

Universidad Autonoma de Nuevo Leon Programs for the Endangered Fish Species of Mexico

by Carlos Aguilera Gonzalez

The University of Nuevo Leon, at its Faculty of Biology, has sustained for some years, programs for the study and protection of endangered Mexican fish. The Museum of Natural History was incorporated to these programs some years back, providing areas or sections for husbandry, reproduction and exhibition. At the moment there are some 20 endangered species of Mexico.

During the present year the Museum obtained financial support from two organizations: a federal one, the "Comision Nacional para el Estudio y Uso de la Biodiversidad" (CONABIO); and the other a state one of the same affinity (CCFFNL), with a project title "Captive Conservation of Endangered Fish from the Northeast of Mexico". This has been done thanks to the support of Dr. Salvador Contreras, Dr. Paul Loiselle from the New York Aquarium, with which the university has the memorandum with the title "The Protection of Mexican Endangered Fish Species" and Dr. Edwin P. Pister of the Desert Fishes Council. This represents for us an

important advance to show the same federal government that supports us, the true value of these projects, and even though we are facing a critical economic situation, and in the understanding of limited or disposable funding, they are worth supporting.

Our intention for this year regards the monitoring of 24 species from the states of Coahuila, Nuevo Leon and San Luis Potosi, that have been listed by international organizations like AFS (American Fisheries Society), IUCN (International Union for the Conservation of Nature) and the federal government. In some type of status, at least 15 of these will be in our programs of reproduction in captivity and reinforced within the Museum with exhibition and information programs on conservation of these species and their habitat.

It is evident that these obtained results will endeavour to guarantee the continuation of these programs in Mexico and in that manner maintain the attention of the government to continue developing programs to repopulate areas, that will in the long run also help to restore the habitat. For all that has been mentioned above, we are open to any contributions that will help manage the problematical situation of the present species.

As a initial point within the program, we plan to obtain a census concerning stocks of these species that are or have been maintained by aquarists.

Cualac tessellatus
Cyprinodon alvarezi
Cyprinodon bifasciatus
Cyprinodon longidorsalis
Cyprinodon veronicae
Lucania interioris
Megupsilon aporus
Gambusia longispinis
Xiphophorus couchianus
Xiphophorus gordoni
Xiphophorus meyeri
Ataeniobius toweri
Xenoporphus captivus
Cichlasoma bartoni
Cichlasoma labridens
Cichlasoma minckleyi
Cyprinella xanthicara
Dionda episcopa ssp. (Cuatrocieneegas)
Etheostoma grahami
Etheostoma sp. (Cuatrocieneegas)
Lepomis megalotis ssp. (Cuatrocieneegas)
Micropterus salmoides ssp. (Cuatrocieneegas)
Astyanax mexicanus ssp. (Cuatrocieneegas)
Ictalurus sp. (Cuatrocieneegas)

The information we are searching is on husbandry, number of organisms or stock, generations in captivity, origin of the population, and whether there is an arrangement for species exchange. It is clear that any information sent to us will be handled with confidentiality and will be used as supporting data for a report concerning all the aspects mentioned above. We hope that our solicitation is well received by aquarists.

We would like to thank you for the attention paid to our solicitation and hope that this will have echo in all interested in the conservation of these species.

Carlos Aguilera Gonzalez
Responsable Seccion Acuario

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pipes above the water surface level.

I measured the water conditions to be pH of 9.0, Kh of 9, GH of 10 German degrees, and the temperature was 22 celsius at the time. The water in the pool was clear and still supported a good amount of fine aquatic vegetation, providing refuge for the *Xenophorus* fry, which would otherwise be at the mercy of thousands of hungry adults. It is perhaps those plants what allows such a dense population to be there.

Captive populations of this population are not known to me, so I took some specimens that I sent to the endangered fish reproduction center at the University of Nuevo Leon at Monterrey, hoping that a population could be maintained there. Biologist Carlos Aguilera Gonzalez was happy to receive them.

