



Koi Appreciation
Anderson Japanese Gardens



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History

- Koi were domesticated in Japan from wild stock in the late nineteenth century
- The first koi were used to supplement the diet of rice farmers in the Niigata region in Japan
- These koi were known as Magoi, and are still occasionally seen in Japan; all koi are descendants of this original brood stock





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History

- The colors that we see in koi today occurred as a result of a natural mutation which resulted in red marking that appeared in Magoi
- The rice farmers noticed this mutation and began to isolate the fish with red markings
- Eventually, a fish was produced with reddish coloration
- A second natural mutation occurred which added white colors to the reddish-colored fish
- The first “modern” koi was a blue fish with reddish markings, known as an Asagi





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Rice Farms - Hiroshige





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Rice Farms - Hiroshige





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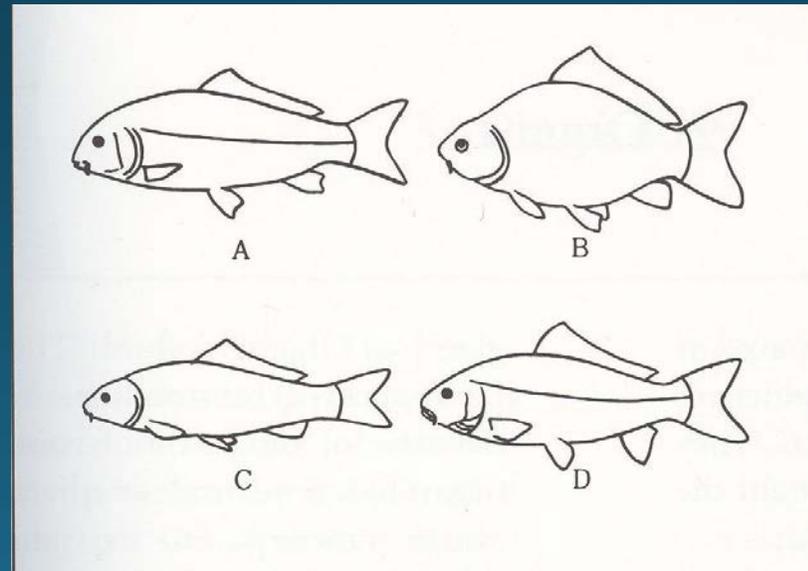
Modern day Rice Farms



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History

- Japanese koi were probably derived from stock first raised in the Middle East
- They are distinct from the three other varieties of carp traditionally associated with the “rough” fish seen in the United States and Europe; varieties A through C in the accompanying picture





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Carp - Hiroshige





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Two carp among Waterweeds - Hokusai



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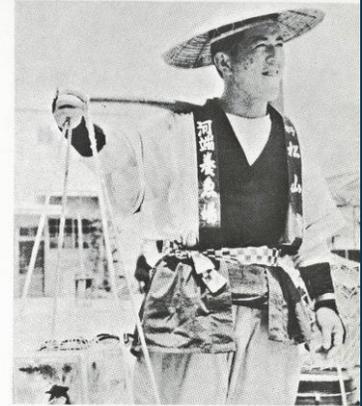
Two carp - Hokusai



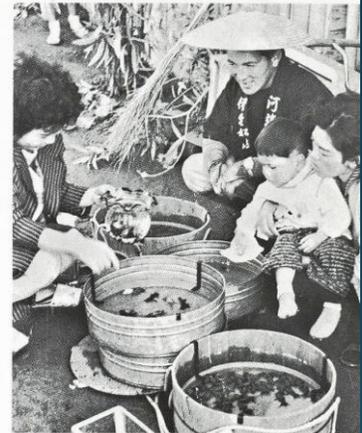
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History

- Koi were originally shown locally as a way to pass the time. Eventually, shows were held regionally and then nationally
- In the early to mid part of the twentieth century, koi were sold by peddlers who walked with koi bowls suspended from their shoulders
- Koi were originally priced very reasonably; today a champion-quality koi can cost several hundred thousand to over one million dollars
- The original rice farmers are now multi-millionaires, who run multi-national businesses



Dear memory of the past
Carp fish pedler carrying fish
on shoulder





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History

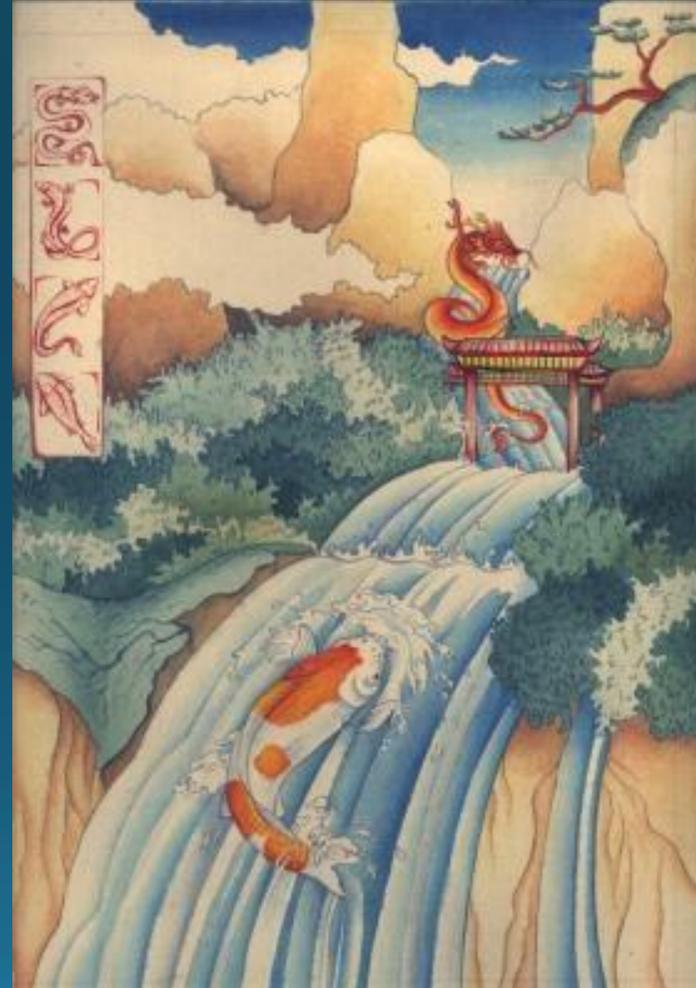
- Koi are part of the character of Japan. Koi embody strength and vitality, traits that are highly prized by the Japanese
- May 5th is set aside as “Children’s Day” in Japan. Children and their parents celebrate the day by flying Koi kites, called Koinobori Flags.
- Legend has it that as the Koi makes its way upstream to spawn, they are transformed into dragons





