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The E-Mag of the South East Section BKKS





Inside this issue:	
In memorium	2
22 Kujakus	3 - 5
Festival of Fishkeeping	6 - 8
Niigata Nogyosai GC	8
Oorou, Daiyaorenji & Kage Ogon	9
Genetics	10-12
NVN Award Scheme	12
Congratulations	13

- twinned with the :-

Oregon Koi & Watergarden Society. The Nishikigoi Vereniging Nederland. The South African Koi Keepers Society. **Partners in goodwill.**

Koi Clubs participating in this exchange scheme are:-

- Nishikigoi Vereniging Nederland.
- Oregon Koi & Watergarden Soc.
- South African Koi Keepers Soc.
- Chiltern Section BKKS.
- NorCal Chapter ZNA (USA)
- Australian Koi Association AKA
- Mid Atlantic Koi Club
- Cambridge Koi Club
- ZNA Potomac Chapter
- Essex Section BKKS
- Texas Koi & Fancy Goldfish Soc.
- Cayman Island Koi Keepers
- Koi@Home (Belgium)
- Banana Bar Koi Society.
- East Midlands Koi Club.
- North East Koi Club BKKS
- ZNA Guangdong Chapter.

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is the

on-line version of the South East Section BKKS' newsletter called "Spotlight", suitably sanitised and denuded of in-house content to make it interesting for other Koi Clubs. However, it will also contain some occasional South East publicity.

"Hot Spot" will be a periodic publication i.e. it will get published when we have enough articles to fill it's 8 pages.

Copies of it will reside on the South East's website and will be distributed to other Koi Clubs who indulge us with an exchange of magazines or newsletters.

Articles taken from "**Spotlight**" are the copyright of the South East Section but may be used by clubs who participate in this exchange.

The original text and photos can be obtained via the editors whose details can be found on the back page.



Annemei van Bladel "In loving memory"



It is with the deepest regret that I bring you this sad news, expressed so eloquently by Tony Price -

"I was saddened this morning (5th October) to receive the news that Annemie, wife of Theo van Bladel, passed away earlier this week from a brain bleed, she had been suffering a blood disease for some time and the bleed proved fatal.

Annemie was a wonderful woman, full of kindness and hospitality, and we will miss her smiling face at NVN shows in the future, she worked tirelessly in the V.I.P tent catering for us all for many years."

As Tony says she was one of the NVN workers that man the Hospitality Tent and played a big part in making visitors from the international Koi community welcome and at ease.

She'll be sadly missed but not forgotten.

22 KUJAKUS

Readers of Hotspot #9 might recall the exploits of the South East's new Show Chairman Alan Archer after the 2007 AJNPA show. For those that don't let me fill you in. He along with some other hobbyists and a dealer then traveled up to Niigata. High on Alan's shopping list was a Kujaku. He was looking for sansai of approx 75cms but the search proved fruitless. However, at the breeder Kaneko he found two smaller nissai that took his fancy and being unable to decide which he chose to take both. That should have been that but in a moment of madness he decided that his quarantine facility would be the ideal place to grow on some smaller Kujaku. What better way to learn more about this variety?, he thought. And with no more



Some 20 months later I was invited to help Alan sort them out. Our club was having an auction on the weekend and the purpose was to select those to keep and those to put in the auction. A couple of days before we were due to do this, Mark Gardner NTV, one of those that accompanied Alan on the buying trip, visited Alan and advised him to put some up for private sale rather than put them all in the auction. A suggestion I was to thoroughly endorse after seeing the koi.



ado he struck a deal and purchased 20 tosai.

Of the 22 koi purchased in Niigata there were 21 to sort through, one having changed hands since arriving in the UK and now residing in fellow club member Les Peto's pond. We sorted through the koi and divided them into 3 groups - Keepers, Private Sale and Auction. Amongst these there were a few that Alan was still undecided about and deferred the decision to



As you can see in the photo above there was a tiny amount of difference in the size but no great difference in body shape or lustre.

20 months on, things had changed and as you will see from the photos, size was to differ quite drastically. But in terms of lustre nothing had gone badly wrong although it was noticeable that a few heads were yellowing and Alan wondered whether this was down to a recent change of food.



