



PRESIDENT'S MESSAGE – Jerry Kyle



Last month's visit to On Golden Pond was enjoyed by everyone. After Sue Golden's presentation on how to make a floating platform for plants in a pond, I went home and with a can of foam did just that. It worked! Not a big raft of a garden but a narrow edging platform about a foot from front to back that fits the pond contour at the back edge

and allows a few water plants to soften the raised cement edge look. No big cement blocks for Koi to scrape against that hold the plants up in a four feet deep area. I felt this was a very unobtrusive way to have a softening effect of plants in an otherwise built for Koi pond. If I salt next spring for a month coming out of winter I can simply lift it out. Come see it at our October meeting when we have our Spaghetti Cook Off.

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This month we had to make an emergency change and will move our Pot Luck to Georgia's Pond side. There will be a presentation by Anthony Quintero from Koi Enterprise on Koi Herpes Virus (KHV). We all know how devastating KHV has been to the hobby in recent years so this is of great interest. AKCA of which we are a member club has been funding research at Oregon State University (Oregon Ducks) and we heard the DNA news had not been good but now Anthony will tell us of a vaccine. I can't wait to hear what he has to say. Another meeting worth attending.

The chance to see multiple ponds and ZNA Champion quality Koi at the Do residence has been moved to November so now all the months of this year have meeting locations. I told AKCA Reps at their Annual Meeting this year that life is good in the Camellia Koi Club and they confirmed pictures of our May Pond Tour / Progressive Dinner Meeting will be a feature in KoiUSA Magazine.

Camellia Koi Club Report to AKCA, July 2012 by Jerold Kyle

June meeting had Sue Golden from On Golden Pond host and demonstrate how to make a floating garden that does not use dirt or rocks to mess up a pond. Aerosol cans of foam created a floating platform to house water plants. Koi keep the plants trimmed and roots nibbled off so they do not overtake the pond. If necessary, removal was as simple as lifting lightweight floating unit out of water. A Koi pond can have plants without turning it into a water garden.

July meeting will be the club annual pot luck and the Annual Koi Person of The Year Certificate from AKCA will be presented to Gus Cubillo. Anthony Quintero from Koi Enterprises is going to give a talk on the Koi Herpes Virus (KHV)

Next month at our annual Koi auction members are able to reduce pond load while helping other or newer members get some nicer and/or larger Koi for their ponds. Life is good in the Camellia Koi Club who always welcomes inquiries from prospective members wanting to learn more and experience more in the Koi hobby



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KOI PERSON OF THE YEAR

At annual June AKCA Dinner Meeting held in Fresno this year Jerry received the AKCA Koi Person of The Year Certificate for our member Gus Cubillo. Last year's honoree, Marilee Patterson, presented Gus with our Perpetual Trophy in April as he will present it to the next recipient next year. The AKCA award will be for Gus to proudly display forever and will be presented to Gus at this month's Pot Luck meeting. Please come to eat well and honor Gus -- not necessarily in that order..

Photos from June's meeting



Entrance to
Golden
Pond



Water
landscaping
plants.



Sue demo's
floating
plant
islands



Board of
Directors at
Work



Water
plants used
for demo.



Bottom of
floating
structure.



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Jerry's
introduction
to Sue
Golden



Group
ready to
learn.



More
members
and guests.



Tropical
Lilly



Take your
pick



Sue takes
the club on
a tour of
the grounds



Koi and
Catfish



Sue shows
us how to
build a
floating
garden



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NEXT MEETING

CKC Annual Potluck

Bring your favorite lunch dish (enough for 8-10).

12:00 noon Board of Director's Meeting

1:00 General Club Meeting

Anthony from Koi Enterprises is going to update us on the new koi KHV virus vaccine.

Jerry is going to bring a LARGE pot of spaghetti and garlic bread with lots of parmesan cheese. Bring a dish to share, chairs and a friend or two.

July 29

at

Georgia's home in Lincoln
881 Greenridge Ct.



