

# THE RAINBOW TIMES

Volume 9/Number 4



*Melanotaenia boesemani*, photo by Gary Lange

**The Rainbowfish Study Group, Inc.**

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## FROM THE EDITOR . . .

Kevin Hosmer  
May 1996

My wife and I were fortunate to have the opportunity to attend the 1990 ANGFA National Convention in Brisbane and the 1993 Convention in Townsville. Although my wife is not an avid fishkeeper, these events are very dear in both of our memories. During both trips, numerous individuals made an extended effort to make us feel welcome and comfortable and to ensure that our visits were memorable. I suspect that some of the ANGFA stalwarts perhaps felt some obligation to the overseas visitors. Their personal efforts could not be surpassed by professional tourguides. Yet the casual ANGFA members were also very generous. For example, some of the latter individuals gave me the opportunity to view an impressive personal collection of Australian butterflies and inspect another's rainbowfish collection - concluding with an offer to return someday for a few days of collecting at his favorite locations!

In his most recent letter to me, I was asked by Ron Bowman (ANGFA, Victoria Regional Group) to mention this year's ANGFA Convention. I am only too happy to oblige.

The 1996 ANGFA National Convention will be held October 19th & 20th in Melbourne, Australia. The slate of speakers will include Heiko Bleher and Jerry Allen. Additional activities have been organized by ANGFA following the convention:

October 21st - Behind the Scenes Guided Tour of the Royal Melbourne Zoo

October 22nd - ANGFA Fishroom "Crawl" and aquarium shop tours

October 23rd - Healesville Wildlife Sanctuary Tour/Snobs Creek Fish Hatchery

I can photocopy information in my possession and send to those interested. Further details can be obtained from June Caughey at 057 742 330 or Ken Smales at 03 9391 5225. Information can also be obtained by writing June Caughey c/o ANGFA Victoria Regional Group, P.O. Box 59, Chirnside Park, Victoria, Australia, 3116.

(continued next page)

### **Please note your expiration code on your address label!**

If your expiration code is 0903 or 0904: please mail your membership dues immediately to ensure uninterrupted receipt of the Rainbow Times.

It is rumored that a new RSG member wishes to obtain information regarding native Australian aquatic plants. I requested information from Bruce Hansen (ANGFA, Queensland Regional Group). His e-mail reply:

“I have just initiated a new A-Z of Australian aquatic plants - the first was sent out with the ANGFA(Q) Newsletter a week ago . . . and others are to follow as assistance and time permit. Also there will be an article on *Eriocaulon setaceum* in the next Fishes of Sahul so tell your friend to keep subscribing to ANGFA and all will gradually be revealed. Perhaps eventually we may even have a colour poster on the native aquatic plants similar to the fish posters--we have done so far. However we are only a little club and these things cost heaps so we have to go slowly.”

Anyone with further and perhaps more immediate information concerning Australian aquatic plants might consider a submission for the next Rainbow Times issue. They're always welcome . . .

Now that it is warm weather - remember to send in you Egg & Fish Listing.

In review . . . . I am pleased with the content of this issue - a general article regarding rainbowfish, several articles detailing experiences with specific species and an update on the RSG Species Maintenance Program. Thank you to those who submitted articles. As usual I encourage our readers to constructively respond to any article that moves them to. Enjoy.

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John D. Elwood (219) 726-4438  
416 W. Water  
Portland, IN 47371

**Wanted**

*P. connieae*  
*P. furcatus*  
*P. gertrudae*  
*P. mellis*  
*P. paskai*  
*P. signifer*

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## CHAIRMAN'S REPORT . . .

Gary Lange

Thanks to the efforts of Scott Buckel and Roger Crowther, the RSG web site is now open: <http://home.earthlink.net/~sbuckel/index.html>. It looks pretty darn good and is attracting a lot of attention from hobbyists on the net. I've gotten quite a few e-mails commenting on it. Hopefully we'll add to it from time to time including a few new pictures. If you are electronically connected please check it out. Thanks again guys.

If you missed the talks in Pittsburgh last year, never fear. Jeff Bilbrough now has copies available of Dr. Allen's talks (2) and of Peter Unmack's talk. Each presentation is on one tape. Tapes cost \$12 each, including postage in the US. Postage to Canada is an extra \$2. Make checks payable to the RSG in US funds. See inside front cover for Jeff's address.

If you are planning on attending the meeting at the NY/Penn council this year, Peter's talk will be "Care and Breeding of Rainbows and other Australian Natives". Hope to see you there. If you'd like further information contact Dan Richardson, (814) 734-7729 or better write him at 4829 Leacock Road, Edinboro, PA 16412 or e-mail at [PLZL02A@prodigy.com] The e-mail address in the previous issue was incorrect.

I spent a little time in Vermont about a month ago attempting to capture the beauty of Doug Chamberlain's beautiful plant tanks (and rainbowfish) on film. Unfortunately the *M. Exquisita* that Doug spoke so glowingly about last issue did not photograph due to an error on the part of the cameraman. Instead you have his male *M. boesemani* disputing over territory.

Cary Hostrawser has an article in this issue on species maintenance. Some of you may not yet realize just how difficult it is to obtain some of these rainbows. A great many of the rainbows purchased in the stores now are just shadows of the former fish due to crossing by many of the wholesalers. Many of the fishes that have come to us from Papua New Guinea and especially Irian Jaya are here because Heiko literally risked life and limb to bring them back. Others are here mainly due to the efforts of one man in Australia namely Ron Bowman. Others have now started helping us obtain some of the more interesting and uncommon rainbows from Australia and we are very grateful for their efforts. Many of us have come to realize though that we just can't keep all of the species currently available in the US, we just don't have the room. If you can see your way to hanging onto a few selected species and then sticking with it for several years you could help to ensure that some of the more obscure stock doesn't disappear. Please give Cary a hand so we can all enjoy these fishes for years to come.

## **The Featherfin Rainbow** ***Iriatherina weneri* (Meinken 1974)**

by Christopher Biggs  
A.S.W., R.S.G.

The featherfin rainbow hails from its homewaters in southern New Guinea between Merauke and the Fly River as well in Northern Australia's Jardine River at the tip of the Cape York peninsula. Here it inhabits small, still or slowly moving crystal clear bodies of water with lots of aquatic vegetation. In order for this small rainbow to prosper in captivity these conditions must be duplicated as best as possible.

The featherfin is one of the small delicate rainbowfish of the Family *Melanotaeniidae* and reaches a maximum size of only two inches.

Featherfins are characterized by being elongate, laterally compressed fish with small mouths. The male of the species develops exaggerated extensions to the second dorsal and anal fins as well as extensions to the deeply forked caudal fin; the female remains rather plain in appearance. Both male and female are an overall silver in color but in the right light metallic hints of blue and pink can be seen. Once the fish become sexually mature they develop bright red highlights on the anal and first dorsal fins, truly a breath taking sight for such a small fish.

