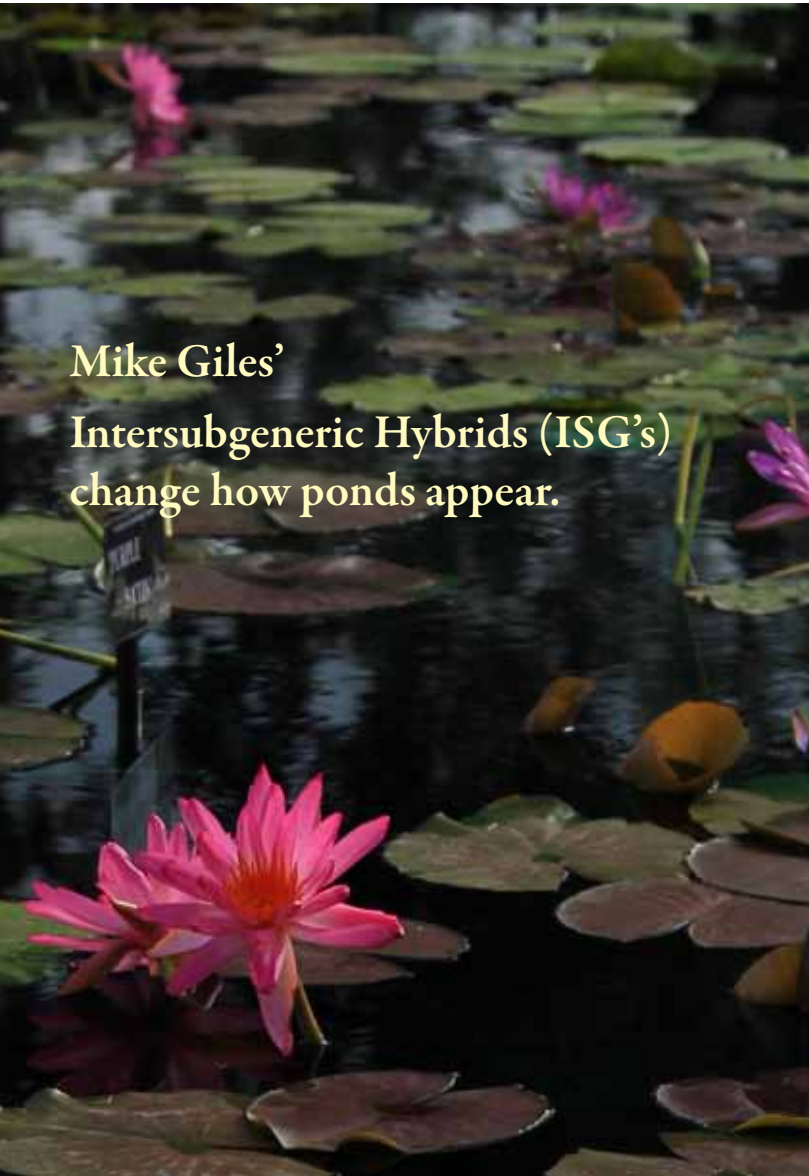


WATERLILY & LOTUS CHRONICLE

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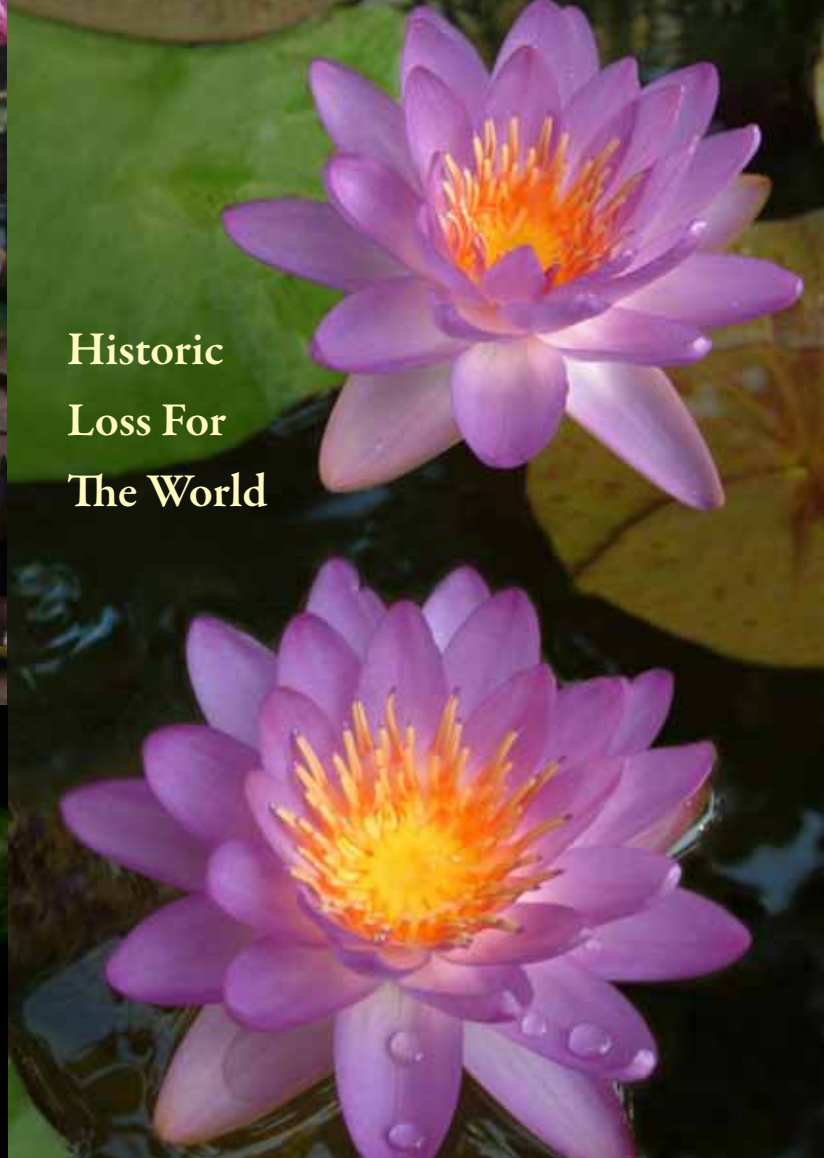
Mike Giles'
Intersubgeneric Hybrids (ISG's)
change how ponds appear.



Thailand in Peril



State
Waterlily
of Texas



Historic
Loss For
The World



Nymphaea 'Siam Pink'
© Zac DeGarmeaux

Welcome

by Tim Davis

We would like to welcome you to some new online endeavors.

We are a group of individuals from around the world who have joined together to expand the knowledge and social interaction based on our aquatic passions. We came together over the last six months in an effort to enact some goals. We use Facebook to keep up to date with each other. Many of us are involved in online forums or through email contact. Our goal is to learn everything we can on the subjects of waterlilies, lotus and associated aquatics and to find a way to disseminate the information. We are reaching out to try and get every hybridizer in the world to collaborate with us so that we may show all the known named waterlilies, even if they are not yet in the trade. A great new discovery or creation for a backyard hybridizer may be the next plant to explode onto the scene and take the world by storm.

We use the internet as a resource. More knowledge has been shared in the last decade than in the century before. It has created a global community. We wish to use the internet to expand the knowledge. Our global village speaks the same language through Google Translate. We share our passion and successes in growing, hybridizing or discovering something new on Facebook. We embrace everyone who has knowledge that we do not. No one has all the knowledge and the explosion of intersubgenerics (ISG's) in the last few years illustrates that concept quite well.

We want those most qualified as experts to share their knowledge so that we may spread it with all.

