DELTA TALE

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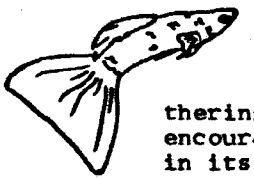
Christmas Dinner Dec.10



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EDITOR: M.E.Mahoney

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President:	Pat Mahoney 534-0006	Corresponding Sec.	Tom Wright 345-9411
Vice President:	Woody Griffin	Recording Sec.	Dana S.Best 548-1868
Treasurer:	Gene Aldridge 931-7426		

1979 BOARD OF GOVERNORS

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Auctions-
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Membership-Nancy Reynolds
Monthly Bowl Shows-
Programs-Ruth Brewer
Ways & Means-Kenney Warren

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P.V.A.S.ANNUAL CHRISTMAS DINNER

Old members knew all about it and what fun it is ... but for the sake of new folk, here's a run down on what it envolves.

Our December meeting is party time. This year Bill Trout and Dana Best are co-chairpeople with assistance from Bev Fazil. They will be in touch with every member sometime in the near future .. or already have been.

1. Everybody brings food ... whatever you are assigned by the committee. Be generous, we always have a great turn out.

2. It's a family affair -- bring everyone, kids too --just be sure your food covers all of you plus!

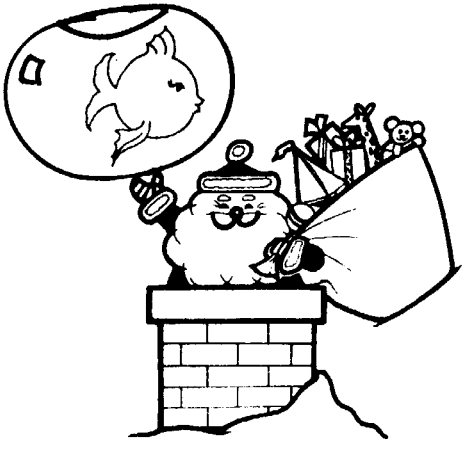
3. Bring a $2 equivalent gift of fishy type thing (NO fish, NOTHING live - some people keep theirs until Christmas morning.) Bring one for EVERY person you bring to the party. Everyone will go home with one, too - so it's an even trade.

4. The club furnishes the meat and the ...ahhem ...beverages. Members are responsible for all the rest of the food, so I beg again that you not stint in the amount you bring.

One plea -- last year some greedy bodies came back for seconds before everyone had had firsts. Please be sure that everyone is fed before you come back. A hundred folks or so take a while to get through the line -- and some sit back til the line gets shorter.

Come and have fun -- there'll be no formal program of any kind ... there will be a door prize , but no bowl show or raffle or business meeting.

We will be awarding the annual bowl show awards and the breeder's Awards for those who have advanced a step this year. Be sure to be there -- the best time of th. year.



Electric Eels and the Energy Crisis

Terry Robinson, April, 1978
Colorado Aquarium Society

Remember the good old days? Remember when regular gas could be had for 25.9 and an electric can opener was the newest necessity of life? We were all confident that we were on the dawn of a new age of affluence, when technology would perform our tasks for us. Then, just when things looked so good, the Arabs shut off the pipe and the VW owners knew they had been right all along. The next thing we knew, we were waiting in line for gas and Richard Nixon was begging us to turn down the heat. Since then things have changed quite a bit. Cars are smaller, heating bills higher, and Jimmy Carter wears a sweater in the White House. Even those who don't believe in the energy crisis sense that all is not well. The national trade deficit is running us bankrupt, thanks to oil imports. Our coal miners have been on strike all winter. People in many parts of the country have been forced to save energy like never before, and still there is talk of blackouts.

In such dark times, can the all-electric aquarium long survive???????? If the governor came on the six o'clock news and announced a 50% cut in power to avoid a blackout, just what would you do with those Pearl Gouramis and Africans? You just couldn't turn their heat down to 60° and expect them to keep on spawning.