To maintain this beauty in the aquarium, one must pay close attention to the water quality. As aforementioned this fish inhabits crystal clear still water and if this is not taken into account, the featherfins existence in your aquarium will be a short one. I maintain a breeding pair in a five gallon aquarium heated to 78°F that is well lit by fluorescent lighting. The aquarium is filtered by a sponge filter and water changes in the range of twenty to thirty percent are done weekly. Due to their tiny mouths my featherfin pair are fed chopped frozen bloodworms as well as live baby brine shrimp daily. This helps bring them into spawning condition. The aquarium is decorated solely by a few potted cryptocorynes and an acrylic mop in which the featherfins deposit their eggs.

Healthy featherfins will generally lay between two and ten eggs daily. The eggs of all rainbowfish are extremely tough, similar to killifish, and can be handled without fear of breaking them. I remove the egg laden mop from the parent's tank and wring it out; then inspect the eggs. I find this to be an important step to see actually how many eggs I have that I'm going to try and hatch. Without this step you could be only getting a hatch rate of ten percent and thinking you were fairly successful. Next I place the mop in a hatching tank, usually a five gallon aquarium, and add a small pinch of crushed oyster shell. I don't filter the hatching tank for probably the first month but rely on

small daily water changes to maintain water quality. I do add an airline to the tank at a rate of one bubble every two to three seconds. Too much turbulence caused by over aeration can kill the fry, so be careful. Once the young hatch , in about seven days, they're ready to be fed. They are too small to take baby brine for about the first month so I tend to rely on live vinegar eels and A.P.R. (Artificial Plankton and Rotifer). Feeding is done three to four times daily and if all is well the fry will be sexually mature in three months.

FISH AND EGG LISTING

Send fish and egg listings to: Kevin Hosmer  
RR3 Box 4353  
Milton, VT 05468

Your listing will run for two issues unless you specify otherwise. The standard for listing a mop is at least 24 eggs in the mop. Most rainbowfish usually produce more than that. If not, price should be specified per dozen eggs.

|                                       |          |                             |  |
|---------------------------------------|----------|-----------------------------|--|
| Chris Drew (519) 641-1082             |          | Marc Beattie (519) 641-7237 |  |
| 90 Inverary Road                      |          | 231 Berkshire Drive         |  |
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| <b>Available</b>                      |          | N6J 3R5                     |  |
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| <i>G. ramuensis</i>                   |          | \$15/mop                    |  |
| <i>G. wanamensis</i>                  |          | \$15/mop                    |  |
| <i>I. weneri</i>                      |          | \$15/mop                    |  |
| <i>M. herbertaxelrodi</i>             |          | \$15/mop                    |  |
| <i>M. lacustris</i>                   |          | \$15/mop                    |  |
| <i>M. nigrans</i> , Scotts Creek      |          | \$15/mop                    |  |
| <i>M. papuae</i>                      |          | \$15/mop                    |  |
| <i>M. parkinsoni</i>                  |          | \$15/mop                    |  |
| <i>M. praecox</i>                     |          | \$40/mop                    |  |
| <i>M. pygmaea</i>                     |          | \$20/mop                    |  |
| <i>M. trifasciata</i> , Running Creek |          | \$15/mop                    |  |
| <i>M. trifasciata</i> , Skull Creek   |          | \$20/mop                    |  |
| <i>M. trifasciata</i> , Wenlock River |          | \$15/mop                    |  |
| <i>M. trifasciata</i> , Wonga Creek   |          | \$15/mop                    |  |
| <i>P. furcatus</i>                    |          | \$12/doz eggs               |  |
| <i>P. gertrudae</i> , Giddy River     | \$8/pair | \$12/doz eggs               |  |
| <i>P. signifer</i> , Bool Creek       | \$8/pair | \$12/doz eggs               |  |
| <i>P. signifer</i> , Harvey's Creek   | \$8/pair | \$12/doz eggs               |  |

# Awesome Fish and A Wonderful Creator

by Mike McCabe

Rainbowfishes are among the world's most beautiful fish ever - including saltwater. I have been keeping them for over five years and they have by far become my favorite. In fact, in order to keep all the different rainbows I would like, I'd have to keep over 500 gallons of aquarium.

The first purchase of a bow was similar to a new taste in food. Have you ever eaten something for the first time and then some time later realized "Hey, that was really good, I'll have to get me some"? This was the case with rainbows. I wanted to add some fish to my community tank and remembered seeing a really neat bicolored fish that was blue-gray in the front, goldish-orange in the back and had orange fins. This started a search through all the local fish stores, describing the fish to retailers and looking through fish atlas' until I finally found it. It was called a Boesemani. I ended up buying three of them. Not long after, while attending the local county fair, an aquarium store owner, working his display booth, told me about the different kinds of rainbows he had for sale. A visit to his store soon after revealed new and amazing colors in fish. He had Parkinsoni, Lacustris and Herbertaxelorods for sale. That was it. I was hooked!

A few months later, in a section in the back of Tropical Fish Hobbyist magazine, they had a large list of aquarium fish clubs. One listed was called the Rainbowfish Study Group and listed Gary Lange and his members. I was soon a member and now keep about eight varieties of rainbows. I have really appreciated the RSG and every member has been very helpful in either obtaining fish or information. Kevin Hosmer (our new editor) has been especially nice, giving me some juveniles for my aquarium. (Thanks again, Kevin.)

Now this article is going to get a little controversial. Just about anytime you are dealing with the study of any animal life, or something to do with nature, you run into a common teaching. This teaching is accepted as fact (though it is not) and is even taught to school children all over the world. This teaching is called "Evolution". The fish we so enjoy are thought to have "evolved" from different life forms over millions of years. Parkinsonis just happened to end up with orange fins (as the theory would go) while Lacustris just happened to become blue. I must say I have not run into any of those teachings in the RSG, thankfully, but most of the popular aquarium magazines are full of it.



Why not give credit where credit is due? Why couldn't God have just made each beautiful species exactly the way he wanted them and put them in their habitats that they exist in exactly where he wanted them? This is described in the Bible in Genesis 1:20 - 23. Look it up. This is what I believe and is, quite frankly, easier to believe than a "big bang" theory. As an example, if you were to write an article and have it published in a popular aquarium magazine or create a work of art, like a painting, and not get the proper recognition for your work, would you be upset? How must God feel?

Let's give God the praise he deserves as we enjoy his handiwork in our livingrooms. Thank-you Lord for making this hobby we enjoy possible and thanks to the new friends I enjoy in the RSG.