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Legend of koi turning into dragon

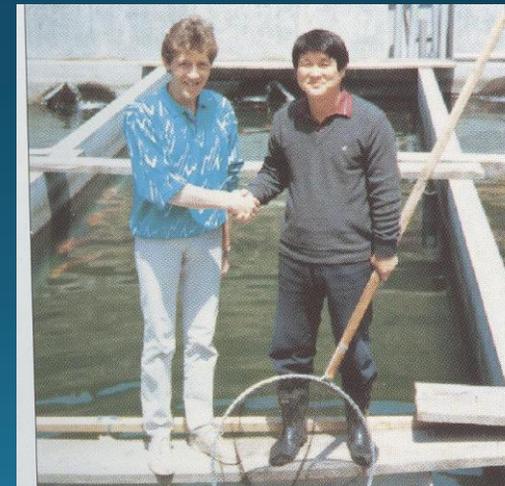




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History

- Koi breeders have developed specific characteristics in their fish; these dealers have become well-known in the Koi community, and their fish are highly prized
- Among the most famous breeders are Mr. Toshio Sakai of Matsunosuke fame, and Mr. Minoru Mano, of Dainichi fame.

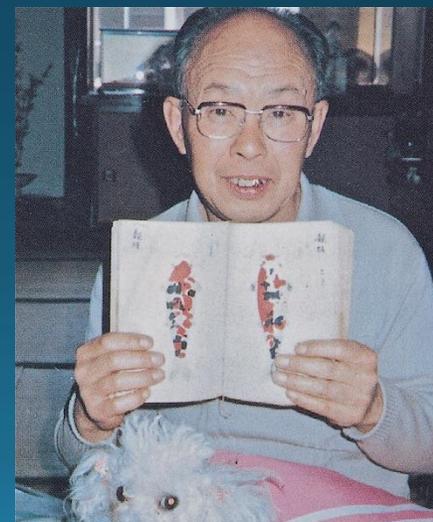




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History

- Other notable breeders include Mr. Hasegawa, Mr. Senichi Mano, and Mr. Hiroshi Kawakami

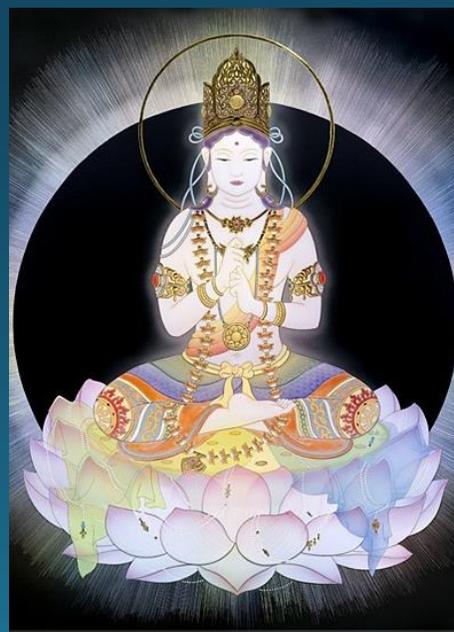




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History

- Many of the breeders have been in the business for generations. Mr. Minoru Manu (Dainichi) is an exception to the rule. He began in the business as a young man with no experience. His farm has won more Japanese Grand Champions than any other Koi Farm. The Name Dainichi comes from a god, whose statue Mr. Manu found one day. Mr. Manu dedicated his farm to the god in return for good fortune – his dream of good fortune has been realized. After his death, his sons continued in the tradition started by their father. Dainichi Koi Farm is the only farm to win Grand Champion in the Kohaku, Sanke, and Showa categories.



