



Koi Ahoy

Camellia Koi Club
Sacramento

August 2004

UNDERSTANDING KOI BEHAVIOUR by Dr. David Pool
Tetra Information Centre, United Kingdom, reprinted from [1994 AKCA Seminar](#)

Binder

Many koi-keepers watch their koi for long periods and admire their colouration, form and movement. However, have you ever paused to consider why or how the koi moves as it does, how it changes colour, or what the various parts of the body actually do. This walk will examine some of the structures and functions of the Koi's body and, in doing so, hopefully provide you with a better understanding of your fish.

Fins

Each fin is comprised of a number of fin rays which support a fine membrane. The fin rays are of two types. Spinous rays are used for protection in many fish (e.g. corydoras) and are often the first ray in any fin in order to provide added support e.g. koi. Muscles are attached to each fin ray to allow the fin to be raised or lowered.

- **Tail** - used primarily for propulsion and as a rudder to change direction. The shape of the tail indicates how fast the fish can swim. Fish with forked tails (e.g. orfe) are fast swimming, whereas a rounded tail (e.g. tench) indicates a slow swimming speed.
- **Dorsal and Anal Fin** - provide stability in a similar way to the keel of a boat.
- **Pectoral and Pelvic Fins** - used for fine movements, directional changes and stopping the fish.

Scales

The scales are thin bony plates which cover the body of the fish to provide a flexible protective coating. The scales first form when the fish are 7-10 days old and increase in size as the fish grows to maintain a complete covering. This growth is achieved by the addition of rings of dentine around the edge of the scale. During periods of rapid growth (e.g. Summer in the British Isles) the rings are widely spaced. In the winter, or dry season, growth is slow and the rings are close together. By counting the bands of closely spaced rings the number of winters (or dry seasons) the fish has survived, and therefore its age, is known.

Colouration

The colouration of a koi is due to the reflective irridocytes and the chromatophores, which contain the colour pigment. If there are no chro
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Special Notice from Jason regarding the Koi Auction:

If you have sturdy cardboard boxes which someone can use to take a slightly used wet pet home from the auction, please bring the boxes.

Not everyone plans to buy a fish or has a cooler, but sometimes they see a fish they can't live without and a box helps transport the new pet home.



Minutes: Board of Directors by Garry Chin

August 17, 2004. Garry Chin, President, called the meeting to order. Present were: Mary Beth Avilla, Treasurer, Directors, Duane Carlson, Marilee Marshall, and Jason Sargeant. Member Melody Carlson was also in attendance.

Mary Beth's Treasurer's Report showed a beginning balance of \$11,217.76, income of \$286.75, and expenses of \$725.31 with ending balance of \$10,779.20.

Extensive discussion involving all in attendance concerning the leadership and direction of the club for the next two years since Garry and Mary Beth will not be running for any office during this year's Election.

Jason discussed the upcoming club Koi Auction. Everything is in place; just need koi to auction off. There will a brief program by our KHAers on Quarantine Procedures.

Brief discussion about the General Meeting for the remainder of the year; September is the club's Annual Pot-Luck at Oh-So-Koi in Galt, October will a program on Koi Health by our KHAers, November will be our Koi Show and the year will end with the Holiday Dinner. Garry presented a couple of proposals he had gotten for the Holiday Dinner, but it was felt additional options should be sought.

Koi Show - Garry reported that Bob and Joan Finnegan have volunteered to be the Assistant Judges at our Koi Show. The Board felt they would add to our Koi Show. When asked about the status of the Koi Show packet, Garry reported that the packet only needed to have the name of a place for the Saturday Night Social Party and the name of a hotel for our out of town guests. Melody Carlson and others will take care of these items.

Garry reported that he has suggested to Bob C. that he have Committee meeting to work on some tasks related to the Koi Show.

Marilee Marshall presented a Semi-Final proposal for the club to institute a "FINS" program to show appreciation for work put in by various volunteers during the club's many activities. After a couple of minor changes, the Board unanimously approved implementing the "FINS" program beginning with the upcoming Koi Show.

The next board meeting will be held September 7, 2004, at a location to be announced.

Submitted by Garry Chin backing-up for Diane.

Treasurer's Report

		Expenses:	
		Pond Tour\$418, Newslettters\$111	529.31
		(s.sylvester)	
		9 Subscriptions (Koi USA)	180.00
		New Member Packets (K.Gray)	16.00
Beginning Balance	\$11,217.76	Total Expenses:	725.31
Income:		Ending Balance:	\$10,779.20
New Members	45.00		
	67.50		
	67.50		
Misc.	106.75		
Total Income	286.75		

Koi Behavior (Continued from page 1)

matophores present, and the irridocytes are on the outside of the scales, the koi will have a silvery appearance; if the irridocytes are under the scales the koi will appear white.

