It’s time to attend the

2011 Symposium
Qingdao, China
July 22 - 30, 2011

At press time, the IWGS Qingdao Symposium is just weeks away from its spectacular opening. It is still possible to join us in Qingdao if you contact me immediately at executeditor@iwgs.org or call me at 585-202-1815. Our Chinese hosts have spent numerous hours planning this symposium and it promises to be one of the most distinctive symposiums in IWGS history.

I am pleased to announce the completion of our speaker lineup. Joining us from Russia is Ms. Maria Kryukova from the Institute for Water and Ecology Problems, Far East Branch, Russian Academy of Sciences. From Thailand Mr. Vichai Puripunyavanich will present “The Story of Mutant Yellow Lotus in Thailand and Its Hybrids.” We have two speakers joining us from the USA. The first is Mr. Rick Bartel speaking on “The Importance of Aquatic Plant Use in Water Feature Installation Applications.” Rick will be meeting us after he completes a new water feature project in Cambodia. Our last speaker is Mr. Warner Orazco-Obando reporting on “Phyto-remediation of S-metochlor Using Lotus (Nelumbo nucifera Gaertn.).”

The recent weather in Qingdao has been hot and humid with temperatures in the upper 80s F. (low 30s C.). Last report from Chinese Waterlily World tells me that the lotus are doing well and should be “looking good” during our visit. For members joining us in Beijing for the post tour, everything is going according to plan thus far. The China Travel Agency assures me that everything will be enjoyable during our stay in Beijing.

So far over 150 people have registered to join us in Qingdao. We are most excited to welcome our new members from Belgium, Russia and India to the IWGS Qingdao Symposium!

Visit www.iwgs.org for complete information and to download registration forms.
May 9, 2011

A friend to all, Stan Skinger had a special fondness of the International Water Lily and Water Gardening Society (IWGS).

My first contact with Stan came as he expressed interest in volunteering for me and the water gardens. We negotiated an agreement in which Stan agreed to bring youngsters from Lookout Mountain Services Center to volunteer at the Gardens. The kids at Lookout Mountain were serious offenders and would have been in prison had they been old enough.

Those were exciting days and those were good days. Under Stan’s direction waterlilies and heavy marginals were divided and repotted. There was time for education and there was time for fun. The group always remembered to bring a lunch for me.

The propagation greenhouse quickly got Stan’s attention. Soon he was helping me with growing the waterlilies. Our method was a take-off from the program initiated by Dr. G.H. Pring at Missouri Botanical Garden and further developed by Patrick Nutt at Longwood Gardens.

Stan was a great student and his involvement in the program grew. He befriended and visited the finest hybridizers/water gardeners of our day. He met and became dear friends of Kit Knotts and William Frase. Victoria experts Nancy and Trey Styler were amongst Stan’s frequent companions and most cherished friends. Verena Liechti visited us for a short internship. Stan and Verena hit it off quickly and Stan remained extremely fond of Verena.

The 1997 IWGS Symposium in Denver will not be forgotten. We had prepared one of the finest displays imaginable; the detail and diversity were beyond imagination.

On the evening prior to the Symposium, light hail began to fall. I stepped out-side for a minute, the hail raged pounding against the greenhouse roof. I did not have to look. The waterlilies and aquatics were decimated.

Stan gained a special love for the species waterlilies. He applied himself intensely and got gems such as *Nymphaea gigantea* to flower in our pools; not an easy thing in our mile-high climate.

The hail-riddled confetti-like waterlilies did little to dampen Stan’s enthusiasm. The day after the storm became Stan’s day in the sun as he proudly and accurately detailed the subtleties and propagation methods of the species waterlilies.

A fine waterlily *Nymphaea* ‘Stan Skinger’ (Florida Aquatic Nurseries… Rocky Mountain Legacy Collection) bares Stan’s name.

photo credit goes to the following... Lois Mayerchak, Bill Powell and Joe Tomocik.