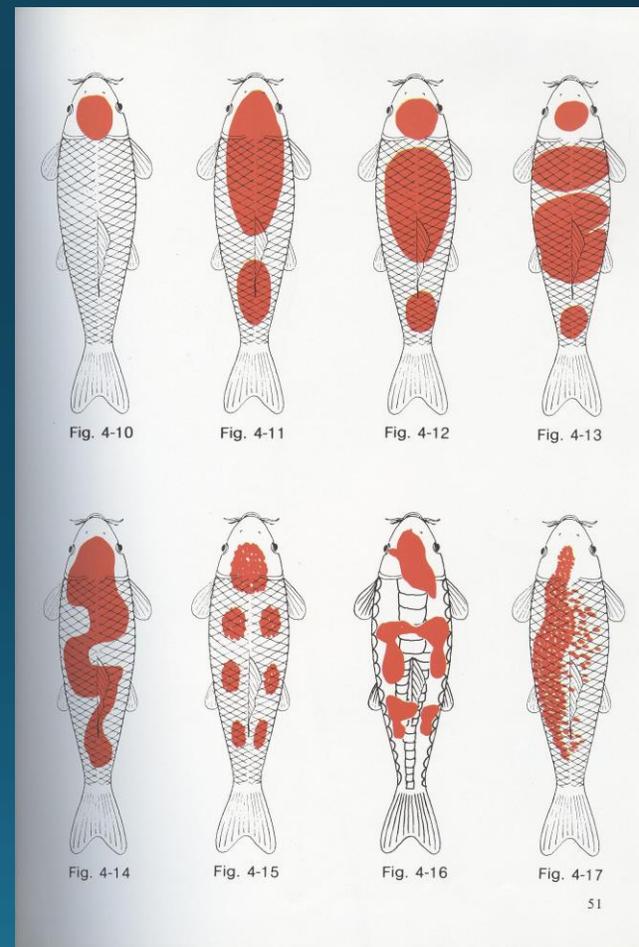
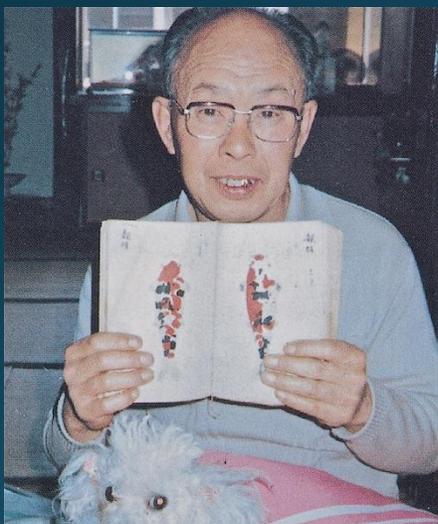
大日如来 Dainichi-nyorai



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History

- Shown here is a line drawing made circa 1920 by Mr. Kawakami, father to Hiroshi Kawakami, who started the Torazo (Tiger) line of koi. Torazo Koi are one of the foundational lines of Koi in Japan.





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Varieties

- The first variety developed was the **Asagi**, which is a blue koi with red accents
- The Asagi traces its lineage back to the Magoi
- Asagi are prized for the following characteristics:
 - Intense, blue coloration on the scales of the fish
 - Each scale is reticulated, that is, outlined by a white border
 - Red should be visible on each fin and on the head



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Asagi





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Varieties

- Sometime at the beginning of the last century, German scaleless koi were introduced into Japan; these scaleless fish are known as Doitsu in Japanese, which is a corruption of the word **Deutsch**, meaning German
- The introduction of scaleless fish led to these fish being bred with the traditional scaled fish
- The fish scaleless fish was the **Shusui**, which was the result of breeding a scaleless koi with an Asagi
- The Shusui has a row of scales on either side of the dorsal fin, flowing from the tail and ending just before the head. There are sometimes scales along the sides of the fish.
- The fish has a bright blue background color with red markings on the back and sides of the fish



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Shusui





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Varieties

- The next variety developed was the **Kohaku**, which is a red and white koi
- This variety is the most popular type of koi in Japan, perhaps because the fish is the color of the Japanese flag – that is, red and white
- Kohaku are prized for the following characteristics:
 - Intense, evenly distributed coloration
 - A white background color which has a creamy, porcelain character
 - A voluminous body shape
- It is said that koi appreciation begins and ends with the Kohaku



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Kohaku





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Varieties

- The **Utsuri** variety was likely a mutation from Asagi stock
- There are three color variations in this variety:
 - Black and white
 - Black and red
 - Black and yellow, although not commonly seen
- Utsuri are prized for the following characteristics:
 - Intense, evenly distributed coloration
 - A black background color which looks like Japanese ink, or sumi
 - Intense complimentary coloration
 - A voluminous body shape



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Utsuri





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Varieties

- Sumi, as noted, refers to a type of ink, as well as a style of painting, known as sumi-e
- The sumi-e style is based on the concept of simplicity and minimalism and encourages the viewer to reflect more closely on the subject of the painting





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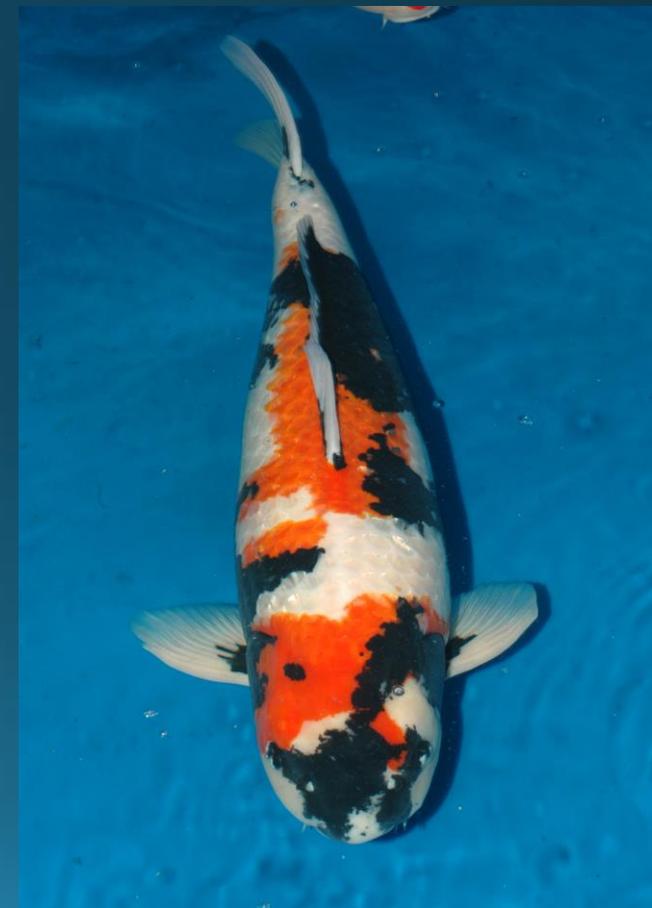
Varieties