One of the ways in which we hope to spread knowledge is through this Chronicle. We wish to cover all of the current trends in growing, hybridizing and preserving both waterlilies and lotus. We will also cover areas related to this such as pests and their control as well as associated aquatic plant life.

Kit Knotts created the most comprehensive internet source of material on waterlilies and aquatic plants with information sources well documented going back well over a century. Victoria Adventure and Water Gardeners International websites became an important resource for learning all around the world. Even more than just the knowledge was the way it brought people together.

Over the past ten years some IWGS Directors laid the groundwork for a number of new ideas for a stronger online presence with additional resources. They brought forth some ideas that never came to full fruition and as a group we want to take up the task of getting to the next level.

One endeavor is a new online database of waterlilies. I have been documenting waterlilies since 2006 with photos that I have been displaying on the International Waterlily Collection website. Zac DeGarmeaux and I started documenting waterlilies in early 2009 with video and additional photos for the intent purpose of creating a new searchable database. We wanted the most comprehensive database with the most up to date information. Budget and time constraints delayed the project at that time.

In July 2011 Zac moved the project forward by financing the design and hosting of a website that had been conceived by us. We had a large amount of data to start the database with but we knew we needed help from around the globe to make it comprehensive. We are friends with Larry Nau and many others in the global community. Larry started contacting friends and hybridizers from everywhere to get more information. We needed additional contributors and even more importantly we needed to reach the hybridizers to get information on their hybrids. We began moving forward with friends from around the globe

submitting both content and feedback on the project. Hundreds of hours of work have been contributed by people on six continents. Larry helped us reach many helpful individuals. We could not have collected this amount of content without his help as an international ambassador.

Waterlily Database.com is launching with over 600 waterlilies in the searchable database. Most include photos, a description and a varying number of listed characteristics. Nearly 100 waterlilies already have video and we will continue to add more going forward. You can search by name, keyword, hybridizer, place of origin, subgenus, plants with photos, plants with videos, or viviparity. We are just getting started but with the help of our global community it will become something great. We will freely share our work with the world at large. If for example, members of the Thailand or German communities wish to incorporate our database into their website, we have provided a way to do that. We want pond lovers everywhere to use our site to learn about their passion.

A full list of global contributors can be found on the waterlily database site however we want to send special thanks to Primlarp Wasuwat Chukiatman, Séverine Lyssens-Danneboom, Huang Guozhen, and Ling Leong for a huge amount of volunteer time and content. We want to thank Rowena and Bob Burns along with Kelly Billing for submitting works and helping collect documents and content. Thank you to the many hybridizers for creating such wonderful subjects and for working with us to make sure we have accurate documentation of their plants.

It is an exciting time to grow waterlilies. It is an exciting time to collect or hybridize waterlilies. This is what fuels our passion. We know that everyday we may grow, see or hear about a new knock-out plant. We want you to come along for this new experience.

We are a small group of friends from around the globe that are working to become a large group and are willing to share all that we know in an effort just to gain new friends. This is the first issue of our Chronicle and with the help of all of our friends; we hope it will be the first of many.

Prof. Huang Guozhen has devoted his life to the understanding, research and creation of new varieties of waterlilies and lotus in modern China. Prof. Huang has forged the way in Chinese waterlily hybridization. Ornamental waterlilies were uncommon in China before he sought out and imported many waterlilies back to China. Most Chinese are unaware of the diversity of waterlilies, especially tropical varieties. He has contributed to the increase of the awareness of waterlilies by placing them in public parks and in the primary botanical gardens throughout China. Many in China call him "the father of Chinese waterlilies".

In 2008 Prof Huang authored the book *Nymphaea*, published in China by the China Forestry Publishing House. This book is a complete guide to the construction of water gardens, aquatic plant care and their identification; all written in Chinese. His book is filled with hundreds of photographs of his own hybrids along with the many classic waterlily hybrids from the West.

Among his many beautiful tropical *Nymphaea* creations are the magnificent *N.* 'Qingdao Blue Star', *N.* 'Red Flag' and *N.* 'Violet Queen'. Prof. Huang's hardy red waterlily *N.* 'Xiao Zu Xion' is a prolific bloomer even in the summer heat. *N.* 'Jiao Jiao' is a heavy bloom-



Huang Guozhen Qingdao China

by Larry Nau



ing large bicolor pink with dark green leaves. Look for many more exciting Chinese waterlily introductions in the years to come.

Prof Huang started work at the Wuhan Botanical Garden of the Chinese Academy of Science in 1958. He worked on his post graduate studies at the Beijing Forest University with a specialty in genetics and plant breeding in 1962. He returned to Wuhan and worked there until his retirement in 1999. Prof Huang also worked in the USA at the Modesto Lotus Garden in Modesto City, California during the mid 1980's and again for 5 years in the 1990's. While in Modesto, Prof. Huang hybridized over 120 varieties of lotus.

From 2001 to the present Prof. Huang has been employed by Chinese Waterlily World in Qingdao, China. During this time he has created an additional 100

varieties of lotus and 150 varieties of waterlilies. He has also worked diligently to expand the aquatic plant collection at Chinese Waterlily World to over 650 varieties of lotus and 250 varieties of waterlilies. Prof Huang has spent additional time researching and developing new products made from waterlilies and lotus. Products such as the popular waterlily flower tea, and an oral liquid, from the pollen and embryo of waterlilies and lotus, are popular items. A "Precious Paste", which contains a mixture of lotus pollen and embryo of waterlily, aids in skin care and shows much promise.

Even after retirement, Prof. Huang never slows down and continues to work every day. He is popular because he is a skillful teacher, dynamic speaker and consistent advocate of aquatic plants and their many uses throughout China. People enjoy the many lotus and waterlilies he has created and these plants are found in many of the public gardens throughout China. The extensive photo collection in his book has introduced many Chinese to wonders of waterlilies and lotus and invited them to experience of beauty of water gardening. Prof Huang Guozhen is a leading contributor to aquatic plant research, education and hybridization not only in China but throughout the world.



Internet Resources And Communities

by Tim Davis

Please join us on Facebook and share your passion through commentary, photos and video. Help us make the waterlily and lotus world a global community in which we all share knowledge, success stories, plants and techniques.

