



California Betta Society
San Francisco Sacramento
Silicon Valley

NEWSLETTER

September/October 2009

New Logo! . . . Worm Keeper!



New Look for California Betta Society

Jeremy Waugh spearheaded this effort, finding a graphic artist who had the time to clean up our old logo. Everyone was happy with the basic design, the two bettas and the state outline, but it had been created from pictures and did not stand up well to enlargements. The artist took our old design, re-drew the state and the fish. Look for the new logo on membership cards, letterhead, Show stuff and on the newsletter. There is even talk of putting it on a T-shirt at the October show.

Voting for 2010 Board of Directors

If you are a member in good standing as of September 1, 2009, you will have a ballot included in this newsletter. It is stamped and ready to go.

Voting is a little early this year because the articles of incorporation say that the results need to be announced in November to give the new board time to prepare for the new year.

You will also see that Christine Tanner is running for Secretary for the third year. The articles state that the Secretary can (and should) serve more than two years to provide continuity,

The slate is:

Eryn RosenbaumPresident
Nelson Snook..... Vice President
Christine Tanner..... Secretary
Jeremy Waugh Treasurer

If you have write-in candidates, please write them in the space provided on the ballot.

So take a minute to mark your ballot and drop it in a mailbox. Ballots should be received by mid-October so the results can be announced at the November meeting and in the newsletter, but you should feel free to mail your ballot right away so you don't forget it!

VOTE!	
California Betta Society	
2010 Board of Directors	
President	<input type="checkbox"/> Eryn Rosenbaum <input type="checkbox"/> _____
Vice-President	<input type="checkbox"/> Nelson Snook <input type="checkbox"/> _____
Secretary	<input type="checkbox"/> Christine Tanner <input type="checkbox"/> _____
Treasurer	<input type="checkbox"/> Jeremy Waugh <input type="checkbox"/> _____

 Mark this ballot and drop it in the mail. The correct postage is already on the postcard. Ballots should be received by the end of October. The results will be in the November newsletter.

A Black Worm Habitat System

by Nelson Snook

The greatest problem in keeping black worms alive appears to be oxygen; they will die off quickly if the water gets to an anaerobic state. Keeping them in the refrigerator slows their metabolism which reduces their need for oxygen. For those of us who cannot use this method, it is possible to use a system that recirculates the water to keep the worms alive. It has an added benefit that you can feed your worms, keeping them more nutritious. My system is kept in the garage where the daytime temperatures are presently from 75-85 degrees. I've had hardly any of the worms die off, even after a week of neglect while on vacation.

This system is based on of a drawing I found on the internet (figure 1) at <http://www.wormborough.com.au/tubifex.html> . It consists of two sections. The lower section is the water reservoir with the recirculating pump, and the upper section is where the worms stay. The original diagram has the upper tub sitting on top of the lower one. I was concerned about water dripping down the sides, so used a smaller container that would sit inside, but not on the bottom of the larger tub (wedged in place). The drawing also used a spray bar for re-circulating the water. However there will be the occasional worm that goes on a trip through the system which would clog up a spray bar. Although I have noted tiny worms in there (probably from fragmentation), the system is designed to keep worms purchased at your fish store alive rather than breeding.

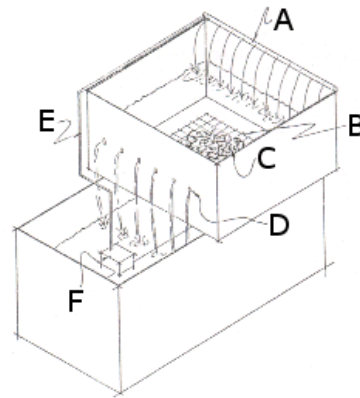


Figure 1 Original Drawing

You will need (figure 2):



Large tub that holds 3-5 gallons (you won't fill it up all the way)
Smaller container that sits sideways in the large tub, but above the waterline. I've found plastic shoeboxes work best, but there are variations.
Small fountain pump (smaller the better)
Hose to run from pump to upper tub for recirculation
Optional: method of restricting the water flow to a trickle
Method of punching holes in the smaller tub

First, ensure the pieces work together. Place the pump in the larger tub, and be sure you can run the hose from there into the upper tub. If there is not enough of a curve to the tube, you can run a length of wire (such as a clothes hanger) and bend to the needed curve. Run the hose under hot water for a few minutes to soften so it will conform to the curve, then immerse in cold water to re-harden.



Figure 3 Upper container with holes in side

Next, poke a series of holes in the side of the smaller tub (figure 3). Where you poke them will determine how deep the water will be where the worms live (mine are about 1 inch from the bottom). Be sure to poke a second series of holes above the first in case they get clogged up. I used a drill with a 1/4" drill bit, and about 6 holes per row on my first one. On my newest system, I'm

making the holes smaller to make it tougher for the worms to go through, but making more holes.

Assemble the parts and add de-chlorinated water (figure 4). When you add your worms, you will probably want to change the water often the first few days.

Notes:



Figure 4 Completed keeper

NOTES:

I have an experiment going on with daphnia living in the larger tub. I've also added some floating plants to help keep the water cleaner.

When I change the water (about once a week) it gets dumped into one of the daphnia cultures.

I angle the upper tub so the side with the holes is slightly higher. Gravity keeps the worm colony away from that side, so fewer worms make their way to the lower container.

No matter what you do, worms will migrate from the upper tub to the lower tub. And once in the lower tub, their favorite place to go is the pump. If you notice the pump is not performing as it should, that is probably the reason. All I do is disconnect it, drain it of any water, and then drop it in my community tank. Leave it for a few hours, and as the worms poke an end out of the pump, your fish will suck them up. Every now and again I'll give the pump a shake to dislodge them more quickly.

The size of the system depends on how many worms you want to keep. I keep about 3 ounces at a time, but could probably handle more.

Another version uses an air stone in a large bucket to re-circulate the water. However, I'm concerned about the water being too deep to efficiently harvest the worms.



Figure 5 Version using a disposable paint tray

Still working on a filter system that will easily collect particles but not worms.

Feeding the worms: A bit of boiled or baked potato works well. I've tried some instant potato flakes, but not sure how those are working. I've also had success using wafers designed for bottom feeding fish. Any cooked vegetable that sinks should be acceptable. Cooked fish also works in small amounts, however salmon left a residue while catfish was fine.



Pictures from the August meeting. Nelson presenting his worm keeper. Eryn doing auctioneer duties.

California Betta Society Newsletter
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