The case of this fish is not an isolated one. Over exploitation of groundwater for human use in many springs in dry northern México is causing many similar situations, and species are disappearing at an alarming rate, as has been widely documented. It is a situation that politically would be almost impossible to stop. And sometimes I wonder if somebody really cares....

Contact information: Juan Miguel Artigas Azas, Grupo Mexicano de Ciclidofilos, Cordillera Karakorum 223B, Lomas 3a. seccion, San Luis Potosi SLP 78216, México. Tel: 48 253168; Fax:28 253168; Email:cm886@freenet.carleton.ca

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Report on the Results of an Ichthyological Survey of the Winam Gulf Region of Lake Victoria, Kenya

Part 1

by Joe Norton and Doug Warmolts

In the June issue a short report of "Progress in Lake Victoria" appeared. The following is the first of a two part article giving more detailed results of the survey.

Introduction

In the last year, much advancement in the Lake Victoria Haplochromine Species Survival Plan, (VSSP), has taken place. Working with a large grant received from **Kal Kan Foods, Inc.**, and **Aquarian Food for Fishes** we were able to make great strides in our immediate and short-term goals for this SSP. In addition to the grant, funding was received from the following institutions: **The Tennessee Aquarium, Columbus Zoo, Metro Toronto Zoo, Detroit Zoo, J.G. Shedd Aquarium, St. Louis Zoo, American Cichlid Association**, and the **Greater Chicago Cichlid Association**. Working with these funds, this SSP continued with work in four primary categories; *in-situ* conservation efforts, North American internships for biologists and technician from the riparian countries, supporting education in-country, and the development of a field guide to the fishes of the Lake Victoria Basin.

In 1994, the AZA Lake Victoria SSP in collaboration with the Kenya Marine Fisheries Research Institute, (KMFRI), developed a plan of action to assess current stocks and population trends of critically endangered native fishes in Lake Victoria. There are many reasons for the importance of this fauna, including the preservation of biodiversity, as well as an important food fishery. Goals included formal training of East African biologists in North America as well as Africa in the fields of taxonomy, genetics, systematics, and

aquaculture. Funding would also support the development of lakeside public educational materials and exhibits, as well as the completion of a field guide to the extant fishes of Lake Victoria. Finally, a series of ichthyological faunal surveys would be conducted in Kenya, Uganda, and Tanzania. Although the continued presence of the Nile Perch, *Lates niloticus*, in Lake Victoria makes the re-introduction of haplochromines impractical, we still believe these species are best conserved in as natural an environment as possible. Our goals were to survey the numerous dams adjacent to the lake to determine which are capable of supporting trophically representative communities of endemic cichlid species. With the information in hand, the proper evaluation can be made as to whether or not a given dam site could serve as a possible reintroduction site for native cichlids. This report represents the data gathered from the trip of March 17 to April 12, 1995.

Table 1: Sites Surveyed

| | |
|-----------|--|
| 25-Mar-95 | Futro Dam; Salawa Pond; Mbeji Dam; Uthyina Dam |
| 26-Mar-95 | Uranga Dam; Tinga Dam |
| 27-Mar-95 | Lake Kenyaboli; Masawa Dam; Tinga Ulanda; Tinga Mwer |
| 28-Mar-95 | Mauna Dam; Ugege Dam |
| 30-Mar-95 | Lake Sare; Lake Nyamboyo |
| 31-Mar-95 | Kemolo Pond,, (Bar-Kanyago); Mowlem Dam |
| 4-Apr-95 | Oyombe Dam; Omboga Dam |

Table 2: Sampling Program

| Locality | Fish Survey | DNA Samples | Water Quality Measurements | Interview of Local Residents | Live Collection |
|----------------|-------------|-------------|----------------------------|------------------------------|-----------------|
| Futro Dam | X | X | X | X | X |
| Salawa Pond | X | | | X | |
| Mbeji Dam | X | | | X | |
| Uthyina Dam | X | | X | X | |
| Uranga Dam | X | X | X | X | |
| Tinga Dam | X | X | X | X | X |
| Lake Kenyaboli | X | X | X | X | X |
| Masawa Dam | X | | X | X | |
| Tinga Ulanda | X | | X | X | |
| Tinga Mwer | X | X | X | X | |
| Mauna Dam | X | X | X | X | X |
| Ugege Dam | X | | X | X | |
| Lake Sare | X | | X | X | |
| Lake Nyamboyo | X | X | X | X | X |
| Kemolo Pond | X | X | X | X | X |
| Mowlem Dam | | | | X | |
| Oyombe Dam | | | | X | |
| Omboga Dam | | | | X | |

