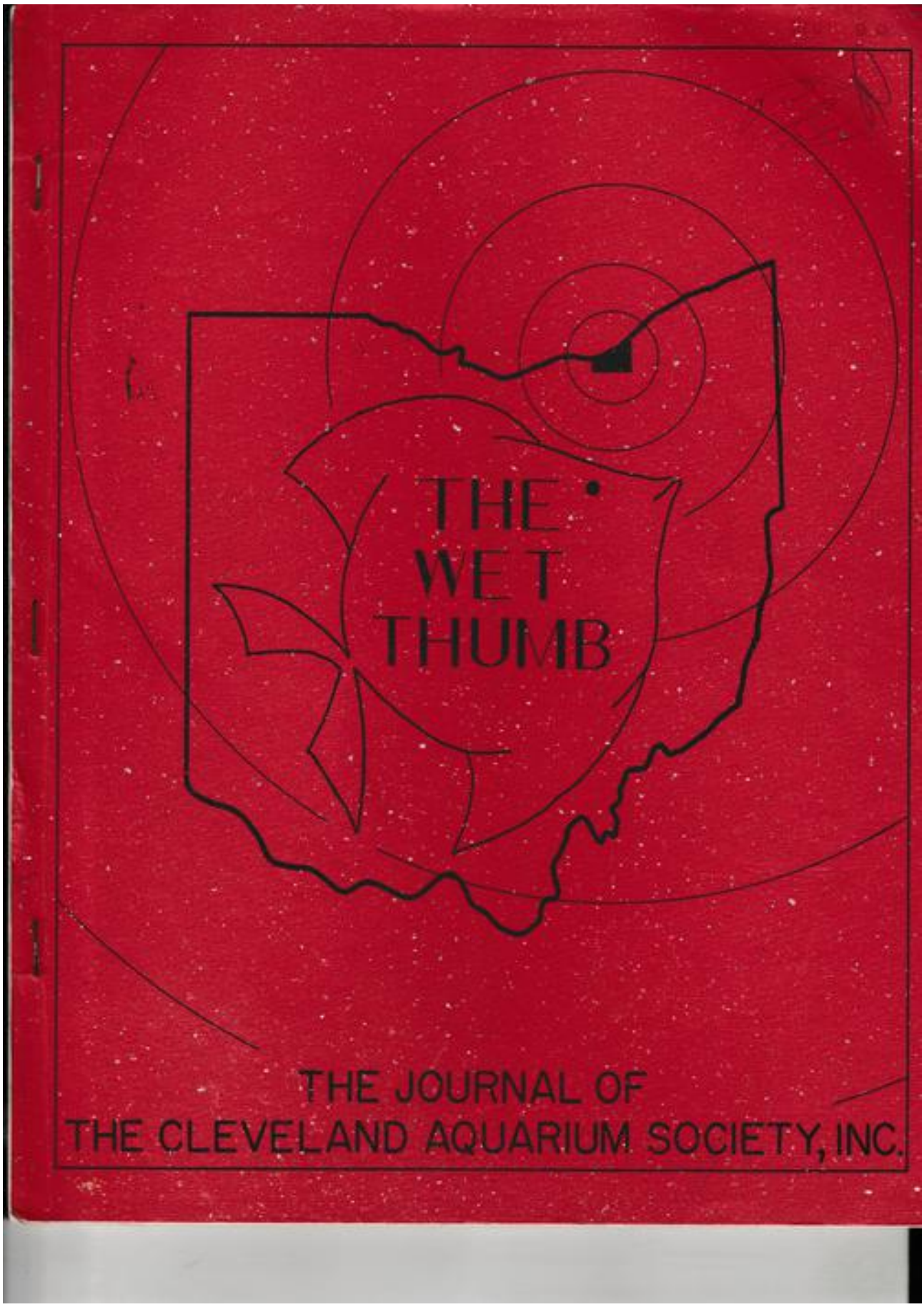

THE JOURNAL OF
THE CLEVELAND AQUARIUM SOCIETY, INC.

THE CLEVELAND AQUARIUM SOCIETY, INC.
P. O. BOX 5185 CLEVELAND, OHIO 44101

The Cleveland Aquarium Society is a non-profit educational organization. Objectives of the society are to encourage and promote the keeping, breeding study and exhibit of aquarium fishes and related aquatic life.

BOARD OF DIRECTORS FOR 1969

TERMS EXPIRE DECEMBER

1968	1969	1970
Dick Andre	Larry Davis	Metro Arden
Don DeVinny	Dick Marchus	Chuck McKay
Ralph Green	Bill Ruggles	Jerry Trejbal

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Vice President.	Dick Andre	449 - 4178
Secretary	Larry Davis	234 - 5089
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Sergeant-at-Arms.	Chuck McKay	731 - 7539

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Social Committee.	Dick Andre	449 - 4178
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THE WET THUMB

December, 1968

Published by
The Cleveland Aquarium Society, Inc.

* *

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Vol. IX
No. 9

December, 1968

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"Fish Story" article courtesy of Port Of Mobile, May, 1968

EDITORS LETTER — C.A.S.

December, 1968

With the end of another year close at hand, the Cleveland Aquarium Society can look back with pride. For this has been a year that will be long remembered. Our 'Nine Point Program', for the most part, has been a complete success, thanks to an active membership which wanted it to succeed and helped.

The area which I was responsible for was the Wet Thumb. I promised 'More ans Better Wet Thumbs'. And I do believe we accomplished this goal and passed it. One reason for success was tht willingness of members to write articles. Monthly columns being the highlight and backbone for an interesting MEETING NOTICE! It is to these many people that I wish to extend my most sincere thanks for a job well done. Bill Ruggles, who has held the position of co-editor, has been most responsive. Fighting with color issues and a stubborn, indignant offset press drove him to the point of no return more than once. Without his dedicated help the Wet Thumb could not have reached this state. Thanks Bill for a great job!!!

This all leads me to the punch. The first of the Exchange awards has been given by the Northern Illinois Aquarist Association. Only First Place is given in each class so I am not sure where we did end up, but...we were one of 4 publications in the finals to be considered for the BEST PUBLICATION and...one of 6 considered for the BEST EDITOR. I deem it a great honor for the Wet Thumb to be considered and wish to extend my thanks to the " AQUATICA " for the honor. But, the greatest thanks must go to the CAS members who were willing to devote time and energy towards its success.

It is my sincere hope that we can continue with a great publication next year. Can I count on you for continued support?

In closing, I would like to extend to all of you a hearty

MERRY CHRISTMAS AND A HAPPY NEW YEAR.

Ralph Green

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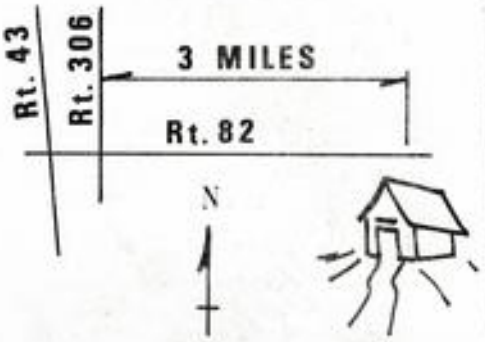

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THE CLEVELAND AQUARIUM SOCIETY

FIVE YEAR PLAN

A. Financial

1. Establish a working account balance of $2,000.
2. Establish a reserve account balance of $2,000.

B. Organizational

1. Average 200 people at meetings.
2. Attain membership of 350.
3. Upgrade printing facilities to adequate level.
4. Establish local distribution system for publications.
5. Institute procedure to increase participation by membership.
6. Re-establish national organization of aquarium societies.
7. Institute a program to promote the keeping, breeding, study, and exhibition of aquarium fishes and aquatic life.
8. Investigate the feasibility of the aquisition of permanent residence for the CAS.

C. Community Service

1. Materially contribute to the growth of the Cleveland Aquarium.
2. Contribute to the Cleveland Adult Education program.
3. Promote a display at the Natural Science Museum.
4. Conduct the Annual Show in a manner conducive to the best interests of the hobby and of the trade.
5. Promote seminars for commercial dealers.
6. Investigate the possibility of bringing a national trade convention to Cleveland.
7. Secure through adequate funding and promotion, the services of professional programs for general society meetings as well as public functions.

• The Presidents Letter •

The year 1968 is rapidly coming to a close for the Cleveland Aquarium Society. In December the principal events are the elction of three members to the Board of Directors and the reorganization of the Board. Since these seem to belong to 1969 as well as 1968 the action of the Board at the November Board meeting was primarily concerned with next year.

The biographical notes on the candidates nominated for election to the Board are found elsewhere in this issue and are a result of the workings of this year's nominating committee.

One decision of note: Dick Marchus, after two faithful years of service on the Board, tendered his resignation. It was accepted with regrets by the Board. Dick and Greta have recently added the selling of real estate to their already active lives, and Dick feels he will be unable to properly execute the functions of a Board member. We all thank both of them for the time they have spent serving the Society, and wish them well in the future.

Since Dick's term has one year to run, we are faced with the prospect of finding an adequate replacement for him. Thus, in addition to electing three members for three years, the membership will be called upon in December to elect one member to the Board of Directors for a one year term.