- The **Showa** was developed sometime after the Kohaku from Utsuri stock
- This variety is very popular worldwide due to its striking colors
- Showa are prized for the following characteristics:
 - Intense, evenly distributed coloration
 - A black background color which looks like Japanese ink, or sumi
 - Intense red coloration
 - A voluminous body shape



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Showa





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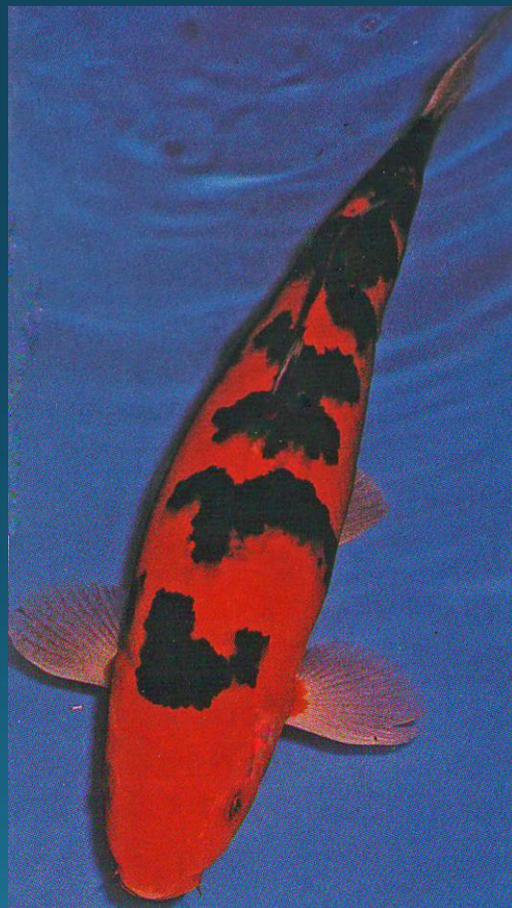
Varieties

- The **Bekko** was developed at approximately the same time as the Utsuri, with which it is sometimes confused
- Where the Utsuri has a black background with white, red or yellow colors acting as accents, the Bekko has a white, red or yellow background with black accents
- Bekko come in three color patterns:
 - White with black accents; Shiro Bekko
 - Red with black accents; Hi Bekko
 - Yellow with black accents; Ki Bekko
- Red and yellow Bekko are becoming increasingly harder to find due to the lack of demand for these fish



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Bekko





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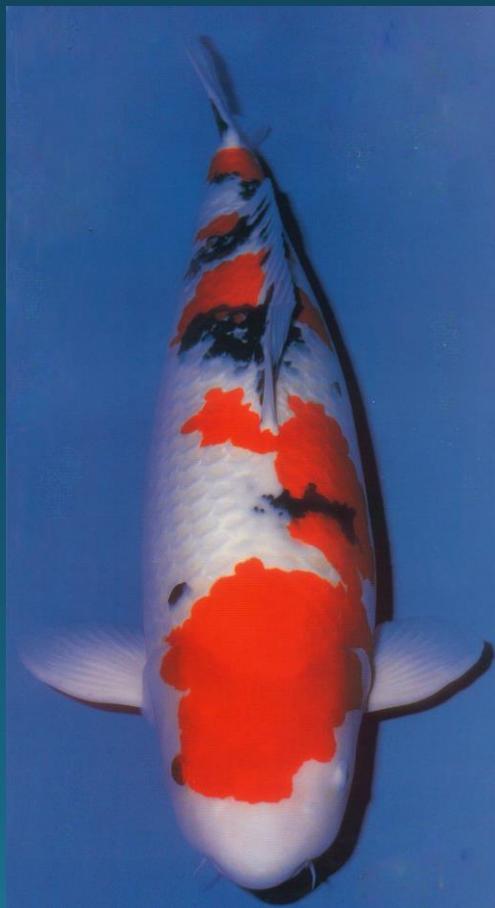
Varieties

- The **Sanke** was most likely developed as a cross between a Kohaku and a Shiro Bekko
- Sanke are sometimes confused with Showa, but where the Showa has a black background with accent colors of white and red, a Sanke has a white background with accents colors of red and black
- In the original bloodline of the Sanke, the black appeared washed-out. Sanke were then crossed back to Magoi stock by Toshio Sakai to improve their hardiness, length and black coloration
- Sanke are prized for the following characteristics:
 - Intense, evenly distributed coloration
 - A white background color which has a creamy, porcelain character
 - Intense complimentary coloration
 - A voluminous body shape