Methods

Our group arrived in Nairobi over a two day period beginning 19 March 1995. The Lake Victoria SSP members included Joe Norton, Tennessee Aquarium, Doug Warmolts, Columbus Zoo, Roger Klocek, J.G. Shedd Aquarium, and Paul Sackley, Tufts University. From this point we traveled to the Winan Gulf region in Kenya to organize and initiate an ichthyological survey of lake side impoundments from Kisumu to the town of Usenge. We were joined at various times by Dr. Nathan Gichuki, Dr. Helida Oyieke, and Ms. Mary Gikungu from the Centre for Biodiversity at the National Museums of Kenya, Nairobi, Mr. Peter Nyamenya of the National Museums of Kenya, Kisumu, and Mr. Boniface Tsuma Jembe, Mr. Ojwang William Okeke, and Mr. Simon Agembe of the Kenyan Marine Fisheries Research Institute, KMFRI. Our group employed the services of Siegfried (Ziggy) Engelhardt, a professional fish collector and guide, and crew of two.

A total of 23 sites were sampled in the Siaya region of the Northern Winam Gulf as well as touching more briefly in the South Nyanza region. At most sites specimens were collected by members of the team or purchased from local residents. Collection methods were primarily by seine, but minnow traps and gill nets were utilized as well as hook and line by the local population. Collections were taken primarily from near-shore locations due to size restrictions or unavailability of deeper water at shore to launch our inflatable. There were several locations that did allow for open water collections. These were accomplished via inflatable craft and seines. Several transports of the catch were taken to KMFRI as well as the Kenyan National Museum at Kisumu. Our goals included obtaining a few specimens of *Oreochromis variabilis*, to return to the U.S. via the research team. The remainder were to be divided between KMFRI and the museum aquarium. Tissue samples were taken at each site by Paul Sackley for subsequent DNA and dry isotope analysis and returned to

collaborating researchers at Ohio State University and Boston University. This work is being carried out to determine same species variance at multiple locations. All sites as well as specimens collected were photographed by at least one member of the team. The sampling results are represented by Table 3.

Water chemistry parameters were taken at each site using a hydrolab, secchi disk. Plankton tows and bottom sampling were carried out at multiple sites as well.

In addition to the work aforementioned, site surveys were also carried out by members of the KMFRI lab. This survey was designed to further determine the appropriateness of a given site utilizing both limnological data as well as anecdotal information gathered from local residents. This data was gathered from the local population who utilize the body of water in question. The survey was developed by Dr. Paul Loiselle of the Aquarium for Wildlife Conservation. This is similar to the form utilized in Dr. Loiselle's work in the Yala Swamp region of Lake Victoria in June of 1994. Some of our sites overlap, which gave us the ability to compare data. [The limnological data is not included with this article. Please contact the authors for more information. rh]