On the facing page is the outline of a very ambitious Five Year Plan offered to the Board by a special bng range planning committee. Although the plan was accepted by the Board, I believe it will take them a full year to realize how far-reaching it is. The most impossible-appearing phases may be the easiest to accomplish. Some of the less difficult-looking steps may be extremely difficult to carry out successfully.

A good example would be the proposal for a national trade show for pet industires or for tropical fish alone. The show just completed could be a natural springboard to the national show. If by that time a solid federation of surrounding cities' societies can be attained a national group is possible.

All of the above is pie in the sky unless the grass roots work is performed. A good solid work force is needed. This force would grow as a result of successful year by year programs of the Society.

This then, is the Five Year Plan. If the spark kindled in 1968 can grow the Five Year Plan may be completed sooner. Yearly plans such as the Nine Point Program for 1968 could be a natural outgrowth.

We successfully completed eight of the nine points. "Nothing breeds success like success." Let a successful 1968 breed a more successful 1969.

Don DeVinny

FISH STORY

Competition is tough for the thousands of different creatures in Alabama's coastal waters. Just about every one of them is stalking something and is in turn being stalked by something else.

From the tiniest creatures which cannot be seen with the naked eye, up to the more familiar fish and mammals, the vicious cycle continues.

The study of the sea and marine life has rapidly gained momentum in recent years as scientists throughout the world have intensified the probe into the mysteries of the deep. Man has depended upon the sea as a source of food since the dawn of time. Now he harvests more food, minerals, medicine and even fresh water from the briny deep.

Marine life begins at the very edge of the water. Thousands of microscopic animals may live in a few square feet of wave-washed sand. One of the larger and more familiar animals is the fiddler or sand crab. Another is the sand flea which makes good fish bait.

Most of the marine life is a source of food for some other specie. Sand fleas are a favorite tidbit of sheepshead fish.

Would Require Volumes

It would require volumes just to list the known varieties of marine life in the Middle Gulf and something new turns up every now and then. Shrimpers often bring unique animals up from the depths in their trawls.

Marine biologists are quick to note that, even with extensive studies through the years, little is known of many species of sea life. A lot of the marine research has been devoted to the marine life which provides food in commercial quantities, shrimp, oysters and some fish.

Rays are among the most common marine life along Alabama's coast. They are a nuisance at best. The sting ray, or stingaree, is the most familiar and the biggest pest of the ray family in this area. The barbed stinger, located near the base of the tail, can inflict painful and serious injury.

The torpedo ray, while not dangerous, can really give a person a start when stepped upon. The torpedo ray's shape is more round than a stingaree's and its tail is more like that of a fish. When stepped upon, it gives an electric shock to the person doing the stepping.

Sometimes a bunch of torpedo rays in the surf makes swimmers look like they are demonstrating the latest dances. The electric shock produced by the ray is 14 to 37 volts, enough to tickle a person and is particularly unnerving to someone who doesn't know what it is which shocked him.

Threadfish or African Pompano

Bulldozer

Urd-Corloto or Sea Squirt

Sawfish

(Opposite page) Trumpet Fish seems in vertical position.

Rays are related to sharks; neither have air bladders and cannot remain still in the water wihout sinking to the bottom.

Another Shocking Animal

Another shocking sea animal is the stargazer which has an electric cell on top of its head, developed from the optic nerve. Its eyes are located on top of its flat head and it can give a pretty good electric jolt to a person or animal. When the mouth opens to grasp prey the victim receives a paralyzing shock.

Crabs are among the most common and easily caught of all marine life. They frequent bays, sounds, bayous and move long distances up rivers as well as living in the Gulf.

There are many different kinds of crabs but the blue crab is the most common in this area. They spawn from December to October. The peak spawning period is June and July. They are prolific and from 700,000 to more than 2,000,000 eggs may be contained in the sponge of a single female.

The egg sponges are orange colored during early stages of development and turn brown when the eggs are ready to hatch. The blue crabs, like so many other species of marine life, hatch in the Gulf and migrate inshore to the nursery grounds along the marches.

It's usually the male blue crabs you find upriver great distances from the coast. The males can usually tolerate more fresh water than can the females.

Crabs eat almost anything, including oysters. The blue crab isn't as bad on oysters as the stone crab is but is bad enough, especially on young oysters or spat. They don't usually bother an adult oyster unless it is already in a weakened condition.

The business of blue crabs attacking only the adult oysters which are weakened is the simple law of the sea as it is the jungle, survival of the fittest. It keeps the natural balance of things.

Stone Crab Bad Actor

As for oyster predators, the stone crab is a bad actor. Stone crabs have claws strong enough to open adult oysters. But there is one factor that controls stone crab damage to oysters. Stone crabs require salty water, even more so than conch or oyster drills which are the oyster's worst natural enemy on the Gulf Coast.

Oyster drills also must have salty water to live. They move in on the oyster reefs when the water is briny but move back out when fresh water moves in.

Crabs have a short life span as do most creatures of the sea. They usually don't live much longer than one year. Croakers in the Gulf rarely live longer than two years.

However, some marine animals live much longer. The ling and tarpon live to be real oldsters if something doesn't get them. Ling may live up to 10 years while tarpon will live to be 13 to 16 years old.

Stone Crab

Ling males mature at two years of age; females at three. They range from New England to Argentina and migrate from American waters to the West Indies during the winter.

Average growth rates on ling, tabulated by marine biologists, are: 1 year, 14 inches, 2 pounds; 2 years, 24 inches, 5 lbs.; 5 years, 39 inches, 22 lbs.; 10 years, 48 inches, 45 lbs. The female ling is slightly larger than the male. Ling spawn in mid-summer.

Tarpon mature when they are six or seven years old and about four feet in length. The young tarpon grow up in salt marshes, mangrove swamps, lagoons and other such waters.

Growth Rates Given

According to available information, the average growth rate for tarpon is: One foot the first year, two feet when two years old and 4-1/2 feet at 9 to 10 years of age. The average 12-year-old tarpon weighs about 70 pounds and a 100-pounder is probably 13 to 16 years old.

Red snapper are believed to have a life span of from four to six years. Redfish may live more than five years. The average growth rate of redfish is a length of 13 inches at the end of the first year; 22 inches the second year and a three to four foot redfish is probably four to seven years old. Redfish also spawn offshore.

Speckled trout spawn mostly in bays. The average speck growth rate is: 5 inches at the end of the first year, 8 inches the second year, more than 10 inches by the end of the third year and more than a foot in length after four years. Male specks die at about five or six years. Some sow trout (females) live longer and grow to weights of from 6 to 10 pounds and nearly three feet in length. Speckled trout have been known to reach a length of four feet.

Sea Turtle

An example of the peculiar habits of marine life is the flounder. Most people think of the flounder as a shallow water dweller, which he is. However, flounders spawn 30 to 40 miles offshore in the Gulf. The largest flounders are believed to be three years old. There has been no evidence uncovered to indicate that they live longer. Marine biologists note that data on flounder, as with much marine life, is scarce.

Fish have one thing in common, the temperature of the water in which they live controls their body temperature. The salinity of a fish's body fluids also remains the same as or changes to the same as the water around it. It's done through osmosis and the saline adaptability allows fish to move from salt water to fresh water.

Most of the fish in the northern Gulf of Mexico have been catalogued by marine biologists. Most of the collections in the last 15 years came from catches of the Bureau of Fisheries' Research Vessel Oregon.

Occasionally new species of fish are found. More is probably known about fish in the northern Gulf than about other types of marine life. Non-commercial marine life has not attracted as much research and study as the commercial varieties.

Sea nettles have long been a bane to swimmers in salt water. They are a member of the jellyfish family and there are more than a dozen different kinds of sea nettles in the Gulf. Some are harmless but others will sting a person on contact. One common type of sea nettle looks like a parachute with canopy and tentacles. The length of tentacles varies but a good rule of thumb is to stay clear of any sea nettles with tentacles.

Even more dangerous than sea nettles but easier to see is the Portuguese-man-of-war. These are the purple colored balloon like creatures which drift on the surface trailing long tentacles.

The Portuguese-man-of-war is not a single animal, they are colonies of separate animals.

They can inflict an extremely painful injury. The tentacles are equipped with tiny hairlike stingers which are coiled like a spring and when triggered by contact spring out like a hypodermic needle. They inject poison into the victim which causes pain.

Toadfish are common Gulf dwellers. There are two species in the Gulf — one living in deep water and the other inshore. Their mouth is lined with upper and lower teeth which are very dull. Their jaws are powerful and they feed on snails, crabs and other fish.

Toadfish like to hide in cans and shells on the bottom, they spawn in conch shells. They are ugly and often are caught by fishermen fishing near the bottom.

Sea Robins are very common in the Gulf. There are 16 different species. They are usually small — less than one foot long — and their pectoral fins fan out like wings. They use the pectoral fins for walking along the bottom.

The Midshipman is kin to the toadfish and is common in the Gulf and saltier bays and

Star Gazer

Toad Fish

Calico Crab

Sea Robin

sounds. Rows of tiny bulblike bumps along its sides and stomach light up like a neon sign when the midshipman is courting. They can burrow into mud or sand and completely disappear in three seconds.