Director of Horticulture Sarada Krishnan honoring Stan for his extraordinary volunteer efforts at home of Nancy Styler
Working with an international group always has its challenges and rewards. Obvious differences like language, time differences and cultural subtleties all factor in. As we get down to work we all have common goals and work to the greatest success of the Society. It is my privilege to work with many of these individuals from around the globe.

The IWGS owes a great deal of gratitude to Dr. N. Nopchai Chansilpa of Thailand for allowing *Nymphaea* ‘Wanvisa’ to be one of our 2011 Collector’s Aquatic Plant of the Year. The sale of this waterlily has been an outstanding fundraiser for the IWGS. We also must acknowledge the hard work and dedication of the staff at Nelson Water Gardens and Southwest Aquatics for growing and shipping these plants. In particular Mike Swize and Jim Purcell lead the efforts of each grower respectively. We also had *N.* ‘Tanzanite’ as our second CAPY. This plant proved to be popular as we filled our international orders. The staff and office at Florida Aquatic Nurseries did a superb job in providing the plants and shipping them to their destinations. Programs like the CAPY are still evolving and maturing. Much credit also goes to others who also contributed to the effort like Steve Stroupe, Tish Folsom and Tim Davis. We certainly appreciate the support of our Italian members who were most anxious to take advantage of our offerings in 2011.

In a few weeks the IWGS will travel to Qingdao China for our first Sino – Symposium. I have met and worked with some outstanding individuals and I am most grateful for Google Translate. Together we have assembled an incredible symposium which will introduce us to the hidden treasures of Chinese water gardening. Our Chinese hosts have worked hard to provide a unforgettable initiation to Chinese research, culture and history. Together we have gathered speakers from around the globe from countries like India, Russia and Australia. I hope to develop strong ties with all of our international participants so they become contributors to our Journal, website and even online discussions. We will host our first ever silent auction on foreign soil featuring aquatic plants from around the world. This will be an adventure as we work our auction in Chinese and English. I want to personally thank everyone to date who has worked so hard to make this Symposium possible. This Symposium has been the dream and goal of Prof. Huang Guozhen and he has worked tirelessly to insure for a successful event for the IWGS.

While preparing for our Symposium I have had the honor of meeting Dr. Subir Ghosh from India. Dr. Ghosh is excited to work with the IWGS and share with us his knowledge of the aquatic plants from the West Bengal Region of India. He has been most gracious in following up with many new members from India who have joined the IWGS. Finding new active members like Dr. Ghosh assures a bright future for the Society.

Currently I am working with a few of our Japanese members to introduce them to new IWGS members and make sure they become “friends” on Facebook as well. Most of our new members appear to appreciate our efforts to welcome them into the Society and to have someone greet them in them in their own native language. Thank you to Mr. Keiji Kawai and Mr. Noriyuki Kato for your assistance.

I hope to meet and greet many of our members in Qingdao. We hope to share photos and video in our Journal, on Facebook and on our new website. We will do our best to make this world a little bit smaller and more waterlily friendly for everyone!

**Larry**

**Executive Director**
Lotus (*Nelumbo*) is one of the most beautiful flowers in the world. The flower visitors and pollinators on *Nelumbo* have been recorded by Charles Robertson (1889) and Sohmer & Sefton (1978) based on investigation of American lotus (*Nelumbo lutea* (Willd.) Pers.). In these two studies, at least 32 and 70 species of insects were respectively collected from American lotus flowers. Pests of lotus have also been briefly reported in China, Japan, the United States, Thailand and Australia. However, an in-depth survey of insects associated with lotus in container production system has not been conducted.

During the summer and fall of 2008, an investigation on insects associated with lotus was conducted at Auburn University. There are more than 120 cultivars and about 1000 potted plants of lotus in a container production system at the Patterson Greenhouse Horticulture Complex at Auburn. Observations were made either in the morning or afternoon based on daily observation intervals or once every several days. In total, over 100 species of insects and pests were physically collected or photographed for identification. More than 60 species have already been verified, and the others are still under evaluation. Specimens have been stored at the Department of Entomology & Plant Pathology of Auburn University. The images of some species are available on the webpage: [http://bugguide.net/bgimage/user/18967](http://bugguide.net/bgimage/user/18967).

