

# AKA Reporter





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# AKA Reporter



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# The Australian Koi Association Inc.

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\*Deceased

## All correspondence

Australian Koi Association, 17 Westmore Drive, West Pennant Hills NSW 2125

# President's Report



It's almost koi show time, the most important time of the year for both the AKA and KSA as we head towards another combined Sydney Koi Show on Sunday 29th May at Sydney International Equestrian Centre at Horsley Park.

Once again we are pulling out all stops to make this bigger and better than before. Our combined financial and memberships gives us the strengths and depths the koi hobby needs to put on a world-class koi show. We want you to be part of it!

The Show Committee is currently working very hard to make the show this year one of the best koi shows to be held in Australia and a premium koi show on the world stage. Currently we look like having four international guest ZNA Judges onboard to judge all the koi.

We need to ensure our members support the show by entering their koi. Last year we had 556 koi—this year we hope to break that record, so please consider entering a few koi. Exhibitors will be able to drive right up to their show vats, unload koi safely and then take their vehicles back outside to park.\*

Koi entries are on-line via [www.sydneykoishow.com](http://www.sydneykoishow.com) or you can contact me directly if you need any assistance entering your koi.

Once again, our good friends Ros and Lars of Allcare Ponds will host breakfast for all exhibitors and show helpers; as well, everyone involved with the show will be treated to lunch and drinks. Another reason to make sure you make the effort this year to exhibit some koi or offer your services as a helper.

This is a great event to attend, so why not bring the children, grandchildren and friends to support your fellow members who are exhibiting their koi on the day?

Our Show Prize Presentation night will be held in the Dakota Room at Smithfield RSL Club. Another great event and a lot of fun! Arrival 6.45–7.00 pm with dinner served at 7.45 pm. Please support your koi clubs and book the dinner via Judi Rea 0418 290 084. A great line-up of International Friendship Awards will be

up for grabs across the whole koi size range. We hope to confirm Hikari as our major sponsor also.

A reminder also that the annual Dave Pogson Breeders Trophy will be held on the May meeting night. Each entry must be of 10 koi bred or raised from last spawning season. Entries can be all one variety or a mixture of different varieties, so members can now bring in as many lots of 10 koi as they can manage. We missed last year through COVID-19, so lets make this year special. Just remember, bring a suitable container to hold your 10 koi and also an airline and air stone.

The next couple of months are going to be busy and I hope all members continue to offer the AKA support and attend as many of these functions as possible and say hello to our international guests. See you at the Sydney Koi Show!

*Yours in koi*

*Ian Andrews, President, AKA* ■

\* Sydney Koi Show set up starts at 8.30 am on Saturday 28th May and we would welcome any helping hands).

An advertisement for AKA Koi Auctions. The top half features the text "AKA KOI AUCTIONS" in large, bold, black letters. Below the text is a stylized illustration of a red and white koi fish swimming upwards, with a grey gavel positioned above it as if about to strike. A hand is shown holding a smartphone with a signal icon, indicating online bidding. The bottom half of the ad features the text "NOW ACCEPTS CREDIT CARDS" in large, bold, black letters. Below this text are logos for VISA, Mastercard, American Express, Apple Pay, Google Pay, and eftpos.

# AKA News and Events

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## Meetings of the AKA

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Our monthly meetings will be held at the Georges Hall Community Centre. Meetings take place on the second Monday of each month with the exception of December where no meeting will take place. Details of all our meetings are also now on AKA's Facebook page.

Remember all members and visitors must register, preferably using the QR code via the Service NSW app, as AKA is now a registered COVID Safety Plan business. ■

## Meeting of the AKA, Monday 11 April 2022

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The April meeting of the AKA will be on Monday 11 April 2022 at the Georges Hall Community Centre 188 Birdwood Rd, Georges Hall, 7.30 pm.

1. Welcome to members and guests
2. Apologies
3. Confirmation of minutes of previous monthly general meeting.
4. Raffle
5. Reports
6. General Business
7. Guest speaker Agus Djafar: Talking about Koi Selection
8. Raffle Draw

Note that any COVID-19 lockdowns will cancel any meeting. ■

## Meeting of the AKA, Monday 9 May 2022

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The May meeting of the AKA will be on Monday 9 May 2022 at the Georges Hall Community Centre 188 Birdwood Rd, Georges Hall, 7.30 pm.

1. Welcome to members and guests
2. Apologies
3. Confirmation of minutes of previous monthly general meeting.
4. Raffle
5. Reports
6. General Business
7. Dave Pogson Breeders Trophy
8. Raffle Draw

Note that any COVID-19 lockdowns will cancel any meeting. ■

## Koi food

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It is hoped that we can continue to provide as necessary any koi food requirements from our four outlets. We will require payment upfront or similar, and with no direct contact—our suppliers (see advertisement in this magazine) can arrange for food orders to be left out ready for pick up, having nil face-to-face contact.