Table 3: Species Distribution

| Locality | Species |
|---|---|
| Futro Dam | 3,6,8,9,13,14,16 |
| Salawa Pond | 1,3,5 |
| Mbeji Dam | 3 |
| Uthyina Dam | 1 |
| Uranga Dam | 1,3,6,9,11,17 |
| Tinga Dam | 3,4,9,10,13 |
| Lake Kenyaboli | 3,4,7,11,14,16 |
| Masawa Dam | 1,13 |
| Tinga Ulanda | 1,3,8,11,13,14,16 |
| Tinga Mwer | 3,5,9,12,14,16,17 |
| Mauna Dam | 1,3,5,12 |
| Ugege Dam | 1,3,5,9,12,17 |
| Lake Sare | 3,4,6,9,14 |
| Lake Nyamboyo | 9,10,11,17 |
| Kemolo Pond | 11 |
| Species Key | |
| 1. <i>Barbus</i> sp. | 10. <i>Haplochromis</i> "fine-bar scrapper" |
| 2. <i>Synodontis afrofisheri</i> | 11. <i>Oreochromis esculentus</i> |
| 3. <i>Clarias gariepinis</i> | 12. <i>Oreochromis variabilis</i> |
| 4. <i>Astatoreochromis allaudi</i> | 13. <i>Oreochromis leucostictus</i> |
| 5. <i>Pseudocrenilabrus victoriana</i> | 14. <i>Oreochromis niloticus</i> |
| 6. <i>Haplochromis phytophagus</i> | 15. <i>Lates niloticus</i> |
| 7. <i>Haplochromis maxillaris</i> | 16. <i>Protopterus aethiopicus</i> |
| 8. <i>Haplochromis</i> "dwarf nubilus" | 17. <i>Haplochromis nubilus</i> |
| 9. <i>Haplochromis</i> "big eye scrapper" | |

Results

After analysis of all data gathered, we were able to determine several sites for potential reintroduction of captive bred specimens. Further work is being carried out to determine if there are other outside influences that may affect the success of specific site introductions. Included in this would be improper fishing techniques or overfishing, seasonal changes in impoundment, heavy predation, etc. This work is in no way considered to be complete. These preliminary site surveys must be re-evaluated in more detail now that appropriate sites are apparent.

Live specimens of *Oreochromis variabilis*, (*mbiru*), were shipped from Kenya to Boston with much success. These individuals will serve as founder stock for captive reproduction. It must be pointed out that this is one of the two native species of tilapia that was once considered extirpated. Recent statements by fishermen that *mbiru* were abundant have been somewhat confusing since we now know that this name is being applied to the introduced *Tilapia zillii*. Visual inspections have confirmed this confusion.

Live specimens were returned to KMFRI and the Kisumu Museum for display and reproduction. These specimens will assist in educating local people in correctly identifying this species.

A detailed account of the findings at each locality will follow in Part 2 of this article in the next issue of *Aquatic Survival*.

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FFTAG Notes

The following two items relating to the ACN appeared in recent communications of the Freshwater Fishes Taxon Advisory Group (FFTAG) of the American Zoo and Aquarium Association (AZA):

- The membership was asked to comment on the appropriateness of using the Aquatic Conservation Network's publication *Aquatic Survival* as a continuing information vehicle for updates on the Lake Victoria SSP (Species Survival Plan) and the Madagascar Program. All comments were positive and in favor of its continuation. The Lake Victoria SSP had purchased its members a one year subscription to *Aquatic Survival* last year. These subscriptions will be due to expire soon. All FFTAG and VSSP members are encouraged to ask their institutions to purchase and maintain this subscription. (Source: AZA FFTAG Minutes, Mid-Year Meeting, July 23, 1995)
- **Freshwater Fishes of Madagascar:** The entire non-anadromous endemic ichthyofauna of Madagascar, some sixty species representing seven families, has been targeted for SSP development. Near term captive breeding efforts are focused on two Madagascar rainbowfishes [Family: Bedotiidae], two killifish [Family: Cyprinodontidae], and ten cichlids [Family: Cichlidae]. Dr. Paul V. Loiselle, who serves as TAG advisor to the AZA's Madagascar FIG (Fauna Interest Group), will continue to bring back founderstock of unrepresented species as part of an ongoing ichthyofaunal survey of Madagascar. A formal memorandum of understanding between FFTAG and the ACN is in the final stages of development. Mr. John McClain of the San Antonio Zoo is coordinating a collaborative AZA/ACN