The container cultivation system of lotus offers a fantastic diverse environment and ecosystem for many insects and other wildlife to prosper. Containers filled with water provide frogs, snails, dragonflies, damselflies and other insects a favorable environment in which to live and propagate. Lotus plants not only are a food source for the diverse pests, but also attract many carnivores, especially spiders, to feed on the pests and other insects. The majority of the most common, often- seen pests and insects on lotus are discussed in this report. They can be roughly divided into 4 categories: leaf-eating pests, flower-eating pests, pollinators, and the neutral or friendly species.

1. **Leaf-eating pests**

   (1) **Mimic pond snail**
   
   *Pseudosuccinea columella* (Say), also called the American ribbed fluke snail, is a small air-breathing freshwater snail less than 10 mm up to 20 mm in length. This species is native to North America, but it has shown strong invasive capabilities in the last decades and is now distributed worldwide.

   The mimic pond snails are commonly found in lotus containers or outside throughout the whole year. They eat the floating leaves of lotus, mainly the blades (Fig. 1-2) and sometimes the petioles (Fig. 3).

   (2) **Waterlily leafcutter** — *Synclita oblitalis* (Walker)

   The waterlily leafcutter is an inappropriate common name for this insect because it feeds
on not only waterlilies, but also on numerous aquatic plants including *Nelumbo*. The adult moth (Fig. 8) is sexually dimorphic, and the males are distinctly smaller (wingspread 11-13 mm) than the females (wingspread 15-19 mm).

The waterlily leafcutter is often found to feed on the floating leaves of lotus (Fig. 4). The larvae cut the lotus leaf into pieces and wrapped themselves in leaf cases which are usually attached to the leaf on the back and sometime float on water (Fig. 5-7).

(3) **Yellow-striped armyworm moth** — *Spodoptera ornithogalli* (Guenée)

The larvae feed on many herbaceous plants. The entire life cycle takes 4-6 weeks: the eggs hatch in about 6 days, and larvae feed for 3 weeks (Fig. 9), the sixth instar larvae burrow into soil to pupate (Fig. 10) and the moths emerge in two weeks (Fig. 11).

The larvae could be found on lotus throughout the whole growth season from early April to September in Auburn, Alabama. They preferably feed on young standing leaves and also occasionally eat flower buds. Due to the limited number, they could be easily killed by hand without the need for pesticide control. Only two in over 1000 potted lotus were seriously damaged in four years (Fig. 12).
(4) Waterlily aphids — *Rhopalosiphum nymphaeae* L.

Waterlily aphids are one of the most dangerous pests for lotus. Usually they don’t become a severe problem when lotus is planted outdoors. However, for lotus grown in a greenhouse or a tunnel house, the aphids develop very fast and are difficult to control by the pesticides. Aphids suck the juice of petioles resulting in curled or disfigured leaves (Fig. 13), flower buds (Fig. 14), and even flowers (Fig. 15).

(5) Sharpshooter and leafhopper

The mostly often seen species were the broad-headed sharpshooter *Oncometopia orbona* (Fabricius) (Fig. 16), the glassy-winged sharpshooter (*Homalodisca vitripennis* Germar, Fig. 17), and a leafhopper (*Graphocephala versuta* (Say), Fig. 18). They were usually found on lotus leaves, petioles and flower stalks.

2. Flowering-eating Pests

(1) Japanese beetle — *Popillia japonica* Newman.

The Japanese beetle (Fig. 19) is native to Japan and was accidentally introduced into New Jersey in 1916. It is one of the most destructive plant pests in the Eastern United States, and feeds on a large range of hosts including *Nelumbo*. The Japanese beetles preferably feed on the petals and stamens of lotus flowers. Taller flowers are much more susceptible to dam-
Beetles were observed in 2007 on lotus and caused serious damage to lotus flowers between the summer and fall of 2008. The largest number of beetles was 13 on a single flower (Fig. 20).