Financial Report July 2012

Beginning Balance	\$8,075.52	
Expenses	106.51	\$100 AKCA Liability Insurance, \$3.51 PayPal fees & \$3 check copy fees from B of A
Income	183.00	\$180 renewals and \$3 reversal of check copying fee
Ending Balance	\$8,152.01	



CKC BOARD OF DIRECTORS MINUTES

June 24, 2012

Attending: Jerry, Georgia, Marilee, Gus, and Jim Phillips

Treasurer Report: As reported in Koi Ahoy this month

Old Business:

Calendar: We still need a November meeting location. Duane will pursue.

December party is going to be at last year's location. Duane will contact them for reservations.

Jerry updated Jim on the condition of the tanks that was returned by ZNA. The tanks were randomly unfolded by Jerry and found to be dry and carefully folded, returned in excellent condition. He also reported ZNA's intention to schedule their next year's show in the spring so as to not conflict with our traditional show dates. A copy of the contract we are using for renting out equipment to other organizations was given to Jim.

New Business:

Jerry reports a splint off group of 14 Koi Show Judges (known as AKJA) has been organized away from AKCA. Details at the end of this report. Jerry also reports a change of editors at Koi USA. Larry Illes wants the magazine direction to refocus on backyard ponders, not just koi competition. Jerry will have more to report following next week national AKCA meeting

Discussed whether CKC should have a show in 2013 or 2014. It was decided that the decision should rest with next year's Board of Directors and membership. AKCA is planning a possible seminar in 2014.

Discussion regarding August koi auction, and a protocol for tanks receiving incoming fish. When asked, Jim said he would draft the necessary protocol.



Garry's Did You Know?

by Garry Chin

CARBON DIOXIDE

Carbon dioxide problems in the pond can be controlled by aeration, by waterfalls, aeration using simple venturi and UV lights which will reduce those tiny suspended algae cells that make water go green and use oxygen.

Carbon dioxide in pond water results from a number of sources including:

1. Waste products decaying at the bottom of the pond. **(Keep your pond clean)**
2. Respiration by pond inhabitants.... Koi, insects, plants, algae. **(Keep your pond clean)**

Of course all of us know first and foremost that oxygen in pond water is essential. Carbon Dioxide is also of critical importance. Oxygen and Carbon Dioxide also work in concert with each other. In simple terms as Carbon Dioxide levels increase in a pond then oxygen levels tend to decrease. This follows a natural pattern from dawn to dusk (daytime) oxygen levels in the pond increase and decrease again from dusk to dawn (night).

Carbon Dioxide concentrations in water act in reverse - falling during daylight hours and rising during the night. Oxygen levels are at their highest at dusk and Carbon Dioxide levels are highest at dawn. This means You MUST Beware of algae blooms in ponds.

Dawn is the critical time in a pond. If something is going to go wrong it is often just before first light because at this stage the oxygen level dissolved in the pond water will be at the minimum. Often people wake up to find dead Koi... and ask what happened? Such deaths could be associated with very low oxygen levels coinciding with high Carbon Dioxide levels. When ponds are full of suspended algae such problems can arise quickly. If there is a very small amount of algae bloom in the pond then you will find oxygen and Carbon Dioxide levels will not change significantly between early morning and late afternoon. On the other hand dense pea soup type water will show very significant variations.

Seasonal Impacts upon carbon dioxide problems.

The first thing to realize is that oxygen concentrations are highest in winter because water is cooler. Because oxygen concentrations are high the oxygen reserve is not depleted as quickly during the night. Plant and Koi life has also slowed down significantly. On occasions Koi in ponds with no venturi, air



diffusers or waterfalls may look listless in winter due to carbon dioxide levels being excessive but this is normally associated with a long run of calm dull days - in these circumstances there is no natural wave action to allow oxygen to be transferred to the water. The problem quickly sorts itself out when windy and bright weather returns. In summer water will hold much less oxygen and the animal and plant life (algae) is also thriving due to higher temperatures along with more nutrients in the water associated with feeding Koi. The living organisms are therefore emitting more Carbon Dioxide in a situation of potentially disastrously low oxygen levels. Koi then die from lack of oxygen and suffocate.