captive breeding program for *Pachypanchax omalonotus* intended to serve as a model for future efforts in this area. Dr. Loiselle and Mr. Rick Haeffner, Denver Zoo, are pursuing possible *in situ* conservation of a second Malagasy killifish, *P. sakaramyi*. An educational poster focused on the endemic fishes of Madagascar has been produced. Half of the production run will be sold in North America to generate funds to support conservation efforts in the field. The remainder will be distributed within Madagascar as the first step in an on-going educational effort intended to build political support for such efforts. The Memorandum of Understanding between the FFTAG and the Aquatic Conservation Network should be ratified by the end of 1995. Studbook and SSP application should be submitted by the end of 1996. A program coordinator and studbook keeper should be selected by the end of 1996. Recruitment for additional institutional participants should continue. Both *in situ* and *ex situ* conservation priorities need to be established for each of Madagascar's endemic freshwater fish species. Fund raising efforts should continue and opportunities for collaboration with major donors of developmental assistance to Madagascar explored. (Source: FFTAG Draft (7/2/95) Five Year Action Plan).

[NB: The ACN Madagascar Breeding Project Coordinator is Mark Rosenqvist. Contact Mark directly for information on how to become involved at Aquatic Research Organisms, P.O. Box 1271, One Lafayette Rd. Hampton, New Hampshire 03842 USA. Tel: (603) 926-1650; Fax: (603) 926-5278.]rh

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The *Pachypanchax omalonotus* Studbook

by Mark Rosenqvist and Julia McCormick

For those of you who are thinking about becoming a member of the *Pachypanchax omalonotus* breeding project, some information about what goes on in this program might be helpful. As a conservation breeder in this or any other future ACN project, you would have 4 major responsibilities. First, of course, would be to get the fish that are assigned to you to spawn, and beyond that to raise and care for the young of the next generation until they are ready to be spawned themselves.

This leads into your second responsibility which would be to maintain a population of your assigned fish as long as is possible for you. Of course, it is hoped that you will bequeath the descendants of your fish to your own descendants. Realistically, ACN asks only that you stick with a chosen breeding program as long as you can, and that when you need to move on to other things in your life for whatever reason, you will make sure your fish get back to the ACN so that we can turn them over to someone who is willing to take over where you left off.



Pachypanchax cf. omalonotus (red fins) - Aquarium Strain.
Photo by Dr. Paul V. Loiselle. (colour images will be uploaded when available)ds

Your third responsibility will be to get fish to other members of the breeding program when it becomes necessary to shuffle the genetic material found in the fish among the various breeders involved. When to move fish around between the members of the breeding project will be determined by the species coordinator.

This brings us to the fourth major responsibility of program members. This is keeping accurate records of what is going on at your facility with your fish. This would include water quality monitoring, any disease problems and what was done to take care of them. Most importantly, however, would be the accurate recording of spawnings, keeping track of individual adults as well as the tracking of individual groups of juveniles produced by specific pairs. This spawning information is vital to the genetic tracking of the total fish population of the breeding project. This tracking is done by the species coordinator. For the *P. omalonotus* project, this is Julia McCormick of the San Antonio Zoo. Not only is Julia breeding *P. omalonotus* at San Antonio, but she has volunteered to create and maintain the studbook for these fish.

In order to put together a studbook, all individuals of any given population, in this case *P. omalonotus*, must be identified genetically and demographically. A studbook questionnaire is the tool by which the data is obtained. Each participating breeder must keep accurate records of individual fish as well as groups of juveniles not old enough to be sexed. Background information such as source of acquisition, wild locality, hatch date, sire, dam, I.D. number and disposition of fishes (death, loan, sale, etc.) will also be kept. With this information one knows where captive individuals are held and their genealogical histories. We can also determine the demographic stability and the level of genetic variation of the population. This data will allow the avoidance of inbreeding.

To create the *P. omalonotus* studbook, Julia is using a software package called SPARKS (Single Population Analysis and Record Keeping System). This is the system used by the AZA (American Zoo and Aquarium Association) to set up most, if not all, of its studbooks. ACN is using this system because it will allow our breeding programs to mesh more closely with the conservation work being done with other taxa of animals by other groups (However, use of this model for ACN purposes is currently under review in cooperation with Jay Hemdal at Toledo Zoo).