Hot Spot Issue #26



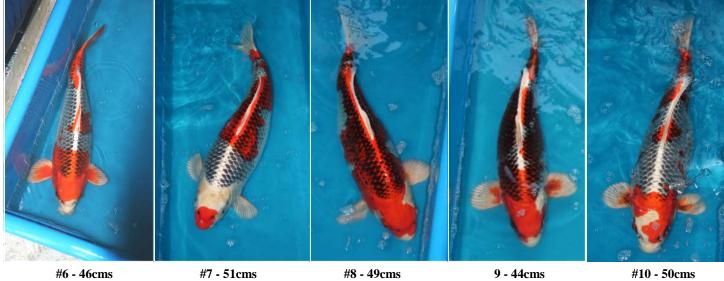
#1 - 50cms

#2 - 46cms

#3 - 42cms

#4 - 47cms

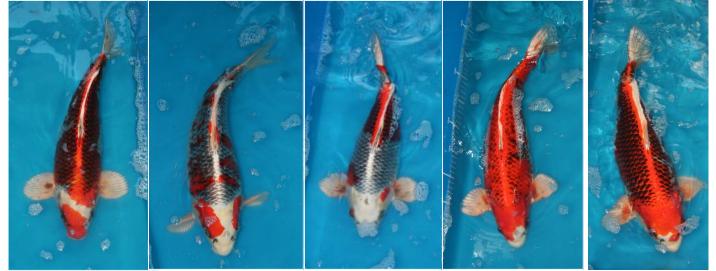
#5 - 55cms



#6 - 46cms

#7 - 51cms

#8 - 49cms



#11 - 41`cms

#12 - 39cms

#13 - 37cms

#14 - 44cms

#15 - 51cms

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Well ! What a spread of sizes? 26 to 55 cms and regardless of the quality of the photography, its pretty clear most kept their lustre. A few e.g #1 and 13 had poor bodyshape and #18 aka 'the Bonsai Koi' was very much the runt of this litter. Having said that it will be a great addition for somebody with a small pond. #19 was the reddest red kujaku I've seen to date.

#16 - 52cms

#17 - 44cms

#18 - 26 cms

#19 - 45cms

Anybody care to guess which were my top 3?

The Kujaku Challenge!

On very noticeable thing about these Kujakus is that they have kept the integrity of their patterns. It's not difficult to reconcile those pictured above against those pictured below at their time of purchase. Which just leaves two to find. The one chosen by Les Peto and the one that wasn't in the original photo So here's the challenge. Find them !



英國

Festival of Fishkeeping - Koi Show.



The Festival of Fishkeeping Show is run by the Federation of British Aquarist Societies FBAS who celebrate their 70th anniversary this year.

Held at a holiday camp* on Hayling Island in the South of England over the weekend of the 11th and 12th October; this show attracts fishkeepers from all over the country plus a few from abroad. E.g. This year there were some discus enthusiasts from Poland attending for the first time.

As the title suggests this is a general fish show with the emphasis on the word 'Show'. Within its portals there were 10 separate shows going on at one time or another, supported by a number of Fish Society stands, some equipment and food manufacturers and a few dealers.

To give you the flavour, these were the list of shows being run during the weekend:-

The British Open Championship - a tropical fish show limited to fish that won either a "Best in Show" or a "1st or 2nd Reserve Certificate" during a previous show this year.

A Goldfish Show run by the Goldfish Society of Great Britain.

- A Discus Show.
- A Catfish Show.
- Killifish Show.

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Page 6

Betta Show,

Miniature Catfish Show

The FBAS Supreme Championship - another tropical fish show open only to "Best in class" winners from previous FBAS shows this year.

The Festival Tropical & Coldwater Fish Show - open to all fishkeepers.

And last but not least -

The 4 Section Koi Show. - run jointly by four southern Koi Clubs, the Middlesex and Surrey Boarders Section, The South East Section, The South Hants Section and the Worthing Section.

The clubs involved are all show savvy and share the workload or running the Koi show, they also run a raffle as a fund raiser. The Koi judges were provided by the Nishikigoi Vereniging Nederland NVN.

Each club is limited to 5 vats each and entries cannot exceed 8 Koi per vat.

This show has a very unique set of prizes:-

There is one **Overall GC**, which once chosen does not compete in the rest of the show.

A **Jumbo Champ** which chooses itself during benching.