I'm not predicting the end of our hobby, yet, but I do believe that many of us could stand to re-evaluate our methods and determine if all those plugs are really necessary. I doubt as if one aquarist in twenty could tell you how much electricity his setup is using or how much of the utility bill is going for fish. A close inspection of the average fish room would not only reveal one of the many reasons for the energy crisis, but a fire inspectors nightmare as well. Aquariums will always require power to operate, I suppose, but there <u>are</u> ways to save some of it. Is there any reason not to do so?

<u>Power</u>

Electric power consumption is measured as kilowatt-hours(KWH). A watt is a unit equal to the power in a circuit in which a current of one ampere flows across a potential difference of one volt. A watt-hour is a unit of work equalling the power of one watt being used for one hour. One KWH equals 1,000 watt-hours. If you want to determine how much electricity an appliance used during the month, simply multiply its watt rating by the number of hours it was used. For example, a 4w air pump that runs constantly will use

$$\frac{4w \times 24hr/day \times 30days/month}{1000} = 2.88KWH \text{ a month}$$

A heater of 150w, which is on about 25% of the time would use about

$$\frac{150w \times 6hr/day \times 30days/month}{1000} = 27KWH \text{ a month}$$

If you follow the usual proceedures,and are keeping more than a few tanks, you may be supprised at just how much power your hobby consumes. These figures can be reduced significantly, however, without affecting your fish, by following a few simple proceedures. They can be reduced still furthur if you are willing

to change your habits to some extent. Electricity is used in aquariums for three main purposes: to maintain the proper temperature, to provide light, and to move water. Let us look at each of these functions and see how their efficiency can be improved.

Heating

Temperature maintenance is the biggest consumer of power in the aquarium. Dealers and the literature generally recommend 2-3w/gallon. Reducing the size of the heater won't save any power. A smaller heater will only operate for longer periods to keep the tank warm (if it can). The key to saving heating power is to avoid loss of heat. There are three main factors affecting the rate of heat loss from aquaria.

The first factor is the surface/volume ratio of the tank. A cubic tank will loose heat slower than a rectangular one of the same capacity for this reason. Cubic tanks aren't all that practical otherwise, however. The logical answer is to reduce the amount of exposed surface on the rectangular tank with insullation. Panels made of plastic foam, plywood, particle board or other suitable materials may be used for this purpose. They may be painted, stained, or covered with various materials to provide an aesthetic background in addition to cutting down heat loss. They must fit tightly to the glass to be effective. Experience has shown me that up to half of the heating power required by a tank may be saved in a well insulated tank. Such tanks are also less affected by summer heat and sudden flucuations in room temperature.

The second factor affecting heat loss is the temperature difference between the tank and its surroundings. It obviously takes more power to keep water warm in a cool room than a warm one. Of course, heating up the whole house to keep an aquarium warm would defeat the purpose. However, if a large number of tanks are involved, it may prove more efficient to keep one room warm for them than to heat each individually. Some aquarium shops use this principle. For the method to be effective, the room must be insulated from both the outside and the rest of the house. Cold walls, especially in a basement, must be covered with some sort of insullation. Fiberboard, wood panelling, heavy curtains, and a number of other things will work. Be sure the insullation reaches all the way to the floor, even if it does not make it to the ceiling, becasue cold air sinks. Floors can be covered with old throw rugs, carpet scraps, furniture pads or whatever you have around the house. A number of small rugs are better than one large one because they can be removed and dried easily if they get wet. Windows should have either a storm window or plastic over them, as well as curtains, if desired. The bubbly plastic sheets used as packing material make excellent window insullation if you don't care about seeing whats outside. Doorways must be kept closed and be sealed against drafts. I have found heavy drapes reaching to the floor work better than solid doors because they stay closed without help and don't create a back pressure when the furnace comes on. Once the room is sealed, you simply have to get it to the right temperature without overheating the rest of the house. With electric heat this is easy- be sure that tanks near the heater won't overheat, however. If you have a forced-air furnace, you will have to adjust vents throughout the house to get results. I have forced-air, and have improved the system by fitting stove pipe elbows to the vent to direct extra heat where I want it. Remember, warm air rises, and the warmest tanks will be those on the highest stands. I have found that I can keep tanks at temperatures between 74 and 82° without electric heaters using this system. Furthurmore, the fish room (in the basement) seems to act as a heat sink for the rest of the house. The heat it holds escapes slowly and lengthens the time between furnace cycles. With

this method I am keeping 17 tanks at the above temperatures (mostly the higher ones), I am not using heaters, and the thermostat is usually set at 70°. The best part is that I can add more tanks and still not require any heaters.