Have you tried AKA's [Sinking Koi Pellets](#) yet? Seems that many of our more experienced koi keepers have given this food a big tick and are getting great results feeding it to their koi. It's best to feed one lot of floating and next feed give them the sinking. Give it a try and I'm sure you will see the improvements in your koi. ■

## New members

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New members are always assured of a friendly welcome when attending the AKA's monthly meetings. Help and advice is available if required and our Supply Officers can provide you with koi food and accessories at favourable prices. Call our membership officer (details on page 2). We welcome the following new members:

[Nick and Joan Cumming](#)

[Roseline Gomes](#)

[Ron Moylan](#)

[Hieu Nguyen](#) ■

## AKA's banking details

*Australian Koi Association,  
NAB BSB 082 343  
A/C 8525 90813.*

*Please always enter your  
name on the transaction.*

## AKA Auction Dates



Held at Fairfield City Showground (bottom of markets) Commencing at 10.00 am. Quality fish at reasonable prices! Food and refreshments available. Fish

food and other fish keeping supplies also available.



Bankstown City  
NSW Chapter  
Zen Nippon Airinkai

**Tentative dates only**  
**Saturday 30th April 2022**  
**Saturday 4th June 2022**  
**Saturday 6th Aug 2022**  
**Saturday 24th Sept 2022**  
**Saturday 12th Nov 2022**

Current COVID-19 restrictions as administered by NSW Government means that all these dates are tentative and will be confirmed or cancelled at a date closer to the auction date.



## AKA Koi News

We will endeavour to keep all AKA members up to date in-between the publications of our bi-monthly *AKA Reporter* magazine.

When it becomes necessary we will send an update information *AKA Koi News* via email.

Unfortunately, not everyone's email addresses are up to date. If you have NOT recently received an *AKA Koi News* email from us, could you please send your correct email details to Heinz Zimmerman at [zimmo55@yahoo.com.au](mailto:zimmo55@yahoo.com.au)

It is very important that we can contact those members who have email to let everyone know about auctions and meeting changes, etc., especially in times like these.

## KSA Auction Dates

Saturday April 9th 2022  
Saturday July 2nd 2022  
Saturday September 3rd 2022  
Saturday October 8th 2022  
Saturday December 3rd 2022

Current Covid-19 restrictions as administered by Fairfield Council means that all these dates are tentative and will be confirmed or cancelled at a date closer to the auction date.

New venue for KSA auctions is Fairfield City Showground (bottom of markets), Smithfield Road, Prairiewood

# The Sydney Koi Show

29 May  
2022

9 am – 3 pm

Sydney International  
Equestrian Centre  
Saxony Road  
Horsley Park NSW

Just off the M7

Celebrating over 40 years  
of Koi shows in Sydney

Japanese Koi  
Koi equipment

Plants, bonsai, cactus, orchids  
Rabbits, birds and reptiles

FREE ADMISSION



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Australian Koi Association  
Koi Society of Australia





# 18 Koi Classification Categories for the Sydney Koi Show 2022

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*Kate McGill-Andrews*

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This year, there are one or two classification changes recently implemented by ZNA, also to be adopted for the Sydney Koi Show.

As in previous years, elements of both AKA and KSA shows are being incorporated into the event, for example, there will be a class for size 1 koi, always fielded by the KSA, plus a wide range of vendors (koi-related items, plants, bonsai, birds and animals) have all been invited to attend.

## Classification guide

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- **KOHAKU**  
Kohaku

- **SANKE**  
Sanke, Aka Sanke

- **SHOWA**  
Showa, Hi Showa, Kindai Showa

- **UTSURIMONO**  
Shiro Utsuri, Hi Utsuri, Ki Utsuri

- **BEKKO**  
Shiro Bekko, Aka Bekko, Ki Bekko

- **ASAGI**  
Asagi, Hi Asagi, Asagi with kado gin (around the edges of scales only)

- **SHUSUI**  
Shusui, Hi Shusui, Hana Shusui, Ki Shusui

- **KOROMO**  
Koromo: Ai Goromo, Sumi Goromo, Budo Goromo, Koromo Sanke, Koromo Showa, Goshiki, Goshiki Sanke, Goshiki Showa

- **KAWARIMONO (previously Kawarimono A)**  
Hajiro, Hageshiro, Yotsujiro, Suminagashi, Matsukawabake, Ochiba Shigure, Kage Showa, Kage Utsuri, Kanoko, Yuki Asagi plus other patterned Kawarimono.