Four Section GC's, drawn from the vats of each club. These winners remain in the contest.

And then the Round 1 winners drawn from each size (7) and each class (also 7). From these classes a 1st, 2nd and 3rd is chosen.

The show classes are:-

Kohaku, Sanke, Showa, Utsurimono, Kinginrin, Metallic, and Non-Metallic.

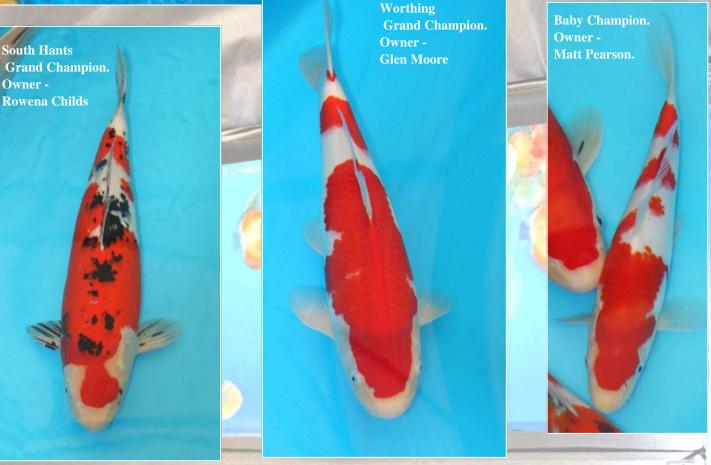
By reducing the amount of show classes to just 7, the chances of one with just a single entry are reduced too, and from the judging perspective the Non-Metallic section is like an extended Kawarimono Class where the standard of a particular variety comes into play and the same can be said of the allmetallic class.

Holiday Camps?

Anybody familiar with the old BBC series **Hi-di-hi** will be at home with the venue as this was where it was filmed. **Overall Grand Champion. Owner Trevor Childs.**

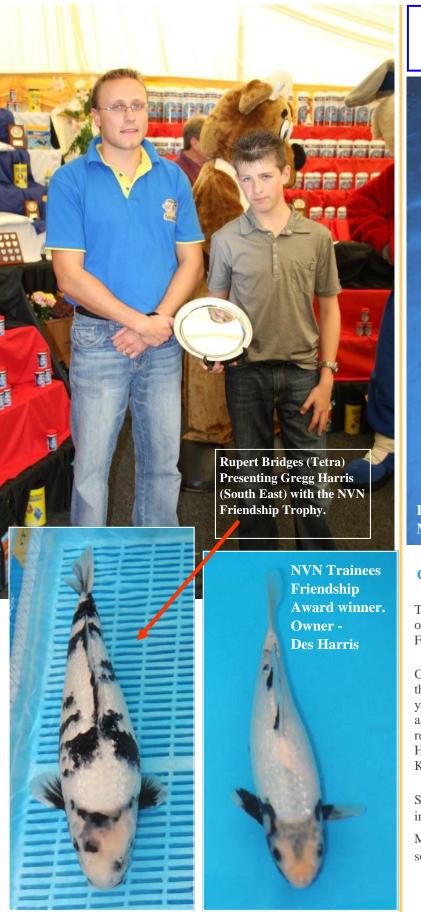


MSB Grand Champion Owner Barrie & Keith Burkin Worthing Grand Cham Owner - South East Grand Champion. Owner Mick Preston



Hot Spot Issue #26

Page 7



48th Niigata Nogyo-sai



The 48th Nogyo-sai Nishikigoi Show October 25 & 26th at Ojiya City Gymnasium.

This year's Grand Champion was this 87cm Kohaku owned and bred by Hisata Nogami of the Nogami Koi Farm.

Our man on the spot, Mark Gardner NTV reports that the number of exhibits is on the increase, with this year (590) being over a hundred up on last year. He also noted that this year the show classifications were reduced to 11 - Kohaku, Sanke, Showa, Utsurimono, Hikarimuji, Hikarimoyo, Kinginrin, Goshiki/Koromo, Kawarimono, Tancho & Doitsugoi.

Show sizes began at <15cms and increased in 5cms increments up to >80cms.

More details can be gleaned from the following sources:- **www.koichat.com**,

www.japan-nishikigoi.org and http://yamakoshi.blogspot.com/

Page 8

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Oorou, Daiyaorenji and Kage Ogon ?