Moray eels are common in the Gulf. There are several species, most of them small. The larger species usually stay out around reefs in deep water. Active predators, the eels eat other fish. The eel is actually a fish and has small gill openings. There are at least five different types of moray eels in the Gulf.

Trumpet fish have long snouts and swim in a vertical position either head up or down instead of horizontally like ordinary fish. They are caught in shrimp trawls from time to time.

Horseshoe crabs are fairly rare in the Gulf, but show up occasionally. They have changed very little in several million years. They spawn on beaches at the high tide mark in late spring and early summer. They can turn on their back and paddle along with their legs working like the oars of a Roman galley.

One seafood delicacy you seldom find in the market is the bulldozer, a member of the lobster family. They are ugly creatures whose appearance belies their fine flavor. Bulldozers are caught in shrimp trawls in deep water off Alabama, Florida, Mississippi, Louisiana and Texas. A catch of a dozen to 18 bulldozers on one trip is considered good. Because of their scarcity and fine flavor, most of the bulldozers that are caught are kept by the shrimpers for their own table.

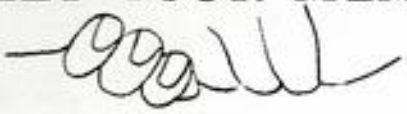
When alive, the bulldozer is reddish orange. They turn dark when frozen. Like shrimp, they have a lot of head but the meat of the tail is delicious. They live on mud or sand bottoms and in crevices, growing up to about two pounds in weight, mostly in 16 to 40 fathoms.

Bulldozers range through the Gulf and up the Atlantic Coast to Cape Hatteras but little is known of them.

These are only a few of the common and more rare marine animals of the Gulf and Alabama's inside waters (bays and sounds). Species of marine life are myriad. Shelves in the laboratory at the Alabama Marine Research Laboratory on Dauphin Island are lined with pickled specimens. Some live specimens are kept in tanks.

Everything is part of the life-cycle of the sea, from the tiny shrimp swimming from the deep waters of the Gulf to the nursery grounds of the marshes, to the giant marlin, tuna, sharks, porpoises and whales.

MEET YOUR MEMBER



By CORINNE DAVIS CAS.

At our December meeting the members of the Cleveland Aquarium Society will be charged with the responsibility of electing three qualified men to serve three year terms on the Board of Directors. The future success of our group will depend upon how wisely we choose these men. To refresh the memories of some of our members, and to help enlighten others, my column this month is devoted to a brief personality sketch of each of the men selected by the nominating committee. For the sake of impartiality they are presented in alphabetical order.

DICK ANDRÉ : A member of CAS for four and a half years, Dick is presently completing a three year term on the Board of Directors, where he is one of the most prolific "idea men" at the monthly Board meetings. He has served as sergeant at arms, membership chairman, parliamentarian, program chairman, and vice president. Dick was an active participant in the salt water and betta work groups. His participation with the filming of "Aquarium Number One" has been enjoyed by all of CAS. At our annual show in October Dick was in charge of judging, and obtained well qualified and impartial judges for our show, several of whom traveled to Cleveland from distant cities to assist in the judging. Presently Dick is teaching classes in the CAS adult education series being presented at Euclid High School. Dick's work with fish diseases has increased the knowledge and success of many CAS fish keepers. For more information about Dick you can see my column in the February Wet Thumb, or ask Dick!

ART GEDEON : Art was the topic of my summer Wet Thumb column (June-July-August issue). He is a quiet, serious fish hobbyist interested in helping others in the hobby. A CAS member for two years, Art is vice chairman of the social committee, and so distributes donuts and coffee, arranged the summer picnic, and is planning the annual Dinner Dance. He worked on the constitutional amendment committee, was active in the selective breeder work group, and participated in the planning sessions for the CAS trip to Toledo in June. At our annual show in October Art was responsible for the delightful pond and its accompanying landscaping. Early in the CAS adult education program at Euclid High Art taught classes which were informative, carefully prepared, and well presented. He was the recipient of the President's trophy at our October show, and has won trophies and awards at other CAS shows, one very recent one being first place in the catfish bench show. Art, by profession, is a water chemist, specializing in problems dealing with water pollution. I am sure it is clear to everyone that what our Board really needs is someone well versed in water chemistry!

RALPH GREEN : The number of hours Ralph devotes to CAS each month is staggering! He has proven himself a capable and competent treasurer, and his ambitious undertaking as editor of The Wet Thumb has steadily raised the quality of our publication. As a professional photographer, Ralph was instrumental in photographing and compiling "Aquarium Number One," which has been so greatly enjoyed by our group. A CAS member for five years, Ralph is completing his

third year on the Board, where he is a stabilizing influence between the progressive and traditional idea conflicts which occasionally occur. He has been active in the betta and salt water work groups. It sometimes seems his energies are endless, and his sincere interest in the progress and welfare of CAS make him a valued Board member. More on Ralph may be found in your September Wet Thumb, where he was my "Meet Your Member" subject.

JOHN HENDERSHOTT : A relative "newcomer" to CAS, John seems bent on conquering the world in a hurry. Though only active since June, he is vice chairman of the membership committee, and active on the CAS design committee. During the planning of our October show John was instrumental in the success of our dealer participation relations. He also handled the organization and execution of the auction very efficiently. John has participated on the print shop committee, and has been invaluable help to the special events chairman, working industriously on both the Toledo trip in June and the wooden tank workshop in September. You will find John extremely competitive, highly ambitious, and very capable. He is a competent leader as well as an enthusiastic follower.

Support your CAS by selecting the men most qualified to give the kind of leadership that will keep the society active and progressive. The nominating committee has given you these four excellent candidates. Consider them carefully. A vote for them in December will ensure a successful future for CAS.

* *

DUES ..... ARE ..... DUE .....

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DECEMBER 3, 1968

IS THE DEADLINE

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- -

just for the record

just for the record - - - Election Day, Tuesday, December 4th, 1973. That's right, 1973. That's the day three new board members will be elected to serve on the Board of Directors that has the long hard job of putting the final touches to the Five Year Plan that will be put into action on January 1, 1969.

The plans, ideas and in some cases maybe dreams that have emerged from this Five Year Planning Committee are great goals that have been set for our Society. These plans are without a doubt some of the biggest that have ever been set for any society. What are some of these goals? Well, for starters try this: a national pet trade convention will be held in Cleveland's new Convention Hall, complete local distribution of The Wet Thumb and then to a national level, a complete coverage of education of our hobby at various school levels, closer ties will be built with the Cleveland Aquarium the Western Reserve Historical Society and universities that are interested in the laboratory study of fishes and aquatic life, the building of a new relationship with other societies on a world wide scale, the creation of an international federation of aquarium societies.

Are these plans realistic? Can they all be done in just five years? The answer to this is it must be done! Your next question, as mine was, will be "Why, and who is going to do it?"

One answer is found at the top of the inside front cover and in our constitution under objectives: "To promote the keeping, breeding, study, and exhibiting of aquarium fishes and related aquatic life." This would be a good answer by itself, but there is more; namely, growth. If any club, society, business, or, for that matter, any country is to continue to grow and prosper they must have continual growth. Without it they will stagnate and die. True, the goals we have set for outselves are high, but they can and will be achieved.

As to the "who" part of your question, that is a big one. The 1968-1969 Board had already pledged itself to start the Five Year Plan, and future Boards must carry on the projects if they are to be completed. Granted the jobs that lie ahead are immense, but not impossible.

just for the record - - - Election Day, Tuesday, December 3, 1968. Prior to this date the nominating committee went to work to ascertain the names of people who would be available and, more important, qualified to run for our Board of Directors.

With the thoughts in mind that these people will be the ones who will be around as the Five Year Plan draws to a close the committee selected a slate we felt to be the most able and capable to see the job through. The people chosen were: Dick Andre, Ralph Green, Art Gedeon and John Hendershott. Unfortunately Don DeViney could not give us a firm answer as to his availability through reason of his employment at the time the nominating committee met. I for one sincerely hope that by December third he will have reached a decision.

No man can say "I deserve to be on the Board because I have been in the CAS for so long." He must prove he has worth and something to contribute to the Society. Both Dick and Ralph have time and time again proved their worth, and what is more important, have shown that they have much more to contribute. As for Art and John, they have both acted as committee chairmen and have done excellent jobs. But more important, they have shown they are both forward thinking, progressive people who have a real interest in seeing our CAS succeed. These, the, are the people the nominating committee and I will support in this coming election.

just for the record - - - Congratulations are in order for two couples of the CAS. First to Pat and Dennis Smith on the birth of their first child. Proud papa says "Mom and daughter are doing fine." Next to Don and Kay Page who have opened a Tropical Fish Shope in Solon, Ohio. Congratulations and good luck to both families.

just for the record - - - This Writer wishes to thank the Editor for allowing his feeble efforts at journalism to be printed in our Wet Thumb. I only hope I have been able to convey my message and hope that it has given an insight into some of the behind-the-scenes activities of the Board and the workings of our Society.

just for the record - - - I would like to take this opportunity to wish you all a Very Merry Christmas and a prosperous Happy New Year.