The coloured pigments are melanin (black), erythrin (red), and xanthin (yellow), each of which occurs in different chromatophores. By combining different chromatophores and the irridocytes a range of colours can be produced. For example, orange is given by red and yellow chromatophores. Blue is caused by black chromatophores covered by irridocytes.

Colour pigments are not synthesised by the fish, but need to be ingested. Therefore, to ensure good colouration, it is important to feed quality foods.

Senses

The six senses of a fish are developed to different levels depending on the fish species and the environment in which it lives. The senses are:

- **Sight** - Compared to man, koi are short-sighted, having a range of perfect vision of only 1-2 metres and blurred vision for approximately 10 metres. This is more than adequate underwater, where visibility is usually restricted by algae and sediment. Despite their "poor" vision, koi can see in colour, with their detection of yellow and green being most accurate.
- **Smell** - Koi have a very good sense of smell. The olfactory organs responsible for detecting smells are located all over the head and anterior part of the body, but are concentrated in the nares and barbels. It has been estimated that goldfish have a sense of smell that is fifty times better than in humans.
- **Taste** - Taste receptors are located both inside and outside the mouth, allowing the fish to taste its food before ingesting it. Outside the mouth they are mainly located on the lips and barbels.
- **Touch** - Touch and pressure receptors are present all over the body of the koi, but are concentrated on the head and barbels.
- **Hearing** - Fish have an inner ear situated at the back of the head, which can detect vibrations, orientation and pressure changes. To increase its sensitivity, the inner ear is connected to the swim bladder (which acts as an amplifier) by means of a chain of small bones. If the swim bladder is punctured, sound perception is reduced to 2% of its original level.
- **Lateral Line** - The sixth sense of a koi is the lateral line. This organ can be seen by means of a row of scales, each with a hole in it, running along the side of the fish. Under the scales is a canal which runs from the head to the base of the tail. The canal is filled with a jelly-like substance and contains many pressure wave sensors called neuromasts. Any vibrations in the water cause the jelly-like substance, and consequently the neuromasts, to vibrate. Nerve endings in the neuromast detect the movement. Slight differences in both the intensity of the stimulus and the time when each neuromast detects it, allow the koi not only to detect movement but also ascertain from where it originated.

As the koi moves, it too produces vibrations. These vibrations bounce back from the underwater objects and are detected by the lateral line allowing the fish to build up a "sonar" picture of its surroundings. Using this system a koi can successfully maneuver in the dark or in cloudy water.

From the preceding paragraphs it is obvious that the koi we keep are highly adapted to life in an aquatic environment. I hope that the information presented will give you an insight into exactly why your Koi behave as they do and help you to get more out of your hobby.



Sacramento Koi Show

Sponsored by the Camellia Koi Club
www.camelliakoi.org

Nov. 6 & 7, 2004

Koi Vendors
Exotic Plants
Pond Equipment

Location:

Green Acres Nursery,
901 Galleria Blvd.
Roseville, CA

Contact Bob Caruso
Registration & Details
916-434-9215

koi@cwo.com

**Ramblings** by Jerry Kyle

“Experience is the best teacher.” I heard that when I was a youngster, and every so often I am reminded of the accuracy of the statement. We are continually acquiring experience. I guess that’s why I began surfing the Internet three years ago in the search for the knowledge to build a pond. I was looking for others who had the experience that I lacked and stumbled upon a site that said, “Join a club.” From there I found another site by some guy calling himself “Hijack.” Turned out that Jack was the vice president of an organization called The Camellia Koi Club. I don’t remember the site that suggested I find a club. However, it was some of the best advise I ever received and Jack turned out to live in the next block in my neighborhood.

Joining a club is a smart thing to do. You can read books, study in the AKCA Koi Health Advisor Program, and even get certified for passing the course. All of which brings me back to my opening statement about experience.

My head is full of knowledge I have gained but my heart still lacks some of the experience. That is why building this pond to completion is such a priority now. OK, OK, that and to save my marriage. She gave me the ultimatum, “Finish this pond or else!” I’m too afraid of her to want to know what the “or else” is.

It is taking longer to build because while I have all this newfound knowledge, I don’t have the experience of having done it before. I am getting excited because as I am gaining experience I’m beginning to see the end product of my labors and find it hard to wait to invite you all to see what is going on in Lodi. I am finding it is fun gaining this experience that supports the knowledge I worked so hard to acquire.