PH and Carbon Dioxide

Carbon dioxide dissolves in water to form carbonic acid which has a pH of less than 7, so pH will tend to fall when Carbon Dioxide level is high. This is what happens during the night with a reversal during daylight hours. There is some quite complex chemistry involved here which I will ignore and save to point out that when pond water pH levels fall below 7 then the potential for Carbon Dioxide problems increases. Pond pH should ideally be around 7.0 to 8 but don't panic if it is 8.5. What we are looking for is a very stable pH with very little swing from daylight to dusk. In practice this means that measuring pH can give very erroneous results depending upon time the sample is taken. If you do like to measure water properties then do this on a continuous basis at the same time every day and keep a graph or log of results so you can monitor changes. Individual results can be quite misleading. Your pH readings will fluctuate from early AM reading to late evening readings. Do not get caught chasing your pH.

Aeration of ponds

Experts advise that all ponds should be aerated using either a simple venturi, air diffusers or waterfalls at least. One of the best and most economical ways to aerate is the use of venturi or air diffusers. You can never have too much additional aeration.

Aeration of pond water achieves two things both of which are very good for pond water and your Koi:

1. Oxygen levels increase.
2. Carbon Dioxide is "blown" out of the water and this tends to push up and stabilize pH levels with proper buffering.
3. ORP and water quality increases.

Remember there should only be 3 things in your pond, water, Koi and air. Oh yea, some of you may add plants to this list too.

Aeration also protects against those algae blooms and their dying - when they die they rot and release Carbon Dioxide by using up the oxygen resource in the water. Major Koi kills take place due to oxygen starvation. Koi Hobbyist suffocated their little Koi to death. Not nice.

In conclusion please remember it is very difficult to over-aerate a pond and aeration has all round major advantages in a pond. The only downside is the minimal cost of a special aerating pump. All top Koi keepers' ponds bubble with air as do their filters. Deeper ponds without venturi, air diffusers and/or waterfalls as the means of creating circulation or mixing during calm periods could be more prone to Carbon Dioxide problems.



Aeration and water mixing (venturi, air diffusers or waterfalls) are the MOST effective methods of controlling potential Carbon Dioxide problems.

Beware of algae blooms (green or brown cloudy water) especially in summer and especially during calm periods and when there is no venturi, air diffusers or waterfalls. If you cannot hear your water and if your water is not moving you are not adding enough oxygen. Lastly remember that the Japanese Breeders say we do not aerate enough.

UV lights

A method for reducing algae is Ultraviolet Sterilization a proven method of controlling waterborne planktonic algae and other harmful pathogens associated with ponds, when and if it is used correctly. It, unlike other possible remedies, such as ozone or chemicals, has no residual impact on life in the pond and is harmless to everything that does not get direct and close exposure to the radiation that they emit.

The UV lamp is the source of UV-C light and they can be either low pressure lamps or medium/ high pressure lamps. Low pressure lamps are generally considered the best for aquatic applications because most of their UV output is in the range of 254 nanometers, closest to what we need, and have a much longer life than medium/high pressure lamps. But all low pressure lamps are not created equal.

The intensity or strength of the UV light that is transmitted by the lamp is usually expressed as “microwatts per square centimeter” of the lamps surface and does vary tremendously. It is one of the first things to look at when comparing UV’s.

It is important to remember that the UV energy must hit the targeted organisms to be effective. The first hurdle is the bulb glass itself. It can be less expensive soft glass or higher quality hard quartz glass. The quartz sleeve and the transmission rate through the quartz sleeve can also vary a great deal, and again, that depends on the quality of quartz used. Higher quality generally means higher transmission rates, higher efficiency, but higher acquisition cost in both cases.

Dwell time or flow rate or exposure to UV light is also very important, maybe the most important. In order to be effective targeted organisms need to be exposed to a certain intensity of UV light for a certain amount of time. There is certainly a formula for this relationship but it is highly technical and is really not pertinent in this discussion. What’s important is that we recognize the direct relationship between intensity and dwell time or flow rates. If intensity is increased then flow rates can be increased, if intensity is decreased than flow rates must be decreased to obtain like results. So the lower intensity lamp could do the job but the flow rate would have to be less than the high output lamp.