○送料は、宅配料 1,480 円+梱包料 800 円= 2,280 円です。但し、九州・四国・北海道は送料が 520 円追加となります。
 ○代金は、送料を含めて現金書留でお送りください。入金確認後、鯉を発送いたします。
 ※新潟県中越地愛の際には、全国皆様から励ましのお手紙を載きまして厚くお礼申し上げます。



A regular poster on the Koi Chat forum asked the question "Who breeds the best Kin Showa" in an attempt to narrow down the hunt on his next trip to Japan.

Several posters including some dealers shared their experiences and named dealers where they had either bought or seen Koi of this variety.

Amongst those replies was one from Mark Gardner (NTV) who said "The advert above, from Rinko published in last couple of days. Middle pic, Kin Showa. The only other info I can tell you is that it's Maeda Fish Farm, somewhere in Mushigame Village.

With a half page colour advert in Rinko I guess he must be hoping to sell a lot of 15cm metallic Koi!

But a few days later, he posted the following

However, I was even more wrong than that!!!

The Kin Showa aren't Kin Showa but

are in fact 'oorou'

The Koi on the left that look like Gin Rin Yamabuki are in fact 'diayaorenji'

And, I'm most sorry to disappoint you, but the Kin Ki Utsuri are in fact Kage Ogon.

Apparently every year Maeda San tries to create 'new' varieties!

Bring back the Zuin I say.! (Ed)



英

Koi Genetics

Rupert Bridges

Most koi keepers are aware that the genetic make-up (**genotype**) of a fish determines its future potential. This is most obvious when it comes to colouration – we can provide the best environment and diet, however what is achievable is ultimately limited by the genes that the fish has been blessed with. Koi breeders in Japan and other parts of the world have turned their knowledge of how these genes are passed on into a profitable business, allowing them to be highly successful at producing top quality fish. Because of the complexity of colour / pattern inheritance in koi, and the fact that breeders' techniques are often closely guarded secrets, the selective breeding of top quality koi can seem like something of a black art. However, whilst we may not fully understand the genetic basis that determines the quality of a particular fish, an understanding of the underlying principles of genetics can help us appreciate why there is such variation between individuals.

Genes

We hear about genes and genetics almost everyday, yet how many of us actually know what they are and what they do? To explain, it's probably easier to start with what **nucleotides** are. These are molecules consisting of three components – a sugar molecule, a phosphate molecule, and one of four possible organic bases (adenine, thymine, guanine or cytosine). Nucleotides are joined together by their phosphate and sugar molecules, forming particular sequences depending on which of the four organic bases is present. In fact, DNA itself is comprised of two long strands of nucleotides, wrapped around each other in a 'spiral' (called a double helix). Each strand contains a sequence of opposing nucleotides, held together by their organic bases (adenine links with thymine, and guanine links with cytosine). A gene is simply a section of DNA that is responsible for producing a specific protein. The key to this is in its sequence of nucleotides, which creates a unique 'code' only found in that gene. These proteins are then used as the building blocks of all organisms. The same gene usually exists in two different forms known as **alleles**, which can have different effects.

A strand of DNA may contain as many as 5 million nucleotides, and therefore contain many thousands of genes, each coding for different proteins and having different effects. The nucleotides in a DNA molecule contain the sugar deoxyribose, hence the proper name for DNA – deoxyribonucleic acid.

The long pieces of double-stranded DNA are commonly called chromosomes. Chromosomes exist in pairs within the nucleus of a cell. Each pair has the same genes, although they may contain different alleles of that gene. These are called homologous chromosome pairs (meaning that both are the same). Most chromosomes exist in homologous pairs, with the notable exception of the chromosomes that determine sex in many animals. Humans have 23 pairs of chromosomes, 22 of which are homologous. The 23^{rd} chromosomes are the sex chromosomes. In males, the chromosomes in this pair differ, which is represented as XY, as opposed to XX in females. Whereas the majority of cyprinids such as orfe or minnows have around 50 chromosomes, carp and goldfish have roughly twice as many – 104 in the carp (Purdom 1993). This increases variation within a population but reduces the chances of varieties breeding true.

Protein synthesis

Genes exert their influence by controlling protein synthesis, and in particular the production of enzymes – protein molecules that control the rate of various chemical reactions. For example, the lack of one particular enzyme causes albinism; a good example of how genes control physical traits.

