptera, sp. "Red Fin"</i>	
<i>Astronotus</i>	15	<i>ocellatus</i>	

<i>Aulonocara</i>	10	<i>baenschii, hansbaenschii, jacobfreibergi, maylandi, maylandi kandeensis, nyassae, sp. "Chitande type North", sp. "Masoni", sp. "maulana", sp. "Orange Flash", steveni, stuartgranti</i>	
<i>Australoheros</i>	5	<i>facetus</i>	
<i>Benitochromis</i>	15	<i>batesii "Eseka", batesii "Pouma", conjunctus, finleyi, nigrodorsalis</i>	<i>nigrodorsalis</i>
<i>Bujurquina</i>	10	<i>vittata</i>	
<i>Callochromis</i>	15	<i>pleurospilus, stappersii</i>	
<i>Caquetaia</i>	15	<i>spectabilis</i>	
<i>Cardiopharynx</i>	15	<i>schoutedeni</i>	
<i>Chalinochromis</i>	15	<i>brichardi, sp. "Malagarazi"</i>	
<i>Cheilochromis</i>	10	<i>euchilus</i>	
<i>Chromidotilapia</i>	10	<i>guentheri</i>	
<i>Cichlasoma</i>	5	<i>portalegrense</i>	
	10	<i>amazonarum, boliviense, festae, salvini, urophthalmum</i>	
	15	<i>grammodes, istlanum</i>	<i>istlanum</i>
<i>Cleithracara</i>	15	<i>maronii</i>	
<i>Copadichromis</i>	10	<i>borleyi, mloto, nkatae, quadrimaculatus</i>	
<i>Crenicichla</i>	15	<i>menezesi, regani, sp. "Orinoco"</i>	
<i>Cryptoheros</i>	10	<i>cutteri, nanoluteus, sajica, septemfasciatus, spilurus</i>	<i>nanoluteus, septemfasciatus</i>
<i>Ctenochromis</i>	15	<i>horei</i>	
<i>Cynotilapia</i>	10	<i>afra</i>	
<i>Cyphotilapia</i>	15	<i>frontosa</i>	
<i>Cyprichromis</i>	15	<i>leptosoma, leptosoma "Blue Utinta", leptosoma "Mpulungu"</i>	
<i>Cyrtocara</i>	10	<i>moorii</i>	
<i>Dimidiochromis</i>	15	<i>compressiceps</i>	
<i>Ectodus</i>	15	<i>descampsii</i>	
<i>Enantiopus</i>	20	<i>sp. "Kilesa"</i>	
<i>Eretmodus</i>	20	<i>cyanostictus</i>	<i>cyanostictus</i>
<i>Etroplus</i>	10	<i>maculatus</i>	
<i>Geophagus</i>	5	<i>brasiliensis</i>	
	10	<i>pellegrini, sp. "Bahia Red", sp. "Red Head Tapajos", steindachneri</i>	
	15	<i>altifrons, surinamensis</i>	
<i>Gephyrochromis</i>	10	<i>lawsi</i>	
<i>Gnathochromis</i>	15	<i>permaxillaris</i>	
<i>Gymnogeophagus</i>	10	<i>balzanii, labiatus "Rio Olimas", meridionalis, meridionalis "El Norte"</i>	
<i>Haplochromis</i>	10	<i>aeneocolor, barbarae, limax, lividus, nubilus, obliquidens, sauvagei, simpsoni, sp. "Blue Bar", sp. "Blue Fire Fin", sp. "Fire", sp. "Flameback", sp. "Lake Kivu", sp. "Madonna", sp. "Migori Red", sp. "Piebald", sp. "Red-Fin Piebald", sp. "Rock Kribensis", sp. "Ruby Green", sp. "Thick Slin", victorianus, wingatii</i>	<i>aeneocolor, barbarae, lividus, obliquidens</i>
<i>Hemichromis</i>	5	<i>bimaculatus</i>	

	10	<i>crystatus, elongatus, letourneuxi</i> "Barrage Lake, Ouagadougou, Burkina Faso", <i>lifalili</i> , sp. "Moanda", <i>stellifer</i>	<i>crystatus</i>
	20	<i>frempongi</i>	
<i>Herichthys</i>	10	<i>carpintis, carpintis</i> "Escondoto", <i>cyanoguttatus, tamasopoensis</i>	
<i>Heros</i>	10	<i>efasciatus</i>	
	15	<i>severus, sererus</i> "Rotkeil"	
<i>Hypselecara</i>	15	<i>temporalis</i>	
<i>Hypsophrys</i>	15	<i>nematopus, nicaraguensis</i>	
<i>Iodotropheus</i>	10	<i>sprengerae</i>	
<i>Julidochromis</i>	10	<i>dickfeldi, marlieri, marlieri</i> "Katato", <i>ornatus, regani, regani</i> "Kipilli", <i>transcriptus, transcriptus</i> "Gombi", <i>transcriptus</i> "Kalambo", <i>transcriptus</i> "Zaire"	
<i>Labeotropheus</i>	10	<i>fuellborni, trewavasae</i>	
<i>Labidochromis</i>	10	<i>caeruleus, chisumulae, freibergi</i> , sp. "Hongi", sp. "Perlmutter", <i>zebroides</i>	
<i>Laetacara</i>	10	<i>curviceps, dorsigera, thayeri</i>	
<i>Lamprologus</i>	10	<i>kungweensis, meleagris, mocquardi, ocellatus, ornatipinnis</i> , sp. "Kasagara", sp. "Minuta", <i>signatus, speciosus</i>	
	15	<i>congoensis</i>	
<i>Lepidolamprologus</i>	10	<i>attenuatus</i>	
<i>Lethrinops</i>	15	<i>lethrinus</i>	
<i>Limbochromis</i>	15	<i>robertsi</i>	<i>robertsi</i>
<i>Lipochromis</i>	15	sp. "Matumbi Hunter"	sp. "Matumbi Hunter"
<i>Lithochromis</i>	10	<i>xanthopteryx</i>	<i>xanthopteryx</i>
<i>Mbipia</i>	10	<i>lutea</i> "Yala Swamp"	<i>lutea</i>
<i>Melanochromis</i>	10	<i>auratus, brevis, chipokae, joanjohnsonae, johannii</i> , sp. "Lepidophage", <i>parallelus</i>	
<i>Mesonauta</i>	10	<i>festivus</i>	
<i>Metriacoma</i>	10	<i>barlowi, elegans, estherae, hajomaylandi, heteropictus, lanisticola, livingstonii, lombardoi, zebra</i>	
<i>Mikrogeophagus</i>	15	<i>altispinosus, ramirezi</i>	
<i>Nandopsis</i>	15	<i>haitiensis</i>	
<i>Nannacara</i>	5	<i>anomala</i>	
	10	<i>aureocephalus, taenia</i>	
<i>Nanochromis</i>	15	<i>nudiceps, parilus, splendens, teugelsi, transvestitus</i>	
<i>Neochromis</i>	10	<i>nigricans</i> , sp. "Kruising"	
<i>Neolamprologus</i>	10	<i>boulengeri, brevis, brevis</i> "Kigoma Blue Face", <i>brevis</i> "Sunspot", <i>brichardi, brichardi</i> "Red Dot Millma", <i>callipterus, calliurus, caudopunctatus, falcicula</i> "Sibwesa White Tip", <i>furcifer, hecqui, leleupi, longior, marunguensis, meeli, modestus, multifasciatus, mustax, obscurus, olivaceous, pleuromaculatus, pulcher</i> "Daffodil", <i>similis</i> , sp. "Magarae", <i>tetracanthus, toae</i>	
	15	<i>buescheri, buescheri</i> "Kamakonde", <i>helianthus</i>	
<i>Nimbochromis</i>	15	<i>livingstonii, venustus</i>	
<i>Nyassachromis</i>	15	<i>microcephalus</i>	