Bill Ruggles

* *

MEMBER OF THE YEAR STANDINGS

There are 80% of the points, through October, in and tabulated. The top ten in alphabetical order are:

Carol Bakos
Art Gedeon
Eileen Klein
Marty Klein
Kay Linc
Phil Lobel
Don Page
Bob Quinn
Dennis Smith
Betty Sobiesienski

WHO WILL THE WINNER BE? ATTEND THE ANNUAL DINNER DANCE JANUARY 25th AND FIND OUT.

Aphyosemion Nigerianum

by George Maier

In the late 50's a fish was imported from Africa under the name Aphyosemion calliurum ahli. After extensive studies Sten Clausen found that the newly imported fish was not what it was thought to be but was a new discovery and since they were found in Nigeria, Africa he called them so aptly Aphyosemion Nigerianum.

This fish turned out to be a real find. The male is very colorful, easily kept and taken care of and easily propagated. The males grow to a length of 3 inches while the females stay one-half inch smaller. The base color of the body is sky-blue over which one can see carmine-red dots irregularly distributed. Pectoral fins are almost transparent with a bluish outer edge. Ventral fins near body are blue, then comes a red band and the outer portion is lemon-yellow. Dorsal and anal fins complement each other, their base is blue, then comes a maroon-red band and the outer portion of both fins is a bright yellow-orange. The tail fin shares this color pattern: the center portion is blue with red dots, then comes an upper and lower red band and the upper and lower portion is orange-yellow. In order to fully appreciate the gaudiness of the color arrangement the fish should be viewed with the light falling over the observer's shoulders. The female is drab in comparison, she is basically brown with small red dots distributed over the entire body.

For years we were told that killifish were very demanding in the condition of their water, that it had to be soft and that just nothing else would do. Experience has shown us that this is not so, that these fish can adjust themselves to just about any condition just like any other tropical fish provided the change to their new surrounding is brought about gradually.

Their propogation is no problem at all. Like most other egg laying tooth carps they lay one egg at a time. These eggs are deposited on floating plants or on gravel on the bottom and the sticky substance on the outside of the egg sees to it that it stays put. If we keep a pair of these fish in a well planted small tank with some floating plants present and leave them in there for about two weeks and then remove the fish to some other tank we can be sure that within a week's time we can observe the first young fish swimming around. It is that easy to breed them! Their eggs take from 2 to 3 weeks to hatch.

A more practical and more prolific approach is to put the pair of fish into a small tank (3 to 5 gallons) without any gravel and without any plants. Add one or two spawning mops (made of nylon fibers and nothing else) to it and we are all set. Every third day or so we remove the mops, squeeze the water out and pick out the fish eggs. These are put into any available container with a small quantity of any sort of counter-acting fungus remedy and checked every second day or so for any bad eggs; any egg that appears milky or gray or show "whiskers" should be removed immediately. The fungus that got a hold of them would only contaminate the rest of the eggs. The harvest of a two week period can be kept in one container. When the young hatch they should be fed infusoria

for the first 3 days. From then on they are already able to tackle newly hatched brine shrimp and micro worms and if properly fed their growth is rather rapid. Care should be taken that the water does not get too warm (this goes for the fry as well as the adults; room temperature is fine) and one should keep in mind, one gets better results in the lower 70's than in the upper 70's.

If need be these fish can be kept in a community tank provided no roughnecks are present. They are peaceful, mind their own business and leave everybody else alone.

(The American Killifish Association released this article as the first of a series on Killifish. The association's aim is to promote the keeping and study of this specific fish family and has grown from a small group 7 years ago to an organization with over 500 members spread around all over the globe. They invite you to join the organization. Why not forward the attached membership application now?)

Membership Application
American Killifish Association

Return to: Mr. Robert Yacano
2778 Oakland
Eden, New York 14057

Name _____ Date of Birth _____

Address _____

City _____ Zip Code Number _____

State _____

Dues: Full Year $7.50 -- After July 1st, $5.00

In accordance with Article VI of the By-Laws, your dues must accompany this membership application. (Make check payable to American Killifish Association.)

Please Sign _____

IN LAST MONTHS WET THUMB I GAVE CREDIT TO INDIVIDUALS AND COMPANIES WHO HELP MAKE OUR FISH FAIR . . . . . I GOOFED! LEFT OUT WAS OUR OWN KILLIE GROUP WHO HAD A FINE DISPLAY OF SOME OF THEIR BEST FISH. SORRY FELLOWS. . . DIDN'T REALLY MEAN TO FORGET YOU.

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R

The Wet Line
c/o Larry Davis

Q. IS IT TRUE THAT ANGELS EAT THEIR EGGS IF THE BABIES AREN'T GOING TO BE GOOD ONES BUT RAISE THEM IF THEY ARE?

A. It's amazing how many people believe this. I think it's pure bunk without any supporting evidence. On the other hand, I must admit that not one eaten egg has ever grown into a good angel.

Q. DON'T MOUTHBREEDERS EVER SLIP AND EAT ANY OF THEIR YOUNG?

A. Unfortunately, they do. This is usually done while trying to negotiate a chunk of frozen brine shrimp and a mouthful of babies at the same time. Incidentally, I personally don't understand the lack of popularity of the mouthbreeders. Every hobbyist should enjoy the pleasure of observing these easily-bred fish.

Q. IS IT TRUE THAT "CATFISHES" HAVE AN "ORGY" WHEN THEY SPAWN?

A. By "catfishes" I assume you mean Corydora species and by "orgy" I assume you mean community spawning without regard to specific mates. "Catfishes," along with most barbs, tetras, and livebearers, have "orgies" when they spawn.

Q. HOW CAN I SAVE MORE LIVEBEARER BABIES?

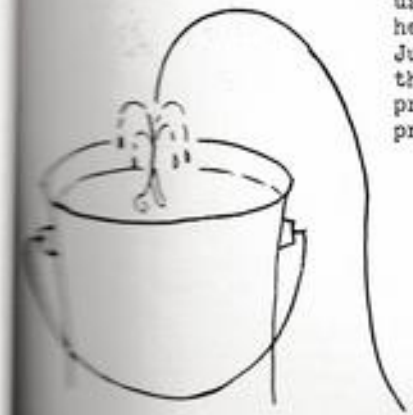
A. A long while ago I gave up on nets and traps and such. I found floating plants such as water sprite or riccia to be more effective. However, I am convinced that more babies are eaten while resting on the bottom, immediately after birth, than at any other time. I have found a much higher number of babies since I have been putting spawning grass and such on the bottom of my spawning tanks.

Q. DO ARCHERS DO BETTER IN SOFT WATER?

A. Archer-fish, scats, Monodactylus, and several other brackish-water fishes do better in a salty environment. Although the above fishes can be maintained in either salt water or fresh, they do best in about half salt, say at about 1.012 specific gravity.

Q. HOW DO YOU JUDGE A FISH SHOW?

A. Oiiiii -- Unfortunately there are about as many ways as there are judges. Betta and guppy judges have adopted complex rating schemes, usually involving such things as "5 points for the anal fin." These schemes become less functional when applied to varied groups, such as barbs or tetras. In such cases the judge evaluates criterian such as conformity, finnage, color, size, health, deportment, and match of pairs if appropriate. Judges do more rejection of fishes for poor qualities than selection for good qualities. Dick Andre is presently organizing a committee to study standards and procedures for judging fish shows.



'TWAS THE NIGHT BEFORE CHRISTMAS

'Twas the night before Christmas
And at the Davis shack
The kids and the fish
Had all hit the sack

All, that is,
Except for a few,
Spook, the black ghost
And some catfishes, too.

They were prowling around
This nocturnal bunch
Hoping to find,
Some goodies to munch.

It was quite late,
I've no fear to say
For you ol' Rovin Revuwer
Had even hit the hay.

Suddenly there was
A large thud on the roof,
Followed by sounds
Of stomping reindeer's hoof.

"Take it easy up there"
"Hear those rafters creak?"
"If you guys ain't careful,
You'll make the roof leak!"

Next from the chimney
Came a sliding sound,
And out of the fireplace
Came St. Nick with a bound.

I yelled out a warning,
But was a little too late,
For by this time Santa
Was doomed to his fate!

I knew what had happened
When he let out a roar:
He had stepped in a tank,
On the living room floor.

This wasn't all,
Let me tell you,
There's not just one tank,
Remember? There's two.

He stepped from the first,
Caught his toe on the top,
And into the second tank
Old Santa did flop.

I said to Santa,
"I most certainly wish--
That you'd be more careful--
You're scaring my fish!"

"Besides, watch your language!
It's dreadful, coming from you!
Barb never said those things!
("She's stepped in 'em, too!")

He got to his feet,
With a moan and a groan,
Ya know what I think?
Santa's accident prone!

'Cause the next thing he did
Was worse even yet --
Stuck his arm in a tank,
To his elbow, I'll bet.

He jerked it right out,
Giving a terrible squeel,
That tank -- you guessed it --
Held "Sparky," my eel.

To say he got a charge out of Sparky
Is putting it mild,
For a better description
Let's say Santa went wild!

After many wild gyrations,
We were back as before,
With Santa Clause struggling
To get off the floor.

"I better hurry," exclaimed Santa,
"And get the stockings filled,
'Cause if I stick around here,
I'm sure to get killed."

"I'll quickly check on the kiddies
So I'll know what to pick."
And for the door of my fish room
Dashed poor old St. Nick.