(2) Other beetles:
Besides the most destructive Japanese beetle, several other species of beetles were often seen on lotus plants, particularly their flowers. However, the damage to lotus flowers or leaves was nearly invisible. Spotted lady beetles, *Coleomegilla maculata* De Geer, fed often on flowers and sometimes on leaves (Fig. 21). Several of the bronze leaf beetles (*Diachus auratus* Fabricius, Fig. 22), the very tiny beetles (*Orthoperus* sp., <1mm, Fig. 23), the tumbling flower beetles (*Mordella marginata* Melsh., Fig. 24 and *Mordellistena fuscipennis* Melsh., Fig. 25) could be seen each day on lotus flowers or leaves. *Conotelus obscurus* Erichson (Fig. 26), the cucumber beetle (*Diabrotica undecimpunctata* Howardi, Fig. 27), the multicolored Asian lady beetle (*Harmonia axyridis* (Pallas), Fig. 28), and several other species of beetles occasionally visited lotus.
(3) Flower thrips - *Frankliniella tritici* (Fitch)

Often called the eastern flower thrips, the flower thrips are only about 1 mm in length. When lotus is is blooming, several to hundreds of the flower thrips feed on a flower, particularly at the base of stamens (Fig. 29). Meanwhile, they are also frequently consumed by *Orius indebis*, spiders and other species of insects.

(4) Bean weevils - *Acanthoscelides* sp.

Two unidentified species of bean weevils belong to *Acanthoscelides* (Fig. 30-31) and often fed on lotus flowers.

(5) Flies

There are several species of flies that visit lotus leaves and flowers. The most often seen visitor is a long-legged fly (*Condylostylus* sp., Fig. 32). Others include the syrphid flies (*Orthonevra nitida* Wiedemann, Fig. 33; *Palpada vinetorum* Fabricius, Fig. 34) and the fruit fly (*Drosophila* sp.).

3. Pollinators-bees

Six species of bees frequently visited lotus flowers to transfer pollen throughout the blooming season. They are the honey bee (*Apis mellifera* L., Fig. 35), eastern carpenter bee (*Xylocopa virginica* (L.), Fig. 36), eastern common bumblebee (*Bombus impatiens* Cresson, Fig. 37), a leaf-cutter bee (*Megachile* sp., Fig. 38), sweat bee (*Augochlora pura* (Say) possible, Fig. 39), and squash bee (*Peponapis pruinosa* (Say), Fig. 40). In addition, *Lasioglossum pilosum* (Smith) (Fig. 41) was also observed.
4. Neutral or Friendly Species

Many species of insects and animals may not be harmful, but are friendly and live in harmony with lotus in a balanced ecosystem. They either are raised in the water of containers or just visit plants for feeding on other lotus pests.

(1) **American green tree frog** (*Hyla cinerea* (Schneider)) is a beautiful impressive species which lives in the water of the containers. During the day, they may rest on the container surface, lotus stalks,
leaves and flowers (Fig. 42-45). In the evening, American tree frogs make the wonderful calls sounding like “Quank! Quank!” and make nature more attractive and NOISY!.

Fig. 42-45 American tree frog resting lotus plants

(2) Orius insidiosus (Say)

*Orius insidiosus* (Fig. 46), also called the insidious flower bug, is an aggressive thrips predator that may also consume some other pests. It frequently visits lotus flowers as well as leaves to feed on the flower thrips.

*Fig. 46 Orius insidiosus*

(3) Spiders

Lotus is not only a source of food for pests but also a good place to visit and dine for carnivores like American tree frogs, many spiders, and the robber fly (*Promachus rufipes* Fabricius, Fig. 54). The beautiful green lynx spider (*Peucetia viridans* Hentz), Fig. 47)

*Fig. 47 Peucetia viridans eating a bee*  
*Fig. 48 Misumenoides formosipes eating a longlegged fly*
and several species of crab spiders (Misumenoides formosipes Walckenaer, Misumenops sp., Fig. 48-50), and jumping spiders (Phidippus clarus Keyserling, Paraphidippus aurantius Lucas, Hentzia palmarum (Hentz) etc, are frequent visitors to lotus Fig. 51-53)