<i>Oreochromis</i>	5	<i>mossambicus</i>	
	10	<i>aureus, niloticus baringoensis, spilurus, tanganicae</i>	
<i>Otopharynx</i>	10	<i>lithobates, ovatus, walteri</i>	
<i>Parachromis</i>	10	<i>motaguensis</i>	
	15	<i>friedrichsthalii, managuensis</i>	
<i>Paracyprichromis</i>	20	<i>nigripinnis</i>	
<i>Paralabidochromis</i>	10	<i>sp. "Fire Red Uganda"</i>	
<i>Parananochromis</i>	15	<i>longirostris</i>	
<i>Pelmatochromis</i>	15	<i>nigrofasciatus</i>	
<i>Pelvicachromis</i>	10	<i>pulcher, pulcher "Lagos, Nigeria"</i>	
	15	<i>humilis, roloffii, sp. "Blue Dorsal", sp. "Scarlet Krib", subocellatus, subocellatus "Moanda", taeniatus, taeniatus "Bandewouri", taeniatus "Bipindi", taeniatus "Dehane", taeniatus "Kienke", taeniatus "Lokoundje", taeniatus "Moliwe", taeniatus "Njanje", taeniatus "Nyete", taeniatus "Wouri"</i>	<i>subocellatus</i>
<i>Petrotilapia</i>	15	<i>tridentiger</i>	
<i>Placidochromis</i>	10	<i>electra</i>	
<i>Protomelas</i>	10	<i>kirkii, similis, sp. "Taiwan Reef", taeniolatus</i>	
<i>Psammochromis</i>	10	<i>riponianus, riponianus "Boyanga, Uganda",</i>	<i>riponianus</i>
<i>Pseudocrenilabrus</i>	10	<i>multicolor, multicolor victoriae, multicolor victoriae "Baria Gold", nicholsi, philander, philander dispersus, sp. "ndiwe"</i>	
<i>Pseudotropheus</i>	10	<i>aurora, crabro, demasoni, elongatus, fuscus, macrophthalmus, microstoma, minutus, saulosi, socolofi, sp. "Acei", sp. "Acrura", sp. "Avanti", sp. "Dingani", sp. "Kingsizei", sp. "Minimus", williamsi</i>	
<i>Pterophyllum</i>	10	<i>scalare</i>	
<i>Ptychochromis</i>	15	<i>oligacanthus</i>	<i>oligacanthus</i>
<i>Ptyochromis</i>	10	<i>sp. "Hippo Point salmon"</i>	<i>sp. "Hippo Point Salmon"</i>
<i>Pundamilia</i>	10	<i>nyererei, nyererei "Makobe Island", sp. "Blue Bar (Hippo Point)"</i>	<i>nyererei, sp. "Blue Bar"</i>
<i>Pyxichromis</i>	10	<i>orthostoma</i>	<i>orthostoma</i>
<i>Reganochromis</i>	15	<i>calliurus</i>	
<i>Rocio</i>	5	<i>octofasciata</i>	
<i>Sarotherodon</i>	10	<i>linnellii "Barombi Mbo"</i>	
<i>Sciaenochromis</i>	10	<i>ahli</i>	
<i>Simochromis</i>	15	<i>diagramma "Isanga"</i>	
<i>Spathodus</i>	20	<i>erythrodon</i>	
<i>Steatocranus</i>	15	<i>casuarius, gibbiceps, glaber, irvinei, tinanti</i>	
<i>Stigmatochromis</i>	10	<i>pleurospilus</i>	
<i>Stomatepia</i>	15	<i>mariae</i>	<i>mariae</i>
<i>Symphysodon</i>	20	<i>aequifasciatus, discus</i>	
<i>Taeniacara</i>	20	<i>candidi</i>	
<i>Telmatochromis</i>	10	<i>bifrenatus, dhonti, sp. "Orange Scribble", temporalis, temporalis "Magara", vittatus</i>	