SPARKS was originally designed with mammals in mind. As a result, adjustments will occasionally need to be made when problems arise. For example, most breeders, amateur or professional, do not have the room to separate out and give I.D. numbers to individual fry from a spawn. For this reason, we will give batch numbers to these groups of juveniles in the comments section of the studbook. When these fish mature sexually, random individuals will be pulled from their group and I.D. numbers will then be assigned to these fish.

To obtain the information needed to put together and maintain the *P. omalonotus* studbook, Julia will send out studbook questionnaires to participating breeders once or twice a year. Since this is a new project, the timing of the fish trades among participants has not yet been determined but this too will be initiated by Julia. Since this is our first fish breeding project, problems are to be expected from time to time. As long as participants keep accurate records and return requested data to the species coordinator in a timely fashion, these problems will be minimized.

Studbooks for fish are still in their infancy. The very first such studbook was set up for the Lake Victoria haplochromine cichlids. The Aquatic Conservation Network is helping to blaze the trail of fish conservation with our *P. omalonotus* effort and once this pilot project is running smoothly, we will move ahead with plans to develop breeding programs for other fishes from Madagascar.

It is hoped that this brief look at studbooks and the organization of the *P. omalonotus* breeding project will help convince ACN members to sign on as conservation breeders. Everyone's help is needed. Besides active breeders, people with the facilities to hold large numbers of juvenile and/or adult fish could make a tremendous contribution to the project. Also, anyone with interest in writing is encouraged to tell of their experiences with their *P. omalonotus* from a fish culture standpoint as well as from the perspective of a participant in the breeding program.

Mark Rosenqvist is the Madagascar Breeding Project Coordinator and he can be contacted at Aquatic Research Organisms, Inc., P.O. Box 1271, One Lafayette Rd., Hampton, New Hampshire 03842, U.S.A. Tel: (603) 926-1650; Fax: (603) 926-5278.

Julia McCormick is the Species Coordinator for Pachypanchax omalonotus and she can be contacted at San Antonio

Zoological Society, Aquarium, 3903 North St. Mary's St., San Antonio, Texas 78212, U.S.A. Tel:(210) 734-7184 (ext. 135);
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Madagascar Breeding Project Update

by Mark Rosenqvist

The ACN would like to welcome new participants to our *P. omalonotus* Breeding Project. Mike Florez is currently serving out Paul Loiselle's term on the Board of Directors. Mike has one pair of *P. omalonotus* and is working towards producing his first fry.

Also coming on board is the Maine State Aquarium Society led by Bob LeBlanc. Their membership now stands at approximately 60 and at least 5 or 6 people will be participating in our program. MSAS will be starting with approximately 40 *P. omalonotus*. These fish will be distributed among society participants and record keeping will be done by one person acting as group coordinator.

Among all participants, ACN is currently holding approximately 240 *P. omalonotus*. *P. sakaramyi* has also been added to our program and as soon as enough are available they will be distributed to members.

Julia McCormick, our *Pachypanchax* coordinator, and John McLain of the San Antonio Zoo, are still trying to figure out how to best keep track of our fish population. They are currently working with Jay Hemdal on population tracking software.

Plenty of fish are available, so if you or your aquarium society are interested in participating in the ACN *Pachypanchax Breeding Project*, please contact Rob Huntley or myself.

Mark Rosenqvist is the ACN Madagascar Breeding Project Coordinator and can be contacted at Aquatic Research Organisms, Inc., P.O. Box 1271, One Lafayette Rd., Hampton, New Hampshire 03842, U.S.A. Tel: (603) 926-1650; Fax: (603) 926-5278.

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First Captive Breeding of Sakaramy Killifish at the Aquarium for Wildlife Conservation

The first captive-bred fry of a critically endangered Malagasy fish (*Pachypanchax sakaramyi*) hatched from eggs spawned at the Aquarium for Wildlife Conservation on 10 March 1995. This killifish was thought to be extinct until a relict population was found just outside Montagne d'Ambre National Park in October 1994. This discovery, which capped three days of fruitless searches within and outside the park, followed a suggestion by a local taxi driver, who claimed to know where zoto (pronounced "zoot"), as this fish is called in Malagasy, could still be found.