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Sanke





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Varieties

- The **Tancho** is a special variety of koi which has a round spot in the center of the head of the fish
- The Tancho reminds koi fanciers of the Tancho Crane, which is marked With a red spot on the center of its head
- Tancho koi are usually judged in the following classes:
 - Tancho Kohaku
 - Tancho Sanke
 - Tancho Showa
 - Tancho Other (Kawarimono)





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Two Cranes - Hokusai





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Tancho





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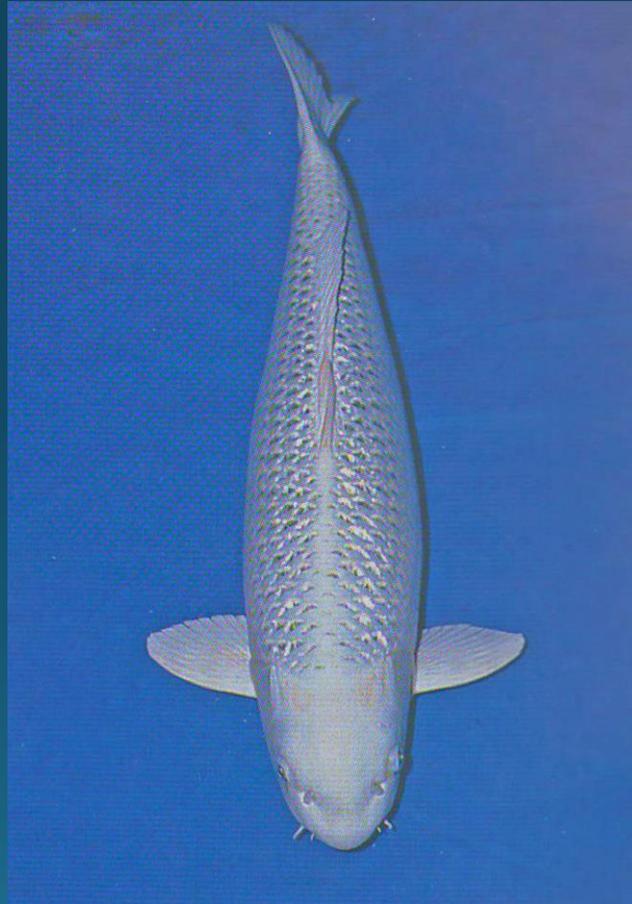
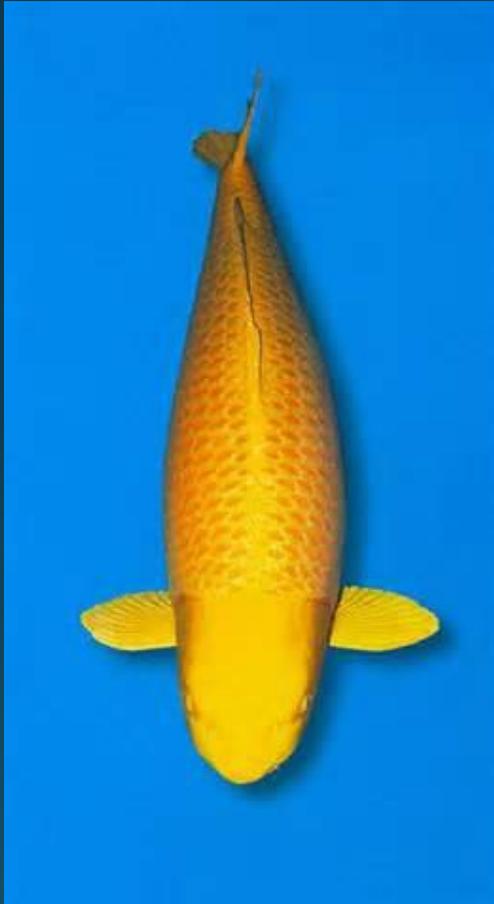
Varieties

- The **Ogon (Hikarimono, shiny, single color)** Variety was developed in the late 1940s by Mr. Aoki (Aoki-san)
- Ogon koi are metallic and are visually striking, and are popular with most people
- Ogon come in a variety of colors; points of appreciation include:
 - Bright, single metallic color
 - Robust body shape
 - Sheen of skin;
 - Presence of fukurin, or skin appearing between scales