Theraps	20	wesseli	
Thoracochromis	15	brauschi, brauschi "Fwa River"	
<i>Thorichthys</i>	10	meeki, meeki "Rio Chiapas"	
	15	aureus, ellioti, sp. "Blue Mixteco"	
<i>Thysochromis</i>	10	ansorgii	
<i>Tilapia</i>	10	mariae, rendalli	
	15	buttikoferi, bythobates, snyderae	bythobates, snyderae
<i>Tramitichromis</i>	15	intermedius	
<i>Tropheops</i>	10	tropheops	
<i>Tropheus</i>	15	brichardi, moorii	
<i>Uaru</i>	20	amphiacanthoides	
<i>Variabilichromis</i>	10	moorii	
<i>Vieja</i>	15	bifasciata, godmanni, maculicauda, microphthalma, regani, synspila	
<i>Xenotilapia</i>	20	bathypbila, melanogenys	
<i>Xystichromis</i>	10	phytophagus, sp. "Dayglow"	phytophagus, sp. "Dayglow"
Cobitidae			
<i>Pangio</i>	20	myersi	
Cyprinidae			
<i>Boraras</i>	20	brigittae, maculatus, sp. "South Thailand"	
<i>Carassius</i>	15	auratus, carassius	
<i>Chrosomus</i>	10	erythrogaster "Sandy Creek"	
<i>Cyprinella</i>	15	lutrensis	
<i>Cyprinus</i>	10	carpio	
<i>Danio</i>	5	albolineatus, frankei, kerri, rerio	
	10	aesculapii, choprai, kyathit, margaritatus, sp. "Ocelot"	
	20	erythromicron	
<i>Devario</i>	5	malabaricus	
	15	auropurpureus	
<i>Eirmotus</i>	15	octozona	
<i>Luxilus</i>	15	zonatus	
<i>Puntius</i>	10	bimaculatus, conchoni, filamentosus, nigrofasciatus, oligolepis, pentazona, puckelli, semifasciatus, tetrazona, ticto, titteya, vittatus	
	15	arulus, phutunio	
<i>Rasbora</i>	20	borapetensis, daniconius, dorsiocellata, elegans, sp. "thuzari", trilineata	
<i>Sundadanio</i>	15	sp. "Red Blue"	
<i>Tanichthys</i>	5	albonubes	
	10	albonubes "long fin", micagemmae	micagemmae

Cyprinodontidae			
<i>Aphanius</i>	10	<i>mento</i>	
	15	<i>transgrediens</i>	<i>transgrediens</i>
<i>Cyprinodon</i>	15	<i>macularius</i>	
<i>Jordanella</i>	10	<i>floridae</i>	
Distichodontidae			
<i>Neolebias</i>	20	<i>ansorgii, trewavasae, trilineatus, unifasciatus</i>	
Elassomatidae			
<i>Elassoma</i>	20	<i>evergladei</i>	
Eleotridae			
<i>Mogurnda</i>	15	<i>mogurnda, nesolepis</i>	
<i>Tateurndina</i>	15	<i>ocellicauda</i>	
Fundulidae			
<i>Fundulus</i>	10	<i>catenatus, notatus</i>	
<i>Lucania</i>	10	<i>goodei</i>	
Gobiidae			
<i>Chlamydogobius</i>	15	<i>eremius</i>	
Goodeidae			
<i>Allodontichthys</i>	15	<i>hubbsi, tamazulae</i>	<i>hubbsi, tamazulae</i>
<i>Allotoca</i>	15	<i>dugesii 'Black Sport', 'Rancho El Molino' (Dibble 2000)</i>	<i>dugesii</i>
<i>Ameca</i>	15	<i>splendens, splendens 'Rio Teuchitlan'</i>	<i>splendens</i>
<i>Ataeniobius</i>	15	<i>toweri</i>	<i>toweri</i>
<i>Chapalichthys</i>	15	<i>encaustus, pardalis, peraticus sp. 'La Mintzita'</i>	<i>encaustus, pardalis, peraticus</i>
<i>Characodon</i>	15	<i>audax, audax 'El Toboso', lateralis, lateralis 'Los Berros', sp. 'Amado Nervo'</i>	<i>audax, lateralis</i>
<i>Girardinichthys</i>	15	<i>multiradiatus, viviparus</i>	<i>multiradiatus, viviparus</i>
<i>Goodea</i>	15	<i>atripinnis, gracilis, luitpoldi 'Lago Opopeo, Michoacan'</i>	<i>gracilis</i>
<i>Ilyodon</i>	15	<i>cortesae, furcidens, furcidens 'Comala', lennoni, xantusi</i>	<i>cortesae, lennoni</i>
<i>Skiffia</i>	20	<i>bilineata 'Rio Grande de Morelia', francesae 'Rio Teuchitlan', lermiae 'Lago de Patzcuaro', multipunctata</i>	<i>bilineata, francesae, lermiae, multipunctata</i>
<i>Xenophorus</i>	15	<i>captivus, captivus 'Illescas'</i>	<i>captivus</i>

<i>Xenotaenia</i>	15	<i>resolanae</i>	<i>resolanae</i>
<i>Xenotoca</i>	15	<i>eiseni</i> , <i>eiseni</i> "Rio Compostela", <i>eiseni</i> "Rio Tamazula", <i>variata</i> "Jesus Maria" (Aguascalientes), <i>variata</i> "Zacapu"	<i>eiseni</i>
<i>Zoogoneticus</i>	15	<i>quitzeoensis</i> , <i>tequila</i>	<i>quitzeoensis</i> , <i>tequila</i>

Hemiramphidae			
<i>Dermogenys</i>	10	<i>pusilla</i> , <i>siamensis</i>	
<i>Hemirhamphodon</i>	10	<i>chrysopunctatus</i> , <i>kapuasensis</i> , <i>kuekenthali</i>	
<i>Nomorhamphus</i>	10	<i>brembachi</i> , <i>celebensis</i> , <i>ebrardtii</i> , <i>liemi</i>	

Lebiasinidae			
<i>Nannostomus</i>	20	<i>anduzei</i> , <i>beckfordi</i> , <i>beckfordi</i> "Red", <i>espei</i> , <i>minimus</i> , <i>mortenthaleri</i>	
<i>Pyrrhulina</i>	15	<i>brevis</i>	