The process by which proteins synthesis is controlled is extremely clever, and depends on the organic bases in the nucleotide sequence of the gene. First, a small length of the DNA strand is split, breaking the opposing nucleotides apart and exposing their bases. There are only four types of DNA base – adenine, thymine, guanine, and cytosine. Different types of free RNA (ribonucleic acid) nucleotides then attach to the exposed DNA bases, and eventually join up to form a short strand of messenger RNA (mRNA). As more DNA becomes 'unzipped' the mRNA molecule lengthens. RNA uses the bases adenine, guanine, cytosine, and uracil. Only specific RNA bases can join with specific DNA bases, making the sequence of mRNA very precise: uracil can only partner adenine, and guanine can only partner cytosine. The mRNA molecule then passes out of the nucleus into the cell, and attaches itself to **ribosomes**, where it provides a template for the production of particular proteins.

Amino acids, the building blocks of protein, are brought to the mRNA on the back of transfer RNA (tRNA) molecules. The tRNA attaches to the mRNA via its bases, causing the attached amino acids to line up. These then bond together forming long chains of amino acids, and ultimately proteins. Importantly, the order of amino acids is determined by the order of nucleotides in the RNA (and therefore DNA), which is why specific genes code for specific proteins. So, to put it simply, a fish's genetic code will determine what proteins are produced, which in turn affect the expression of particular traits such as colour and growth.

Inheritance

The observable characteristics of an animal are referred to as its **phenotype**, its specific genetic make is known as the **genotype**. Phenotype may be very closely related to genotype in some cases, and less so in others. This is because phenotype is also affected by environmental conditions. So, for example, the allele combinations of just two genes (known as S and N) determines scale pattern in carp. In this example, genotype has almost total influence. Growth rate is far less certain though, as it is governed by a plethora of genes and heavily influenced by environmental factors such as food intake and quality, or oxygen supply.

Because the genetic make-up of an animal is inherited from its parents, it is possible to reproduce desired traits by selecting appropriate breeding stock. On the whole, it's much easier to predict the outcome where just one or two genes are involved, and where expression of the trait is closely related to the genotype. This is the basis for selective breeding; the process by which the vast range of colours seen in koi carp have been developed.

The reason that koi fry differ from their parents is that sexual reproduction is designed to mix up the genetic code. This increases genetic variability and ensures the future health of the population. For example, if all individuals in a population where genetically identical, all could be susceptible to the same parasites, with disastrous consequences. As we mentioned before, each chromosome pair contains the same set of genes. However, genes on either chromosome, (the allelic forms of a gene),may differ slightly. During the production of eggs and sperm, the chromosome

pairs are split via a type of cell division called **meiosis**. This produces eggs and sperm with only half the number of chromosomes (so in humans, 23 instead of 23 pairs). When the egg and sperm join during fertilisation, they each donate 23 single chromosomes, forming the full number of pairs again. One chromosome from each pair is from the mother, and one from the father. This ensures good mixing of the genetic code, yet can result in unpredictable characteristics in the offspring.

A simple example of basic inheritance is albinism, which occurs in most animals. Albinism is controlled by one gene, which exists in two allelic forms (one allele on one chromosome, one allele on the other). These albinism alleles can be represented as A and a. The A allele is written in capitals, as it is dominant, and if present in either chromosome will be expressed phenotypically as normal colouration. The a allele is recessive, and will only result in an albino if it is present in both chromosomes – in other words only if the A allele, the dominant 'normal' allele, is NOT present. If we know the genotype of the parent animals, we can predict the likelihood of their offspring being albino. This is best illustrated using a Punnett square, and we will assume that both parents have either allele. The Punnett square allows us to see all the possible offspring genotypes that could result from the inheritance of one allele from each parent

	Parent 1	
Parent 2	Α	Α
A	AA	Aa
a	Aa	aa

As we can see, the offspring have a 75% chance of normal colouration (AA & Aa), and a 25% chance of the fish being albino (aa). Of course, if one of the parents possessed both dominant alleles (AA), all of the offspring would have normal colouration.