- **MUJIMONO (previously Kawarimono B)**  
Karasugoi (Crow koi), Kigoi, Benigoi, Chagoi, Soragoi, Midorigoi, Matsuba (Shiro, Ki, Aka), Karashigoi

- **HIKARI MUJI (OGON)**  
Lemon Ogon, Yamabuki Ogon, Nezu Ogon, Platinum Ogon, Orengi Ogon, Cream Ogon, Mukashi Ogon and all Kinginrin Hikari Muji, including Gin Matsuba, Kin Matsuba, Kin Hi Matsuba.

- **HIKARI MOYO**  
Hariwake Ogon (Kikusui), Platinum Kohaku, Yamatonishiki, Kujaku, Shochikubai (Metallic Koromo), Ginga.  
*(Note: Doitsu versions of Hikari moyo are classified with Metallic Doitsu)*

- **HIKARI UTSURI**  
Kin Showa, Gin Shiro, Kin Ki Utsuri and Kin Hi Utsuri.

- **TANCHO**  
Tancho Kohaku, Tancho Sanke, Tancho Showa, Tancho Goshiki, plus all Ginrin Tancho in these varieties and all Doitsu Tancho in these varieties.

- **KINGINRIN A**  
Kinginrin Kohaku, Kinginrin Sanke, Kinginrin Showa, Ginrin Shiro Utsuri, Kinrin Hi Utsuri and Kinrin Ki Utsuri.

- **KINGINRIN B**  
Kinginrin Goshiki, Ginrin Soragoi, Ginrin Matsukawabake, Ginrin Ochiba Shigure and all the Kinginrin koi except Kinginrin A, Hikarimuji and Tancho.

- **METALLIC DOITSU**  
Doitsu Ogon, Platinum Doitsu, Mizuho Ogon, Doitsu Kujaku, Doitsu Kin Showa, Doitsu Kikusui, Ginsui / Kinsui (metallic Shusui), Kikokuryu, Kin Kikokuryu, Doitsu Gin, Kin and Kin Hi Matsuba.

- **NON METALLIC DOITSU**  
Doitsu Kohaku, Doitsu Sanke, Doitsu Showa, Doitsu Utsuri, Doitsu Bekko, Kosui (a Shusui/Kohaku cross), Kumonryu, Beni Kumonryu, Doitsu Matsuba and all Doitsu Kawarimono.

Major differences for KSA exhibitors are:  
(a) the Classes Metallic Doitsu and Non-metallic Doitsu  
(b) Kin-Gin-Rin Ogon are included with Hikari Muji  
(c) Ki Kokuryu and Kin Ki Kokuryu are included with Metallic Doitsu.

Don't worry...even if you are not sure what variety is your koi should be classified with we will correct any entry errors,

As always, a huge amount of effort is going into planning this event but its success depends absolutely on all you hobbyists. We need your support! Please consider showing a few koi this year, nearly everyone should be able to exhibit at least a couple of size 1 koi. Talk to veteran exhibitors and other hobbyists; team up with friends to help get your koi to the show. The show committee will be absolutely delighted if we have a record number of entries and attendees at the show this year. The venue is going to look great; it just needs you members to bring your koi, to complete a wonderful day for all!

Remember, participating is a lot of fun! We look forward to seeing you all at the Sydney Koi Show. ■

## Koi Critique Kawarigoi or Kawarimono

Kate McGill-Andrews

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### An unusual Matsukawabake (Mahts' kah wah bah' key)

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Kawarigoi (something strange) holds some very interesting varieties; the largely black and white Karasugoi (Crow Koi group), Ochiba Shigure (*autumn leaves on water*), a range of single-coloured, non-metallic koi and unusual cross-bred koi, for example Sanke - Shusui.

This month's Kawarimono or Kawarigoi features a very unusual example of the black and white Karasugoi group. Karasugoi generally show black (*sumi*) on the head and as pectoral fin joints, whereas this koi has a clean white head



and fins. On the body, arrangement of sumi does point towards a Matsukawabake, with heavier sumi towards the tail, although the rest of the koi could be Suminagashi, another Karasugoi variety, with the well developed reticulated effect between sumi and white. This koi really is a puzzle, however, because the completely white head and fins do not fit either picture.

As a unique Kawarigoi, this example is worthy of appreciation. The white skin is clean and bright: a small amount of gin-rin scaling adding a pleasing lustre. Sumi is strongly developed and attractively arranged along the body. Additionally, this adult koi has a very pleasing figure. The unusual white head actually works with the impression, since sumi is lightest over the shoulders. Altogether, a fascinatingly memorable koi.