Loricariidae			
<i>Ancistrus</i>	10	<i>cirrhusus</i> , <i>dolichopterus</i> , <i>lineolatus</i> , sp. "bristlenose", sp. "albino bristlenose", sp. "Calico", sp. "Gold Spot", sp. "Pucallpa", sp. "L144", <i>temminckii</i>	
<i>Dasylicaria</i>	20	<i>filamentosa</i>	
<i>Farlowella</i>	20	<i>acus</i> , <i>gracilis</i> , <i>hasemani</i>	
<i>Ricola</i>	20	<i>macrops</i>	
<i>Rineloricaria</i>	20	<i>microlepidogaster</i> , sp. "Red"	
<i>Sturisoma</i>	20	<i>aureum</i>	

Melanotaeniidae			
<i>Chilatherina</i>	10	<i>bleheri</i> , <i>campsi</i> , <i>fasciata</i> , <i>sentaniensis</i>	<i>bleheri</i> , <i>sentaniensis</i>
<i>Glossolepis</i>	10	<i>incisus</i> , <i>maculosus</i> , <i>ramuensis</i> , <i>wanamensis</i>	<i>incisus</i> , <i>wanamensis</i>
<i>Iriatherina</i>	15	<i>weneri</i>	
<i>Melanotaenia</i>	10	<i>affinis</i> , <i>arfakensis</i> , <i>australis</i> , <i>boesemani</i> , <i>catherinae</i> , <i>fluviatilis</i> , <i>fredericki</i> , <i>goldiei</i> , <i>gracilis</i> , <i>herbertaxelrodi</i> , <i>irianjaya</i> , <i>kamaka</i> , <i>lacustris</i> , <i>maccullochi</i> , <i>misoolensis</i> , <i>nigrans</i> , <i>oktediensis</i> , <i>papuae</i> , <i>parkinsoni</i> , <i>parva</i> , <i>praecox</i> , <i>praecox</i> (Pagai 08), <i>pygmaea</i> , <i>splendida</i> , <i>splendida inornata</i> "Anniversary Creek", <i>trifasciata</i> , <i>trifasciata</i> "Wonga Creek", <i>utcheensis</i>	<i>arfakensis</i> , <i>boesemani</i> , <i>lacustris</i> , <i>oktediensis</i> , <i>parva</i>
<i>Rhadinocentrus</i>	10	<i>ornatus</i>	

Mochokidae			
<i>Synodontis</i>	15	<i>lucipinnis</i>	
	20	<i>multipunctata</i> , <i>petricola</i>	

Nothobranchiidae			
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<i>Aphyosemion</i>	15	<i>ahli</i> , <i>alpha</i> "Cap Santa Clara" (DNA-01), <i>amoenum</i> , <i>australe</i> , <i>australe</i> "Cap Esterias" (DNA 01), <i>bitaeniatum</i> , <i>bitaeniatum</i> "Lagos Red", <i>bitaeniatum</i> "Zagnando", <i>bivittatum</i> , <i>bivittatum</i> "funge", <i>bivittatum</i> "hollyi", <i>bivittatum</i> "ijebe ode", <i>bualanum</i> , <i>buytaerti</i> (BSWG-97-3), <i>calliurum</i> "Ikorodu", <i>cameronense</i> <i>haasi</i> (ACH2-DNA02), <i>celiae</i> , <i>coeleste</i> , <i>deltaense</i> , <i>elegans</i> , <i>elegans</i> "Mabimba", <i>exigoideum</i> , <i>fulgens</i> , <i>gabunense</i> , <i>gabunense marginatum</i> , <i>georgiae</i> , <i>hera</i> , <i>hera</i> (ARK 1-2/96), <i>herzogi</i> "Zomoko" (HAH '98), <i>hofmanni</i> , <i>labarrei</i> , <i>labarrei</i> "Madimba", <i>louessense</i> "Malinga", <i>lujae</i> , <i>ogoense</i> , <i>ogoense pyrophore</i> (GHP), <i>ogoense pyrophore</i> (RPC-19), <i>passaroi</i> (GEB 94/5), <i>primigenium</i> , <i>punctatum</i> "Buong Bai", <i>raddai</i> , <i>riggenbachi</i> , <i>riggenbachi</i> "Dibang", <i>riggenbachi</i> "N'kapa", <i>schioetzi</i> , <i>splendopleure</i> "Muyuka Police Station" (C89/15), <i>splendopleure</i> "Tiko Green", <i>sp.</i> "Bioko Island N'supa", <i>sp.</i> "Lobave", <i>striatum</i> , <i>striatum</i> "Moyoko", <i>zygaima</i>	
	20	<i>callipteron</i> (HAH '98), <i>elberti</i> , <i>loennbergii</i>	
<i>Archiaphyosemion</i>	15	<i>guineense</i>	
<i>Callopanchax</i>	20	<i>monroviae</i> "Paynesville" (L97), <i>occidentalis</i> , <i>toddi</i>	
<i>Epiplatys</i>	10	<i>annulatus</i> "Guinea", <i>ansorgii</i> , <i>berkenkampii</i> , <i>chaperi</i> , <i>chaperi schreiberi</i> , <i>chaperi schreiberi</i> "Ghana", <i>dageti</i> , <i>dageti monroviae</i> , <i>fasciolatus</i> , <i>lamottei</i> (Koule - GRC 90/178), <i>olbrechtsi</i> , <i>sexfasciatus</i> , <i>sexfasciatus</i> "Barol Bidu", <i>singa</i>	
<i>Fundulopanchax</i>	10	<i>gardneri</i>	
	15	<i>amieti</i> , <i>fallax</i> , <i>cinnamomeus</i> , <i>filamentosus</i> , <i>gardneri</i> "Akure", <i>gardneri</i> "Inidere", <i>gardneri</i> "Lacustris" (HAH-98), <i>gardneri</i> "Lafia", <i>gardneri</i> "nigerfatum", <i>gardneri nigerianus</i> "Misaje", <i>gardneri</i> "N'sukka", <i>gresensi</i> , <i>gularis</i> , <i>marmoratus</i> , <i>marmoratus</i> "Mundemba" (GS-I), <i>mirabelis</i> , <i>moense</i> , <i>oeseri</i> , <i>puerzli</i> , <i>scheeli</i> , <i>sjoestedti</i> , <i>spoorenbergi</i> , <i>walkeri</i>	
	20	<i>avichang</i>	
<i>Nothobranchius</i>	15	<i>foerschi</i> , <i>guentheri</i> , <i>guentheri</i> "Zanzibar", <i>korthausae</i> , <i>korthausae</i> "Mafia Island" (Tan 02-05), <i>palmqvisti</i> , <i>palmqvisti elongatus</i> , <i>rachovii</i> , <i>rachovii</i> "Beira 98", <i>rubripinnis</i> , <i>rubripinnis</i> "Mbezi River" (TZ 83-5), <i>sp.</i> "Lake Victoria"	<i>foerschi</i> , <i>korthausae</i> , <i>rubripinnis</i>
<i>Pseudepiplatys</i>	15	<i>annulatus</i> , <i>annulatus</i> "Guinee" (CI-00), <i>annulatus</i> "Monrovia"	
<i>Scriptaphyosemion</i>	15	<i>geryi</i> "Abuko", <i>guignardi</i> , <i>guignardi</i> "Sougueta", <i>liberiense</i> , <i>liberiense</i> "Firestone Plantation", <i>schmitti</i> "Juarzon"	