The intensity of all UV bulbs declines with use, some as much as 40% in as little as 6 months. So a bulb may have a projected effective life 8,000 hours but we know that the intensity is declining. It is difficult to measure the actual intensity of UV energy hitting the water so observation is about the best we can rely on. It would be great if all manufacturers would give us “microwatts per square centimeter” of the bulbs they use when new and at the end of their effective life. But, in the meantime, if the water starts turning green it is time to change the bulb and/or clean it and the quartz sleeve. That may be once a year or more often or less often. Change it when it needs to be changed! My experience with UV’s indicates that the



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degradation accelerates with the age of the bulb so keep a replacement on hand. It is much easier to maintain clarity as opposed to cleaning

The vessel itself can influence the efficiency of any UV. As discussed above in order to kill the targeted organism the UV light must hit them. Anything that reduces intensity, and exposure, by absorbing the light, adversely affects that ability. Examples include poor quality glass, dirty glass or murky water or the vessel itself. Stainless steel, especially when the inside surface is polished, is highly reflective and therefore much less likely to absorb the UV light. Some feel that stainless steel can increase unit efficiency by 20% or more. It is also more expensive.

There are two other things that are worthwhile additions to any UV. They are an **on/off switch** and a **pressure switch**. The electronics in UV's don't respond well to quick on and off cycling. So when, for instance, you are back washing a bead filter the UV power cord should be unplugged. A **pressure switch** will shut the UV down as soon as water flow stops or slows down to an unacceptable level. If the unit continues to operate in either one of these scenarios the heat generated will quickly destroy the unit.



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For Sale

I am a new person in the club. I have a pump and filter for sale. They are about a year old. They are follows: 1/4 HP pump (Performance Pro Artesian w/cord) The new retail is \$678. and I want to sell it for \$350. The filter is a Ultima II bead filter. The filter could be a 1.5 or 2" inlet and outlet. Retail for it new is \$750.40 and I would like to sell it for \$400. I have attached pictures.



Theresa.Nelson
atnelson@surewest.net

News:

Genki is having a Grand Reopening at their new location and has invited our Koi club.



GENKI
www.genkikoi.com

GRAND RE-OPENING
Please Join Us At Genki Nishikigoi, Inc.

Date: Saturday, July 28th, 2012
Time: 10:00 AM – 5:00 PM
Location: 1850 S 10th Street #14
 San Jose, CA, 95112
www.genkikoi.com

Scheduled Activities:

- 10:00 Door Prizes (Polo Shirts Limited Supply)
- 11:30 Lion Dance & Ribbon-Cutting
- Noon Lunch
- 12:30 Koi Judging Contest
 (Grand Prize: Value \$500 Fish
 Consolation Prize: Genki Gift Card \$200)

Thank You: We would like to say thank you to all of our clients, friends, and family who made our Grand Opening possible.

Note: We appreciate your business in previous years and we look forward to your continued support!



Next month (August) is the annual koi auction for club members to reduce the population of their developing pond, and new koi lovers to obtain mature and beautiful fish for super bargain prices. Jim Phillips is our water quality guru, and expert on koi transport safety. He has some practical wisdom to share.



Transport Bag Water Chemistry

By Jim Phillips

This is an abbreviated version of what I hope to finish and have vetted by more knowledgeable people shortly.

Occasionally I hear someone say, "When you get this fish to its new environment, put some of that new water in the bag to prevent pH shock." Do you think it's a good idea? Please read this and I'll ask this again at the end.

When fish are in the bag, it is a whole different environment than what we and the fish are used to. As it is in a bag that has had all the air expelled and then filled with pure oxygen, this is something we do not have in nature, a closed environment. As the fish consumes oxygen and expels carbon dioxide and ammonia, the closed environment causes different things to happen. The volume of water compared to volume of fish is much smaller, that is, there is no dilution factor. The carbon dioxide and ammonia produced by the fish are much more concentrated. So, what really happens in the bag?