Besides a 5,000 gal pond under construction, I now have a 1,000 gal heated isolation tank with about 15 koi in it since January. I used to call it a hospital tank but the fish have never had so much as a hiccup due to good water quality. I now have experience keeping koi alive for over seven months. This week I set up another (700 gal) temporary tank as I continue getting and growing koi in anticipation of finishing the pond. Someone sold their home and had to move out the nine koi the new owners did not want. The new koi contributed to more new experience for me. Those eighteen to twenty inch fat mommies had never been in such clean, clear, healthy, highly aerated water before. They were so happy they thought they would reward me. I learned that seeing pictures, reading about, and even visiting koi ponds a few days after a spawn in no way compares to the newest experience in my fishy life. I just experienced my first spawn. As for experience being the best teacher, let me tell you that one can read about this phenomenon but only experience can smell it.



Annual Club Koi Auction *by Jason Sargeant*

It is time once again for the annual club koi auction. This is your chance to pick up some usually large, usually good quality, fish that other members are selling to make room in their ponds for more small fish. There are some members with smaller ponds who buy very nice tosaï for their smaller ponds and when the fish grow too big they get sold at auction. For instance, here are a couple of examples from 2002's auction:



Last year we had many fish being sold at the koi show auction. This year, with the expanded koi show, we decided to have the auction during a regular meeting – the next meeting on August 29 at Mary Beth's. I plan to sell a few fish, including one bought during last year's Spring Buying Trip from Genki Koi. Most of you know the quality of even Kevin's inexpensive fish, but you'll need to show up at the meeting to see if somebody else will be selling something even better! For instance, I bought a nice sanke last year that I plan to bring to the show this year.

If you are going to sell fish:

- ***Bring a picture of the fish that clearly identifies it.*** You may set a reserve price. Be prepared to take the fish back if the reserve is not met.
- Check-in starts at noon.
- Make sure the fish has no ulcers, raised scales, etc. Any fish with visible disease will be sent back home and not introduced to any tank.
- As usual the club gets 50% of the selling price, the seller gets the other 50%.

If you are going to buy fish:

- Auction starts at 2pm.
- Checks or cash only, no credit cards or ATM.
- Please bring boxes and/or coolers to transport your fish back home. Bags, oxygen, and rubber bands will be provided. Amquel is available if the trip home will be long.
- You must take your fish home after the auction. No fish-sitting facilities are planned.
- Quarantine! Quarantine! Quarantine!

**President's Message** by Garry Chin

Well the weather is finally heating up and our beloved koi will probably want to eat more now than previously. Have you enough koi food to satisfy the needs of your koi? So what does one feed their koi if the koi food runs out? Well you could make a trip to the refrigerator or grocery store for such items as fruits, vegetables and some shrimp. Koi love these items and many people use these as treats.

I have a paste food recipe that I prepare every now and then to feed my koi. The recipe includes a green pepper, fresh spinach, some frozen peas, wheat germ, various liquid vitamins and koi clay. All of this is blended together in a food processor then poured into a heated liquid that consists of orange juice and Knox unflavored gelatin. I then spread this mix onto a cookie sheet and refrigerate for a few hours. Then I cut the food into small cubes that are fed to my koi. So there are several options if one runs out of koi food, you are only limited by your imagination.

Potluck: Speaking of food our club's Annual Pot-Luck will be the September General meeting at Oh So Koi in Galt. See the September issue of Koi Ahoy for more details.

Koi Health: At the October General Meeting our Koi Health Advisors will be presenting a program on Koi Health.

Koi Show: This year will be on November 6-7 at Green Acres Nursery in Roseville, just down the street from the Roseville Galleria. This English Style show will have Bob Caruso as Show Chair and Chuck Poppe of the Potomac and Lone Star Chapters of Zen Nippon Airinkai as our Head Judge. Chuck was originally from Sacramento, so this will be a homecoming. Assisting Chuck will be Bob and Joan Finnegan. Bob is the current Chair of the AKCA Judging Committee and Joan is past-President of AKCA.

Koi Auction: Scheduled for the August General Meeting at Tony and Mary Beth Avila's. Here's an opportunity to find that extra koi a new home. Please see Jason Sargeant for more details.



Contact us:

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www.camelliakoi.org

Club Calendar

August 29: Club Koi Auction at Mary Beth & Tony Avila, 6715 22nd St, Rio Linda, 95673 (916) 991-0511

Directions: I-80 to Greenback/Elkhorn Exit.
Go West on Elkhorn, several miles.
Pass Watt Ave and McClellan Air Base runway, staying in the left lane.
Turn Left on 22nd Street,
We are the third house on right.

(From I-5, take 99/70 exit to Marysville/Yuba City.

Take the first exit which is Elkhorn.
Head east several miles.

Turn Right on 22nd Street, 3rd house.

September 26: Annual Potluck at Oh-So-Koi in Galt

October 24: Meeting at Jim Phillips

November 6-7: Koi Show at Green Acres Nursery

December ?: Holiday Party at ?

Koi Ahoy

Sandra Sylvester
4840 T Street
Sacramento, CA 95819

«Text2»

«Text3»

«Text4»