Pachypanchax sakaramyi - Sakaramy River at Joffreville.
Photo by Dr. Paul V. Loiselle

The five pairs of this species brought back from Madagascar have to date produced 100 fry. This rapidly growing F1 population is intended to serve as the nucleus for a long-term captive breeding program.

There is a collaborative effort by the AZA's Freshwater Fishes Taxon Advisory Group, the Aquarium for Wildlife Conservation, Denver Zoo, World Wildlife Fund, and the Malagasy government to establish a secure refuge for this species in Montagne d'Ambre National Park. (Source: article by Paul Loiselle in *Communique*, September 1995).

[NB: Since this article was written the ACN has received a shipment of a number of pairs of F1 juveniles from the Aquarium for Wildlife Conservation, which are being raised and bred by Roger Langton. Roger has already a number of offspring from these fishes. For information on how to become involved with this and other Madagascar species as they become available contact Mark Rosenqvist, ACN Madagascar Breeding Project Coordinator, Aquatic Research Organisms, Inc., P.O. Box 1271, One Lafayette Rd., Hampton, New Hampshire 03842, U.S.A. Tel: (603) 926-1650; Fax: (603) 926-5278.]rh

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Call for Fish Breeders - Madagascar Captive Breeding Project

We still have a real need for people to become breeders of *Pachypanchax* killies - immediately we need people to take some *Pachypanchax omalonotus* and in the near future we will need to find lodging for a number of *Pachypanchax sakaramyi*. Although we presently have no ACN founder stocks for the following species we are starting to get the programs organized, after which we will seek out the fishes. We are looking towards starting captive breeding programs for the cichlids *Paratilapia polleni* and the **lamena** (no scientific name yet but "potentially" a *Paretroplus*). Species/Genus coordinators are required as well as program participants. Also, anyone willing to work with Madagascar rainbowfishes of the genus *Bedotia* should make themselves known. Less immediate, but nevertheless prospects for the future are several species from the *Paretroplus* genus of cichlids. Another genus with potential for aquarist breeding programs is the *Rheocles* genus of rainbowfishes. If you have an interest in any of these areas, please contact Mark Rosenqvist, ACN Madagascar Breeding Project Coordinator, Aquatic Research Organisms, Inc., P.O. Box 1271, One Lafayette Rd., Hampton, New Hampshire 03842, U.S.A. Tel: (603) 926-1650; Fax: (603) 926-5278.

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Positions Wanted

1. Professional aquarist/ aquaculture technician is seeking a position in aquatic education or research. Will relocate within New England.

Experience includes culture of micro-algae, rotifers and other fresh water and estuarine invertebrates.

Also experienced in the spawning and larval grow out of both native and exotic fish species.

Education experience includes designing and leading tours of a large indoor aquaculture facility aimed at students from elementary to college level. Also includes production of aquarium set up and maintenance video. Also experienced in working with teachers and other educators to design aquatics related to classroom programs.

For a resume and/or more information, please contact **Mark Rosenqvist** at (603) 659-6893 or mail enquiries to 5 Church Street, Apt. 1, Newmarket, NH, 03857, U.S.A.

2. B.Sc. Biology graduate seeking position with private or public institution. Aquarium enthusiast. Conservation minded. Management and retail experience. For complete resume, contact **Mike Collins**, P.O. Box 86, Waterdown, Ontario, Canada, L0R 2H0. Phone (905) 689-9852. Fax (905) 689-9483. E Mail colgiles@netaccess.on.ca

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- *Newsletter*, 1995, British Cichlid Association, May 1995, No. 156, p. 15 & 16
- *Glaucus*, Vol. 6, No. 1, Vernal 1995, p. 43.
- *Florida Fish Farmer*, Newsletter of the Florida Tropical Fish Farms Association, Inc., May 1995, p.5.
- *d'BAACH*, publication of Federation Luxembourgeoise des Aquario- et Terrariophiles (FELAT), June 1995, p.35 & 36.

Apologies to anyone missed. We are getting such great exposure that it is hard to keep abreast of it. rh

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