Taking this further, we can look at the inheritance of scale patterns in carp (Purdom, 1993). Scale patterns are influenced by 2 genes, each of which has two alleles (S or s & N or n). Their combination gives rise to four different scale patterns:

Fully scaled (common) = SS:nn or Ss:nn

Mirror (scattered enlarged scales)= ss:nn

Linear (single row of enlarged scales along lateral line) = SS:Nn or Ss:Nn

Leather (scaleless) = ss:Nn

Fish with both dominant N alleles (NN) are not viable, and do not survive.

Therefore, if we were to cross two heterozygous (possessing both forms of the allele) linear carp, we would get the following:

	SN	Sn	sN	sn
SN	SSNN	SSNn	SsNN	SsNn
	(not viable)	(Linear)	(not viable)	(Linear)
Sn	SSNn	SSnn (Common)	SsNn	Ssnn (Common)
	(Linear)		(Linear)	
sN	SsNN	SsNn	ssNN	ssNn
	(not viable)	(Linear)	(not viable)	(Leather)
sn	SsNn	Ssnn (Common)	ssNn	Ssnn
	(Linear)		(Leather)	(Mirror)

From this cross, four of the combinations are not viable as they contain the NN combination of alleles. Of the remaining twelve, 50% will be linear, 25% common, 16.5% leather, and 8.3% mirror.

Some colours are also inherited in a fairly predictable fashion, by determining the formation of specific colour cells. However, the range and combination of colours seen in koi, plus their quality, is very complex, and something that is not very well understood. On top of this, traits like body shape and growth rate cannot be predicted by the action of just one or two genes. They are determined by polygenic (multiple gene) inheritance and show what is called 'continuous variation', where there may be a whole range of phenotypes, influenced by many genes plus environmental factors. Selecting for these traits normally involves many more fish, and a much longer and more involved breeding programme to get the desired results.

One down side to the process of intensive selection of particular colours and patterns, is that koi may be a little weaker (less 'fit') than wild carp. This is because they have been selected for traits other than those that would help them survive in the wild (e.g. disease resistance, fast growth, tolerance of poor conditions). This is why koi tend to require more careful attention than your average carp.

Genetic engineering

One of the more interesting, albeit controversial, sides of genetics is genetic engineering. This involves the manipulation of the genetic code to

produce desired traits in an animal, and has already been applied quite widely to fish. Genes can be taken from one organism and spliced into the genome of another, often totally unrelated organism. Popular examples that spring to mind include genes for insecticidal toxins taken from bacteria and spliced into rice or wheat, fluorescent proteins from reef corals inserted into the DNA of zebrafish, creating controversial glow-in-the-dark aquarium fish, or antifreeze protein genes from arctic fish inserted into the genome of tomatoes, to allow them to store better when frozen.

Hu, Wang, & Zhu (2005) report on a variety of studies involving transgenic carp, i.e. carp that have had a foreign gene inserted into their genetic code. In particular, they report on studies were growth hormone genes have been injected into developing carp embryos. In one study, the transgenic carp reached market size at 142 days, a full year before non-transgenic fish. In another, after 120 days the largest transgenic fish were 2,750g in weight, as opposed to 1,414g for the control fish. The reason for this impressive growth seems to be due to more efficient food utilisation; in particular the transgenic fish wasted less energy on nitrogen excretion and general metabolism, and retained more for growth.

Whilst our understanding of fish genetics grows ever greater, it seems that for the time being we will still need to rely on the experience and skill of specialised breeders to deliver the best quality koi. Also there remains an inherent mistrust of any genetically modified ('GM') organisms in the psyche of most people in the western world. In any case, if producing top quality koi was easy, perhaps the hobby would lose some of its fascination.

References

Purdon (1993), Genetics and Fish Breeding
Billard (1995), Carp Biology and Culture
Roberts, Reiss, Monger (1993), Biology: Principles and Processes
Hu, Wang, Zhu (2005), Developments in transgenic fish in the People's Republic of China
Thanks also to Dave Hulse, Reaseheath College / Tetra UK, for assistance in putting the article together

Glossary

Genotype – Genetic make-up of an animal Nucleotide – Organic molecules that form the building blocks of nucleic acids such as DNA and RNA Allele – Alternative forms of a gene Ribosome – Small particle found in a cell, where proteins are synthesised Phenotype – Observable characteristics; the result of both genetic and environmental influences Meiosis – Type of cell division the occurs during the production of eggs and sperm, resulting in a cell containing half the full chromosome number

This article was provided by Rupert Bridges B.Sc(Hons), M.Sc, DipM, ACIM Product Manager for Tetra UK www.tetra.net





NVN awards for services to the Koi Show.