Osphronemidae			
Belontia	15	signata, signata jonklaasi	signata
Betta	10	splendens	
	15	albimarginata, channoides, coccina, edithae, enisae, falx, fusca, imbellis, ocellata, picta, pulchra, rutilans, simplex, smaragdina, unimaculata	albimarginata, channoides, coccina, rutilans, simplex
	20	brownorum, strohi	brownorum
Ctenops	20	nobilis	
Macropodus	5	opercularis	
	10	erythropterus	
Malpulutta	15	kretseri	kretseri

<i>Parosphormenus</i>	20	<i>deissneri</i>	<i>deissneri</i>
<i>Pseudosphromenus</i>	15	<i>cupanus, dayi</i>	
<i>Trichogaster</i>	5	<i>trichopterus</i>	
	10	<i>fasciata, lalius, leerii</i>	
	15	<i>chuna, labiosa, microlepis</i>	
<i>Trichopsis</i>	15	<i>pumila, schalleri, vittata</i>	
Percidae			
<i>Etheostoma</i>	20	<i>caeruleum</i>	
Poeciliidae			
<i>Alfaro</i>	10	<i>cultratus, huberi, huberi "Rio Bonita"</i>	
<i>Aplocheilichthys</i>	10	<i>normani</i>	
<i>Belonesox</i>	15	<i>belizanus</i>	
<i>Brachyrhaphis</i>	10	<i>rhabdophora, roseni</i>	
<i>Carlhubbsia</i>	10	<i>stuarti</i>	
<i>Cnesterodon</i>	10	<i>carnegiei</i>	
<i>Gambusia</i>	5	<i>affinis, affinis "Baja, Mexico", affinis holbrooki, geiseri "San Marcos", melapleura, panuco, punctata, sp. "Baja California", speciosa</i>	
	15	<i>vittata</i>	
<i>Girardinus</i>	5	<i>metallicus</i>	
<i>Heterandria</i>	5	<i>formosa</i>	
<i>Lamprichthys</i>	20	<i>tanganicanus</i>	
<i>Limia</i>	5	<i>caymanensis, melanogaster, melanonotata "San Marias, Dominican Republic", nigrofasciata, perugiae, rivasi, sp. "Tiger", sulphurophila, tridens, tridens "Las Salinas", versicolor, vittata</i>	
<i>Micropoecilia</i>	10	<i>pumilis</i>	
<i>Micropoecilia</i>	5	<i>minima</i>	
	10	<i>picta</i>	
<i>Neoheterandria</i>	15	<i>elegans, tridentiger</i>	
<i>Pamphorichthys</i>	5	<i>minor</i>	
<i>Phallichthys</i>	5	<i>amates, fairweatheri, quadripunctatus, tico</i>	<i>quadripunctatus</i>
<i>Phalloceros</i>	10	<i>caudimaculatus</i>	
<i>Poecilia</i>	5	<i>butleri, caucana, chica, gillii "Rio Coco", latipinna, marcellinoi, maylandi, mexicana, orri, reticulata, reticulata "Puerto Gaitan", rositae "Lago de Ilopango", salvatoris, sp. "Jutiapa River", sp. "Para", sphenops, sphenops "Roatan Island", velifera, wingei</i>	
<i>Poeciliopsis</i>	5	<i>prolifera</i>	
	15	<i>fasciata, gracilis, latidens, turneri "Rio Purification", turrubarensis</i>	
<i>Priapella</i>	5	<i>intermedia</i>	
<i>Procatopus</i>	15	<i>aberrans</i>	
<i>Scolichthys</i>	10	<i>greenwayi, iota</i>	
<i>Xenophallus</i>	15	<i>umbratilis, umbratilis "Arenal Volcano"</i>	

<i>Xiphophorus</i>	5	<i>continens, cortezi, cortezi "Rio Axtla", evelynae, evelynae "Rio Tecolutala", helleri, helleri guntheri, helleri "Cortezi Rio Tambique", maculatus, maculatus "San Miguel #4", mayae, mayae "Lago de Izabel", meyeri, montezumae, montezumae "Cienega Grande", nezahualcoyotl, sp. "Domestic Platy", sp. "Domestic Swordtail", sp. "Domestic Variatus", sp. "PMH", variatus, variatus "Encino", variatus "Rio Axtla", variatus "Rio Panuco", xiphidium, xiphidium "Rio Purification"</i>	<i>meyeri</i>
	10	<i>alvarezi, andersi, andersi "Rio Atoyac", birchmanni, birchmanni "Rio Orizatlan", clemenciae, couchianus "Huesteca Canyon", gordoni, malinche, malinche "Rio Claro", monticolus, pygmaeus, signum</i>	<i>couchianus, gordoni</i>