All About Waterlily or Bua @ Pang u bon, Thailand

<http://www.facebook.com/groups/225480244144661/>

International Waterlily Collection on Facebook

<http://www.facebook.com/pages/International-Waterlily-Collection/98465558398>

Thai Waterlily Society

www.thaiwaterlily.com

Victoria Adventure

<http://www.victoria-adventure.org/>

Water Gardeners International

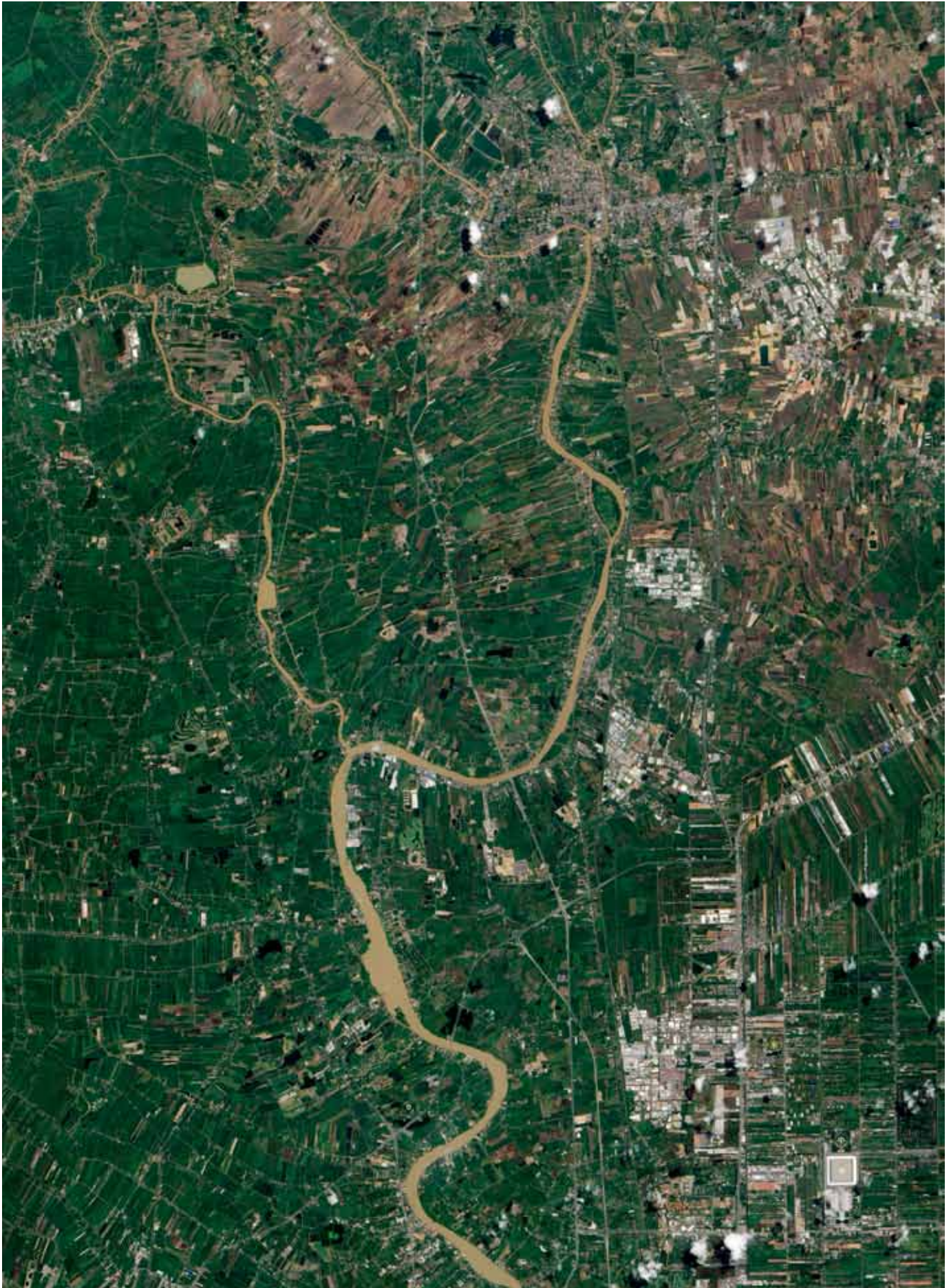
<http://www.watergardenersinternational.org/>

Waterlily Database

<http://waterlilydatabase.com/>

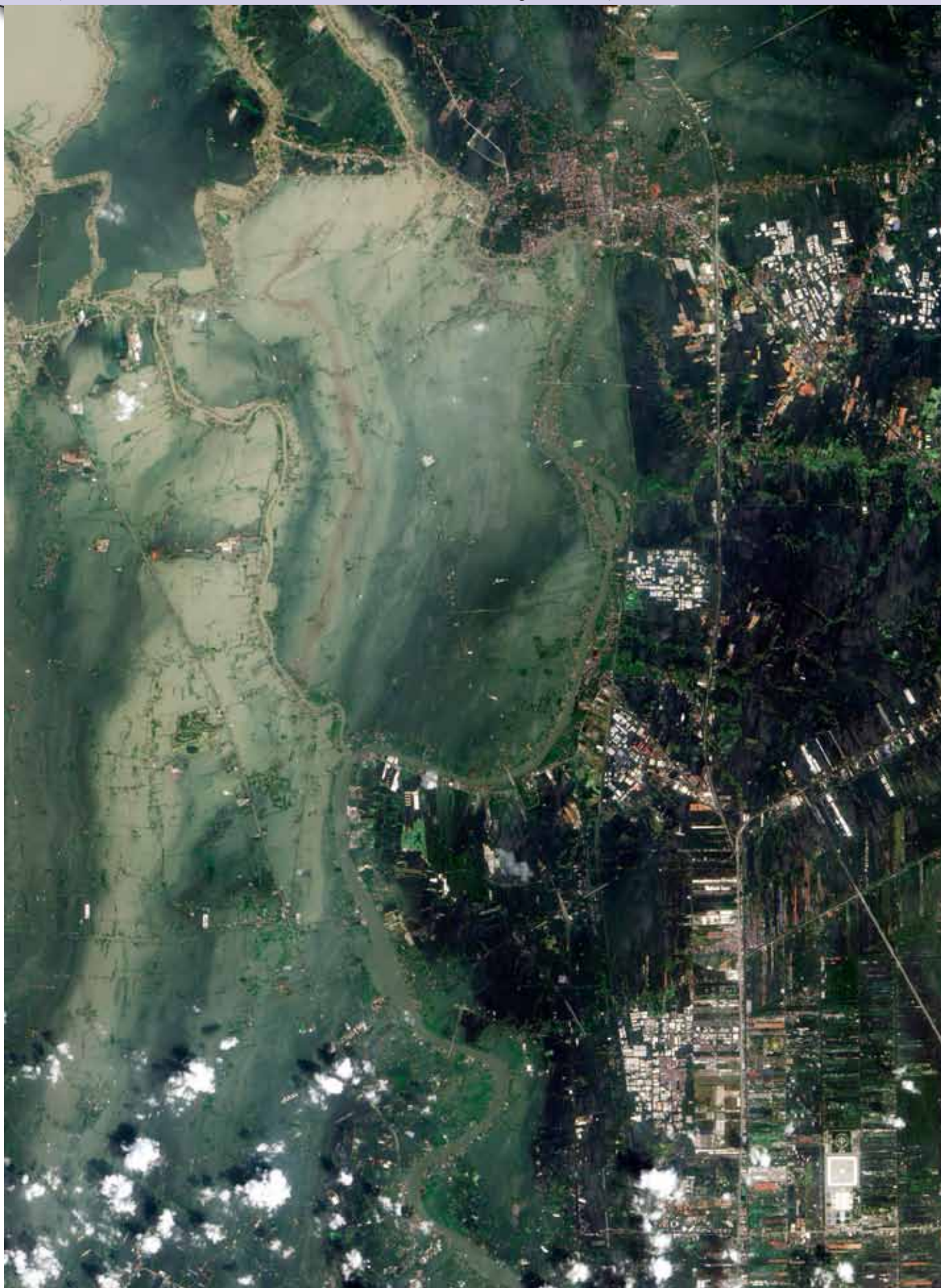
Thailand in Peril

by Larry Nau
and Tim Davis



True-colour satellite image showing flooding in Ayutthaya and Pathum Thani Provinces in Central Thailand (right), compared to before the flooding (left).

NASA Earth Observatory image created by Jesse Allen and Robert Simmon, using EO-1 ALI data provided courtesy of the NASA EO-1 team and the United States Geological Survey.



A historic monsoon season created the worst flooding in Thailand since the 1940's. Over 3 million Thais were directly affected by the rising water. Nearly 800 Thais perished in the flood waters. The toll on the Thai economy was tremendous as huge industrial parks were flooded, roads were impassable, even the major domestic airport in Bangkok had been forced to close. It has been estimated that over 2 million Thais, in 21 provinces, were unable to work due to the flood waters, many since August. At the end of December, there were still more than a million Thais unable to work in 5 provinces west of Bangkok.