The last main 'heat leak' in aquaria is evaporation. Evaporation must have energy to proceed, and it gets it from the water. The rate of evaporation is a function of the difference between the water and the air, temperature, the amount of exposed surface area, and the humidity of the air. If it is proceeding rapidly it can lower the temperature of a tank 6 or 8 degrees. To avoid the loss of heat, not to mention water, just keep the lid on tight. I should also mention another reason for avoiding evaporation-if you want to use the heated fish room system and you don't cover your tanks, you may find that the walls and everything else may rot pretty rapidly from all the moisture getting trapped in a sealed room.

Lighting

Lighting is another big user of power. The most significant power saving you can make is to be sure all your lights are flourescent. Flourescent lamps are about three times as efficient as incandescent. Of course, there are some cases where plant growth may be aided by incandescent (open to question), and the excess heat of an incandescent lamp could be used to heat a tank, but I prefer to stay with the flourescent type. Some further savings may be had by using lamp timers (usually 4w each) if you are in the habit of forgetting to turn out the lights, or if you can't be home at the right times to turn the switch. They provide the additional benefit of giving exacting control over photoperiod, which has been shown to be important to most plants and many animals. Just how much light you need, and for how long depends on what you are keeping. A good reference for such things is Light in the Aquarium by Rolf Kubler (T.F.H.).

Circulation

The last use of power in aquaria is for water circulation. Water is circulated for two main reasons: to aerate the water and to pass it through filters. By far the most efficient means of moving water in an aquarium is the airlift. These devices are capable of moving far more water than you might suspect-a one inch airlift has been shown capable of moving up to 1000 g/hour under ideal conditions! Of course I doubt as if many airlifts in use in our tanks do that well, but it shows what is possible. Since airlifts are run by low watt pumps they run for almost nothing, but unfortunatly there are some things they cannot do. In such cases some sort of pump must be used, usually as part of a power filter. The best advice I can give is to shop around. Find which moves the most gallons/watt as well as gallons/minute. Also, avoid the temptation to get something bigger than you need. Bigger is not always better and a filter should be purchased with more than gpm in mind. For example, the efficiency of activated carbon is dependent on contact time, turbulence and a number of water chemestry factors. A low flow filter will sacrafice some efficiency due to decreased turbulence, but that is all. Contact time is not a function of flow-either the water makes many quick passes or a few slow ones through the filter. Of course, if you're keeping large cichlids that like to dig, you may need all the help you can get.

Since any method of moving water automatically aerates it, aeration is usually accomplished by filter flow. Under normal circumstances, if filtration cannot maintain oxygen at acceptable levels, you probably have problems elsewhere anyway and extra aeration is not the answer.

Results

So just how much power can be saved by insullation, timed lights, air-powered filters and overheated fish rooms? That depends on many variables, of course, and I can only use myself as an example. The literature and most dealers will tell you that it takes 5 to 6 watts/gallon to operate aquaria with modern methods. If you use large power filters, U.V., ozone or other devices it can go higher. Keep in mind that the power represented by the heater is not used constantly. If flourescent lamps are used and the tank is in a warm location you might get by with 2 to 4 watts/gallon. On the other hand, by using the methods outlined above, I am presently keeping 21 tanks with about 1.2 watts/gallon. The main reason I can do this is because only two tanks in a cool room use heaters. The rest are is a pre-heated fish room or built into walls. One of the heated tanks is insulated by plywood on four surfaces, including the bottom, and is using 1w/gallon of heater capacity without straining the heater. I use power filters only rarely and then for special purposes. I also believe I can reduce my power needs still further to about 0.9w/gallon with some further refinements.