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Ogon Hikarimono





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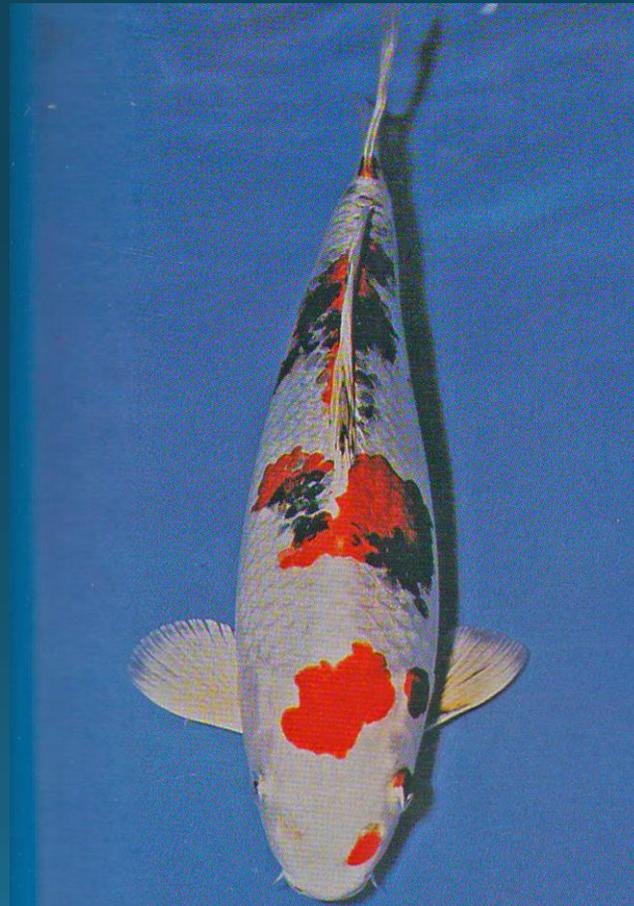
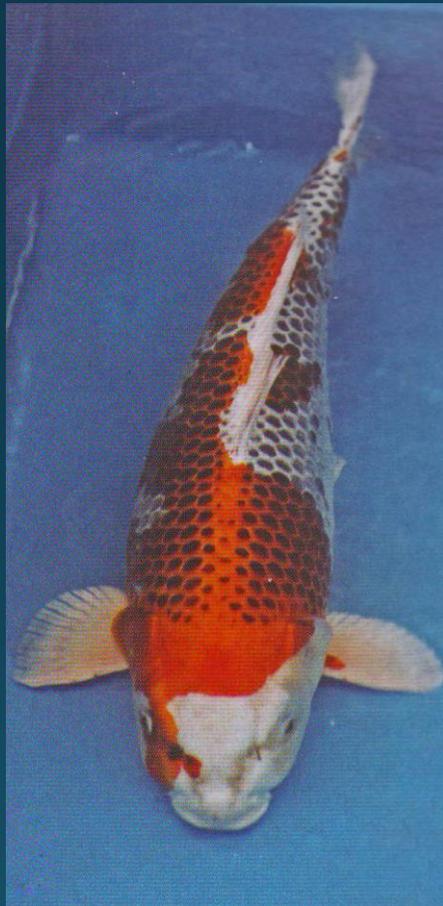
Varieties

- The **Hikarimoyo** (shiny, many colors) Variety was developed in the late 1960s by several breeders
- Hikarimoyo are metallic fish with patterns
- Hikarimoyo come in a variety of colors and patterns, with the two most popular varieties being the Kujaku and the Yamtonishiki
 - Bright, metallic colors
 - Robust body shape
 - Sheen of skin;
 - Presence of fukurin, or skin appearing between scales



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Hikarimoyo





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Varieties

- The **Koromo** and **Goshiki** varieties were developed as crosses between Kohaku and Asagi
- Both fish have a base that is either white (Koromo) or grey (Goshiki) with red accent markings
- Both varieties are appreciated as follows:
 - The red patches should be distinct and vibrant
 - In the case of the Koromo, each scale should be reticulated (outlined)
 - In the case of the Goshiki, the grey background should be evenly distributed



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Koromo/Goshiki





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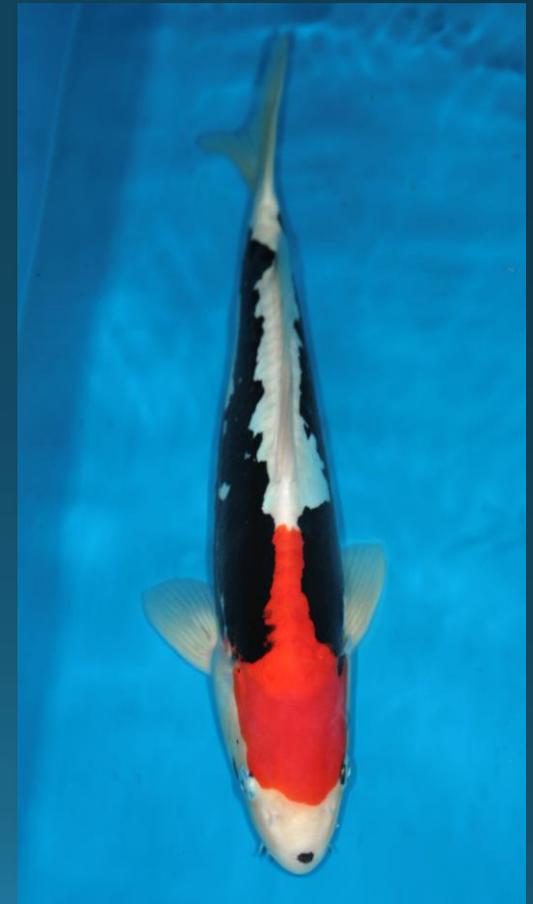
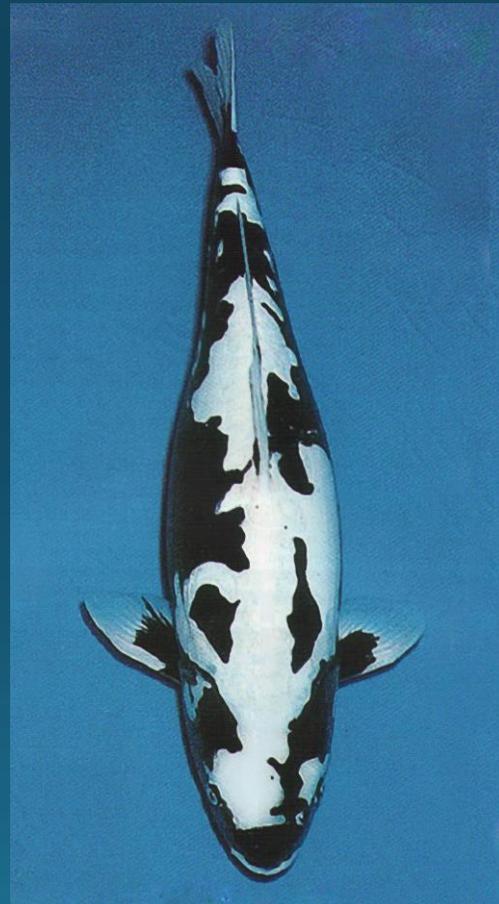
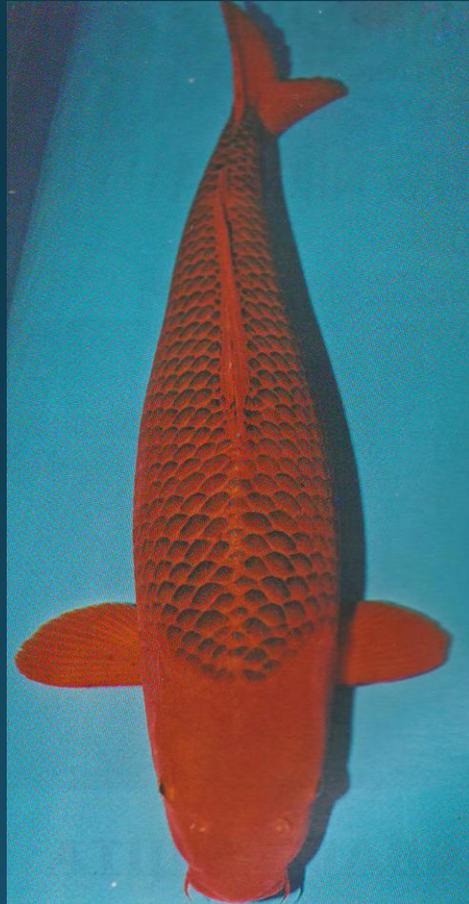
Varieties