(4) Dragonfly and damselfly

Several species of dragonflies and damselflies are raised in water of lotus containers. Adults are a very common sight on plants, including blue dashed (Pachydiplax longipennis Burmeister, Fig. 55), the eastern pondhawk (Erythemis simplicicollis (Burmeister), Fig. 56), the blue fragile forktail (Ischnura posita (Hagen)), Fig. 57).
Pests and Insects Most Commonly Seen on Lotus (Nelumbo) Grown in Containers
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Reference
Tian, DK. 2008. Container production and post-harvest handling of lotus (Nelumbo) and micropropagation of herbaceous peony (Paeonia). The PhD Dissertation of Auburn University.
If life were truly simple, we could describe flower colors in a concise and elementary fashion. We could say a flower is red, blue, green, orange, yellow, or white. However, we are blessed with an entire rainbow of colors… varying shades of all these colors require more precise observation and description. Before discussing environmental factors which can change the actual or perceived color of a waterlily flower, we must first look at communication factors that affect our individual descriptive language.

**COMMUNICATION**

I perceive a great difference in subtlety and vocabulary between men and women when it comes to describing colors, just as there is in their approach to shopping. Men often see shopping as an obstacle to overcome: get in, buy that pair of slacks, and get out…the faster, the better. Women, on the other hand, approach shopping as an adventure in exploration and discovery. Fabric, color, texture, style, and finally, the price, are all part of a pleasant process.

In a similar fashion, most men seem to have a limited vocabulary for describing colors, while most women have an entire pallet of color descriptions at their disposal. A man might describe his new slacks as “brown,” while a woman might say the color is really “taupe”. He might say Iris ‘Black Gamecock’ is dark blue, while she might say it is more “eggplant.”

Perhaps women are more culturally attuned to the nuances in colors, and have thus developed a broader vocabulary to describe them. It is helpful to keep in mind that differences in vocabulary can get in the way of accurate color description. If you don’t believe this, just go to any paint store and see how many different colors of white are available for your ceiling!
Another communication variant may be the inaccurate color of a flower as it appears in a photo, or in a book…or even on your computer screen! Photographic film is notorious for shifting the blue color of flowers towards purple or pink in the printed photo. This gives rise to inaccurate flower colors in books, magazines and catalogues.

I remember taking a photo of blue waterlilies in a blue plastic pail. When the photo was developed, the pail was still blue…but the lilies were pink! In older books, photographic filters were often used to correct for this shift from blue towards pink, but this also darkened and falsified the flower color in the printed photo. For this reason, it may be difficult to get an accurate impression of a flower’s true color from a photo, especially if it is a blue or purple flower.

Digital images are much more color accurate than photographic film, but even they can suffer color shifts when images are emailed to someone whose monitor is not calibrated to the same color accuracy as the sender’s computer. I once received an emailed photo of a blue waterlily which was pink when I opened it on my computer. I emailed it back to the sender, where it arrived blue, the way it was supposed to be. Some color option adjustments were needed to my computer to arrive at a true blue for future emailed photos. And of course, digital cameras may be set with different calibrations for color by their owners, and this affects what color shows up in the image, whether on the viewfinder or a computer monitor.

ENVIRONMENTAL INFLUENCES ON FLOWER COLOR

It might be a stretch to call sunglasses an environmental factor…but once a customer came into my office to express disappointment that we did not have any blue waterlilies for sale. I knew we had at least ten varieties of blue waterlilies in bloom, so we walked outside to the ponds where I asked her to take off her sunglasses. She laughed out loud when she saw all the different blue lilies she could choose from. She was wearing the famous “blue blocker” sunglasses that make blue appear pink. (This reminds me of the expression, “looking at life through rose colored glasses.”)

The growing season greatly influences the actual color of waterlily flowers. The first few flowers in early spring may have a much lighter or darker color than they have in mid summer. In fact, early in the season, these flowers may be smaller, have fewer petals, and even be shaped differently than their mature forms.