*(Photograph courtesy Ian Andrews)*

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# The basics of koi assessment during judging

## Part 3: Pattern



### Pattern

This article focuses on the general aspects of pattern. There are many specific aspects confined to individual varieties that you won't find here.

Pattern is probably the first thing we look at when selecting a koi for our ponds. We have something in the back of our minds and we look for a koi that appeals to us. Some may say that 'pattern' is the most important thing.

However, if we go back to the analogy this series started with i.e. that of a painting. Then no matter how good the application of the paint is, if it is slapped on a piece of crumpled toilet paper stuck poorly on to a rickety frame of uneven twigs, then it won't be winning any prizes for artistic merit.

So for a good koi we need a good frame (Body), a good quality canvas (Skin) plus a good pattern. For the koi keeper the pattern needs to be one that they admire. For a judge at a show there are a few other things to consider. So before we go any further let's start this element of koi

appreciation with a definition.

*'Pattern = the distribution of the auxiliary colours over the base ground'*

The ground being the main skin colour depending on the variety. For example—a Kohaku has a red coloured pattern on a white ground.

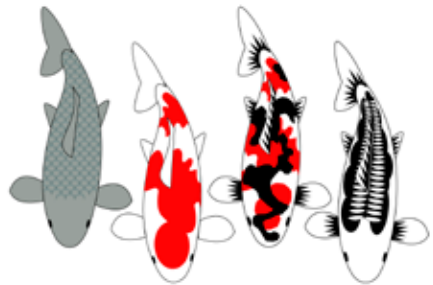
Next let me state the two guiding principles of any pattern irrespective of the koi's variety. They are:

*It should take your eye from the front to back i.e. head to the tail.*

*It should have balance, both front to back and side to side. Balance does not mean symmetry.*

Both of these principles are true whether it is a koi with a simple pattern (one colour) or a more complex pattern with two or more colours.

Having established that let us consider the pattern types. I'm told that there are four, but one of them (the solid) doesn't fit into my definition above. Nevertheless, I will include in the diagram below so that you can decide for yourself.



**Left to right: Solid (no pattern), Dorsal type, Wrapped type and Linear type.**

Let us look at the three on the right.

The Kohaku has a dorsal type pattern that conforms to the principles. It takes your eye from front to back and it has balance, as does the Shiro Utsuri. On the Kumonryu we have to take into account the specific guidelines for the variety—a linear sumi pattern on the flanks and a bald head.

This brings me on to another pattern element to consider—its starting or key point.

Left to right:

Starting Points – Left to Right



1. Head: For beni patterns
2. Mouth: For sumi patterns on Utsuri and Showa types
3. Flanks: For Shusui and Kumonryu types.
4. Shoulder: For sumi patterns on Bekko and Sanke types.

Now please note that these 'starting points' are guidelines not rules. They are not set in stone. A pattern can easily deviate from these guidelines and yet still conform to the basics of balance etc.

For example, there is a guideline for Kohaku in most koi books that recommends that the first block of pattern (*dan*) conforms to the *kutsu-bera* head pattern. A round, horseshoe shape on the head between the eyes, but not touching them or the mouth. If it is an isolated piece of pattern just on the head its called (*maruten*). At the other end of the body a gap is preferred between the last block of colour (*odome*) and the tail. This gap is called the *ojime*. Incidentally, this *kutsu-bera*/*ojime* combination ensures that the pattern balances on the head to tail axis. The Kohaku in both of the above diagrams conforms to this, but look at the koi in the next photo at top right.

This koi does not conform to the aforementioned guideline, but does its pattern not take your eye from front to back? Does it not have balance?

The head pattern goes right down to the nose (*hanatsuke* or *tsukitsuke*). At the other end the final *dan* reaches the tail thus extending the pattern in each direction but at the same time maintaining the balance.

Using this photo as an example, a quick trick to assess balance is to imagine a line running vertically through the koi from tail to mouth and then weigh up the amount of pattern on either side. Another imaginary line could be drawn across the middle of the koi if needed to assess that in each quarter the colours are approximately evenly balanced. (See 'Pattern



checking tools:)

While on the subject of this photo the beige colour of the head needs to be mentioned. Unless the photo has been reprocessed by a good photographer heads will often appear a different colour from the body. This is because cameras interpret reflective light and the koi's skin on the body has scales that are more reflective than the skin on the head. This is one of the reasons I suggest that the main place for proper teaching is at a koi show where you can see fish in the flesh and compare them to others.

## Simple and Complex

Simple, two colour patterns come in many forms. With the dorsal pattern they can be described simply counting the number of *dans* using Japanese numbers; *nidan* for a two step, *sandan* for a three step and so on. There are a couple of other descriptions of significance—*inazuma* for a lightning strike pattern and *ippon hi* for a single *dan* stretching the length of the koi.