Thailand's worst floods in half a century also destroyed millions of tons of crops and badly damaged industrial production. The World Bank has estimated the damage at \$45 billion and recovery and reconstruction needs at \$25 billion. The National Social and Economic Development Board cut Thailand's economic growth forecast to 1.5% from 3.5 to 4% prior to the flooding.

The heavy monsoon rains started in late July and quickly flooded the Northern regions of Thailand. As the months progressed the rainfall totals were 40% higher than the average annual rainfall for the region. All of the water had to flow south, around Bangkok, and into the Gulf of Siam. The Thai government worked feverishly to divert over 9 billion cubic meters of water from the North via canals, a system of dikes and pumping stations to keep the central business area of Bangkok dry. While the central business area remained intact, the rural agricultural areas around Bangkok and to the North were submerged completely.

Thailand relies on its agricultural areas to supply not only food but jobs for many of its citizens. These may include the production of flowers, general ornamental plants and even tropical fish. Our interests are very specific: the creation of new and the overall production of aquatic plants. With flood water exceeding 3 meters in some areas, the fate of many aquatic farms and their valuable products was in doubt.

For the past two decades Thailand has been in the forefront of creating new, exciting varieties of waterlilies and lotus for the aquatic trade. In the past 5 years 3 of the 5 best new waterlily winners have been created in Thailand. The winners in-



Images from before the flood.



Growing beds at Pangubon in Thailand after the water receded enough to get back onto the property. The property was still not back to normal at the time this photo was taken. © Primplarp Wasuwat Chukiatman

clude *Nymphaea* 'Suwanna, N. 'Wanvisa' and in 2011 N. 'Siam Purple 1' by Pairat Songpanich and the second best New Waterlily N. 'Tuonta' hybridized by N. Nopchai Chansilpa. In 2007 Pairat Songpanich rocked the waterlily world with announcement of the first blue hardy waterlily named N. 'Siam Blue Hardy'. The creation of a hardy blue waterlily had been the goal of waterlily hybridizers around the world for over the past 100 years. This aspiration was realized in Thailand thanks to Mr. Songpanich's determination and perseverance.

The father of Thai waterlilies, Dr. Slearmarp Wasuwat, has provided the world with over 30 new varieties for the past 30 plus years. Among his treasures are *Nymphaea* 'Nangkwang Chompoo 1', N. 'Primlarp' and N. 'Gulyanee'. Following in her father's path Sqn.Ldr.Primlarp Wasuwat Chukiatman has been creating her own future waterlily champions. Primlarp's tropical night bloomer N. 'Ploi Praow' shows much promise as does N. 'Julakomen'. If your search the waterlily database you will discover over 100 waterlily hybrids, created by 10 different Thai hybridizers, have been entered thus far. Thai success in intersubgeneric (ISG) waterlily crosses guarantees many more beautiful plants in the years to come.

Nelumbo, or the sacred lotus, is used throughout Southeast Asia as a source of food, religious offerings and for ornamental purposes. These fields too were submerged by the flood waters in Thailand. New research, such as that by Vichai Puripunyanich, has created new lotus hybrids by gamma radiation. His 2008 hybrid *Nelumbo* 'Chantrakomen' allowed flowering of yellow hybrids in Thailand where the length of maximum daylight is shorter. Dr. N. Nopchai Chasilpa has been focusing his efforts on the miniature or tea cup lotus. Dr. Chansilpa has won numerous awards and much praise throughout Thailand and China for his lotus. The status of many of these new lotus hybrids remains uncertain at this time.

While we wondered about the future of these beautiful plants our greatest concern was for the people of Thailand, specifically many of our waterlily colleagues and friends who were in peril. Their homes were flooded. Their lives were disrupted. Their health was in jeopardy. In fact one prominent hybrid-



Photo taken on December 2nd. The flood started on October the 10th.
© Primlarp Wasuwat Chukiatman

izer was forced to sleep in his office, with his family, to escape the rising waters. Ironically the water also surrounded his office but at least they were warm and dry. Others traveled through water, a half a meter deep, to deliver food and water to their gardeners who watched their flooded waterlily fields. Countless small rural farmers had their waterlilies and lotus submerged by the murky and often polluted flood waters for the past 4 to 5 months. The future of their farms and waterlily crops are still in question. Fields of new waterlily hybrids owned by prominent hybridizers were submerged by up to 3 meters of water and covered by silt. As emergency motor boats whisk over these precious plants rescuing victims and delivering supplies, the fate of these plants is just now being determined. The flooding was not the only natural disaster that our waterlily friend's hybrids faced. The flooding and widespread bodies of water allowed the golden apple snail to spread unchecked and also attack their prized hybrids.

Continue to pray for Thailand and especially the Thai people as they endured this tremendous tragedy and hardship. The Thai spirit is one of generosity and humbleness. They are patient and quick to help others as was seen by thousands of Thais providing food, medicine and dry clothing to those that fought the encroaching waters. The waters are now receding, the mud is being pushed away and homes rebuilt. The spirit of our Thai brothers and sisters will prevail

and soon we will again enjoy the fruits of their efforts in our water gardens and beyond.

There are many groups and charities around the world assisting the flood victims of Thailand. Direct contributions may also be made to the Thai Red Cross at <http://www.redcross.or.th/home>



This photo show Primlarp in front of a wall. The brown stain above her head is the flood line in the home. The home is another half meter above the level at the street. © Primlarp Wasuwat Chukiatman.

Nymphaea 'Siam Blue Hardy'

**It perished in the 2011
Floods in Thailand.**

*Photo and Hybrid by
Pairat Songpanich*



Nature Teaches Us That Beauty Is Fleeting

by Tim Davis

There is a phrase in popular culture that says "Beauty is fleeting." I believe this applies not only to aging as is usually implied but also to the fact that life is finite. A previous article in this Chronicle described the fearsome and devastating effects of nature in Thailand. You may view the floods as an act of nature, the wrath of God, cause and effect by man's actions on the climate or simply patterns of force that occur from time to time in our world. Whatever you believe and however you view the events of last year, the results are the same. Life is created, exists, is celebrated and then dies.

A new hybrid in the waterlily world may not seem like a world-changing event. For those of us who spend our time and passion in the world of aquatics though it can be quite exhilarating. As someone who creates hybrids, I can tell you that watching it grow from seed and waiting very impatiently to see it grow into a new blooming wonder of my world it is very personal and very powerful. If you are very fortunate you may see the fruition of something special that has not been seen before. The first bloom on a new hybrid is like awaiting the birth of a child. It is something you hope will grow, live well, bring joy to the world and solidify why you were on this Earth.

Pairat Songpanich of Thailand has created many, many beautiful new hybrids in a very short space of time. He has more than 20 celebrated hybrids to his credit. He has had the good fortune to witness not only new hybrids but those that became sought after throughout the world. His fame hit an all-time high when in 2007, he created the intersubgeneric (ISG) hybrid that became known as *Nymphaea* 'Siam Blue Hardy' It was one of many hybrids in a large cache of seed that he meticulously grew to not only see what he might create but to display all of the forms possible in one specific cross. His methods and the ensuing



DNA testing proved that his hybrid was indeed an ISG, all solidified his stature in the world of hybridizing and his place in history. He succeeded in doing what so many pioneering and successful hybridizers before him had failed to achieve. He created the first waterlily with hardy characteristics that showed colors in the blue and purple spectrums. It was celebrated and spectacular for the achievement that it represented. The only thing that kept this from being one of the most prolific selling plants of all time was that it would not branch and reproduce like a regular hardy waterlily. After 4 years of growth, there was still only a single plant.