In climates where summer days are long and temperatures high, waterlily flowers may attain their full size, but their color can actually be bleached somewhat by the heat and sun; a first day flower may often have a deeper color than a third day flower, not only because of the bleaching action of the sun, but also because the flower grows and expands each day, diluting the pigments over a larger area as the petals expand in width and length.

For example, *Nymphaea* ‘Wood’s Blue Goddess’ displays a medium blue color flower the first day it opens, but fades to almost white after three days in the hot summer sun. In some varieties, variation in color between first, second and third day flowers can be an asset…they may even be promoted as “changeable.” However, if the third day flower loses most of its color, I think most people would find that unattractive.

Darker colored tropical waterlilies are more prone to bleach out in the summer sun than are hardy lilies. One of the reasons may be the fact that many hardy lilies close their flowers in early afternoon, while tropicals may stay open for several hours longer each day.
The time of day, the number of hours of direct sunlight, and even cloudy conditions, can alter not only our perception of a flower’s color, but its actual color, too. For example, consider two plants of the same variety of waterlily growing in the same pond with one plant receiving 12 hours of sun daily, and the other plant, only six hours daily. It would not be unusual to see a noticeable difference in the color intensity of the flowers on these two plants.

Perception of a variety’s flower color intensity also changes if we look at it under the full summer sun at noon, as compared to the next day at noon when the sky is cloudy. This is one reason why photographers avoid the mid day sun. They prefer early morning and late afternoon when the sun’s rays are less intense, knowing that this results in better color saturation and more desirable reflections on the water’s surface. For photography, even an overcast day may be more desirable than working in the midday sun. This applies for both film and digital photography.

The intensity of the sunlight, along with the day length, affects the color on most flowering plants, not just waterlilies. Travel to England or the northeastern part of the United States at the height of summer and you see a deep intensity of flower color which is impossible to attain in the southern United States. The latitude, day length, number of sunny days, time of year, and even altitude can affect the intensity of flower colors.

I have noticed an interesting seasonal anomaly in my night blooming lily *N. ‘Elysian Fields’* when grown in full sun. In the middle of the summer, the leaves display a beautiful bronze color and the flower sports a rich, even pink. This very same plant, when grown in the greenhouse under the shorter, cooler days of winter, produces green leaves and a pale, apple-blossom pink flower.

The flowers show such different colors that you would think these are two different varieties. Since the flowers open at night, the pale winter color is not due to fading from intense sunlight, but rather reduced pigment production in leaves and flowers because of the limited winter sunlight.

Some tropical lilies actually develop flowers of a completely different shape when grown in the winter greenhouse compared to their normal summertime appearance. The tropical *N. ‘Midnight Star’* produces fertile stamens in summer; but in the winter greenhouse, those stamens morph into small petals and the flower does not produce pollen. This gives the appearance of a semi-double flower which is quite different from its summer form.

I’m concentrating on color changes in tropical lilies because they seem more prone to the sun’s bleach-
Factors Affecting Color in Waterlily Flowers

article and photos by Rich Sacher
American Aquatic Gardens
New Orleans, LA

ing effect…but as already mentioned, some fading in flower color also occurs among hardy lilies.

In sum, both the actual and the perceived color of a waterlily flower, (and other kinds of flowers, too!) can be influenced by vocabulary, time of day, the growing season, latitude, and the quality of the printed or digital image. How can waterlilies be manipulated to achieve a desired color from their flowers?

MANIPULATING WATERLILY FLOWER COLOR

Hybridizing for new forms and colors is a classic method for developing something new. Perhaps a plant breeder is working toward a particular color or bicolor, or a hobbyist notices an unusual chance seedling or a sport in an existing variety. New colors of waterlilies are introduced to the trade by vegetative propagation of these novel varieties.

Recent waterlily introductions exhibit more flower petals, unusual flower shapes, and new bi-color flowers. Hybridizer Craig Presnell in Florida has been particularly prolific in creating new bicolor waterlilies including *N. ‘Foxfire*, *N. ‘Ostara’, and *N. ‘Midnight Embers.’