"Hey no! -- Not that door!
Hey Santa! -- Hey wait." --
But just as before,
My warning was late.

It took only a moment
For him to vanish from view
Then came a crash and such language!
Made the air blue.

"Oh! no!"exclaimed Santa --
"More fish tanks galore --
"There's even another
"(CENSORED) tank on the floor!"

The way he found this tank
Wasn't too neat!
Stepped right in the middle,
With both of his feet.

This of course tripped him
And as he fell,
He grabbed hold of another tank,
And spilled it as well.

Besides getting soaked,
Old Santa Clause sat
On the erect dorsal fin
Of my Clarias cat.

"Don't you hurt my Clarius,
Santa -- I'm warnin' you!"
"You're confused," replied Santa,
"As to who's hurting who!"

He leaped to his feet,
And did quite a dance,
'Cause the fish was still stuck,
In the seat of his pants.

While I freed my catfish
Santa stood gnashing his teeth,
With wild fruit flies encircling
His head like a wreath.

He was muttering and sputtering,
And this is no joke,
He was so mad that
I thought he would choke.

"Santa, all that I've read,
Says you're a jolly old elf,
But the way that you're acting --
Aren't you ashamed of yourself?"

"What do you mean?" asked Santa,
"Why should I be ashamed?
After the way I've
Been soaked, shocked, and maimed!

"I want you to know
It's not going to be nice,
Driving that sleigh,
With my boots full of ice!

"It's colder than blazes,
And my suit is all soaked!
Wouldn't surprise me if
I got pneumonia and croaked!

"Children will soon be waking
I'm behind schedule I fear.
I've got to get going,
If I can get out of here.

"I can't get to the fireplace,
To go up to my sleigh,
So I'll go out the front door,
If there's no tanks in the way."

So eluding the fish tanks
On the living room floor,
Old Santa Clause dashed,
Right out the front door.

"Hey Santa Clause wait,
You've forgotten your sack
You never filled the kids' socks,
You had better come back!"

"You keep the pack and
Pass the gifts around.
I'm not going back in there,
'Cause I'm sure to be drowned!"

He called his team on the roof,
To the ground down below.
And guess what he found
Going to his sleigh thru the snow.

You say you can't guess? --
Then you're not trying too hard!
Yep, there's another fish tank
Setting out in the yard.

That's a heck of a place for it,
I'll have to agree,
But there's just no room for it,
In the house, don't you see?

He got to his feet saying,
"What a low blow! --
Imagine hiding a tank,
Out here in the snow!

"What a miserable night!" cried Santa
As he climbed in the sleigh.
"I'm getting outa here!
Stay out of my way!"

"Are you going to yell," I asked Santa,
"As you fly out of sight,
Merry Christmas to all,
And to all a good night?"

"Merry Christmas! Bah, humbug!
What are you, some kind of nut?
To think I'd wish you a good night,
It's been anything but."

He yelled as he flew off,
"My Christmas wish ---
Is that I don't find more people
Who are so nuts about fish!"

(As told by the Davis's in Fish Tales, which is published by the Greater Iowa Aquarium Society, reprinted from Fin Features, December, 1966.)

* *

JANUARY ISSUE DEADLINE

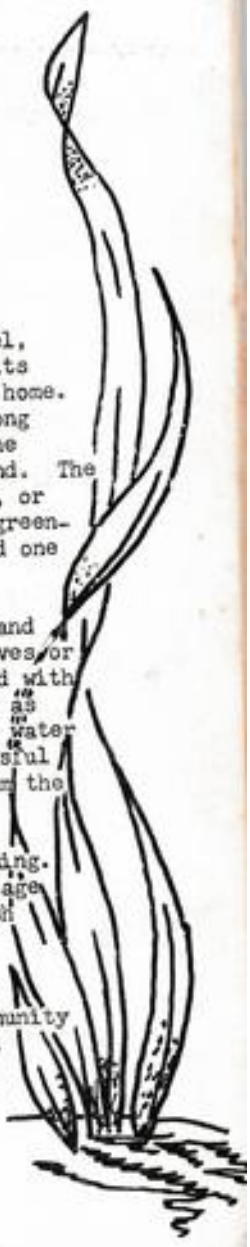
DEC 3RD

THAT'S ONE WEEK EARLY

CHRISTMAS

YOU KNOW !

FISH OF THE MONTH



There are three different kinds of angelfish. One is the deep angel, Pterophyllum altum. It looks like a regular angel, but darker. Also, its nose is concave. These fish are all crossbred, so they have no natural home. Next there is the Lesser angel, or Pterophyllum eimekei. It is 12 cm. long and 24 cm. high. The back and snout are a bluish-brown to a yellow. The fish has five or six bands, all being a deep black on a silver background. The pectoral fin is colorless. The last of the angels is the scalare angel, or Pterophyllum scalare. They are found in the Amazon, and are a greyish-green-ish color with a brilliant silver sheen. They have four light bands and one strong black band across the eye.

In breeding the fish should be allowed to choose their own mates, and "find" one another. The fish will usually choose to breed on broad leaves or slate. The eggs are cared for by both parents and are frequently fanned with clean water. (That's what all the books say. Experience tells us that as often as not the eggs are eaten by both parents and not fanned with any water at all!) Eggs not quickly eaten will hatch in 24 - 36 hours. A successful spawning will contain 600 - 1,000 fry. They eggs may be takne away from the parents and hatched in a separate container.

At four to five days the fry will try their first efforts at swimming. The babies very soon are eating newly hatched brine shrimp, and by the age of four weeks you will find the fish taking on the distinctive angelfish characteristics.

Most people will agree that angels are among the prettiest of the fresh water aquarium species. They are fairly hardy and make good community pets. They will do well on any normal fare fed to your community tank. Recently a pair of angels spawned in our 100 gallon community tank.

Let's see all your Christmas angels at the December meeting.

FROM THE PAST 1941

Bonnie Ruggles, CAS Historian

January 8

The meeting was called to order at 8:45 by President Wilcox. There were about 40 people present. The treasurer's report was as follows:

Bal. Dec. 11			$64.42
Membership	$7.00		
Raffle	3.60		10.60
			$75.02
Rent		$2.50	2.50
Balance			$72.52

The report on coming Flower Show arrangements was made by Dr. Charleson. The feature of the evening was the showing of a color movie "Exotariums" which was obtained from the Eastern New York Aquarium Society of Albany, New York.

February 12

Meeting was called to order at the Museum of Natural History. Bertha Arnold gave a talk on Fish and Plants. The postage bill for the month was $1.65. Hey, Ralph, how many Wet Thumbs can you send for that?

March 12

The President called the meeting to order in the usual way. The rent for the month was read and approved for $2.50. There was a report about the Sportsman Show tickets by Mrs. Stephens. A very interesting talk on the breeding and raising of Angelfish was given by Mr. J. Ulman.

April 9

The meeting was called to order at 8:30 p.m. and adjourned at 10:00. Wonder how they handle that? The ticket chairman reported that 412 tickets were sold. With a balance of $48.85 it was moved and seconded that Mr. Koening be paid $10.00 for his colored movies of the Home and Flower Show Fish Exhibit.

May 14

This was an unusual meeting. The majority of the meeting was devoted to a Question Bee. The sales from the Sportsman Show tickets were $41.20.

June 11

For entertainment the Standard Oil Company's movie "Beautiful Ohio" was shown. On the motion of Mrs. Stevens, it was decided to hold the next meeting as a Basket Picnic at Willoughbeach Park.

August 20

The meeting was held as a wiener roast at Wildwood. Several of the members obtained a good supply of daphnia from the creek.

September — The September meeting was also a wiener roast.

October 8 — The meeting of the Winter Session was called to order by Vice-President Stevens. Mr. LaGanke gave a very interesting talk on "Spawning Egg Layers."

November 12 — Again the Sportsman Show was brought up for discussion. We will not exhibit this coming year, but we will sell tickets. Moved and seconded that the meetings be held at members homes, thus saving rental. Offer made by Mrs. Swope that we hold future meetings at her restaurant 13753 Euclid Avenue. Art Corday was the speaker on raising daphnia by feeding soy beans.

December 10 — The meeting was called to order at 9:30 p.m. at the Silver Lantern Restaurant. The following officers were elected:

President	R. D. Stephens	
Vice President	R. D. LaGanke	
Secretary	J. E. Watkins	
Treasurer	G. Webster	
Trustees	Mrs. Stephens	Mrs. Gundel
	Mrs. Arnold	Miss Gene Swope
	Mr. C. M. Wilcox	

* *

PIRANHAS WILL EAT YOU - - - TIMIDLY. As for the so-called vicious piranha fish, Dr. Hubert Markl, an ethologist from the University of Frankfurt, West Germany, discovered that most species are somewhat timid, will attack an abnormal-looking object, such as a sick fish, rather than a normal one, and hesitate to attack anything larger than themselves.

(Ocean Industry, February, 1968)

WAR ON THE GREAT BARRIER REEF

(War has been declared along 1,200 miles of Australian coast: the Great Barrier Reef, one of the scenic wonders of the world, is being attacked and the Queensland Government is fighting back. The invader is a starfish, the Crown of Thorns, which is heartily munching away the foundations of the coral. The invader now as a price on its head and a curious opponent has been drafted.)