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Kent Webster (310) 831-5695  
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|-------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|
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| <i>M. affinis</i> , F-1<br>Orange blue and yellow stripe<br>Caught 10/94 from Emas Lakes<br>near Karawari river basin, P.N.G. | juveniles available | \$20/mop |
| <i>G. incisus</i>                                                                                                             |                     | \$20/mop |
| <i>M. boesemani</i>                                                                                                           |                     | \$20/mop |
| <i>M. herbertaxelrodi</i>                                                                                                     |                     | \$20/mop |
| <i>M. lacustris</i>                                                                                                           |                     | \$20/mop |
| <i>M. macculichi</i>                                                                                                          |                     | \$20/mop |
| <i>M. papuae</i>                                                                                                              |                     | \$20/mop |
| <i>M. preacox</i>                                                                                                             |                     | \$20/mop |
| <i>M. spl. fluviatilis</i>                                                                                                    |                     | \$20/mop |
| <i>M. trifasciata</i> , Goyder River                                                                                          |                     | \$20/mop |
| <i>P. gertrudae</i>                                                                                                           |                     | \$20/mop |

For full list of fish available (including other species) please send SASE or call.

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Space limitations did not allow for Fish & Egg listings for the following individuals:

Gary Lange (314) 837-6181  
Kevin Hosmer (802) 524-7309

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# What Works For You: A Tail of Two Fishes

by Chris Drew

This article is actually about one species but the differences between two fishrooms would suggest otherwise.

I hope to demonstrate in this article the one truth that I have learned in my relatively short fish keeping career. If anything can be said to be absolute, it is this: Nothing is absolute. Read all the books you want, talk to all the experts you can. I am sure you will find that there is no one answer to any problem. What works for you, is the proper solution to your challenge. In an attempt to illustrate this principle, compare my experience with Harvey's Creek *Signifer* to that of Kevin Hosmer's (A Most Significant *Signifer*, Vol 9/3 ).

My experience is very different from Kevin's for a number of reasons which will become apparent as you read on. I also wanted readers to have a more balanced view of this fish and it's care. I'm sure that this scenario holds true for many other species. I think Roy Hunter was quite right when, in a recent article he advised to keep species that work well in the natural conditions found in the area where you live. It will be a constant effort to maintain artificial conditions if you try to do otherwise. I do however understand that burning, uncontrollable desire to have "that" fish!

I received 20 Harvey's Creek eggs from Derrick Onishi in Hawaii back in the summer of 1993. Of the twenty eggs, 19 hatched and grew to maturity. My dominant male proceeded to jump from the tank. I shared a few fish around and was left with a colony of twelve in a 20 gal.long. There were five males and seven females.

I would describe the fish as more olive/gold than silver with a few reflective scales along the sides. The males' finnage is quite spectacular and they are frequently engaged in dominance displays. The first rays of the first dorsal and the anal fins extend to the base of the caudal peduncle. When flared in display posture, they look like sails. The fish are very active and fast swimmers and while they are quite aggressive with each other, I have never witnessed death or injury as a result. The most dominant male I own has grown to 5.8cm.

I maintain the temperature at 23-24 Celsius. This is much lower than Kevin's fish room temperature of 80 F. Their natural habitat is quite cool. In the summer I turn off the heaters and let the temperature fluctuate. The tanks are kept in my basement so, rarely does summer heat become a problem. My water conditions here in London, Ontario are pH 7.4 and hardness of 250ppm. I usually add 5ml of

salt per 20l. of water. I do not do this with Harvey's Creek. Their natural habitat is fairly soft so, I see no need to add salt.

The tank is bare with three sides and the bottom painted black. Filtration is provided by two large corner filters and 30% water changes are performed on this and all my tanks once per week.

As Kevin says these fish are not fussy eaters and can be considered greedy! I feed a varied diet which consists of the following:

- Murex Spirulina Flake
- Murex freeze dried plankton
- Hikari frozen bloodworms
- Sera Vipan mixed flake
- Live brine shrimp nauplii (\$\$\$!)
- Occasional live mosquito larvae and daphnia as the seasons and my enthusiasm allow.

Mops are always left in the tank. I use both floating and sinking mops. Since I do not have gravel in my tank as Kevin does, I can't say what the fish prefer as a spawning medium. I find that my fish use both types of mops and I collect more eggs from the floating mops than the sinking ones.

When harvesting eggs I usually pick the mops daily before lights out. I retrieve about 8-10 per day, on average. I remove these to a hatching container which is maintained at 27 Celsius. Although nothing is added to the adults' tank, I do add salt and calcium (the form is not crucial) to the hatching tray. I avoid bent spines etc., by doing so. The eggs are extremely fertile. I do not add any fungus retardants. The chlorine in the tap water performs that function. I partially change the water daily until a few days prior to hatching. I can't recall losing an egg of this species to fungus although, I have with other species. I would say that fertility and hatch rates are above 90%. The fry grow rapidly when kept at this temperature. However, it has been my experience that Harvey's Creek *Signifer* do not reach sexual maturity until about nine months. Although I have never found *Signifers* to be prolific, I recently had a trio of Bool Creek *Signifer* lay 30 eggs in one day! A feat that they have not repeated since.

I believe as Kevin does and our different experiences show, that temperature is critical to the life expectancy of these little beauties. While Kevin's fish live for about a year, mine are close to three and still producing offspring. I do believe that this is near to the outer limit of their life span. I have recently lost a few originals for no apparent cause. I also received *P. gertrudae* and Seary's Creek *Signifer* that same summer and a few of those fish are still living today. Temperature may also contribute to their ease of care because, unlike Kevin I have

found them very easy to manage. Despite the limits Kevin and his water have placed on his fish, he has still thoroughly enjoyed keeping this species. My experience has also been great. I highly recommend these fish if you are just getting into *pseudomugils*. They are not as timid as some of the smaller varieties. They are active swimmers who display almost constantly and can be quite long lived if you have suitable conditions.

After reading Kevin's article I was amazed at how different our experiences were. I'm always impressed by how differently fish behave in different settings. Because water analysis and quality is so variable from place to place and not well understood by most hobbyists (myself included), it is no wonder that what works in one place does not always work in another. While communication between hobbyists provides suggestive solutions to problems and hours of shared camaraderie, rarely can it provide concrete answers. There is only one source for that and that is the fish themselves. If you can find a formula that best suits their needs then you will be successful.

I have tried to show that one person's experience is not the definitive. Some readers who might have shied away from *pseudomugils* based on Kevin's experiences may actually be encouraged by mine, to try these fish. I think this can apply to just about anything you read or hear regarding animal husbandry. I encourage readers to share their experiences. Even if an article has already been written on a particular species you may have some information that could help someone else.