All is not well, however. At my present rate of consumption I still calculate that my tanks are using about 25% of the 600 to 700KWH a month my family uses (in the winter). This figure may be slightly high, since the tanks provide all of the light for the fish room and over half of the light in the living room. Even so, I can't help but wonder.....if some local or national circumstance forced us to cut power by 25% or 50%, where could I cut back more? The washing machine? Cook meals over charcoal? Well, I guess I could always keep a bowl of goldfish in the kitchen window.

****

AN EDITORIAL ULTIMATUM:

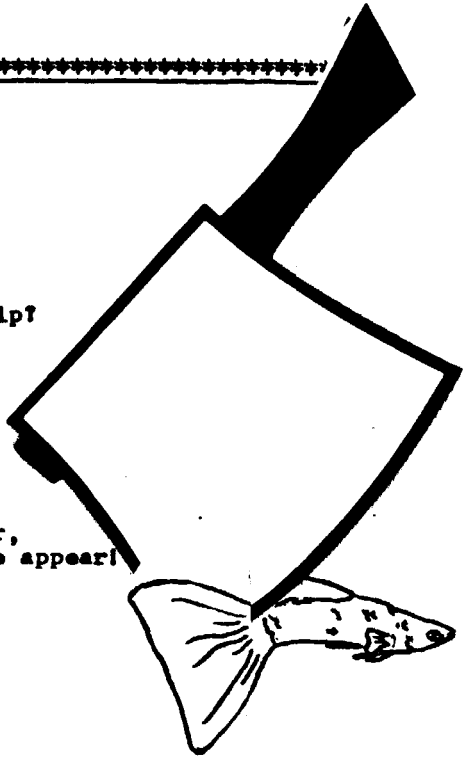
I've done this job for two years now,
with little thanks, or none.
It's not a sometime enterprise,
it keeps you on the run!

What do I get when I ask for Help?
Does "I'll do it" sound as a rising yelp?
How many volunteers appear?
.....not even one!

Shall I, in 80,edit Delta Tale?
Well -- it's a sorry task!
Some one to help me type or mail,
that's all I really ask.

So -- if no bodies come forth next year,
"Maggi Mahoney, editor" will never more appear!

--30--



ELECTION OF OFFICERS, BOARD OF GOVERNORS AT NOVEMBER OPEN MEETING

The slate that the nominating committee presented this year was accepted by acclimation, at the November open meeting on the 19th. So our officers and board members for next year are:

President - Woody Griffin

Vice President - Pete Tietjen

Recording Secretary - Maggi Mahoney

Corresponding Secretary - Ken Reece

Teasurer - Gene Aldridge

Board of Governors - Joe Paull - 1980

Dana Best - 1981-1981

Ed Smith - 1980-1981

There is one remaining seat on the Board of Governors, due to Maggi's having been elected as recording secretary. The new president and board will fill that vacancy when they take over.

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Darrell Helman will procure for any P.V.A.S member who wants it, Five Pound buckets of Tetramin Special Mix for $32 each. No limit. Call him to place an order at 532-3419. Members only, natch! Darrell would also like to buy Brichardi -- if you have any fry, call him.

Kenny Warren has a 55 gallon and a 30 gallon O'Dell tank for sale, plus a 29 gallon salt set-up, that's ready to go. If you're interested call him at 671-3300.

Pat Mahoney has some miscellaneous tanks, stands, hoods for sale -- call him at 534-0006 if you're interested.

BREEDERS AWARD PROGRAM STANDINGS, END OF NOVEMBER, 1979

NAME	POINTS
Joe Paull	505****
Ruth Brewer	280**
Garland Neese	240**
Gerry Hoffman	220**
Bev Fazil	180**
Pat & Maggi Mahoney	165**
Sue & Mike Sprague	165**
John Jessup	95*
Woody Griffin	90*
Kenny Warren	90*
Gene Aldridge	80

* Breeders Award
** Intermediate Breeders Award
*** Advanced Breeders Award
**** Master Breeders Award

bap REPORT

Recent points awarded for spawning:

Gerry Hoffman - whiptail cat
Aphyosemion australi
Aphyosemion striatum
(and an apology to Audry, which your editor has mailed.)