A coral-consuming starfish known as the Crown of Thorns has started seriously attacking the Great Barrier Reef, described to tourists as the "Eighth Wonder of the World," apparently bent on destroying all 1,200 miles of it.

The Great Barrier Reef is the longest coral reef in the world, extending from near the mouth of the Fly River (New Guinea) down the coast of Queensland to Breaksea Spit (lat. 24 degs. S.).

To counteract the menace -- and to protect its dollar-earning tourist attraction -- the Queensland Government has sponsored an urgent research program. However, the mysterious Crown of Thorns appears to be one up on science, and is still eating heartily -- so the Queensland Government has announced a further grant for even more research.

Once a rarity, the giant starfish, which grows up to 2 feet in diameter, recently appeared in plague proportions around Green Island, a coral atoll near Cairns, North Queensland. Professional divers were employed to track and kill them by hand for a bounty of a shilling a head, and about 45,000 were cleared from the island's main coral area.

An adult Crown of Thorns can kill about 24 square inches of coral a day. But a plague of the species is capable of killing the bulk of living coral of an average-sized reef in two years.

The Crown of Thorns' only known predator is the Trumpet Shell, and it is suspected that release from predator pressure has allowed the starfish to multiply astronomically.

The Queensland Treasurer, Mr. Gordon Chalk, said controls would be imposed to prohibit the dredging, taking or possession of the shells.

A stock of live Trumpet shells will be transplanted to a reef where their effect on the starfish population can be observed. It all seems to be up to the Trumpet.

Despite its name, the Great Barrier Reef is not a continuous unit of a single type, but is composite -- a collection of coral reefs and coral islands of various kinds, forming a broad belt bordering the coast. The reef is one of Australia's best tourist attractions, drawing many visitors from the United States and Canada every year.

The hazards of navigation within the maze of reefs were experienced to the full by Capt. James Cook. In 1770, during his discovery voyage northward from Botany Bay, his ship stuck fast on what was later named the Endeavour Reef. After jettisoning much of his gear, he got his ship afloat again and eventually repaired it at a spot where Cooktown now stands.

He found the reefs increasingly numerous as he proceeded north and it was with intense relief that he found an opening through the outer reefs to the open sea.

Coral fish of great beauty abound in pools and along the edges of the submerged coral. Most are edible and provide good sport for anglers.

The Great Barrier Reef, for interest, variety and beauty of life, is one of the world's scenic wonders. Meanwhile, oceanographers, marine biologists and Australian Fisheries Department officials are joining forces to counter the starfish menace which has already destroyed large areas of coral around Green Island and threatens wider devastation throughout the Great Barrier Reef.

(Reprinted from the African Aquarist, August, 1968.)

* *

AWARDS

THE DINNER DANCE

IS

"COMING"

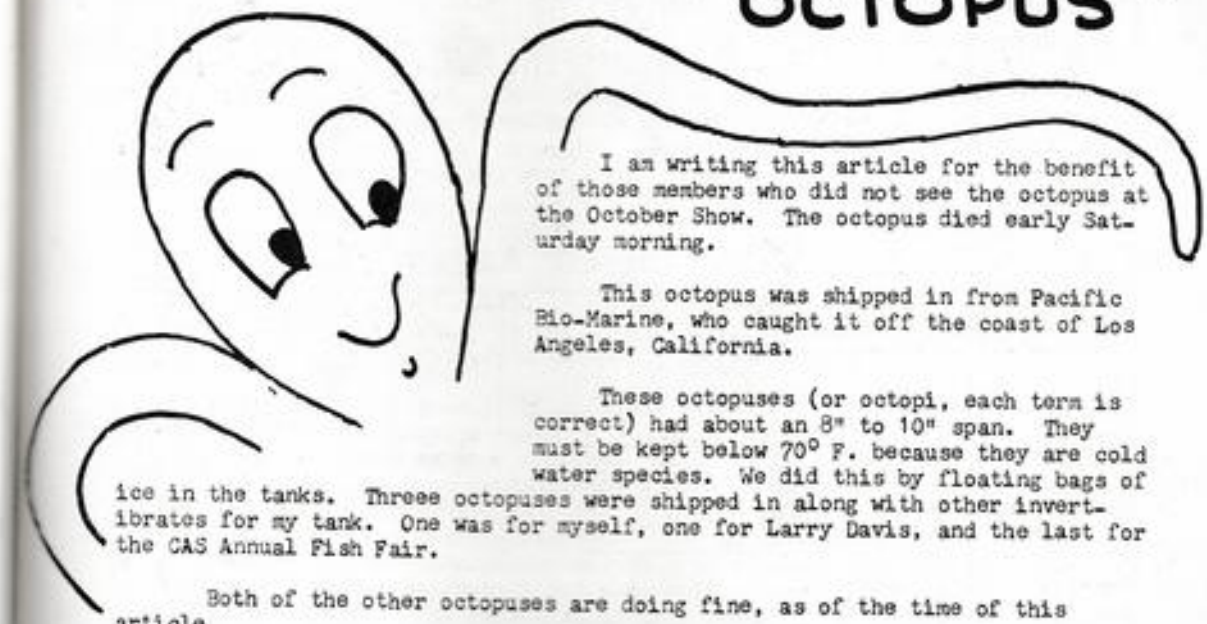
BOOZE

FUN

LIVE BAND

JANUARY 25, 1969

" OCTOPUS "



I am writing this article for the benefit of those members who did not see the octopus at the October Show. The octopus died early Saturday morning.

This octopus was shipped in from Pacific Bio-Marine, who caught it off the coast of Los Angeles, California.

These octopuses (or octopi, each term is correct) had about an 8" to 10" span. They must be kept below 70° F. because they are cold water species. We did this by floating bags of ice in the tanks. Threee octopuses were shipped in along with other invertibrates for my tank. One was for myself, one for Larry Davis, and the last for the CAS Annual Fish Fair.

Both of the other octopuses are doing fine, as of the time of this article.

Octopuses are very difficult to keep. They average about a week, some last a month, and a few have been kept as long as six months. They usually eat well and look well in the aquarium, but they die because of confinement.

The smallest octopus is the Pigmy Octopus. It usually outlives all other members of the species. It has an adult span of about 3", which makes it desirable for the aquarium.

Octopuses usually live in empty sea shells and eat small live crabs, sea snails, and shrimp. I have found that it also likes guppies and salt water clams and oysters if they have been opened. The octopus will cover the open clam and rip out the mussle, tearing it to shreds with its tentacles.

The hood of the aquarium must be kept tightly covered or it will push off the top, crawl out, and usually die on the floor from lack of water.

The octopus prefers shallow water and can often be found under rocks at low tide. He can change colors rapidly, especially when excited or feeding. The colors are usually browns, yellows, and a dull rose color. They move along the bottom using their tentacles, or swim by jet propulsion like squids. From eggs laid in jellied clusters on rocks, the young emerge as miniature adults. Atlantic and Pacific shore species are similar in appearance.

For those of you who want more technical information, they belong to the phylum Mollusca. They have an internal shell remnant; ventral, muscular foot; gut with two openings; body cavity.

by Phil Lobel

The Pacific Octopus should be kept at a salinity of 1.022. The tank whould be at least 20 gallons depending on the size of the particular specimen. Twenty gallons would support a maximum of a 10" span.

The octopus is usually a good parent. The father octopus pays no attention to his offspring. It is usually the female that guards the eggs until they hatch. When the eggs are layed they are round and glassy clear. There may be 100 or several hundred eggs. The size of the egg depends on the size of the female. The female may lay them one at a time or in a large batch stuck together. The female guards the eggs in the same fashion as the cichlids, driving away all preditors.

The incubation period is about eight weeks. During this time the female does not leave the nest, even to look for food. The fry are miniature copies of the parents. The fry immediately begin to search for food such as small snails and other molluscs. Many of these tiny creatures will be killed and eaten by other creatures of the sea. But few will survive to breed again.

While reading The Plain Dealer one morning, I came across an article I found of interest. It told of a strange "plague" of swarms of octopuses that appear suddenly and destroy the shore creatures such as crabs and lobsters. This occured on the coast of France in 1899. Every rock for miles was covered with octopuses averaging a span of six feet. A year later England also had a similar plague. Scotland, Japan, and other places have experienced attacks. The most recent was in 1950 - 1951. Marine biologists have no idea what causes them. If any one of these "plagues" hits the American coast maybe the collectors will send some to our petshops (providing they aren't of the 6' span variety) and the aquarist will have a chance to keep one of these extremely interesting creatures of the sea.

If you intend to get an octopus remember to put him in the largest tank you can because a main cause of death is confinement and fear, and have plenty of hiding places for him.

Not all octopuses need to be kept below 70° F. There are also warm water species which may be kept at 80° F. They are compatable and a tank full of these creatures could really be interesting and an "eye cathing" display in your tank as they are more active when in the company of their own kind.

Alot could be written about this fascinating creature. That is why hobbyists will keep trying to keep them in spite of their short life in the home aquarium.

(Note: I am sorry to report that my octopus dies on October 19th. It lived sixteen days after I received it. Larry Davis's octopus died a few days before mine did.)