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Jim Forshey (916) 622-7547  
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|                                                                                    |         |
|------------------------------------------------------------------------------------|---------|
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| The Fascination of Breeding Aquarium Fish, by Axelrod and Sweeney                  | \$59.76 |
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Postage: USA=\$2.95, Canada =\$7.50, all others \$15.00  
(CA residents only add 7.25% sales tax      (MC/VISA/MO/CHECK all okay))

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## Meet the RSG

by Peter Unmack

Clubs, such as the RSG, that are spread across the nation can seem a little impersonal at times. You see all the names, but you really don't know anyone unless you travel or are lucky. Since I have had the opportunity to meet with a few of the many RSG members, I thought I would run a little series of interviews to allow both myself and other RSG members to get to know them a little better. Who better to start with than the main founder of the RSG himself.

### Gary Lange

By most people's standards I think you would have to agree that Gary has rather a significant amount of experience in keeping fish (even if I don't tell you how old he actually is.....). He has been awarded the title of Grand Master breeder in the Missouri Aquarium Society, a level which only seven members have ever achieved. Gary has also written many articles for the Rainbowfish Times and his photos regularly adorn the pages of Aquarium Fish Monthly and elsewhere. Gary's fishroom is about 12 by 18 ft with around 82 tanks (many are relatively small--the unfortunate result of having began evolution as a killi keeper!). Gary only has around 50 species or races of Australian and New Guinea/Irian Jaya fishes (why do people always leave off Irian Jaya?). The remainder of this article has me asking the questions, followed by Gary's responses.

**What started your interest in fishkeeping?** When I was 9 or 10 (couldn't be that important if he has forgotten already!) my Grandmother had two aquariums with the most enormous blue gouramis and silver dollars I can ever remember. I begged my mother for a betta tank (interviewer's note: to which she unfortunately obliged much to our pain and suffering!). A couple of years on my Grandmother tired of her aquariums and passed them on to me.

**How did you get into rainbows?** In 1982, at the Missouri Aquarium Society, our BAP chairperson, Peggy Scott, showed me Jerry Allen's "new" book on rainbowfish. I opened the book right on a page with *M. herbertaxelrodi* and decided that I had to get some. Up until then I had only kept and bred checkered rainbows.

**Favorite rainbowfish?** *M. herbertaxelrodi*, *M. lacustris*, *M. parkinsoni*. (interviewer's note: I only asked for a singular response, not plural.....)

**What was your greatest misconception regarding rainbowfish?** My first one was that people in Melbourne would routinely drive up to the Northern Territory for the weekend to collect rainbows (interviewer's note: it's a solid 3 or 4 day drive one way.....) and also to New Guinea. My second was the importance of getting conditions correct for rainbows to show color. I even wrote to Ron

Bowman and "suggested" his fish didn't have any color (interviewer's note: I remember being at the ANGFA board meeting when Gary's following letter came in after he "discovered" the color in his rainbows.....).

**Biggest mistake with rainbows?** Not building my fishroom three times larger.

**Greatest frustration with rainbows?** Not being able to keep every single one of them and not being able to get all the ones unavailable in the U.S. Also, rainbows do tend to require patience when raising fry.

**How did you get involved in the RSG?** Back in 1983 or 4 a group called the American Rainbowfish Association (ARA) began. At it's peak it had up to 120 members. Unfortunately the club folded around 1985 or 6. Their greatest problem being that there were only around four rainbowfish that were available in the US. One night, spring 1987, during a Missouri Aquarium Society conference, I was sitting around with a group of fishheads watching the first two Neil Armstrong/ANGFA slides sets of these amazing Australian fish. I mentioned how great it would be if a club of that nature existed in the U.S. to Jim Bellina from Chicago (an ARA member) and Delores Schehr (Wet Thumb Aquatics). They replied, "So why don't you do it?" I obtained the ARA mailing list and put together a few page newsletter (having already discovered ANGFA, I "stole" an article on vinegar eels by Ron Bowman) asking if people wanted to join. Wayland Lee from San Francisco replied with information that he still had the remaining ARA treasury, and who was still owed club magazines at the time it folded, and offered it to me. With things starting to really push forward, I realized that we would require photos for their magazine, thus I took up fish photography. Probably the biggest highlight for me was getting Jerry Allen across in 1989 to speak. In the early days things were difficult as few people had different species. Most of the earlier species to hit U.S. shores came via the ANGFA/Ron Bowman egg program. A few more continue to arrive via us visiting the ANGFA conferences. Since the arrival of *M. lacustris*, a few additional species have been imported through Ekk Well also. Hopefully, more will continue to trickle in as new species are collected from Australasia.

## **The "other half"--Jeanie**

**Jeanie, what are the worst aspects of Gary's fishkeeping?** The fanaticism. I still wonder how he can talk fish on the phone for an hour, then get right back on with someone else for another hour.

**What are the good aspects?** At least he is not out in the bars all the time. I do occasionally get to travel cheaply when Gary gets invited to talk somewhere, mind you, if he didn't spend all his money on fish.....

## *Pseudomugil gertrudae*

by Kevin Hosmer

I have been maintaining a colony of *Pseudomugil gertrudae* for several years. This small, colorful fish has been undemanding with regard to water conditions, feeding, spawning and raising fry. It is an active, yet peaceful aquarium denizen with much to offer the casual aquarist keeping a community aquarium or those wishing to maintain a breeding colony of fish. I don't understand why this fish is not more readily available from specialty hobby societies or even commercially available.

*Pseudomugil gertrudae* was first discovered in early 1900's at the Aru Islands off the northern coast of Australia.<sup>1</sup> They only became available recently in North America and Europe in the early 1980's. The translation of the Latin name would be *Pseudomugil* = false mullet and *gertrudae* = after Gertrude Merton.<sup>2</sup> I assume the latter was the individual, or perhaps the significant other (or mother) of the individual who first named or discovered this particular fish.

When trying to initiate this article, I asked myself, "How do I know that these fish are truly *Pseudomugil gertrudae*?" I suppose because someone told me they were and they coincidentally appeared to resemble those pictured in various references.<sup>1-5</sup> I am very familiar with rainbowfish photographs. I have collected many references concerning fish of Australia and New Guinea. However, I admit that I have only read the photograph captions - numerous times. What if I needed to verify their identification further?