No matter how many *dans* there are or how complicated they are, the principles must still apply.

Looking at the *Nidan* and *Sandan* patterns above they all fulfil both principles—leading



the eye and balance. FYI—These diagrams were intended to show that balance could be achieved without symmetry.

Moving on to the next group—the more complex patterns—3 colours or more. Probably the most common of these are the *sanshokus* (literal translation = three colours); the *Taisho Sanshoku* or Sanke and the *Showa Sanshoku* or Showa. Although not gifted with the suffix Sanshoku the Beni Kumonryu is another example of a complex 3 colour pattern. Those colours being red (*beni*), black (*sumi*) and white (*shiro*). All three of these koi are a meld of characteristics belonging to two separate varieties.

The Sanke has a combination of two dorsal patterns. Those of the Kohaku and the Bekko on a white ground.

The Showa a combination of the Kohaku dorsal pattern with the wrapping pattern of an Utsuri. (Technically the Showa is a black skinned koi, but in terms of appreciation we discuss the black as if it were a colour.)

The Beni Kumonryu a combination of the linear Kumonryu pattern and that of the dorsal Kohaku pattern.

Each of the above have a metallic, doitsu and Tancho variant. The Tancho variant has only a single beni *dan* that can only be located on the head. These variants should follow the guidelines of each of their constituent varieties. For those I will refer you to the series being introduced by Toën Feyen. For my part I will draw your attention back to those basic principles—taking your eye from front to back and balance. A quick way to assess that complex balance is to imagine the koi being divided into three equal parts, the head section, the mid section and the tail tube (*ozutsu*). Each piece should contain enough of the varieties characteristics to allow you to identify it.

With a complex pattern the appearance can be enhanced when the two additional colours stay separated on the skin. When colours overlap e.g. when the sumi on a Sanke appears within a *dan* of beni, it doesn't have quite the same contrast of sumi on the white ground (*shiroji*). The word for this is *kasane* which translates to overlapping and is interpreted in many books as simply black on red. The opposite of *kasane* is *tsubo* which I was taught to mean black on white. This is a valid interpretation but we miss something from the actual translation. One of many is the term 'key point'. A well known breeder caused some consternation at a seminar in the UK when he referred to the first sumi *dan* of a Sanke's pattern that happened to be on a large *dan* of beni as '*tsubo*'. That's when I learned that this word has two meanings.

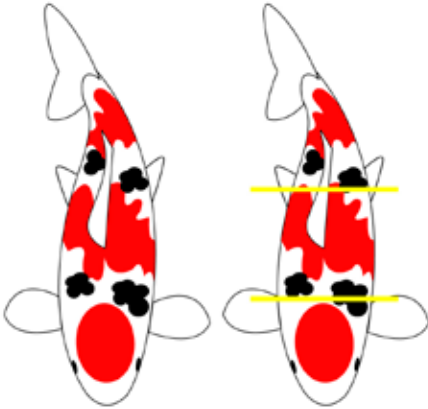
Many books will infer that *kasane* sumi is of lesser merit than *tsubo* sumi in the black on white sense. It certainly doesn't have the same contrast and impact. But the next photo shows a triple Grand Champion Sanke (2015–17). I leave you to decide how less a merit it is.



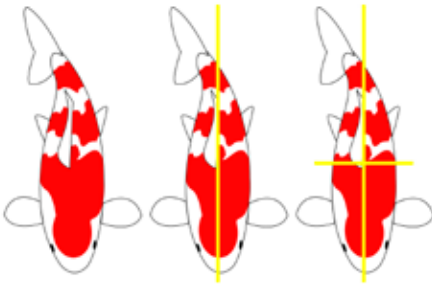
## Kasane and Tsubo

## Pattern checking tools

There are two mental tools that I've used over the years to assess pattern, most of the time when discussing minutiae with other judges. The first, erroneously called the 'rule of thirds' can be used to assess the pattern's ability to take your eye from front to back. However, this tool doesn't work with any of the Tancho varieties.



My tool for assessing balance is known as 'halving and quartering'. If a pattern is properly balanced you should see evenly distributed elements of pattern in each quarter by drawing imaginary lines through the koi.



I'd like to stress here that these are my methods that I have acquired from the teachings of many people. There are others.

## Show classes

The majority of the show classes deployed at koi shows are based on patterns to allow for judges to assess like with like. For example:

- Kohaku, Bekko, Utsurimono, Asagi/Shusui concentrate on simple patterns.
- Sanke and Showa on the complex patterns.

- Hikari-Muji and Mujimono on the so-called solid patterns i.e. single coloured koi.

The other classes focus on other attributes; for example:

- Kinginrin (metallic scales),
- Tancho (head patterns),
- Koromo (robing).