Simple to make ---
Simpler to use ---

by Sharon Thene Chappell

Those of us who raise a lot of fish face a problem when it comes to feeding them. What can we use for a staple food that is nutritious and can be fed expediently? To me the answer is freeze dried preparations. Too expensive? Not if you make your own.

Here is what you need to set up your own Freeze Drying Plant:

1 quart jar with lid
ground beef and/or liver
fine mesh cheese cloth
salad shredder
1 pound of dessicant (silica gel or calcium sulfate, available at biological supply houses or from your druggist
refrigerator with freezing compartment

STEP 1 : Have the butcher trim the fat off a beef heart and grind it like hamburger. To this ground mixture add hard boiled egg yolk, cooked spinach, milk curd, vitamins, or whatever you feel your fish deserve.

STEP 2 : Freeze this mixture in small rolls about 2½" in diameter and 2" long in wax paper. These rolls will keep until you need them.

STEP 3 : Use the salad shredder to shave the frozen mixture into tiny fish-bite-size "worms." Spread the shredded mixture in a layer not over ½" thick on aluminum foil, and put back into the freezer.

STEP 4 : Prepare two 2" by 8" squares of cheese cloth. Spoon out two to three tablespoons of frozen shredded mixture onto each square. Break up any chunks. Wrap the loose ends of cheese cloth over one side only. Place a rubber band loosely around the packet and return it to the freezer.

STEP 5 : Pour about 1" of dessicant in the bottom of the quart jar. Place one packet of the mixture on top of this layer. Pour 1" of dessicant over the packet. Lay a second packet on this layer. Pour all the remaining dessicant over it. Seal immediately, and place in the freezer in upright position.

STEP 6 : Leave the jar in the freezing compartment for five days. On the fifth day, remove it and allow it to set at room temperature for at least 12 hours.

STEP 7 : Remove the packets from the dessicant. A few grains of mixture might cling to the cheese cloth. Use your fingernail to scrape them into the desired container. (I scrape them onto a sheet of aluminum

foil where I can easily remove any stray grain of dessicant. The foil is rigid enough to make a firm funnel for pouring the finished product into a jar.)

STEP 8 : Feed it by crumbling dried "kernels" between thumb and forefinger to any sized fish you have. It's easy as feeding dried food, but is taken with alot more gusto.

CAUTION : The dessicant must be thoroughly dried out before each use. (It can be used over and over.) To do this, pour it into a baking dish, and bake it at 400° F. for an hour, stirring the grains several times to expose all surfaces. (It is possible to obtain color coded dessicants to show blue when they are dry, and pink when moisture saturated.) Pour the hot dessicant into a heat resistant jar and seal to avoid absorbing of moisture from the air. Do not use it until it has sufficiently cooled. The calcium sulfate dessicant is more effective if it is chilled before use after having been reactivated by baking.

NOTE : It is of the utmost importance that the mixture be frozen before placing it in the dessicant. If not, it will chunk, and not dry out properly.

SUGGESTION: Store the freeze-dried food in a foil covered jar in the refrigerator. Keeping it cool and away from light retards oxidation and allows it to keep its red-beef look longer.

ADVANTAGE: (1) This preparation can be made any time for use any other time.
(2) The ease with which it can be fed makes feeding a pleasure, rather than a chore.
(3) It reconstitutes itself the moment it touches water, and has the properties of fresh meat.
(4) It floats.
(5) It is nutritious for fish, and
(6) They love it!

(Reprinted from The Tropical Breeze, November, 1968. Originally from the Splash, Volume 14, #6, June, 1968. Publication of the Milwaukee Aquarium Society, Inc.)

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• • • NEW MEMBERS 1969 • • •

Mr. and Mrs. C. R. Branatt 1810 Grantham Road Cleveland, Ohio 489-9407	Reg 44112		John M. Hrovat 9527 Reno Cleveland, Ohio 883-8416	Reg 44105	
Mr. and Mrs. R. J. Curran 1735 Allandale Ave. Cleveland, Ohio 451-0300	Comm 44112				

"BARBBODES SCHWANENFELDI"
(TIN FOIL BARB)

by Marty Klein CAS

The tin foil barb is one of the very few species of fish that the larger they grow (14 in. in maturity) the more attractive they get. Their color at maturity is silver body, orange to birght red fins with black dorsal fin with white crown.

If an aquarist wants to keep them till maturity, he should start with at least a 50 gallon tank with a good top because they are extremely good jumpers.

The Schwanenfeldi requires a great deal more oxygen than most fish, so a good filtration system and an air stone should be used. The temperature should be between 75 - 82°. Water requirements are very important. They cannot tolerate a drastic pH or hardness change. PH should be slightly acid and the water should be rather soft. The tank should be well planted as they are very jumpy at times.

Breeding has been accomplished in the United States in a 350 gallon tank. Sex differences have not been noted. They have been bred by putting 6 mature fish in the tank, fed properly and then time produced little tin foil barbs. They are egg layers.

The tin foils are great eaters, and will eat almost anything put in the tank. They will consume large quantities of brine shrimp, liver treat, shrimpelettes, TetraMin, and the prettiest live plants you have in your tank. For color they should be fed a lot of vegetable matter. Riccia is very good. They should be fed a minimum of two times a day. If fed properly they can be kept with the smallest of fish as they are quite peaceful.

* *

DID YOU KNOW? ? ? ? ? ?

The smallest full-grown fish ever caught was a Schindleria praematurus in Samoa. It weighed 1/14,000 of an ounce.

A Snail's pace is .00036lmph. to .03125 mph.

How about them apples!

Permian Basin Aquarium News
January, 1961

The Book Shelf

THE SALT WATER AQUARIUM IN THE HOME

by Robert Straughan
reviewed by Phil Lobel, CAS

Robert Straughan is a marine collector for Coral Reef Exhibits. He has been skin diving since he was ten years old, and has spent many hours observing marine life. He has written many articles on aquarium fish, and keeping marine fish. He also is the editor of the Salt Water magazine.

This book is written in very easy reading language. The text is interesting and informative, and has excellent photographs.

With this book in hand, the novice should have a good idea how to set up a salt water aquarium in his home. Although the book covers everything for the average salt water aquarist, I have learned experience is the best teacher.

Straughan starts out by explaining how to set up exhibits, both novelty and regular. He explains the problems one may run into and what to do when they are encountered. He says the best size tank to start out with is one larger than twenty gallons, since this will not pollute as quickly as the smaller ones.

One of the main questions asked is "What do I feed my salt water fish?" To this question the author devotes a chapter on feeding salt water fish, and a Marine Fish Food Chart. Another group of questions often asked is on diseases, to which another entire chapter is devoted.

Natural and artificial sea water are discussed in relation to each other, as to the advantages and disadvantages of each.

For the biologist who cannot wait for his local pet shop to order the fish he wants, he can order fish by mail. Straughan tells how to receive fish by mail and how to acclimate them. Of special interest for those who ship in fish is a chapter on salt water plants and live coral, as the stores don't usually carry them.

The next couple of chapters tell about the fish, invertibrates, crustacea, and scavengers in the aquarium. Straughan also gives community tank suggestions and tells what fish have to be kept separately.

A chapter is devoted to breeding salt water fish. This chapter tells about what little is known on the breeding habits. To my knowledge no salt water fish have been successfully bred and raised except for sharks and other such creatures.

For the ambitious aquarist, the author has a chapter on salt water projects that more knowledge is required, such as all glass aquariums, salt water plants, specific gravity tests, phin salt water tanks, and others.

Since Robert Straughan is a marine fish collector by profession, he naturally has a chapter on collecting fish. This chapter should be of interest to those of you who are going to the tropical coasts of the world.

The book has 301 pages liberally illustrated with photographs, many of which were taken in the author's own tanks. The cost of the book is $9.75 at your local pet or hobby shop. It is also available in our great CAS library, which has a book on almost all subjects in the aquarium hobby.

ed note... Phil is interested in comments you may have on books you have read from our library or other sources. Give him a call and give him your thoughts.

* *

• RAFFLE •

BRING YOUR OLD RAFFLE TICKETS WITH YOU THIS MONTH

NO TICKETS WILL BE SOLD

DECEMBER 3RD 8: P.M.

The Case against the Undergravel Filter

by W. Hering
Capetown, South Africa

The idea of an undergravel filter, as commonly constructed today, is a biological short-circuit adapted under the wrong assumption that "what is good for terrestrial plants must also be good for water plants."

A gardener puts organic matter into the soil to promote plant growth and crops. These substances undergo a bacteriological breakdown, leaving mineral salts in solution to be absorbed by the roots. If he does not take care that there are good drainage and sufficient air to reach the roots, the plant may die. Furthermore, these decomposed materials improve the structure of the soil and its porousness as well as its ability to absorb the water.

In an aquarium there is certainly enough water present around the roots and the gravel is generally more porous than soil. But mostly there is not enough "drainage". The water becomes stagnant and poor in oxygen, furthering anaerobic decomposition with all its disastrous results.

Allegedly, an undergravel filter should now give the aquarist this much wanted circulation, bringing oxygen to the roots, including mineral salts formed by aerobic decomposition from waste material drawn into the gravel. Furthermore, in time a film would be formed around the san d grains, absorbing colloidal forms of wastes -- resulting in crystal clear water.