Some of the newly created hybrids in Thailand also exhibit new and delicate shadings of flower color. *N. ‘Soft Cake’ is an excellent example of this trend.

While hybridizing can be a long term project, there are several cultural things hybridizers do to maximize flower color in waterlilies. Remember, as stated above, dark colored flowers tend to lose some of their color in the summer sun. Therefore, if you have some shade on a portion of your pond, that would be the choice spot for a dark blue, dark pink or deep red lily. Their color remains

*Nymphaea ‘Midnight Star’*  
*Nymphaea ‘Ostara’*  
*Nymphaea ‘Midnight Embers’*
more vibrant if they are not in sun for 12 to 14 hours a day.

It is a little extra work, but I know hobbyists who have several ponds, with one of them too shady to bloom waterlilies. They rotate lilies from their sunny pond to the shady one, exchanging them every week. This provides all the plants with enough sunlight to remain in bloom while helping to prevent excessive fading of the flower colors in mid summer.

Probably the most important factor in maintaining vibrant flower color in tropical waterlilies is to keep high soil fertility continuously during the growing season. The warmer the weather and the bigger the pot, the more fertilizer is needed because these tropical beauties grow so fast. Frequency of feeding is important in the rapid growing season, and many growers fertilize their plants every 10-14 days, using the tablet equivalent of a teaspoon of granular fertilizer for a 7- by 10-inch pot.

Fertilizer tablets come in various sizes, and in many different formulations. Sometimes I use four tablets every two weeks in a 16-inch pot; sometimes I broadcast a quarter cup of coarse granular fertilizer right on the soil surface of pot. I may use 13-13-13, or something similar, as long as it is coarse and dissolves slowly. Sometimes I cover this fertilizer with a thin layer of soil, sometimes not. The point is this: do not let your tropical lily go hungry during the peak summer growing period.

If you use this heavy application of fertilizer, it may result in some green water, but it does not hurt your lilies and your fish love it. Of course, very young plants and seedlings should not be given the heavy dose of fertilizer recommended above.

I always have a heavy hand when it comes to fertilizing plants, both aquatic and terrestrial, but I have never managed to kill a mature waterlily by giving it too much fertilizer!

So, if you want to maximize the color potential of your waterlily flowers, keep a faithful feeding schedule, and remember that a little too much fertilizer is preferable to too little.

TOTAL CHANGE OF COLOR IN A FLOWER

“My blue lily came up yellow this year!”

Some hobbyists insist that their waterlily (or iris, or some other flowering plant) became a completely different color when it resumed growth in the spring. While we may have some differences of opinion on which color is purple or blue, it is hard to argue with blue verses yellow. In the case of a blue tropical waterlily “turning” yellow the following spring, it is rather obvious what happened.
A small rhizome of a yellow hardy lily was growing in the same pot with the blue tropical, but no one notices the difference in their leaves. The tropical goes dormant in the fall and its leaves disappear. The yellow hardy begins rapid growth in the spring, completely overwhelming the dormant blue lily. Finally, that pot of lilies begins to bloom, and behold! The blue lily “comes back” yellow.

People have claimed their Louisiana iris changed color in the spring, or their day blooming lily came back as a night bloomer! In all these cases, a stray tuber or rhizome was present in the potting soil, and it was a more vigorous grower than the original blooming plant. Nature takes its course, and the strongest growing plant eventually takes over.

ACCURATE COLOR DESCRIPTIONS

We have already discussed that people have widely varying vocabularies for describing colors, and that images of flowers may not be color-true. The Royal Horticultural Society of England has a very expensive set of color charts with each shade of a color having its own number. Fan out these cards next to a flower and find which numbered shade corresponds most closely to the actual flower color. So, if you say the color is RHS 42, anyone who has access to the same charts knows exactly which shade of blue, or red, etc, to which you refer. Problem is, without a color chart at your disposal, the color number is meaningless.