First, we all know the fish requires oxygen, it is there in abundant supply in the portion of the bag not occupied by water. Oxygen is a water soluble gas, it dissolves into the water so we know the fish is not going to suffocate. Second, the fish produces carbon dioxide through respiration, just like we do. It also produces ammonia as a by-product of protein metabolism. So what happens to the carbon dioxide and ammonia? They are also water soluble gases. A quick refresher on pH is going to be helpful here. The pH scale goes from 0 to 14. 0 to 7 is considered acid meaning it has a lot of hydrogen ions. 7 is neutral, and 7 to 14 is considered alkaline, meaning it has a surplus of hydroxide ions (not to be confused with alkalinity, which we will not discuss here.)

The carbon dioxide dissolves in the water and forms carbonic acid. This acidifies or reduces the pH of the water. This means there is a surplus of hydrogen ions in the water. As the fish spends more and more time in the bag, the pH continues to go lower and lower (more and more hydrogen ions).

At the same time, the fish is producing ammonia. Remember there is no bio-converter to consume this ammonia. We all know that ammonia kills fish, right? So why can the fish survive in the bag for extended



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periods of time? As the ammonia dissolves in the water, it becomes one of two different forms or species of ammonia: ionized ammonia or ammonium which is a combination of ammonia and one of those hydrogen ions floating around; or regular ammonia. Ammonium, the ionized stuff, is relatively non-toxic. Ammonia on the other hand is very toxic.

How much ammonia can there be and the fish still survive? A lot, a whole lot if the pH is low enough. That is because the vast majority of it is locked up as ammonium. My mentor, Norm Meck has found examples of fish bagged for extended periods that had truly staggering amounts of ammonia where the fish survived. Why? The pH was incredibly low. The exact numbers were a pH of 4.5 and total ammonia of 30ppm. You many have noticed I used the term total ammonia. When you use an ammonia test kit, it does not differentiate between ionized and unionized ammonia, it just tells you how much is there. There are tables that tell you based on temperature and pH, how much free ammonia you are dealing with and this is the important number. For example, that 30 ppm ammonia at a pH of 4.5 at 72 deg F is really less than .02ppm free ammonia. Now if that same amount of total ammonia was present in water with a pH of 7.6 at 72 deg F, the results would be much different, .547ppm. While this is a level that won't immediately kill your fish, it causes a great deal of damage to the gills and weakens the fish immensely.

Ok, so what does this mean? As long as the bag is closed, everything is fine. As soon as the bag is opened, the pent up carbon dioxide begins to gas off and all the chemistry that has gone on in the bag begins to reverse itself. The carbonic acid decreases, the pH starts to go up, the ammonium/ammonia ratio starts to reverse, just from opening the bag.

So what happens if you introduce some of this water from the new environment? Water with a much higher pH? Water that is most likely pH 7.6 or above? The pH of the water in the bag spikes upwards rapidly closely approximating the pH of the new water. This immediately reverses the ammonium/ammonia ratio and releases much more unionized ammonia to possibly critical levels based on how long the fish was in the bag.

So, I'll ask you again, still think it's a good thing to add new water to that bag?

The problem of pH shock is very real, just not what a lot of people have believed for a long time.

Last year for the auction, I recommended that fish brought that were not in a bag with pure oxygen, be re-bagged, with none of their original transport water, into a bag with fresh water treated with The Ultimate water conditioner and filled with oxygen.



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2012 Club Calendar (to date)

Date	Topic	Location
January 20	Winter update	Marilee & Jim's Auburn
February 26	Flora Tropicana	Elk Grove
March 25	High Hand Nursery	Rocklin
April 29	Bay Area Koi Vendor Tour	San Jose
May 20 (3rd Sunday)	Intraclub pond tour, progressive dinner, and poker run	Starts at Tran home
June 24	Golden Pond	Rocklin
July 29	Annual Potluck / Koi Herpes Virus (KHV) vaccine	Georgia's home
August 26	Annual Club Koi Auction	Carlson's home
September 30		Haugland home
October 28	Spaghetti cook-off Challenge	Kyle & Flockhart homes
November 18 (3 rd Sunday)	TBD	Do home
December 9	Christmas Party 1:00 p.m.	Umeko Buffer 8353 Folsom Blvd. Sacramento

If you would like to host your pond and house next year, please let Duane Carlson know. We will be delighted to schedule your convenient month.



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