Slearmlarp Wasuwat has been quietly creating wonderful hybrids for decades in Thailand. He is a mentor to Pairat Songpanich. He is the father of Primlarp Wasuwat Chukiatman. Like her father, she has been following his passion and creating new hybrids of her own. Primlarp has been a great ally and friend over the last several years to those of us at the IWC. The internet and specifically, Facebook has allowed all of us to be up to date almost daily on the wonderful

new hybrids that are created around the globe.

Primlarp has created nearly a dozen listed hybrids herself and is quite skillful in this endeavor. One of her hybrids that caught the eye of everyone on Facebook was *Nymphaea* 'Phakaithep'. It was a beautiful tri-color bloom. It went from a rich blue on the outer part of the petals to white and finally yellow in the center. It was very stellate and quite striking in color and form. Primlarp is one of only a few hybridizers in the world who are working on night blooming waterlilies. One of her night blooming hybrids was *Nymphaea* 'Larpsrinoon'.

The start of 2011 was just another year it seemed. Then in July, everything changed for those in Thailand. The natural disaster that has become the worst flooding event in more than 40 years impacted nearly everyone. It is with great sadness that I write this article. The hybrids I have listed in the previous paragraphs are no longer alive. The flood itself was devastating. There were months where the plants were below 2.5 meters (8 feet) of water. That meant months with no sunlight. The water was

muddy, dirty and polluted because of everywhere the water was flowing from. The test growing beds for Primlarp and Pairat was cutoff from any land access. Primlarp described seeing some plants in the growing area from a great distance by boat in November. As the water receded, they have been taking stock of how they have been impacted. With great regret, Primlarp announced on Friday, January 13th that the hybrids listed above are now extinct.

This was not the only natural disaster this year. The massive 2011 Tohoku earthquake and ensuing tsunami caused destruction, atomic disasters and nearly 20,000 deaths. The economic and human toll was unimaginable. The possible environmental impacts may not be fully understood for quite some time to come. The cost associated with this was 210 billion dollars. New Zealand had an earthquake in February that resulted in 20 billion in damage. Flooding in Australia, on the scale of Thailand resulted in 7.3 billion in damage. An outbreak of tornadoes in the United States resulted in damage that resulted in 23 billion dollars in damage. You can see that natural disasters on a large scale are occurring throughout the world. We have water garden friends in all of these countries as well as dozens of others.

As I said at the beginning, life is created, exists, is celebrated and then dies. My wish is that you do not mourn the loss of the hybrids. They were beautiful and brought great beauty and pleasure to all that admired them. I must point out that the lives of our friends is even more beautiful and precious. I want to celebrate the hybrids but I really wish to celebrate the friends that created them through human hybridization techniques or nature lending a hand. Those friends celebrated something beautiful in their lives. The relationship that we have with our friends is so important. The waterlilies and the passion we share is just a conduit that brings us together.

Celebrate life and all the beauty that you can find. Life is all too short and we must embrace it together.



***Nymphaea* 'Larpsrinoon'**

It perished in the 2011 Floods in Thailand.

Photo and Hybrid by

Primlarp Wasuwat Chukiatman

Mike Giles

New Superstar Hybridizer - Reprint Of An Article I Wrote in 2010

by Tim Davis

ISG's Top to Bottom

Nymphaea
'Purple Satin'



Nymphaea
'Red Satin'



Nymphaea
'Purple Fringe'



H x T 15,06
ISG



Nymphaea
'Royal Satin'



H x T
1, 08 ISG



4th Purple
ISG



All pictures
by Mike
Giles

There have been a large number of intersubgeneric (ISG) hybrids created over the last several years. Many are fantastic looking plants and some are not so great. That is just what happens when the genetics begin to mix together.

One of the first major events was when William Phillips created *Nymphaea* 'William Phillips' in 2002. It was an ISG with the parentage of *N.* 'Andre Leu' x *N.* 'White Colorata'.

The most famous ISG plant to date has been Pairat Songpanich's *Nymphaea* 'Siam Blue Hardy' that was created in 2007. It is a really unique creation. Like many before him, he was on the quest to create a blue hardy. Pairat broke the barrier that had previously existed for everyone else. No other hardy had shown blue or purple tones in its flowers.

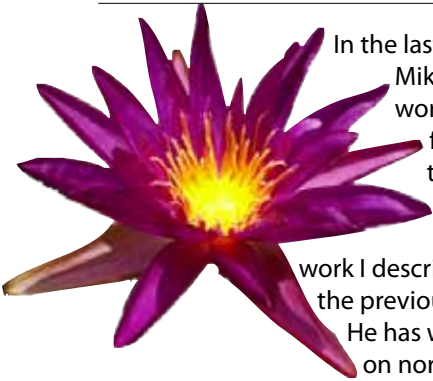
I'd like to mention the history of ISG's even before they were called that. Perry Slocum tried for years to create a blue hardy. He was not successful in that endeavor. Many who knew him believed he did have quite a few hybrids that were crosses between *nymphaea* and *brachyceras*, they just were not blue. The world at large discounted his work because since no one else had been able to do it, the skepticism was that it could not be achieved. It still is not cost effective unless you know someone in a University environment that can help do the work for you. Pairat's DNA tests on *Nymphaea* 'Siam Blue Hardy' stopped the skepticism. Pairat's meticulous documentation and record keeping along with DNA studies to prove his results was as much of a breakthrough as the hybrids themselves. It stopped all of those who still held the view that "the world was flat" as far as waterlilies were concerned. We want to thank him for both achievements.

Now I'd like to introduce you to someone you probably have not heard of. Mike Giles is a hybridizer on the east coast of the United States who has been working full time to create new hardies and also create new ISG's in an attempt to get a blue hardy. Mike was able to successfully make ISG crosses as early as 2005. Mike was new to hybridization at the time and unfortunately did not know how to care for the seedlings and consequently lost them all. He has still continued to create many new exciting hardies that are not ISG's but that has not been his long term goal. He wants to create new waterlilies that have not been possible before now. Pairat broke the barrier with his *Nymphaea* 'Siam Blue Hardy'. I'm proud to show you how Mike Giles has crashed through the ISG barrier. Here are the first published pictures in print of his fantastic work.

Mike Giles' Update A Year Later

Intersubgeneric Hybrids (ISG's) change how ponds will appear.

by Tim Davis



In the last year Mike has worked feverishly to continue the amazing work I described in the previous article. He has worked on normal

hybridization and intersubgeneric (ISG) hybrids as well. I'd like to tell you a bit about Mike. He lives alone and spends all of his time and energy in the pursuit of waterlilies. When he needs more water space, he simply uses a tractor to dig out a new pond and when nature fills it with rain; he starts to use it as a new pond. Everything Mike does is in the pursuit of new hybrids. He is a great friend of mine and Ken Landon's of the International Waterlily Collection (IWC). Due to his full time passion and meticulous growing methods and



record keeping, Ken trusted him to grow out seedlings from the large cache of seed we produced from the banner year of 2010. With the 2010 Symposium and the large number of new hybrids we had from around the world, we produced seed that should create some fantastic



new hybrids. In addition to growing out his own seed from the last 5 years, Mike grew seed specifically for the collection. In his own words, Mike has said that some of the tropical hybrids he saw bloom were some of the most fantastic that he had ever seen. He is a true collaborator with the IWC in creating new hybrids and displaying them for the world to see. He has about 500 new hybrids that he grew from our seed and will be returning them for us to grow out and evaluate. This is not seed,