In a far sighted move the NVN have commissioned a series of pins to commemorate the hard work and reward the loyalty of their show volunteers.

With a bronze pin to commemorate 10 years of show service, silver to acknowledge 15 years, gold (20) and with a diamond for 25 years dedication they are looking towards the long term.

Several of this years 120 volunteers have already earned their 10 and 15 year pins, - not bad for a show that just held its 16th anniversary.

"Continuity, Tradition & Progress" is the motto of the South East Section, it may not be the NVNs but by this action they are demonstrating a marked similarity of thought.

Full marks for a great idea.

CON - GRAT - U - LA - TIONS !

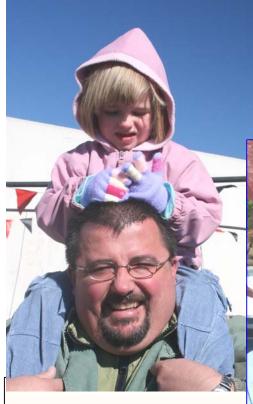


Congratulations

To Kevin Harrison Larry Hubbard Raj Laloo Jim Phillips Oosie Strydom

For achieving Grade A status within the SAKKS Judges Training Programme.





WELL DONE!



Anti clockwise : - Kevin Harrison, Larry Hubbard, Raj Lalloo, Jim Phillips, & Oosie Strydom. 英

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Partners in goodwill.

This sentiment and it's logo were the product of Norman Call's (our representative in the Oregon Koi & Watergarden Society) imagination. It came about in an organic sort of way that has a lot to do with the relationship between our two clubs, our two countries and our hobby.

Our Spotlight newsletter had USA/UK logo that was getting a bit faded & jaded after years of photocopying etc. Knowing that Norm was a graphic designer I asked him to give it a makeover which he did. It has adorned our newsletter ever since. It was delivered in October 2001 at a time when the atrocities and the aftermath of 9/11 were still current news and fresh in peoples minds.

That month, we were invited to attend a fund raising 'Barn Dance' by the governors of the school where we hold our Koi shows. The school was at one time in its history (WWII) a training school for fire-fighters of the London Fire Brigade who still support the school, as we do now. I forget the details now, but the heroics of the New York City Fire Department were mentioned in relation to the dance.

As a gesture of support Teresa Lambert one of our members printed off Norm's logo, laminated them and produced brooches which we wore to the dance. I sent one to Norm, who is an avid pin collector, who in turn turned the concept into a pin. The logo next appeared on the OKWS' own newsletter "The Tall Fish Story" underlined with the sentiment -"Partners in goodwill" an ethic we have since adopted and spread. Our partners are now the OKWS, The NVN (Dutch Koi Society and the KwaZulu Natal chapter of the South African Koi Society SAKKS.



About the South East Section.

The South East Section was founded in 1981 by a break away group from the London Section. It obtained Section status from the BKKS in 1982 and serves the counties of Kent, East Sussex, Surrey and Berkshire and the southern boroughs of London.

It's neighbouring Sections are the South Kent to the south, Essex to the North, Worthing to the west and the MSB (Middlesex & Surrey Borders) to the northwest.

The South East has a pretty stable membership generally numbering about 85 families.

Almost since it's founding the SouthEast has participated in information exchange with overseas Koi clubs and continues to do so today.

Our 'Open' show is both an attraction to the UK Koi scene as well as Koi keepers

Every year the show attracts an increasing number of overseas visitors and through them a number of useful connections have been made which enhances our appreciation and understanding of the hobby.



The show is always held on the August Public Holiday which generally falls on the last weekend of that month. Details can always be found on our web-site -

www.koi-clubs.com/SouthEast

The South East meets on every 4th Sunday of the month with the exception of December. Our meetings start at 2pm and we endeavour to have a speaker for 2 out of every 3 meetings. Those speakers generally cover Koi related subjects but occasionally we have one that diversifies a little e.g. Bonsai.

Our current membership fees are £15 per family and details as well as a schedule of speakers can be found on our web-site.

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And	

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