I often wonder if we would do just as well with a full set of paint chips from a major paint manufacturer! Surely, if someone said their flower was exactly the same color as the paint chip “Orange Sherbet,” everyone would have a pretty good idea of the color by looking at an identical set of paint chips. Meantime, it seems that multiple adjectives, rather than one-word colors, are more helpful in conveying an accurate color description. Instead of saying “brown,” say “paper bag brown,” or “chocolate pudding brown,” or “cinnamon brown.” Just don’t ask me to describe “taupe!”

RHS Colour Chart Information

The RHS Colour Chart is the standard reference for plant colour identification. The current price is £170 which equates to about $278 US. Used by the RHS, the chart is indispensable to gardeners who value accuracy in the identification of plant colours.

But it is not just gardeners that value the chart - it has been used by food manufacturers to standardise food colourings, chemical engineering companies and fabric designers.

It is because the chart has been specially developed to match nature’s own colours that it has become such a useful tool.

In 2007, 12 new colours have been added to the existing 884. The 896 colours are on 224 cards, arranged in four easy-to-use fans.

Each colour patch has a central porthole which can be laid over the object being matched.

The gloss coating on the colours has also been enhanced to provide greater scratch resistance.

The fans come with full instructions in six languages (English, French, Dutch, German, Russian & Japanese). [http://www.rhs.org.uk/Plants/RHS-Publications/RHS-colour-charts](http://www.rhs.org.uk/Plants/RHS-Publications/RHS-colour-charts)
In ancient Egypt the waterlily, *Nymphaea caerulea*, was a symbol of light coming from darkness. The flower of the waterlily rises from the darkness of the water. It opens its beautiful blue flower with a bright yellow center, releasing a sweet fragrance across the water. Each day the light would overcome the darkness and chaos of the night. The flower was linked to the rising and setting of the sun or the return of what is good over the darkness.

The god of the blue waterlily was Nefertem, a god not only linked to the sun, but to beautification and healing. The fragrance of the waterlily is pleasing and was frequently offered to the sick and dying. Drawings from ancient Egypt often show women offering to party guests the flowers soaking in a glass of wine. While the actual narcotic properties of the waterlily are still being debated, the flower served as a source of healing and rejuvenation throughout Egypt. Today the power of tropical waterlilies is once again being tapped for its healing powers and its symbolism of light overcoming darkness. Members of the International Waterlily and Water Garden Society (IWGS) from around the world see waterlilies as symbols of what they wish for the people of Japan in overcoming the darkness of Japan’s natural disasters this year. Through the magnificent photographs of IWGS member Noriyuki Kato, of Yokkaichi-shi, Mie, Japan, the healing powers of the waterlilies are being unleashed. These powerful images are presented to the people of Japan as they begin to rebuild their lives and their country after the devastating earthquake and tsunami of 2011.

Opening on August 1, 2011, will be Here at the OT-SUKA MUSEUM OF ART in Naruto National Park, this exclusive exhibit displays 20 photographs of Mr. Kato’s unique perspective of the beauty of waterlilies. The museum features over 1000 splendid replicas of classic works of art from the past 2,000 years from around the world. It also features an outdoor pond referred to as
Monet’s Waterlilies with a wonderful selection of beautifully grown waterlilies. Several reproductions of Monet’s work appear in this area. This is the ideal venue to display Mr. Kato’s outstanding collection.

In Mr. Kato’s own words, “If these photographs are able to shake the mind of people who are coming to exhibition, even a little, and tie the Japanese heart together for rejuvenation and reconstruction, To create a driving force to be able to support tomorrow’s revival, there is no pleasure superior to this for me.” Mr. Kato sells post cards, featuring his exquisite photographs, for sale through his website, with a portion of the proceeds going to the relief and reconstruction efforts in Japan. Once again the magnificent waterlilies remind us of the light overcoming the darkness of disaster.

For complete details of the exhibit and post card offerings, please visit [http://www.noriyukikato.com/english/index_english.html](http://www.noriyukikato.com/english/index_english.html).

For additional information on the Otsuka Museum of Art in English: [http://www.o-museum.or.jp/english/](http://www.o-museum.or.jp/english/) or in Japanese: [http://www.o-museum.or.jp/](http://www.o-museum.or.jp/)
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