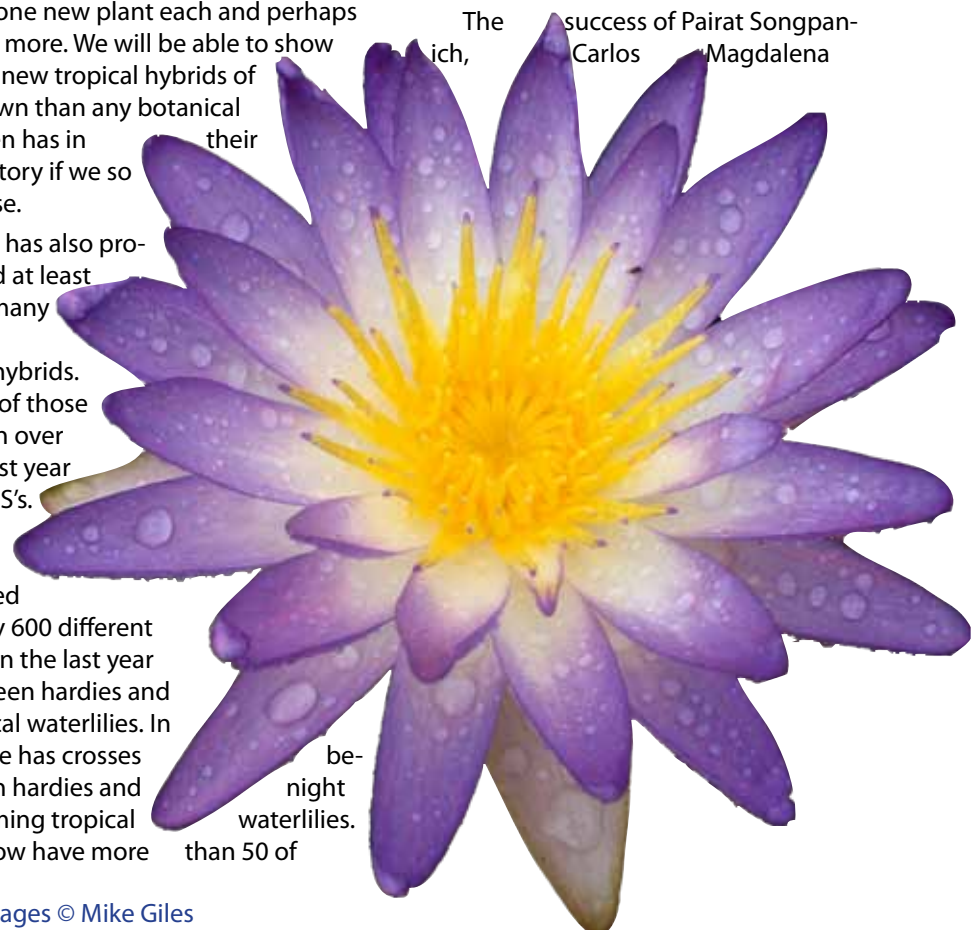
these are tubers that will produce at least one new plant each and perhaps many more. We will be able to show more new tropical hybrids of our own than any botanical garden has in their inventory if we so choose.

He has also produced at least that many of his own hybrids. Most of those grown over the last year are ISG's. Mike has created nearly 600 different ISG's in the last year between hardies and tropical waterlilies. In fact he has crosses between hardies and blooming tropical We now have more than 50 of



Mike's ISG's growing at the greenhouse in San Angelo to show this year. We will certainly get more from Mike as we get into the spring of 2012. Our conservative estimate is that this year we will have about 100 new intersubgeneric (ISG's) on display at the IWC. Mike's friendship will allow us to show more ISG's and new hybrids at the IWC than any other place on earth. My estimation is that by 2015, barring any problems, Mike will have more than 5000 new ISG's and countless other hybrids. He is a hybridizing machine that only requires time, space and water.

The success of Pairat Songpanich, Carlos Magdalena





and Mike Giles raised interest for Brandon McLane of Florida Aquatic Nurseries. He and his other Brad are great friends of the IWC as well. They have allowed us to display their new hybrids before they were released to the public. In just the last two years, Brandon decided to get into the ISG game. He has created his own Red, Pink and Purple intersubgeneric hybrids. In 2011 he had at least 30 ISG



hybrids that he saw bloom. He has the time, space and ability to compete with Mike on growing new hybrids. He has the ability to market and get new plants into back yard gardens through his families' business. Very soon, ISG hybrids will be available to sell either through the internet or the retail channel. It is simply a matter of time before collectors and hobbyists have one.

There are some facts I can tell you about ISG's at this



they bloom on the surface of the water and bloom like a hardy. Some

stage. The crosses are not created through magic or special tricks. It is just a methodical process with a relatively low success rate in comparison to normal hardy by hardy crosses or tropical by tropical crosses. Although the success rate is low, it is certainly not difficult. Those who have been really successful like Pairat, Mike, Carlos, and Brandon simply have a large number of plants to utilize for crosses so through

sheer numbers, they are much more successful. If you are persistent, lucky and meticulous you too can create your own ISG's. If you emasculate your pod parent and careful you are able to identify ISG seeds upon looking with the naked eye. *Nymphaea* seed is large like a portion of a grain of rice. *Brachyceras* seed can be as small as grains of salt. According to all, the seeds if ans ISG are of an intermediate size between *Nymphaea* and *Brachyceras*.

The resulting plants are quite variable. Thus far, they all grow somewhat like hardies. None look exactly like a tropical in form. Some look exactly like a hardy in form,

exhibit strong traits of both parents. They will have blooms high above the water and some have multiple blooms up at the same time like a tropical. Some of the hybrids bloom from the tip growing area like a regular hardy. Some grow horizontally like a hardy but have blooms that grow in a radial pattern from the tip like a tropical.



I have seen as few as 1 bloom from a growing point at once and as many as 14 blooms from a growing point at variable pads that look nothing like hardies. The undersides of the pads are indicative of the bloom many times like a tropical. If you get an ISG with a pad that has a purple underside you are likely to see a purple bloom. If you get an ISG with a pad that has a blue underside you are likely to see a blue or purple toned bloom. Mike has several that are blue but at different times of the season, they are more purple than blue. So far no one has a true blue colored hardy that does not exhibit other colors like purple or pink but I believe it is only a matter of time and selected seedlings. One curious trait that we have observed is that the bloom shapes are all over the spectrum. Some have wide petals, some





have thin. Some have very few pads and some rival tropical in petal count. There really is no knowing for sure what you will see as a first bloom on a new plant. There is another trait that we have seen quite a bit in Mike's ISG's. There are a very high number of them that are bi-color blooms. I personally find some of them the most striking.

For the last few years, Mike has been really concentrating on getting a blue



hardy. To that end, he used many blue or purple tropical water lilies as his pollen parents. He has gotten pinks, reds, purples, bi-colors and some that are blue for part of their bloom cycle. In the tropical world, if you use pollen from a yellow tropical water lily into another color tropical you are likely to get some blue offspring even if you do not think there is a blue spectrum in the parentage of the pod parent. I suggested that perhaps he should expand his pollen parents for some more exciting new plants. He started making crosses and



getting seed that started with yellow or autumn colored pollen parents. These will most likely grow and bloom late this year. The possible color spectrum from these crosses should be quite astounding.

The hybrids he has already photographed and documented show all colors between pink and purple and the bi-colors all exhibit some color with white. The pictures that accompany this article are not named water lilies yet. They are lot numbers based on the seed cache they came from. I am going to show you quite a few different looks in addition to what was seen in the previous article. This is simply a way for you to learn about his fantastic work. The few that I have seen that bloomed in a radial pattern like a tropical had multiple blooms up at the same time and successive days like that for a long period during high summer. Many are much more cold tolerant and I have seen them bloom in November in 60 degree water without slowing down. This is a way for you to see what the future of the hobby may look like. Imagine a blue or purple water lily that can grow in northern climates, survive freezing temperatures and not need to be replaced every year like a tropical in the same climate. Whether they come from Pairat, Mike or Brandon; intersubgeneric hybrids are on the horizon. Brandon is in the best position to mass produce and market them. Pairat has the secret to getting it done well through meticulous scientific trials. Mike will have more variety than anyone else in any part of the field. My guess is that one of the next must-have water lilies certainly has a good chance of coming from Mike Giles' ponds. When it does, it will have a direct effect on your back yard pond.