John Jessup - Pseudotropheus auratus
Serratheraden chilwe
Serratheraden hueledentia

Garland Neese - Deep Water Haplochrumus
Rainbow cichlid

At the November Board of Governors meeting the BAP program was discussed -- along with ways to incourage more participation.

A suggestion was made that the checkers be included in each edition of the Delta Tale, so interested members would know who to call ...why didn't I think of that?

BAP COMMITTEE CHAIRMAN - Joe Paul - 591-9245
COMMITTEE MEMBERS: - Gene Aldridge - 931-7426
Gerry Hoffman - 347-7486

CHECKERS: Consist of the above and the following:

Dana Best - 548-1868
Ruth Brewer - 893-6997
Nancy Reynolds - 949-1290
Pat Mahoney - 534-0006
Tom Wright - (301) 831-9118

If you are in any doubt -- call Joe Paul, and he'll tell you who probably lives closest to you. Keep in mind that <u>any</u> member can sign <u>in</u> a 10 point fish -- over that a checker or committeman must sign both in and out. Log in the spawns- pile up the points.

RESULTS OF THE NOVEMBER SUPER BOWL SHOW

CICHLIDS

Mbuna

1st - Kent, Livingsteni
2nd - Neese, Marmalade cat
3rd - Kent, cream zebra

Other African

No entries

Angel/Discus

1st - Kent, Gold Angel
2nd - Kent, Black Angel
3rd - Kent, Marble Angel

South/Central American

1st - Kent - Red Oscar
2nd - Kent - Jack Dempsey
3rd - Kent - Pink Convict

Dwarf

1st - Kent, Ram

Open

Elko - Goldfish

Judges: Jessup, Griffin

EGGLAYERS/LIVEBEARERS

Livebearers

No entries

Characin/Killi

1st - Elko, Rasbora
2nd - Elko, Neon Tetra
3rd - Elko, Rasbora

Anabanteids

1st - Neese, Kisser Gourami
2nd - Elko, Kisser Gourami

Catfish

1st - Neese, Synodontis

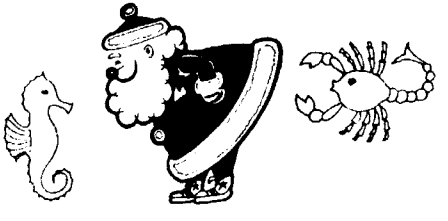
Sharks/Leaches

No entries

Open

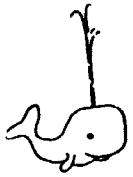
No entries

Judges: Paull, Tietjen



P.V.A.S BOWL SHOW FINAL STANDINGS FOR 1979

CICHLIDS	MONTH	ANNUAL
Neese, Garland	9	104
Kent, Bill	63	103
Reece, Ken	0	48
Griffin, Woody	0	22
Prendergast, Mark	0	16
Maheney, Pat	0	12
Helman, Derrell	0	2



EGGLYAERS/LIVEBEARERS		
Elke, Vincent	39	141
Neese, Garland	22	78
Helman, Derrell	1	76
Prendergast, Mark	0	35
Kent, Bill	0	30
Maheney, Pat	0	15
Guilder, Chryss	0	13
Smith, Ed	0	12
Andreen, Pinches	0	10
Reece, June	0	8
Harrell, Carl	0	7
Herrell, Leretta	0	6
Baldwin, Gil	0	4
Meyer, Peggy	0	4
Reynolds, Nancy	0	2

Bill Kent took a flying leap to try for the Cichlids trophy for the year -- and darned near made it. Garland nosed him out by one point. Bill has only been a member for 6 months, so I think he certainly deserves an honorable mention for getting so many points in so little time. You cichlid folk better look to your laurels next year -- if Bill can get 103 points in 6 months, just think what he can do in eleven!!!

Vince Elke far and away took the grand total points for the year ....as well as,of course, the trophy for the Egglayer/Live-bearers. Congratulations, Vince. Do you care to try for three?

Since the turn out for the super double point bowl show was so poor, I imagine the new board of governors for 1980 will want to take a long look at having another next year. With luck, you'll find the entire schedule for next year's bowl shows printed in your January Delta Tale. If not January, as soon as it is decided.