Hikari-Moyo and Hikari-Utsuri focus on metallic skins (white for Moyo and black for Utsuri), Leaving Kawarimono to cater for all that is left.

## Japanese terminology used in this article

Beni = the red/orange colour

Dan = a block of colour

Hanatsuke = touching the nose

Inazuma = a lightning strike pattern

Ippon hi = one single *dan*

Kasane = overlapping sumi on beni

Kutsuberu = horseshoe shaped front of a head pattern

Maruten = an isolated beni pattern on the head

Nidan = a two-step pattern

Odome = the last *dan* of pattern

Ojime = the space between the *odome* and the tail

Ozutsu = tail tube

Sandan = a three-step pattern

Shiro = white

Shiroji = white base colour

Sumi = black

Tsubo = key point (position) / sumi on shiroji.

Tsukitsuki = to go before. ■

*Acknowledgement. The original template for the diagrams I've used came from Vincent Chiu Taiwan Chapter. I've used it for many years to illustrate presentations I have given within the UK.*

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# AKA Mid Northern Region, Coffs Harbour

At our recent meeting (the first for 2022) we felt it necessary to have a practical side as well as the normal procedural bits, a concept that we aim to bring to all meetings—so much more can be learnt and retained when there is that practical element associated with the theoretical.

So we decided to get back to basics after there had been several incidents where members had experienced pond fatalities.

What better place to start than WATER.

Yes of course we all know about it and we all regularly record a variety of parameters to ensure fish health and safety—coupled with proactive early intervention strategies—don't we!

This delivery was coupled to two expert

panel members, each of whom hold Masters degrees—one a Masters in Nuclear Physics and one a Masters of Environmental Science; both with outstanding hobby backgrounds and success rates.

Colgan and Collins for those wondering.

Importantly—and this was key, we asked members to bring samples of (a) local tap water and (b) their pond water.

We then measured each sample with a calibrated digital probe and posted those results to a whiteboard.

The results were incredibly reassuring as all samples (one exception only—and that was anticipated by the member), falling within acceptable limits.

We collectively felt good with these outcomes.

A five-page (single-sided) handout was put together from a variety of reputable sources.

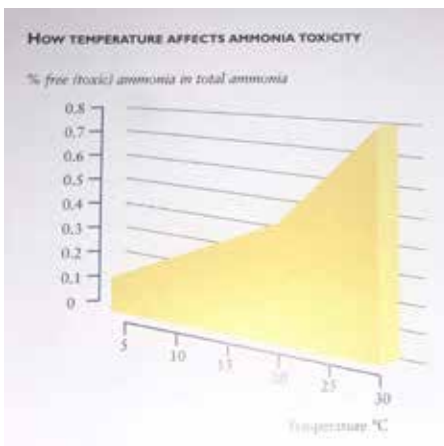
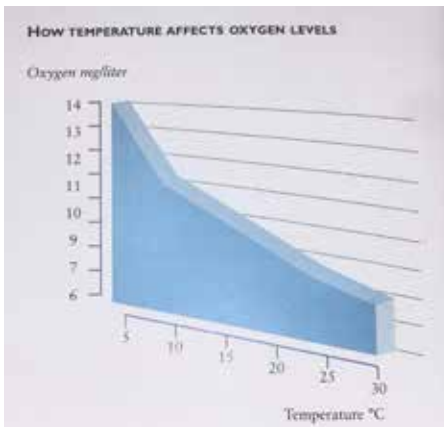
The topic was pH and O<sub>2</sub>.

Of course there was significant discussion around oxygen and pH, sometimes we forget, are pre-occupied with something(s) else—or simply do not know the INTERDEPENDENCE of these quite considerable matters.

Here is an example of the material we offered to our members.

Further topics to be addressed will be Nitrates, Nitrogen, Ammonia, Kh, and Salinity and again we will test 'live' samples.

And as a teaser for future meetings and as an example of 'inter-dependence'..



## KH levels—what are they?

Another important, but often overlooked water parameter, directly affecting pH is the KH value.

KH is the measure of carbonate hardness or the measure of dissolved bicarbonate and carbonate ions that work as buffers, preventing pH dropping too low or changing too suddenly.

KH levels should be around 90 ppm but they can fluctuate safely by about 20 ppm either way.

One of the best ways to keep a stable pH level is to ensure you have a stable KH value.

In making any adjustments consider—why is the adjustment necessary—what has caused the need for the adjustment.

TRY TO ADDRESS CAUSATION—NOT SYMPTOMS. ■

# The Asian tapeworm

Peter Colgan  
AKA Foundation Member

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The February 2022 AKA Auction had some excellent koi that were sold for record prices.