Getting To Know The Lotus And The Waterlily

By: Sqn.Ldr Primlarp (Wasuwat) Chukiatman

Lotus and waterlily are aquatic plants called “bua” in Thai.



People throughout the world recognize the beautiful flowers of these water plants. They create various diversity of beauty through their bloom colors, bloom forms, and plant shapes whether they are floating in water or standing in a wet-land. They are found in nearly all humid and warm climates. In other countries they are called lotus and waterlily but in Thailand we only use the word “BUA” for both.

Lotus and waterlilies can be traced back over 4,000 years. We see them in the pictures, statues and stories represented in the cultural development of the ancient world. They can be seen in some form from Egypt, India and China and throughout all of Southeast Asia. Vietnam uses the lotus flower as its national flower.



Family and genus of lotus & waterlily: what are the differences between them?

The lotus & waterlily can be divided from external characteristics into two families. Lotus is in the

Nelumbonaceae family. Waterlily is the *Nymphaeaceae* family. Both families can be divided by their origin in nature into two groups. One group is the temperate and sub-tropical zones group and the other group is the tropical zones group.



Nelumbonaceae



Nymphaeaceae

Botanical characteristics of *Nelumbonaceae* and *Nymphaeaceae* :

There is only one genus in the *Nelumbonaceae* family. It is called *Nelumbo*. Its main characteristics are: - stiff spiny peduncle , outer surface of peduncle is brittle and difficult to peel off. The peduncle can push the leaves and flowers very high above the water. The leaf is peltate. The top of the leaf looks like it is covered with wax so water cannot be absorbed into the leaf

surface. Water droplets bead on it like mercury on a surface.



American Lotus

Asian lotus

Here are some observations on fully mature the *Nymphaeaceae* family in contrast to the *Nelombonaceae* family. Its main characteristics are: - soft peduncle , outer surface of peduncle is soft and easy to peel off. The leaves also called pads float on the water surface. There are different types of the sinus, margins and pads colors across the differential genus. There are two genus of *Nymphaeaceae* that occur naturally Thailand. They are *Nymphaea* and *Victoria*.



Hardy waterlily

Nymphaea



Tropical Day blooming

waterlily

Brachyceras



Tropical Night blooming

waterlily

Lotos



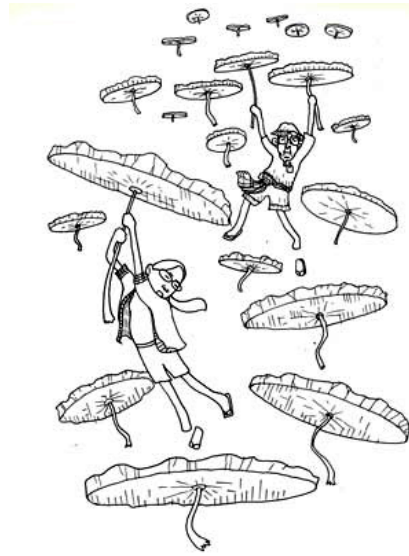
Victoria

Victoria

The table below is a summary of the main characteristics for the two families and three genus.

| | <i>Nelumbonaceae Family</i> | | | <i>Nymphaeaceae</i> | | | <i>Nymphaeaceae</i> | |
|-----------------------------|--|----------------------------------|----------------------------------|---|---|-----------------------------------|---|--|
| Characteristics | It has a stiff spiny peduncle, the outer surface of the peduncle is difficult to peel off. The peduncle can push leaves and blooms very high above the water. The leaf is petlate. The top of the leaf repels water. | | | It has a soft peduncle, the outer surface of the peduncle is soft and easy to peel off. The leaf floats on the water surface. | | | It has a hard peduncle, the outer surface of the peduncle is firm and covered with spikes. The leaf floats on the water surface. All areas of the leaf are covered with spikes except for the top of the pad. | |
| Genus | <i>Nelumbo</i> | | | <i>Nymphaea</i> | | | <i>Victoria</i> | |
| Growing areas | sub-tropical and temperate zones | tropical zone | tropical zone | sub-tropical and temperate zones | tropical zone | tropical zone | sub-tropical and temperate zones | tropical zone |
| Common name | American lotus | Sacred lotus or Hindu lotus | Album plenum and Roseum plenum | Hardy Waterlily | Tropical Day Blooming Waterlily | Tropical Night Blooming Waterlily | Victoria or Water Platter | Victoria or Water Platter |
| Latin name | <i>Nelumbo lutea</i> | <i>Nelumbo nucifera</i> | <i>Nelumbo nucifera</i> | <i>Nymphaea</i> | <i>Brachyceras</i> | <i>Lotos</i> | <i>Victoria cruziana</i> | <i>Victoria amazonica</i> |
| Leaf Margin | entire (clear and smooth margin) | entire (clear and smooth margin) | entire (clear and smooth margin) | entire (clear and smooth margin) | erose | denticulate | entire (clear and smooth margin) with sharp spines on the outside of the green sepals | entire (clear and smooth margin) with sharp spines on the outside of the purple - red sepals |
| Flower Position | high above water surface | high above water surface | high above water surface | floating on water surface | high above water surface | high above water surface | floating on water surface | floating on water surface |
| Flower Opening Time | 4:00 - 6:00 am | 4:00 - 6:00 am | 4:00 - 6:00 am | 5:00 - 7:00 am | 7:00 - 9:00 am | 6:00 - 8:00 pm | 6:00 - 9:00 pm | 6:00 - 9:00 pm |
| Number of Sepals and Petals | 18 - 24 | 18 - 24 | more than 24 | 18 - more than 45 | 18 - more than 45 | 18 - more than 45 | more than 45 | more than 45 |
| Flower Color | yellow | white, pink or red tone | white, pink or red tone | white, pink, red, yellow and orange | white, pink, red, yellow, orange, blue, purple, two toned and all colors in between | white, pink and red | changeable from white to a red color | changeable from white to a purple - red color |
| Growth Type | horizontal growth | horizontal growth | horizontal growth | horizontal growth | vertical growth | vertical growth | vertical growth | vertical growth |

Table Displays : The characteristic of the different Family and genus of lotus and waterlily.

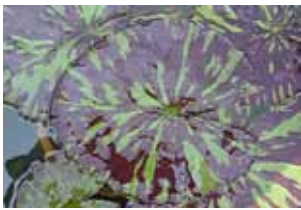


Here are some ways to identify the differences between different varieties and cultivars.

Here are some illustrations of the variety that exists in those 3 genus.

1. The leaf characteristic

a. The color of the upper and under side of leaf



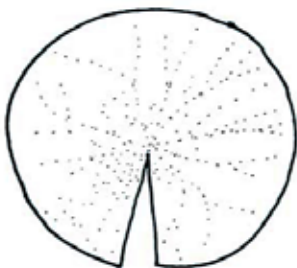
Some examples of the look of the upper side of waterlily pads .



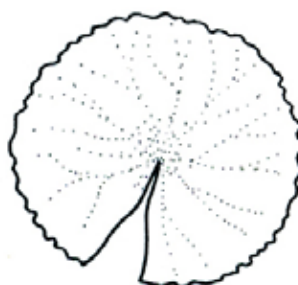
Some examples of the look of the under side of waterlily pads .

b. The leaf margins are different between the different species of *Nymphaea*.