Unfortunately, an undergravel filter will soon block up as fine particles of organic matter are drawn into the cappilaries between the sand grains. Optically the filter may still work, e.g., it will still pump water through the gravel, but only at widespread points of the gravel surface where cracks appear, forming channels through which the water passes unimpeded. A test with the dye Eosin can demonstrate this. In the rest of the gravel stagnation and putrefaction soon sets in, with the possible production of noxious gases such as hydrogen sulphide and other toxic substances. The outward sign is the well-known blackening of the gravel.

AMMONIA DANGER -- Nitrate-forming bacteria which may live in the gravel are strict aerobes and can flourish only in an environment of high oxygen content. If they die off the ammonia cannot be oxidised to nitrite-nitrate and a dangerously high level of ammonia may appear in the water.

Undergravel filters promote these conditions as there is no way of removing excessive organic matter from them. Furthermore, undergravel filters encourage the growth of blue-green algae which like the high organic matter content. Through a pseudo-scientific motivated sales drive you find undergravel filters predominantly in England and the U.S.A., but on the continental market they disappeared years ago.

G. Hueckstedt, chief chemist at the Max Planck Institute, strongly advised the opposite: Instead of sucking the water through the gravel, it was pumped into the space created by a false, perforated bottom where it pressed organic particles back into the overlying water where they were filtered out in the usual way by an ordinary filter. But aquarists soon found out that many plants do not like water movement at their roots -- whether the new principle or the outdated undergravel filter was employed.

After much research we adopted, what we thought, a completely new system, but to our astonishment came to realize that this system was in practice by professional growers of underwater plants for years already.

PROFESSIONAL SYSTEM -- Lying on the bottom of their basins they have a perforated plastic tube which is closed at one end. The other end, projecting above the water's surface, is open and serves not only to bring liquid fertiliser into contact with the roots but also to flush the gravel from time to time with fresh water. In this way they prevent accumulation of toxic substances in the gravel and near the roots.

Our pipe system can easily be constructed from a length of perspex tubing in which holes are drilled approximately one half inch apart. The pipe is then bent to shape with the aid of steam or over a Bunsen burner and quickly cooled in water, the end closed with a cork. To achieve an even flow and distribution of water into the gravel, the holes increase in diameter progressively towards the closed end.

Flushing the gravel once a month with fresh water generally is sufficient. The water used should have a somewhat lower pH than the tank water.

The addition of fresh water into the vicinity of the rhizisphere (the space near the roots) is important for another reason: for perfect growth a water plant needs two zones of different osmotic values. If water is constantly flowing through the gravel, as in undergravel filters, no such differentiation will occur as the osmotic pressure on the roots will be the same as on the leaves, thus preventing a proper flow of sap in the plant cells.

At the roots there should be a lower pH value which is created by flushing with fresh water. If such flushing is overdone it will not fulfil its purpose. In general the water for flushing should not be more than 20 to 30 per cent of the volumne of the gravel; this means that if you have 10 liters of gravel in the tank, only two or three litres of fresh water is needed.

For flushing the inlet pipe is connected by a rubber tube to an elevated container of fresh water, or the water is simply poured in with the help of a funnel.

By applying this simple technique you may already be able to obtain better plant growth, providing you have the right gravel. But that is another story I may write about in the future.

(Reprinted from the African Aquarist, August, 1968.)

••• BIOLOGICAL FOULING •••

by Joe Slencsak
Guppy Associates of Greater Cleveland

Algae and slime are problems encountered to some extend by almost all guppy hobbiests. Some hobbiests have been assuming slime and algae are the same. This is by no means correct. The difference is algae manufactures its own food through the use of light and carbon dioxide, while slime or fungi can not.

Algae is never much of a problem unless its growth completely overcrowds a tank and this can be controlled by the amount of light an aquarium receives. Slime on the other hand, can be a problem. I am inclined to believe that many of the diseases encountered in the guppy hobby are caused directly, or indirectly by slime.

Slime is an accummulation of microorganisms, and their excretions, together with what organic or inorganic debris that may be imbedded in the mass. The microorganisms usually found in these deposits are various bacteria filamentous fungi, yeast and occasionally protozoa. Slime growths may also contain dead algae which have become entrapped in the mass. Slime growths occur in either illuminated or dark areas. They are totally parasitic in nature, so the presence of light makes no difference to their growth.

The most common types of microorganisms found in slime are:

(1) Ulothrix
(2) Chlorella
(3) Asterionella
(4) Cosmarium
(5) Nitzchia
(6) Synedra
(7) Closterium
(8) Microspora
(9) Anabaena
(10) Anacystis

The most common protozoas found in slime are:

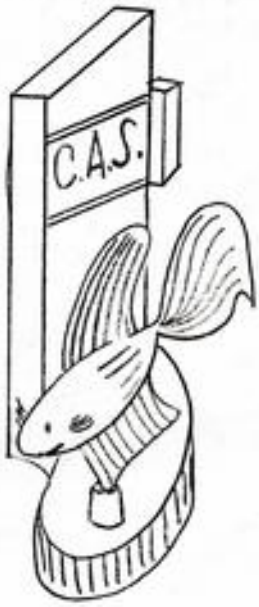
(1) Euglena
(2) Synura
(3) Uroglena

Water that contains slime should be considered polluted by the serious breeder. How do we get rid of slime? That is a good question. There are many compounds that will kill slime, and prevent their growth, but unfortunately they also are lethal to guppies. Copper sulfate is one of the compounds, but it is detrimental to fish in very minute quantities. Until someone comes up with something that will kill slime or prevent its growth and still not be detrimental to guppies, the age-old formula is still best. That is, clean tanks, clean filters, and no overfeeding.

One method that really helps is to sterilize tanks by Chlorination. Chlorine will kill slime as quickly and as effectively as more expensive products. An extra tank should be set up when the presence of slime can be felt on the glass of an aquarium. Remove guppies and plants and place them in the tank you have set up. Take a cupful of household chlorine bleach and empty it in the tank that has slime and let it in overnight, with the filter running. Your aquarium will be sterilized the next day. Then you must drain off all water, flush the tank and filter thoroughly until all traces of chlorine are removed. Then set up this tank as your spare. Make sure all residual chlorine is gone. This can be checked with an indicator called Ortholotidine. It comes in swimming pool test kits and it turns yellow when chlorine is present. It has been found that after sterilization by using chlorine, then keeping tank bottoms and filters clean and adapting careful feeding habits, slime growth does not reoccur as rapidly as with continual cleaning methods.

* *

BENCH SHOW NEWS



November winners:

1st Carol Bakas
2nd Tom Bates
3rd Bill Bader

TOP POINTS TO DATE:

Kay Allen	8
Larry Davis	6
Dan Schwegler	5
Ed Barrish	4

19 different people have earned points so far this year

DECEMBER BENCH SHOW -- -- -- --

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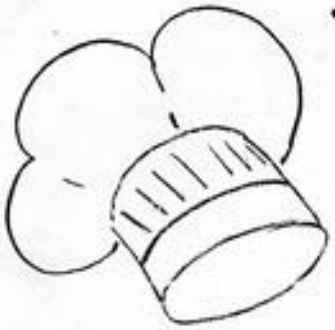

"Fish Foods"

by Gary Capper, CAS

Feeding fish is by far one of the most important items an aquarist has to deal with. A balanced diet will produce an excellent conditioned fish, while a poor one will leave a scrawny, unwholesome fish.

Many of the foods we eat are enjoyed by our pets. Say at breakfast you have scrambled eggs and your friend has a hard boilded egg (ech!), scrape off a little scrambled egg from your plate, run hot water over it to rmove the grease, and feed. Scrape some of your friend's yolk into your hand and let the fish finish it. They love it.

Shrimp, lobster, clams, oysters, or salmon are also eaten ravenously by them.

And if you have a Waring Blendor or liquidizor, you can prepare many different treats for your fish. One excellent food, developed by Myron Gordon is as follows:

1 pound fresh beef liver
20 tablespoons Pablum
2 teaspoons salt

1. After cutting out fibrous tissue, cut liver into ½ inch cubes.
2. Put 2 ounces each of liver and cold water through the blender. Strain, and repeat until all liver is liquidized. Add salt.
3. Add Pablum until a consistency of peanut butter is reached.
4. Fill 1, 2, or 3 ounce jars with mixture.
5. Place filled jars in water, heat until water begins to boil, turn off heat and allow to cool.
6. Cover the containers, and put them in the coolest part of the refrigerator. Some may be frozen.

Live foods are by far the best. Daphnia, Tubifex, brine shrimp, cyclops, all are excellent fish. Brine shrimp can be raised in your own home with eggs from California or Utah. Other live foods include mosquito larvae, white worms, microworms, flies, and earthworms. Also take care in feeding, because too much live food can take away oxygen and spoil the water.

Wunderbar, Tetra-min, Biorell and many others are examples of dried flak food. Salmon eggs, daphnia, shrimp, crab, vegetable meal, and others constitute the dried food section. Most of the food is cereal, but the fish love

Freeze-dried food is fairly new, but my fish love it. Just remember poorer quality food given wisely is better than a good food given poorly.