There were also many koi offered for auction that, although of good quality, looked skinny and underfed. From my experience I offer another explanation, these skinny koi may be parasitised by the Asian tapeworm.

Originally from China and Japan, *Bothriocephalus acheilognathi* has been spread worldwide along with the movement of carp (including koi). It is suspected that the tapeworm was introduced into Australia in the mid 1980s. Fisheries scientists have become increasingly worried about the spread of this tapeworm into native fishes and the Australian aquaculture industry.

The domestic koi pond environment is not ideal for establishment of this parasite, as it's lifecycle involves a copepod crustacean intermediate host which contains the larval form of the tapeworm, known as a proceroid. However the raising of koi fry in mud ponds, or the feeding of fry with copepods caught from local water bodies, presents an ideal opportunity for the parasite to establish itself within a koi collection.

When a fish eats an infected copepod, the larval worm develops into its adult form inside the intestine of the fish where it soon assumes the long, segmented, ribbon-like shape typical of tapeworms, and with the rearmost segments shedding large quantities of eggs. Once released via the faeces into the water, and after hatching, the free swimming larval stage seeks out the copepod intermediate host to complete the lifecycle.

Not all copepods can support the parasite, but those that can (such as *Cyclops*) are often found in the biofilters of our koi ponds. All koikeepers need to be vigilant.

The adult Asian tapeworm has a characteristic heart shaped head which makes for easy identification when seen during either autopsy or in the pond water after treating your koi with anti-helminthics—see photo 1.

The symptoms of infected koi are rather vague and include a failure to gain weight—the koi will appear emaciated despite eating, as well as swimming lethargically and hanging near the surface.



Photo 1: The Asian tapeworm, *Bothriocephalus acheilognathi*.

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Photo 2: Praziquantel, in tablet form.

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While mature koi can tolerate a low burden of tapeworms via their immune response, koi fry and young fish can be devastated by the infection—almost having the appearance of tadpoles. However even a mature koi cannot tolerate a large burden of Asian tapeworms as that can lead to intestinal blockage and subsequent rupture.





Observation indicates that the Asian tapeworm can leave the body of a koi (particularly fingerlings), being either expelled via the anus following treatment, hanging from the anus if too large for the fingerling, or by drilling a small hole through the gill plate or stomach wall. The tapeworm is typically found dead in the pond following treatment and can be surprisingly long.

The treatment of choice is Praziquantel; I use 2 grams per 1,000 litres. Praziquantel is widely used for the treatment of intestinal worms in dogs and horses, so is readily available. The pure form of Praziquantel is difficult to dissolve in water. Anecdotes from members include placing the Praziquantel into a stocking which is then hung under the pond return or waterfall. Alternatively you can purchase 'pond ready' Praziquantel products online or from your local aquarium store, but they are expensive—see photo 2.

Overseas reports indicate the existence of Praziquantel-resistant Asian tapeworm, and recommend the use of Flubendazole as a substitute—again widely available within the veterinary industry.

### **Acknowledgements:**

In writing this note the author relied on personal experience, the 2012 BKKS 'Koi' article by Dave Hulse and the NSW Department of Primary Industries 2007 publication by P. Read et al on the 'diagnosis, treatment and prevention of the diseases of...silver perch'. ■



**A well-manicured koi pond.**

# South African Judging Seminar

*Mike Harvey*

The past weekend saw all of the South African judges and trainees gather together for an intensive two days.

With seven ZNA Judging Seminars, (run exactly along the lines of the ZNA Seminars in Japan), the judges rotated around the six vats which had five koi in each vat. The 7th Seminar saw the top five koi from the previous rounds being judged across varieties.

Thanks to Dean Britz for hosting this event and not only setting up all the vats but also providing the 30 koi that were in these vats.

On Saturday afternoon our two trainees Abraham Wiggill and Clint Chen each presented their excellent research papers, and after discussion between the judges they were awarded SAKKS Grade C Judge certification. Well done Abraham and Clint.

On the Sunday the judges rankings from the previous day were posted along with a Model Answer. These were discussed and debated. Other items on the agenda included the adoption of new ZNA Classifications for all our SAKKS Shows, judges' allocations for the year ahead, etc. All in all a very productive, educational and enjoyable Judges' Standards Committee weekend. ■





South African Judges and Trainees attending the two-day seminar.

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Harry Beckx and Mike Harvey presenting Abraham Wiggill and Clint Chen with their SAKKS Grade C Judging Certificates.