Polycentridae	
<i>Polycentrus</i>	20 <i>schomburgkii</i>

Pseudomugilidae	
<i>Popondichthys</i>	10 <i>furcatus</i>
<i>Pseudomugil</i>	10 <i>cyanodorsalis, gertrudae, gertrudae "Aru IV", gertrudae "Giddy River", signifer, tenellus</i>

Rivulidae	
<i>Aphyolebias</i>	15 <i>peruensis, wischmanni</i>
<i>Austrofundulus</i>	15 <i>limnaeus</i>
<i>Austrolebias</i>	15 <i>alexandri, alexandri "San Javier", nigripinnis, sp. "Mabelis", wolterstorffi "Canal Andreoni"</i>
<i>Cynopoecilus</i>	15 <i>melanotaenia</i>
<i>Kryptolebias</i>	10 <i>marmoratus, marmoratus "Puerto Rico"</i>
<i>Nematolebias</i>	15 <i>whitei</i>
<i>Pterolebias</i>	20 <i>hoignei</i>
<i>Rachovia</i>	10 <i>brevis</i>
	15 <i>hummelincki, maculipinnis</i>
<i>Rivulus</i>	5 <i>cylindraceus</i>
	10 <i>alilae, chucunae, cryptocallus, deltaphilus, hartii, hildebrandi, iridescens "Pebas", isthmensis, limoncochae, luelingi, magdalenae, montium (PAN 06/23), santensis, tenuis</i>
	15 <i>ornatus "Rio Tigre", xiphidius, xiphidius "Bagne dr Anamites", xiphidius "Cirque Blanche" (SFG04)</i>
<i>Simpsonichthys</i>	15 <i>bokermanni, constanciae, fulminantis</i>

Serrasalmidae	
<i>Pygocentrus</i>	20 <i>nattereri</i>

Syngnathidae	
<i>Hippocampus</i>	20 <i>zosteriae</i>
<i>Syngnathus</i>	20 <i>scovelli</i>

Telmatherinidae		
<i>Marosatherina</i>	10	<i>ladigesii</i>
Tetraodontidae		
<i>Carinotetraodon</i>	15	<i>travancorius</i>
<i>Tetraodon</i>	20	<i>suvattii</i>

How Chickens and Fish are Alike

by Kathy Deutsch

Over the years I have watched fish for hours. I bet you have, too. One reason why we keep fish is to have a tank full of interesting creatures to watch. As the fish interact with each other, forming colonies, defending territories, perhaps making families, we observe. It entertains and educates us. These past few years, I have become a chicken-keeper. As I watch my bantams, I am surprised how much they behave like fish. I use my knowledge of fish to be a better flock master, and I use what I learn about chickens to be a better fish-keeper.

Fish and chickens like to be in groups. Just as a solo chicken is miserable, a single fish is lonely. Both use cues given by other members of the group to tell them when it is safe to move about, when and what to eat, and where to set up a territory. With my chickens, there is a pecking order. An alpha male cares for a group of females and any sub-males who don't challenge his authority. He finds food for them, and makes sure they eat before he does. He is constantly on the watch for danger, and alerts his group through body language and sound. The alpha also keeps his flock in a group and herds them to good places. When I watch my buffaloheads, I see similar behavior. The alpha will dance and lunge at food, to show the others where to go. The alpha chases rivals and also threatens fish who come to his level in the tank. Once they are higher or lower, then the alpha relaxes. Other fish, from tetras to eels, also use body language to indicate when there might be danger. They swim to the safest spot that might have food. Even fish thought to be "solitary", such as catfish, appreciate other fish who live on their level of the tank. I find my plecostomus and synodontis come out and eat quickly when the corydoras schools are going after food. Whether in flocks or schools, chickens and fish do much better in the company of others that are like themselves.

And speaking of schools/flocks/groups; fish like dither fish. Dither fish are a group of fish that live in the same tank, but on another level than the main group of fish. The dithers are an early warning system, an indicator of where food might be, and a distraction to predators who might otherwise eat the main group of fish in the tank. When the dithers are happy then everyone is happy. In my buffalohead tank, I have Emperor Tetras and barbs as dithers above the cichlids, and some Habrosus cories as lower-level dithers. The buffaloheads watch the dithers and get cues if the environment is safe and has the possibility of a meal. They follow the dither fish when I put food in the tank, waiting to see if the food is tasty and if there are no predators. When my chickens are outside, the alpha constantly watches the sky and listens. The local wild birds' sounds and actions tell him if there is a hawk near. My rooster especially likes the hummingbirds who dive bomb, and the warblers who eat bugs near the flock. He knows when these birds are close, everything is OK.

Some fish, and all chickens lay eggs. That's the simple comparison. But both these creatures do a lot of work before the eggs are laid. A family group is established with a male who will contribute genetics and sometimes will care for the eggs and babies. A place is cleaned and made safe for the eggs. The female tries to eat a good diet with nutrients to make sturdy shells. After the eggs are laid, a parent

stays with the eggs. He or she keeps the eggs clean, sheltered, and at the proper temperature. Once the eggs hatch, the babies are tended, fed, protected, and taught. In my chicken/egg/chick observations, I am surprised how the hen eats selectively for healthy eggs, cares for them obsessively, and yet the hatch is only 25%-50%. It is something to note when our fish don't hatch out every egg, that some eggs just are not meant to hatch. Chickens won't even lay if they feel the conditions aren't right, and if they don't like the rooster, they won't allow breeding (if they can avoid it). I have also seen hens walk away from eggs half way through the gestation when the weather turned bad. If the hen does not feel the chicks will have a chance of surviving, due to lack of food, a bad rooster, overcrowding, etc. they will abandon the eggs. I truly believe when our fish give up on fry or stop tending eggs, there is a reason. We cannot know everything about our fishes' aquatic environment. Conversely, when a family of fish is hatching and raising fry, enjoy it and don't change a thing. This family won't keep breeding forever, so don't be surprised when production drops off.