- The **Kawarimono** is a catch-all variety that includes non-metallic fish that do not fit into any other category
- Since this category contains so many different kinds of fish, it is quite large
- Appreciation for this category is as follows:
 - The colors should be vibrant and distinct
 - The body should be robust
 - Where there is a pattern, it should be well-defined



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Kawarimono





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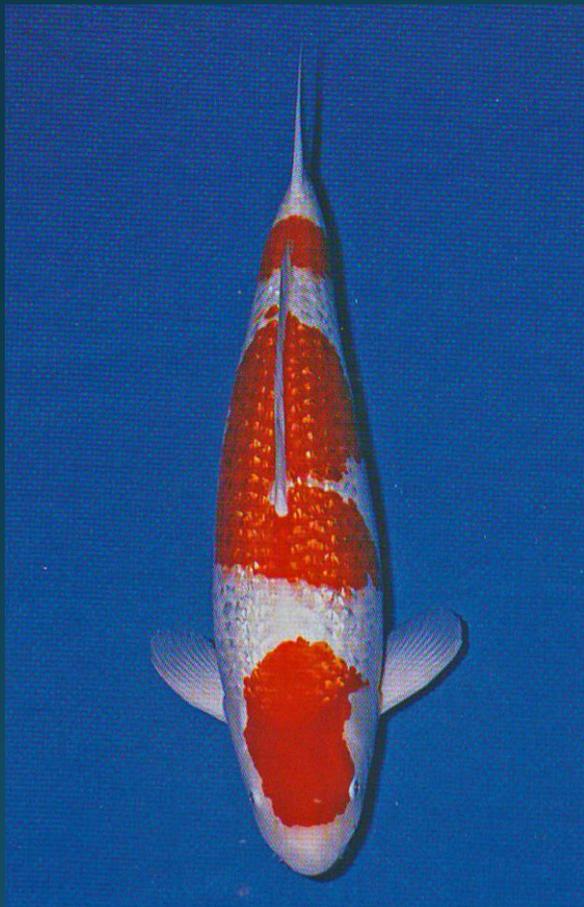
Varieties

- Gin-Rin koi are fish with special scale characteristics, and can occur in any type of koi
- There are four (4) different types of Gin-Rin scales:
 - Pearl Gin-Rin
 - Diamond Gin-Rin
 - Kado-Gin
 - Beta Gin (preferred)
- Appreciation for this category is as follows:
 - The colors should be vibrant and distinct with no apparent washing-out of color
Due to the Gin-Rin scales
 - The Gin-Rin should extend down the back to at least 4 scales down
 - The body should be robust



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Gin-Rin





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Varieties

- Longfin koi are the result of a cross between the Indonesian Grass Carp and a Nishikigoji, and were first bred by Mr. Suda (Suda-san)
- For a number of years, Longfin were not considered Koi
- The Japanese were reluctant to develop standards for this variety and sought help From the Associated Koi Clubs of America (AKCA) to develop the standards
- After several unsuccessful attempts at developing the standards, the AKCA adopted standards developed by Peter Ponzio, Larry Christensen, Joe Pawlak and Myron Kloubec in 2008; they are now used world-wide
- Appreciation for this category is as follows:
 - The body should be robust, and not thin
 - Fins should be flowing, not excessively long, and should complement the body
 - Swimming motion should be graceful, and not jerky or inelegant