### Option 1A:

Family *Pseudomugilidae*: Total anal fin rays usually 9 to 13; rigid fin spines always absent; anal fin origin usually on posterior half of body (excluding caudal fin); tropical or subtropical.<sup>3 p.16</sup>

### Option 1B:

*P. gertrudae*: Body and median fins covered with small black dots; dorsal fin origin about 1/2 eye diameter anterior to level of anal fin origin (Northern Territory, northeastern Queensland, and southern Papua New Guinea)<sup>3 p.107</sup>

### Option 2:

Diagnosis: Dorsal rays II to V-6 or 7; anal rays I,8 to I,10; pectoral rays 8 to 11; vertical scale rows 27 or 28; horizontal scale rows 6 or 7; predorsal scales 9 to 12; preopercle-suborbital scales 3 to 5; maximum body depth 21.9 to 25.5, head length 24.2 to 28.1, snout length 4.0 to 5.4, eye diameter 8.5 to 10.3; interorbital width 10.8 to 13.0, caudal

peduncle length 21.8 to 28.4, predorsal distance 49.8 to 55.7, and preanal distance 51.6 to 61.4, all as percentage of SL; body and fins with small black spots; sexual dimorphism typified by brighter colors and more elongate dorsal and anal fins in males; maximum size to about 3 cm SL, but usually under 2.5 cm SL.<sup>3 p.110</sup>

Now here is a reason to only read photograph captions! I initially assumed the lengths were in metric units (millimeters). I had a problem accepting that any fishes' eyes would be 10 mm in diameter. Then I noticed that lengths were expressed as a percentage of body length. Hopefully you did not make the same mistake as I.

I found the taxonomic classification of rainbowfish to be more interesting. *Pseudomugil* were originally classified as part of family *Melanotaeniidae* and a detailed classification was proposed as:<sup>4 p.28</sup>

Class: *Osteichthyes* (bony fishes)  
Subclass: *Actinoptergii* (ray-finned fishes)  
Infraclass: *Teleostei*  
Superorder: *Acanthopterygii*  
Order: *Atheriniformes*  
Family: *Melanotaeniidae*  
Genus: *Pseudomugil*  
Species: *Gertrudae*

The *Pseudomugil* were later placed in their own family:<sup>1 p.22</sup>

Phylum: *Chordata* (all animals with notochord)  
Class: *Osteichthyes* (bony fishes)  
Order: *Atheriniformes* (35 orders)  
Family: *Pseudomugilidae* (15 species)  
Genus: *Pseudomugil*  
Species: *gertrudae*

Other popular rainbowfish belong to the family *Melanotaeniidae*: genera *Melanotaenia*, *Glossolepis* and *Chilatherina*. Members of the family *Pseudomugilidae* are commonly referred to as Blue Eyes - a readily noticeable physical characteristic of these small fish.

*P. gertrudae* is perhaps the smallest variety of rainbowfish presently available to the aquarist. As is often the case with rainbowfish - the males are much more splendid than the females in both appearance and behavior. The males' dorsal and anal finnage is much more elongated and colorful. This finnage is prominently displayed when attempting to entice females to spawn. Discounting finnage, the two sexes are approximately the same size for a given



age. Males seem to sexually mature earlier than their female counterparts and can be identified at a size as small as 1/4" - 1/2" in length by the elongated first dorsal fin.

There are at least two distinct populations available in captivity: Goanna Lagoon and Giddy River. The latter are characterized by somewhat more yellow coloration on more elongated finnage. There may be other differences I did not note. It is suggested to take great care to not maintain these populations together - females of the two populations are indistinguishable and differences between males may be unrecognizable unless all are fully developed. Hybridization will occur if given an opportunity.

*P. gertrudae* must be on the lower end of the food chain in their natural environment. Their small size and lack of defense makes them highly vulnerable to predators. They are a very nervous fish when maintained without companions and adequate hiding places. An excellent and thorough account of maintaining and raising *P. gertrudae* is given elsewhere.<sup>5,6</sup>

When I began keeping *P. gertrudae*, approximately 100 fish were placed in a 40 gallon "long" aquarium. Although they flourished, when I walked past the aquarium they all rushed to one side and many slammed headfirst into the glass! Now my colony of 50 - 150 individual *gertrudae* of various ages are maintained in a 100 gallon dark plastic tub. Numerous *gertrudae* are placed into other aquariums where they are more easily observed. The pH of the tub water varies from 6 - 8 depending upon how carefully I acidified my well water during the last water change. Sponge filtration and a large canister filter maintain adequate water quality between water changes. The temperature varies from 74-85°F depending upon the time of year but never varies rapidly. A handful of coral gravel is scattered on the tub floor and many clay pots are present for the tub's other inhabitants - ancistris. Excess duckweed is periodically removed from the water surface and a light is on at all times.

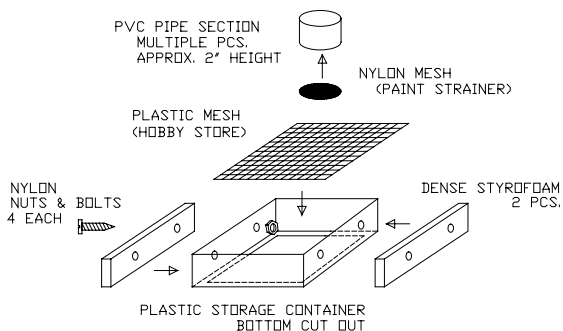
Size is perhaps the only consideration required for selection of a food to offer *P. gertrudae*; they have very small mouths. Crushed flake foods, live baby brine shrimp and crushed freeze-dried bloodworms are greedily accepted.

Standard acrylic spawning mops are always hanging near the upper level of the colony's tub and always full of eggs in various stages of development. Fear of a catastrophic disaster in the colony motivates me to have eggs hatching and juveniles growing in separate housing at all times. Egg laden mops can be removed from the colony and placed in an empty, clean aquarium for hatching over a two week period of time. Although results are adequate, I have found success to be greatly enhanced by picking eggs from the mops and then placing the eggs in dishes while awaiting the emergence of the fry. Very few (less than 5%) eggs fungus prior to hatching. The dishes I speak of is an arrangement I

fabricated: dishes float on the surface of an aquarium and the dish bottom is fine nylon mesh which holds the eggs within yet permits water circulation. See the appended illustration. Fry are removed to a two gallon aquarium with an eyedropper as they hatch. Fry are offered APR, vinegar eels, and live baby brine shrimp. A great distribution of sizes develop within a few weeks. The vast majority of fry survive. Fry grow very rapidly and can be returned to the colony in approximately four weeks if desired. Newly hatched fry do **not** survive in the colony - they are eaten by the adults.

I do not understand the lack of enthusiasm for *Pseudomugil gertrudae* in the fish keeping community. I suspect they would be perfect tankmates for peaceful fish such as neon or rummy-nose tetras that would provide the “safety in numbers” environment that would calm the ever-nervous but beautiful little fish from Down Under.