Every species likes a varied diet. But with fish and chickens, the results are dramatic. Both of them like live foods like worms, insects, and fresh greens. They both need a decent amount of fiber (from plant foods and the exoskeletons of bugs) to keep their digestive tracts healthy. Fish scales and bird feathers are composed of proteins and minerals, so high quality protein from live foods makes them both more physically attractive. And both like the mental challenge of hunting, killing and eating. I have watched fish rip apart lettuce in the exact same manner as chickens. A wriggly worm makes a chicken or a fish's eyes light up. For optimal health, coloration and breeding success, fish and chickens need similar diets. My chickens really like a treat of fish food pellets made for catfish.

We all know that keeping a fish tank clean and doing water changes is vital. But it can be a chore I put off. Build-up of toxins, parasite multiplication, and poor fish health is the result. In a similar way, chicken health is quickly and greatly affected by poor housekeeping. Chickens, like other birds will not indicate they are ill until they are almost dead. If their coop is not clean, they can get parasites, ammonia burn to the lungs, foot fungus, and other maladies. By the time the chicken keeper notices the bird is sick, it probably won't survive. Tending a sick chicken is not something I ever want to do, so I resolved never to let them get sick if I could help it. A quick daily coop/food/water cleaning takes about 20 minutes. I am embarrassed to admit my happy chickens are a blunt reminder that the fish need similar care.

I have been watching fish for most of my life and I still cannot figure them out. They do things that make no sense; they exhibit behaviors that I can't unlock. Having chickens has helped me make some sense of flock/school mentality. Feeding chickens and seeing the amazing results reminds me that my fish need a better diet (although I am not cooking them cornbread like I do for my chickens). Most importantly, keeping fish reminds me that some creatures prefer their own kind over a human. I never feel hurt when the fish ignore me. When my chickens come over to see if I have a snack for them, then drift off to hang out together, I am glad they are acting the way they should.



An expanded line of MASI Logo merchandise is now available from Café Press. Derek Walker has picked up management of the site and added many new items. Pick from T-shirts, jerseys, caps, tote bags, coffee cups, and more.

Go to www.cafepress.com/MissouriAquariumSociety to view and order the merchandise.

HAP Report May – June 2011

Mike Hellweg

Member	Species	Common	Rep	Pts	Total
Mike Hellweg	Justicia americana	Water Willow	IB	10	3090
Andy Walker	Ranunculus aquatilis	White Water Crowfoot	V	10	520
John Van Asch	Canna glauca Variegated Yellow Flame*	Yellow Flame Canna	V	10	715
John Van Asch	Canna glauca Tropical Rose*	Tropical Rose Canna	V	10	725
Derek Walker	Echinodorus sp. Tanzende Feuerfeder	Tanzende Feuerfeder Sword	V	15	3065
Derek Walker	Hygroryza aristata*	Asian Waterweed	V	5	3070
Derek Walker	Salvinia cucullata*	Asian Watermoss	V	5	3075

Reproduction Key: V = Vegetative, OB = Outdoor Bloom, IB = Indoor Bloom, S = Seedling

* = MASI First

Member Classifieds

I have bloodworms and brine shrimp. Brine Shrimp eggs \$32 for 16 oz. can. I am looking for a 200 gallon tank. Jim Miller, 314-638-1134.

Charles Harrison (314) 894-9761, csharrison@inkmaker.net -

Thiosulfate crystals (Chlorine Remover) \$3.00 a half pound
 OTO double strength Chlorine/Chloroamine test kits - 4 ounce - \$12.50
 Flubendazole, 5% powder 10 grams \$5.00, 25 grams - \$20.00
 Lavamisole HCl Powder - 5 grams treats 100 gallons \$10.00
 Methylene Blue 5% solution (2 ounces) \$12.75
 Acriflavine Concentrate (4%) solution, 2 ounces \$12.70
 Bromthymol Blue pH test solution, 4 ounces\$7

Wanted: Small Styro shipping boxes - 12 x 12 x 12 or a little bit smaller. If your company uses them and throws them away, save them! Bring to the meeting or I'll come pick them up. Mike 636-240-2443

MASI Members can place a classified ad in the Darter for free. Ads may be up to 30 words in length. Send your ads to the editor. The ad will run for one issue unless you specify how long to run it, in which case it will run as requested.

Patroeddy Harrisonhellwegi

- Hybrid MASI Fish Breeder Report

By Derek Walker

Patroeddy Harrisonhellwegi or hybrid MASI fish, is a mouthbrooder native to the muddy waters of Missouri and Mississippi river, but are mainly found around the Dorsett Village area. The climate is sub-tropical with temperatures in the mid 70's to 80's and native waters for this fish are 7.4. I obtained six 3/4 inch long fish from MASI auction. Males achieve a size of 6 inches and are White sulfur head with a red stripe in the white markings. Body is long and robust with a mustache above the top lip. Females achieve a size of 5 inches and are a red sulfur head with a white stripe. These fish are moderately aggressive and will attack other members of MASI. Males will do damage to other males and females, so provide cover and lots of hiding places. This fish cannot be kept with the Coryhuckrushi Ediewalker. Both will rip each other apart.

The fish bred in a 2000 gallon Scott Bush special tank which contained mud and was planted with anything that will grow in mud. The tank was filtered by a Industrial power filter and had a pH of pH of 7.0. I performed weekly water changes equal to 60% of the tank volume. I used fluorescent lighting for a duration of 14 hours each day. I fed the fish Table scraps and occasionally they will get prime rib from Tangle foot Steak house in Festus. You can't beat the Quality.