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Longfin

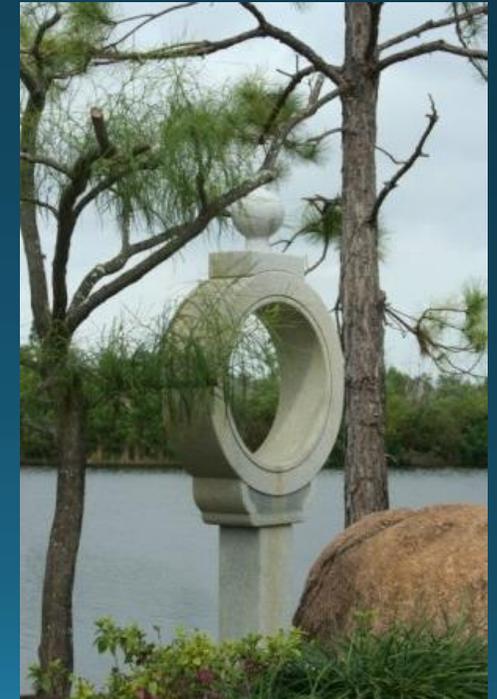




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Husbandry and Care

- Koi have the ability to grow as large as one meter (39 inches) in length
- In order to achieve this size, koi must be kept in optimal conditions, which include:
 - Pond size
 - Filtration
 - Feeding and Nutrition
 - Water Quality
 - Disease prevention





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Husbandry and Care

Pond Size

- There is no standard definition of pond size; however, the larger the pond, the larger the fish
- As a general rule, ponds should be deep enough to prevent predation by animals + - 4 feet
- Ponds should not be constructed where excessive debris will blow into the pond
- If possible, situate where there will be some shade during the day
- Construct the pond in a location where it can be viewed
- Do not overstock the pond!!!!!!!
- Make sure to check local restrictions (if any) on pond construction



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Husbandry and Care





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Husbandry and Care





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Husbandry and Care





Husbandry and Care



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Husbandry and Care

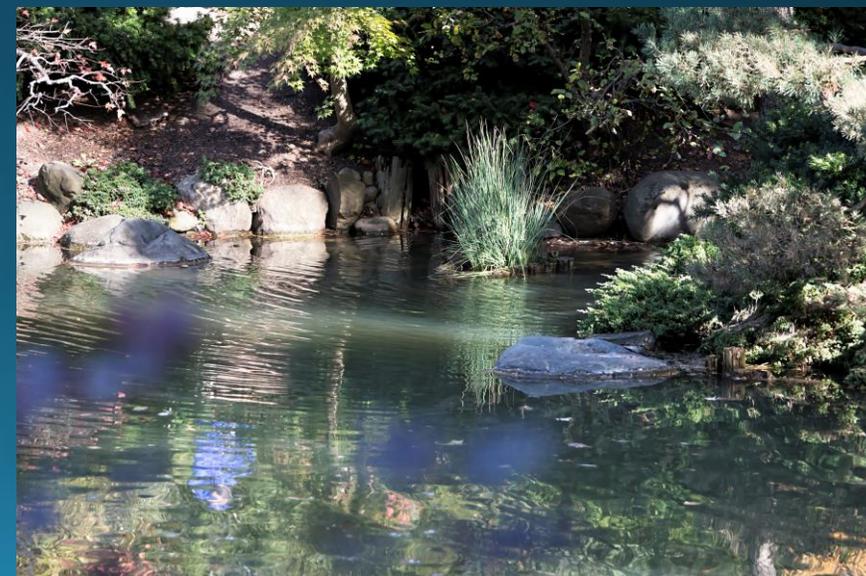




Husbandry and Care



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Husbandry and Care

Filtration

- The nitrogen cycle is a term coined to describe the process that occurs in ponds that converts toxic ammonia into nitrites and then into nitrates
- Ammonia is a product that is produced as a result of fish waste and respiration
- If ammonia is not broken down into its less harmful components through nitrification, it is lethal to fish
- Filtration is necessary in smaller ponds to complete this process
- While there is no standard definition of the size of filters, a good rule of thumb is 1/10 the size of the pond
- Provide mechanical, chemical and biological filtration



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Husbandry and Care





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Husbandry and Care

Feeding and Nutrition

- Koi are omnivorous, and require a diet with protein, some starch and vegetable ingredients
- Koi tend to assimilate protein that is fish-based or based on vegetables, not meat-based protein, with a protein content of between 35 – 45% of the feed
- In addition to proteins and carbohydrates, koi require vitamins and trace elements, some of which can be added to their diet (vitamin C, E and carotene [for coloration] are the most commonly added trace elements)
- Some hobbyists add montmorillonite clay to their ponds to supply calcium for bone formation and to improve the sheen in their fish



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Husbandry and Care





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Husbandry and Care

Water Quality

- Koi can adapt to a variety of water parameters, but do best under the following conditions:
 - pH between 7.0 and 8.5
 - Hardness between 75 to 150 ppm
 - No traces of ammonia
 - No nitrite
- Adequate oxygen levels – air blower with air stones recommended
- Do frequent water changes to eliminate contaminants – 10% per week
- Consistency in water conditions the **MOST** important factor





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Husbandry and Care

Disease Prevention

- Koi husbandry allows the fish not merely to survive, but to **THRIVE**
- Follow the basic guidelines noted in this seminar:
 - Provide an adequate size pond, do not overstock
 - Provide adequate filtration – mechanical, chemical, biological
 - Use high-quality koi food
 - Monitor your water quality – do frequent water changes
- Once you do all these things, you'll never know who will stop by to visit





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Information

For more information on koi and goldfish, please visit these sites:

- <http://www.akca.org/>
- <http://www.americangoldfish1.org/>
- <http://www.znaamerica.org/>
- <http://niigata-nishikigoi.com/>
- <http://zna.jp/eng/index.html>
- <http://www.peterjponzio2.com/>