### Egg Holding Assembly



### REFERENCES

- <sup>1</sup> Dr. Gerald R. Allen, Rainbowfishes In Nature and in the Aquarium, Tetra-Verlag, Germany, 1995.
- <sup>2</sup> Ray Leggett and John R. Merrick, Australian Native Fishes for Aquariums, J.R. Merrick Publications, Artarmon, N.S.W., 1987.
- <sup>3</sup> Dr. Gerald R. Allen, Freshwater Fishes of Australia, T.F.H. Publications, Inc., Neptune City, NJ, 1989.
- <sup>4</sup> Dr. Gerald R. Allen & Norbert J. Cross, Rainbowfishes of Australia and Papua New Guinea, T.F.H. Publications, Inc., Neptune City, NJ, 1982.
- <sup>5</sup> Gregory Semple, “*Pseudomugil Gertrudae* - Maintenance, Reproduction and Early Development of the Spotted Blue-eye,” Journal of the Australia New Guinea Fishes Association, 3, [1] 105-108 (1985).
- <sup>6</sup> Chris Drew, “The Care and Keeping of *Pseudomugil gertrudae*,” The Rainbow Times, Rainbowfish Study Group of North America, 9, [1] 8-10 (1995).

# Species Maintenance Report

by Cary Hostrawser

I would like to say thanks to all the people that responded to our survey on the species kept by RSG members. I received many of the same questions about not being sure about the origins or purity of fish and want to state right off "If you're not sure, Don't breed!!!!". Get some new stock you can be sure about. We have enough problems with the commercial breeders destroying our rainbows without adding to it ourselves. We're working up a program now to reward the people that wish to partake in breeding and maintaining pure rainbows. It will be called the Species Mentor Program. I'll be sending out more information directly to the people that responded to our survey. Basically its similar to many BAP programs in local clubs, but the emphasis will be on training newer members and maintaining the species we're worried about loosing. It will be designed to foster more trading between RSG members and attempt bring in the newer members that have a hard time finding the rare bows.

To all you folks that haven't found the all the bows you wish in the Fish and Egg Listing, I'd like you to know that most of the rare bows never make the list. Based on the responses received, we have over 100 different varieties of bows, gudgeons and gobies here and I've heard about new ones coming in. Below is a listing of all the fish that we have and how many people reported keeping these. Some are fish that have only been reported to be in the hands of two or less people. If you have any of these fish please try to get them reproducing and spread out to more members. If you have some of the fish that are noted as "none reported" please let me know you have them. On a further note, although they weren't reported on the forms, I've heard of a few new bows that have hit American shores. They are *P. paskai*, *Scaturiginichthys vermeilipinnis*, *M. eachamensis* Mabo Crater.

The numbers after the fish are code numbers for members that have responded. The letters after these numbers stand for R = reproducing, F = females, M = males and J = juveniles or fry.

Asterisks indicate species that, based on our responses, we should be concentrating on reproducing and spreading out to more members. Lets work together and take care of our rainbows.

# Species Maintenance Report

## Census Results

|                                       |         |        |        |        |        |
|---------------------------------------|---------|--------|--------|--------|--------|
| Bedotia gaeyi                         | 445FM   | 555RFM | 904M   | 465RFM |        |
| Bedotia gaeyi Tri-color               | 327RFM  | 647FM  | 231RFM | 033RFM | 397RFM |
| Cairnsichthys rhombosomoides**        | 128RFM  | 033F   |        |        |        |
| C. axelrodi**                         | 904M    |        |        |        |        |
| C. axelrodi Gerry Allen**             | 647     |        |        |        |        |
| C. bleheri                            | 894FM   | 647FM  | 013RFM | 206FM  |        |
| C. campsi                             | 894FM   | 128RFM | 445FMJ | 033M   |        |
| C. campsi population 1                | 647FM   |        |        |        |        |
| C. campsi population 2                | 647FM   |        |        |        |        |
| C. fasciata**                         | 275RFM  |        |        |        |        |
| C. fasciata Red & Black**             | 128RFM  | 033RFM |        |        |        |
| C. sentaniensis                       | 128RFM  | 033RFM | 227RFM |        |        |
| Chlaydogobius eremius Desert Goby     | 033FM   | 709RFM |        |        |        |
| Chlaydogobius eremius Hergott Springs | 128RFM  | 327RFM | 033FM  | 501FM  |        |
| Craterocephalus dalhousiensis**       | 033FM   |        |        |        |        |
| Craterocephalus stercusmuscarum**     | 033FM   |        |        |        |        |
| G. incisus                            | 180RFM  | 445RFM | 468RFM | 327RFM | 647FM  |
|                                       | 231FM   | 133    | 620RFM | 123M   | 904FM  |
|                                       | 709M    | 465RFM | 397RFM | 227RFM | 527M   |
|                                       | 724FM   |        |        |        |        |
| G. incisus Blushing sport             | 275RFM  |        |        |        |        |
| G. maculosus**                        | 128RFM  |        |        |        |        |
| G. multisquamatus**                   | 855M    |        |        |        |        |
| G. multisquamatus F1**                | 397FM   |        |        |        |        |
| G. ramuensis                          | 575FM   | 894RFM | 128FMJ | 724RFM |        |
| G. wanamensis                         | 894RFM  | 180FM  | 445FM  | 468RFM | 647FM  |
|                                       | 231FM   | 013FM  | 033F   | 555RFM | 529RFM |
|                                       | 227     | 724FM  | 709M   |        |        |
| G. wanamensis F1                      | 397FM   |        |        |        |        |
| Hephaestus carbo Coal Grunter         | 647     | 33     |        |        |        |
| Iratherina weneri                     | 894FM   | 327RFM | 724MJ  | 033RFM | 397RFM |
|                                       | 481     |        |        |        |        |
| Iratherina weneri F1                  | 397RFM  |        |        |        |        |
| M. affinis Clear Water**              | 033J    |        |        |        |        |
| M. affinis Emas Lake                  | 327RFM  | 647FM  | 033FM  | 275RFM |        |
| M. affinis North N.G. Mandang**       | 327RFM  | 275RFM |        |        |        |
| M. affinis Pagwi                      | 894M    | 647FM  | 033M   | 275RFM |        |
| M. arfakensis**                       | 033FMJ  |        |        |        |        |
| M. batanta                            | 327J    | 724J   | 501RFM |        |        |
| M. boesemani                          | 709RFM  | 855RFM | 894RFM | 102RFM | 605J   |
|                                       | 468RFM  | 647FM  | 724FM  | 231FM  | 013FM  |
|                                       | 555RFM  | 801J   | 123FM  | 501RFM | 275RFM |
|                                       | 709FM   | 465FM  | 397RFM | 227RFM | 481RFM |
|                                       |         | 180RFM | 518M   | 527FM  | 124RFM |
| M. boesemani Ekk-Will                 | 033RFM  |        |        |        |        |
| M. boesemani org. 1984                | 327RFM  | 033RFM |        |        |        |
| M. duboulayi Kangaroo Creek**         | 647FM   |        |        |        |        |
| M. duboulayi Kin Kin                  | 647FM   | 724FM  | 033J   | 501J   |        |
| M. duboulayi Ocean Lake               | 575RFMJ | 894RFM | 327FMJ | 647FM  | 724    |
|                                       | 620RFM  | 481    | 033FM  |        |        |
| M. eachamensis Lake Eachamen**        | 468RFM  | 724FM  |        |        |        |