When spawning, the red color of the male intensifies. Females change to a bright yellow. The pair cleaned an old award that I took from Jim Miller's house that was in the tank. I took the award because he beat at a show. Next, the female laid an egg and picked it up in her mouth. The pair assumed a "T" position and the female then bit at the egg spot of the male fertilizing the eggs.

The pair laid approximately 3600 eggs. After spawning, the female retreated to a hiding place to avoid harassment by the male. I moved the female to a thickly-planted twenty-six hundred gallon tank containing Wangeri danios and Zahringer platies. This tank provided lots of hiding places to make the female feel comfortable. Approximately 2700 eggs representing 80% of the total hatch were viable and hatched after 20 days. The fry were a yellow-tan in color and about 3/8 of an inch long and looked very similar to their parents.

The fry didn't require any special care on my part. I left them in the 2600 gallon tank with the danios and platies after moving the female to another tank. The tank used a Second Nature power filter and a Tetra sponge filter for filtration. Once the female released the fry, she did not exhibit any tendency to care for the fry. I started the fry off on Jost Chemical. After seven days I started feeding chicken chunks from Deutsch's Feather Friends. The fry grew fast. It's important to feed high quality stuff.

When breeding this fish, you have to patient. It takes quite a while for the males to mature and grow up. Too much party life in the big tank. This was actually the hardest mouthbrooder I have bred. It takes them a bit to get their party life in check. I lost two spawns before finally they figure out that party life was over. While Patroeddy Harrisonhellwegi was challenging, I would recommend them to other aquarium clubs. They are aggressive fish. If you don't watch them they will pat you on the back and walk away.

Be prepared for very aggressive fish and offer lots of hiding spots. My dominant male bites me on a regular basis. Last thing always watch for the pat on the back. Whatever side he touches look to the opposite way you will find him.

To all this was a made up story and not a true fish.

FISHES as DISHES

Patrick A. Tosie, Sr.

We all love our fish! This column will be dedicated to using our fish for something tasty to enjoy. Try it, you may like it. If you have leftovers, bring it to a monthly meeting for others to enjoy.

Grilled Tilapia with Peach BBQ Sauce

Ingredients:

Peach BBQ sauce

3/4 cup ketchup
3 tablespoons prepared mustard
1/2 cup oil
1/2 cup apple cider vinegar
Pinch garlic salt
3 tablespoons Worcestershire sauce
2 teaspoons paprika
1/4 cup lemon juice
1 teaspoon pepper
3 tablespoons brown sugar
3/4 cup water
1/2 cup onions, finely chopped
2 cups fresh or canned peaches

4 (7-ounce) tilapia fillets
House seasoning
1 lime, juiced

Directions:

Mix all the ingredients together in a saucepan, excluding the peaches and simmer over medium heat for 15 to 20 minutes.

While the sauce is simmering, puree 2 cups of canned or fresh peaches. Once the sauce is cooked, add the pureed peaches to the sauce and stir together.

Preheat the grill to medium heat. Season the tilapia with house seasoning. Cook the fish on each side for 3 to 4 minutes. During the last few minutes of cooking, brush the fish with some barbecue sauce.

Once cooked and plated, ladle a nice spoonful of the Peach barbecue sauce on top of the fillets.

EAT MORE



FISH

Club Hopping 2011

Steve Edie

Aug 14 - St Louis: Missouri Aquarium Society – Auction

Sept 25 – Indianapolis: Circle City Aquarium Club - Auction

Oct 2 - St Louis: Missouri Aquarium Society – Swap Meet

Nov 4-6 – San Antonio: Federation of Texas Aquarium Societies – Annual Convention

Nov 13 - St Louis: Missouri Aquarium Society - Auction

Nov 18-20 – Cleveland: Ohio Cichlid Association – Extravaganza

Jan 14, 2012 – Urbana, IL: Champaign Area Fish Exchange - Auction

July 14, 2012 - Urbana, IL: Champaign Area Fish Exchange – Auction

More dates will be added as clubs firm up their plans.

From The Fish Room

By Ed Millinger

Under the I can't believe it category comes the story of a thief in Chicago who killed the goldfish of the homeowner he had just ripped off before leaving the scene of the crime. His reasoning was that he didn't want to leave any witnesses.

Animal Planet has a show on hoarding. Most of the reports concern keepers of cats or dogs and once I saw a woman with twenty five birds who had bird lung disease. Have you ever considered anyone with many aquariums a hoarder? I know I haven't. Is it because fish are contained in an enclosed environment? The major problem with dog, cat and bird hoarders becomes obvious usually from the smell and the mess that ensues. Keeping fish is a hobby but can become an obsession? How do you know the difference? Is it a matter of opinion?

I think everyone can agree that plastic plants have come a long way over the years. But if they were realistic shouldn't they have some dead and decaying leaves to better imitate the way my live plants usually look?

From the way back machine, in the fall of 1986 the M.A.S.I. breeders award program (BAP) was under the very capable hands of Peggy Scott who at the time had 1255 points. It was at this time a member turned in his first spawn ever. They were red velvet swordtails and those five points were just the beginning, Mike Hellweg now has over 4000 points, quite an accomplishment wouldn't you say?

...remember it's a hobby not a job

The Computer Page

Steve Deutsch

MASI's official web page: www.missouriaquariumsociety.com

MASI's email group: MASIFishHeads Yahoo Group - see web site for joining instructions

Addresses are only printed with permission of the owner. If you would yours added, please email me at steve@skdeu.com. If you would like yours removed, or if it needs correction, also please email me.

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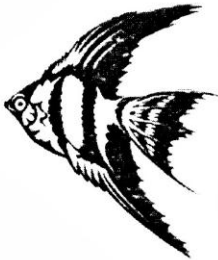
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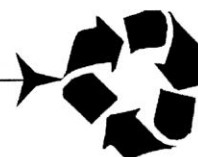
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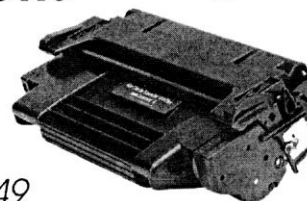
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