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# Worms, crustaceans and flies—an all-in-one remedy

*Michelle Cranna and David Lonergan*

Shortly after our pond was completed in 2004 we noticed these strange little worms and crustaceans coming into our settlement tank from the bottom drain pipe. We quickly established they were both the same thing and part of the life cycle of a little fly. They start as a little worm, turn into little crustaceans, and then finally rise to the water surface as a little black fly. Many flies drown and sit on the water surface in the settlement tank, but most seem to end up in your eyes as they burst out in mass exit every time you open the lid on the settlement tank.

After a while the water level (head-height) in the settlement tank started dropping down and ended up about 100mls (4 inches) below the

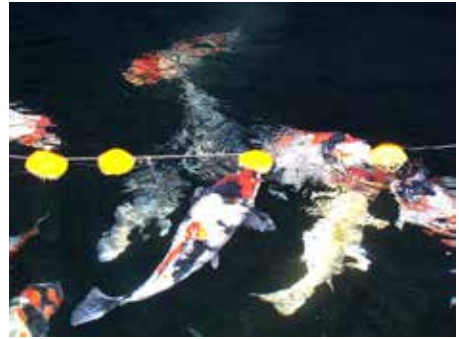
original height. This was very worrying because we have two mechanical pre-filters ('Answers') Worms on at the other end of the same settlement tank and the water level must be above them.

We thought something had to be blocking the 100 ml pipe from the bottom drain to the settlement tank which is about 5 metres long with five 90 degree bends. So we dragged a sponge through the bottom drain to see if we could clear any blockage. What came through was a mass of these strange little worms who had built themselves a colony on fine silky threads. After clearing the pipes of these rascals the head-height returned to normal, but, not for long. They soon re-colonized and again the head-height went down, down, down.

We tried to find out what these worms



Worms on sponge.



**Top left: peel the oranges around the centre then cut in half. Top right: Oranges on string across the pond. Above left: Fish soccer! Above right: Holding the orange against the wall to eat.**

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actually are so we could apply a remedy, and although we found other members also had these pests, nobody seemed to know what they are or how to get rid of them. We researched the internet, and even asked on koi forums all over the world, but no success. So we, I mean David, has had to persevere with the difficult job of sponging the bottom drain to keep the head-height up. This involves a swim with the fishes to squeeze the sponge under the airdome in the middle of the pond, 5 feet under. Great fun in winter!

Well I'm glad to say after all these years of water torture, David stumbled across a solution. After feeding our koi oranges for about three week, and leaving the left over orange peels in the pond for a few days, the worms die off and are washed into the settlement tank. The water level in the settlement tank then returns to the original head-height level. Orange peels in our pond get sucked down to the bottom drain and sit wedged under the edge of the airdome. This ensures a constant flow of water passing by

the peels and into the bottom drain where the annoying worms hang out. Fish poos full of acidic orange leftovers also get sucked into the bottom drain and no doubt lodge in the worms colony of silky threads.

So there you have it. Worms don't like oranges, and I suspect anything else with plenty of citric acid in it. The oranges do not seem to have any ill-effect on the fish, the filter or the water quality, but just to be on the safe side monitor your PH levels when using lots of oranges.

Hope this helps. ■

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## MEDICINE

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Methylene Blue	18 gms	\$30.00
Clean Fish CF 50	1 litre	\$45.00
Condy's Crystals	200 gms	\$30.00
Oil of Cloves	100 ml	\$30.00
Hydrogen Peroxide	600 ml	\$10.00

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Please Note: Members' orders for supplies for delivery at the monthly meetings are to be in the Tuesday prior to the meeting.

Members ordering supplies for postal delivery should send money order or cheque payable to Australian Koi Association to PO Box 6222 Dural DC 2158.

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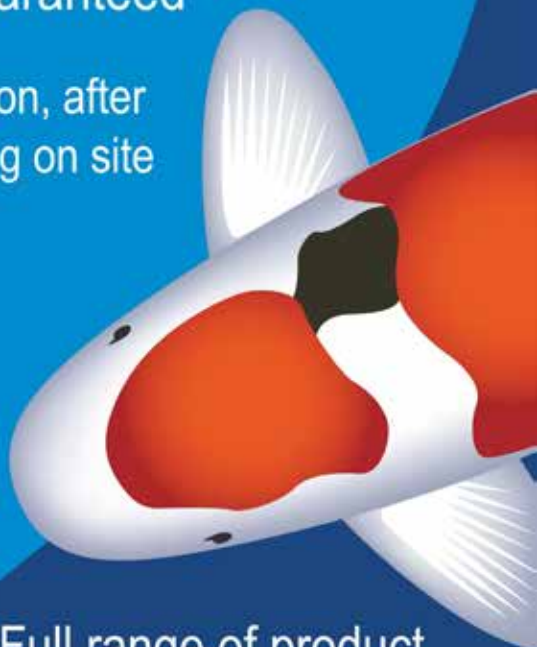
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