|                                         |               |         |         |        |        |
|-----------------------------------------|---------------|---------|---------|--------|--------|
| M. eachamensis Lake Eurimo**            | 033RFM        |         |         |        |        |
| M. exquista**                           | 724RFM        |         |         |        |        |
| M. fluviatilis                          | 575RFM        | 647FM   | 724RFM  | 620RFM |        |
| M. fluviatilis Grafton**                | 894FM         |         |         |        |        |
| M. fredericki**                         | 481RFM        |         |         |        |        |
| M. goldiei**                            | 033RFM        |         |         |        |        |
| M. herbertaxelrodi                      | 575RFM        | 855FM   | 894RFM  | 180RFM | 445RFM |
|                                         | 647FM         | 724RFM  | 231RFM  | 013FM  | 033RFM |
|                                         | 904M          | 275RFM  | 397FM   | 227RFM | 481    |
|                                         | 555RFM        | 124M    | 327RFM  |        |        |
| M. irianjaya                            | 855M          | 647FM   | 033FM   | 904M   |        |
| M. lacustris                            | 709RFM        | 855M    | 894RFM  | 180RFM | 327RFM |
|                                         | 013FM         | 033RFM  | 555RFM  | 904M   | 501    |
|                                         | 527FM         | 709FM   | 465FM   | 397FM  | 227RFM |
|                                         | 206FM         | 124M    | 275RFM  | 231RFM |        |
| M. maccullochi                          | 575RFM        | 102RFM  | 327M    | 647FM  | 033FM  |
|                                         | 481RFM        | 275RFM  |         |        |        |
| M. nigrans                              | 527FM         | 481     |         |        |        |
| M. nigrans Scott Creek                  | 575RFM        | 894RFM  | 128FMJ  | 647FM  | 620RFM |
| M. papuae                               | 327RFM        | 647FM   | 724RFM  | 549RFM | 275RFM |
|                                         | 206FM         |         |         |        |        |
| M. papuae Port Moresby**                | 227RFM        |         |         |        |        |
| M. parkinsoni                           | 894RFM        | 327FMJ  | 647FM   | 724FM  | 231RFM |
|                                         | 033RFM        | 040MJ   | 904FM   | 275RFM | 465FM  |
|                                         | 481           | 124M    | 227RFM  | 013FM  |        |
| M. praecox                              | 575FM         | 855RFM  | 894RFM  | 128RFM | 605J   |
|                                         | 724FM         | 231RFM  | 033RFM  | 904FM  | 501RFM |
|                                         | 481           | 327RFMJ | 275RFM  |        |        |
| M. pygmaea                              | 894RFM        | 128RFM  | 468RFM  | 724RFM | 033RFM |
|                                         | 620RFM        |         |         |        |        |
| M. pygmaea Second Collection**          | 647           |         |         |        |        |
| M. sexlineata**                         | 033J          |         |         |        |        |
| M. sp Moorhead**                        | 501           |         |         |        |        |
| M. sp Tapini**                          | 724FMJ        | 501RFM  |         |        |        |
| M. splendida australis                  | 445FM         | 033M    | 904FM   | 227RFM |        |
| M. splendida australis Drysdale River** | 033FM         |         |         |        |        |
| M. splendida australis Gabolgi Creek**  | 647           |         |         |        |        |
| M. splendida inornata                   | 709RFM        | 855FM   | 904FM   |        |        |
| M. splendida inornata Coamolie**        | 647FM         |         |         |        |        |
| M. splendida rubrostriata               | 327RFMJ       | 647FM   | 033FM   | 620RFM |        |
| M. splendida splendida Burdekin River   | 647FM         | 033FM   |         |        |        |
| M. splendida splendida Cairns**         | none reported |         |         |        |        |
| M. splendida splendida Cattle Camp**    | 647           |         |         |        |        |
| M. splendida splendida Kuranda Creek**  | 724RFM        |         |         |        |        |
| M. splendida splendida Utchee Creek**   | 102J          | 033J    |         |        |        |
| M. splendida splendida Wallaby Creek**  | 647FM         |         |         |        |        |
| M. splendida splendida Wild River**     | 575           | 033RFM  |         |        |        |
| M. splendida tatei                      | 033FM         | 620RFM  |         |        |        |
| M. splendida tatei Thompson River       | 575RFM        | 647FM   | 724RFM  | 033F   |        |
| M. splendida Upper Burdenkin River**    | 033FM         |         |         |        |        |
| M. trifasciata Canoe Creek**            | 013FM         | 033FM   |         |        |        |
| M. trifasciata Cape Arnhem**            | 647           |         |         |        |        |
| M. trifasciata Coen River**             | 033RFM        |         |         |        |        |
| M. trifasciata Giddy River              | 894M          | 102RFM  | 647FM   | 033F   | 275RFM |
| M. trifasciata Goyder River             | 894           | 180RFM  | 327RFMJ | 647FM  | 231RFM |
|                                         | 620RFM        | 518M    | 555M    | 904FM  | 227RFM |

|                                           |               |        |         |        |        |
|-------------------------------------------|---------------|--------|---------|--------|--------|
|                                           | 481           | 033RFM |         |        |        |
| M. trifasciata Running Creek              | 575RFM        | 894RFM | 647FM   | 724RFM | 033RFM |
| M. trifasciata Skull Creek                | 575RFM        | 894RFM | 647FM   | 231RFM | 620RFM |
| M. trifasciata Upper Coen River           | 327FMJ        |        |         |        |        |
| M. trifasciata Weipa**                    | none reported |        |         |        |        |
| M. trifasciata Wenlock                    | 894RFM        | 647FM  | 724RFM  | 231RFM | 033M   |
|                                           | 620RFM        |        |         |        |        |
| M. trifasciata Wonga Creek                | 894           | 647FM  | 620RFM  | 501    |        |
| Morgurnda morgurnda                       | 327RFM        | 033FM  |         |        |        |
| Pseudomugil connieae**                    | 033FM         |        |         |        |        |
| Pseudomugil furcatus                      | 575RFM        | 180FM  | 327RFMJ | 033FM  | 555RFM |
|                                           | 549RFM        | 465RFM | 481     | 040M   |        |
| Pseudomugil gertrudae                     | 555RFM        | 275RFM |         |        |        |
| Pseudomugil gertrudae Giddy River         | 575RFM        | 468RFM | 327RFMJ | 647FM  | 033FM  |
| Pseudomugil gertrudae Goanna Lagoon       | 327FMJ        | 724RFM | 033FM   | 481RFM |        |
| Pseudomugil gertrudae Golden Gert**       | 033FM         |        |         |        |        |
| Pseudomugil mellis**                      | none reported |        |         |        |        |
| Pseudomugil paludicola                    | none reported |        |         |        |        |
| Pseudomugil paludicola Sarong**           | 894RFM        |        |         |        |        |
| Pseudomugil signifer Bool Creek**         | 894RFM        | 033FM  |         |        |        |
| Pseudomugil signifer Harvey Creek         | 575RFM        | 894RFM | 647FM   | 033J   | 709RFM |
| Pseudomugil signifer Little Yabba Creek** | 033M          |        |         |        |        |
| Pseudomugil signifer Seary Creek          | 894RFM        | 033FM  | 481     |        |        |
| Pseudomugil signifer Townesville**        | none reported |        |         |        |        |
| Pseudomugil tenellus**                    | none reported |        |         |        |        |
| Rhadinocentrus ornatus Kin Kin**          | 647FM         |        |         |        |        |
| Rhadinocentrus ornatus Seary Creek**      | 327F          | 647FM  |         |        |        |
| Tateurndina ocellicuda Peacock Gudgeon    | 894FM         | 102RFM | 327RFMJ | 231FM  | 033FM  |
|                                           | 529J          | 397FM  | 275RFM  |        |        |
| Telmatherina antonieae**                  | 128RFM        |        |         |        |        |
| Telmatherina bondi**                      | 647J          | 033FM  | 275RFM  |        |        |

Cary Hostrawser (612) 422-9446

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### Available

*P. gertrudae*, Goanna Lagoon \$15/dozen eggs

*P. gertrudae*, Giddy River \$15/dozen eggs

*M. paupuae* \$15/mop

*M. splendida rubrostriatai* \$15/mop

Peacock Gudgeons \$15/trio

Shipping is \$5 for eggs and varies for fish depending on shipping method.

Availability depends on the amorous intentions of the fish.

## RSG STORE

- 1996 Rainbowfish Calendar

This is a small, free standing calendar by Dr. Allen. Calendar size is 7"x 5 " with the picture just a tad smaller than 3"x 5". What fish are included? *C. bleheri*, *C. fasciata* (the hypnotic one - not the one in the hobby), *G. incisus*, *M. herbertaxelrodi*, *M. species* (Kantobo, PNG), *M. species* (Lake Kamaka, Irian Jaya), *M. boesemani*, *M. eachamensis* (Dirrin Creek), *M. lacustris*, *M. trifasciata* (Coen River), *M. vanheurni*, & *M. irianjaya*. The price of this calendar is only \$4 US plus shipping.

### Shipping for calendars:

|          |            |            |              |                          |
|----------|------------|------------|--------------|--------------------------|
| U.S.:    | 1 @ \$1.25 | 2 @ \$2.00 | 3-8 @ \$3.00 | 9-12 @ \$4.00            |
| Canada:  | 1 @ \$1.70 | 2 @ \$2.10 | 3 @ \$2.60   | 4 @ \$3.00    5 @ \$3.50 |
| Airmail: | 1 @ \$3.40 |            |              |                          |

- Poster: Blue-eyes and Australian Rainbowfishes

Unsigned copies are \$12 and signed copies are \$15.

### Shipping & Mailing Tube for posters:

|         |                |            |            |            |               |
|---------|----------------|------------|------------|------------|---------------|
| U.S.:   | 1 @ \$2.70     | 2 @ \$2.95 | 3 @ \$3.20 | 4 @ \$3.65 | 5-18 @ \$4.00 |
| Canada: | 1 @ \$2.65     | 2 @ \$2.80 | 3 @ \$3.20 | 4 @ \$3.40 | 5-7 @ \$4.30  |
|         | (surface mail) |            |            |            | 8-12 @ \$5.10 |

- T-shirts

This is a Karen Randall design depicting *P. furcata* and *M. praecox* (the neon rainbow). "Rainbowfish Study Group" proudly arches in rainbow colors over the top of artwork while "Living Color" balances below. A quality shirt was used in the process - Fruit of the Loom "Best", a 50/50 cotton/polyester blend. There really isn't any shrinkage. As with all shirts with a silkscreen design it should be washed in cold water and drip-dried.

L & XL: \$12.      XXL: \$13.

### Shipping & Mailer for T-shirts:

|         |            |              |              |
|---------|------------|--------------|--------------|
| U.S.:   | 1 @ \$3.00 | 2-3 @ \$3.60 | 4-5 @ \$4.60 |
| Canada: | 1 @ \$3.00 | 2 @ \$3.30   | 3 @ \$4.50   |

Combination: 1 Poster, 1 Calendar & 1 T-shirt

You won't have to pay for a mailing tube or a padded mailer.

### Shipping & Mailer for Combinations:

|         |            |            |            |
|---------|------------|------------|------------|
| U.S.:   | 1 @ \$3.00 | 2 @ \$4.00 | 3 @ \$5.00 |
| Canada: | 1 @ \$4.07 | 2 @ \$5.67 |            |

- Best of RSG

This is a compilation of the best articles originally published in the Rainbow Times - encompassing (approximately) the first 7 years of publication.

RSG book with shipping

|          |           |         |
|----------|-----------|---------|
| U.S.     | book rate | \$13.50 |
| Canada   | surface   | \$14.00 |
|          | air       | \$15.00 |
| Overseas | surface   | \$15.00 |
|          | air       | \$18.00 |

Send requests for items to:

Gary Lange  
2590 Cheshire  
Florissant, MO 63033

Payable in U.S. funds only, checks payable to the Rainbowfish Study Group.

If you would like to order larger quantities of any item(s), we'll check UPS rates. If you have any questions you can call me, Gary Lange, in the evenings (6-10 CST & most weekends until 10 pm CST) at (314) 837-6181 or email at [GWLANG@CCMAIL.MONSANTO.COM](mailto:GWLANG@CCMAIL.MONSANTO.COM)

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Roy Hunter (970) 876-2553  
P.O. Box 380  
New Castle, CO 81647

**Available**

|                                                               |                     |
|---------------------------------------------------------------|---------------------|
| <i>C. bleheri</i>                                             | juveniles available |
| <i>M. affinis pagwi</i>                                       | juveniles available |
| <i>M. duboulayi</i> , Kin Kin Creek                           | juveniles available |
| <i>M. duboulayi</i> , Ocean Lake                              | juveniles available |
| <i>M. nigrans</i> , Scott's Creek                             | juveniles available |
| <i>M. trifasciata</i> , Giddy River (dk. blue body, red fins) | juveniles available |
| <i>M. trifasciata</i> , Goyder River                          | juveniles available |
| <i>M. trifasciata</i> , Running Creek                         | juveniles available |

Other juveniles and eggs are available from time to time. Please call for availability. Shipping is \$30 for fish. Availability depends on the cooperation of the fish. Fish by express mail or priority mail are at your own risk.

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