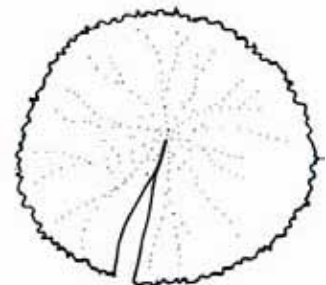
Here are the leaf margin types you will encounter.



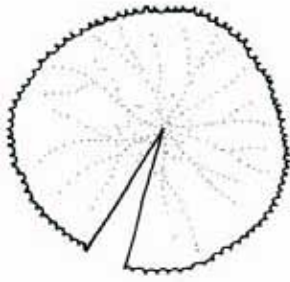
entire



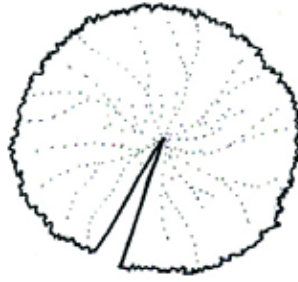
crenate



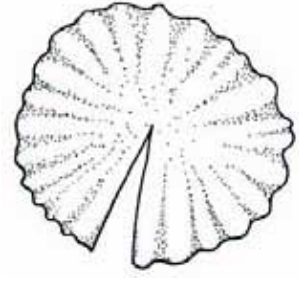
mixed crenate and dentate



dentate



irregular dentate



undulate

c. The leaf sinus may be different or the same among the different species of *Nymphaea*.

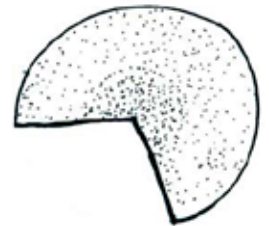
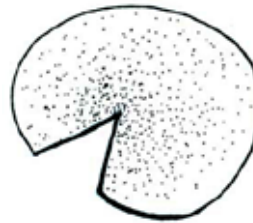
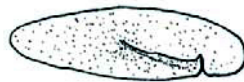
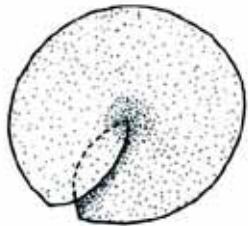
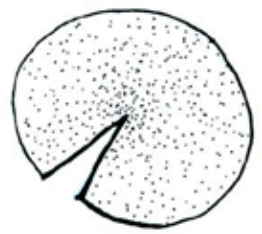
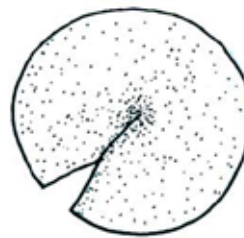
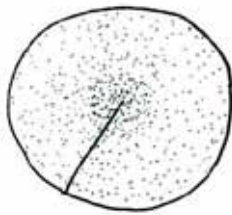
The leaf sinus

Closed group

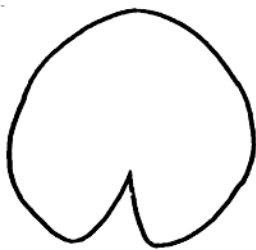
Opened group



Peltate



d. Here are some of the characteristic leaf shapes.



Ovate



Ovate / Oblong



Sagittate



2. There are many different flower characteristics to observe.

a. The petals, sepals, anther and filament color may be quite different in color and form.



b. The petals count can be very different in different species and hybrids. As a general rule, the species blooms have lower petal counts than many highly desirable hybrids.



4-20 petals



33-44 petals

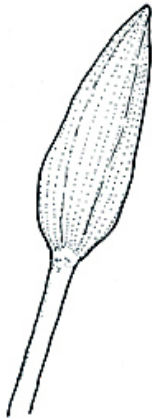


21-32 petals

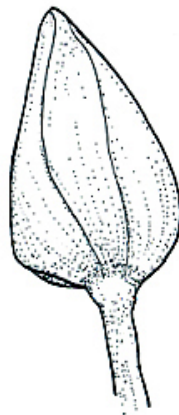


Over 45 petals

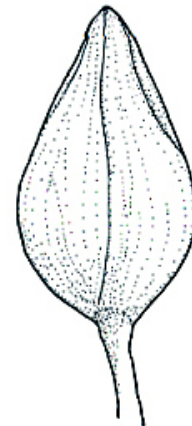
c. This is the shape of a mature bud prior to blooming.



Linear



Ovate



Elliptic



d. The shape of full-open flower



cup or 45-60 degree shape



Half circle or 180 degree shape



Circle or 360 degree shape

e. The shape of the petals



Linear



Ovate



Elliptic

f. There are differences in fragrance in the species and hybrids. Tropical blooms have a strong fragrance in most cases. Hardies have either no fragrance or very light fragrance in comparison to the tropical blooms.

3. There are a great many variations in the petiole and peduncle characteristic.

Some are glabrous and some are pubescent.

Petiole(flower stem) – Peduncle(leaf stem)



At Pang-U-Bon, we keep a few hybrids that are very close to one another as a visual illustration to visitors so that they may see how to identify similar plants through proper visual methodology. Look at all of the pictures below to see the similarities and the differences in the named hybrids. A couple examples of plants that we display and initially look alike are as follows...

Nymphaea

'Muang Thummanoon'

Flower



Nymphaea

'Muang Wiboonlak'



Nymphaea

'Mrs. Richmond'



Nymphaea

'Splendida'



Upper leaf color



Lower leaf color



BIBLIOGRAPHY

Slocum, P.D., P. Robinson and Frances Perry. 1996. *Water Gardening, Waterlilies and Lotuses*. Oregon: Timber Press. 322 p.

Lawrence. G.H.M. 1955. *An Introduction to Plant Taxonomy*. New York. Macmillan Co., Ltd. 179 p.

Sleamlarp Wasuwat and Primlarp Chukiatman. 2000. *Ornament, Nymphaea, nelumbo and victoria in Thailand. vol.1*. Bangkok : Nation Books.192 p.

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2011 Lilyfest in San Angelo Texas

by Tim Davis and Zac DeGarmeaux

The 2011 Lilyfest was held on the third Saturday in September of last year at Civic League Park in San Angelo, Texas. The friends and supporters of Ken Landon's International Waterlily Collection gathered for the seventh annual Lily festival.

There are between 250 and 300 waterlilies on display each year of the nearly 3000 Ken Landon has collected or rescued. Both species and cultivars are represented in this one-of-a-kind collection.

State Representative Drew Darby joined for the second year in a row. This time he was there to present the proclamation of Ken Landon's *Nymphaea* 'Texas Dawn' as the official State Waterlily of Texas.

We have been privileged enough to witness history in the making here in San Angelo, Texas. School children who take the course in Texas History in our state will forever more learn of this accomplishment by Ken Landon just as they learn that the state flower is the Texas Bluebonnet.

Ken has run the park for nearly three decades. He quietly works on hybrids, growing techniques, fertilizer formulas and research on new species in this small Texas town. He was recently recognized in the New York Times for his accomplishments.

He often chooses special people or supporters of the IWC to name waterlilies for when it is time to name one of his many hybrids. Each year at Lilyfest there is a dedication of new hybrids presented during Lilyfest. Last year hybrids of Ken's were named for Miss Genna Duncan and Miss Griffin Greene.



Genna has worked for the last several years at the IWC with Ken as part of his staff. Genna was never one to be shy and always kept the group laughing in cold weather or hot. She is a genuinely fun person to be around with a positive attitude. She helped put on the show of the century for last year's IWGS Symposium and Lily Fest. She has moved on to the next phase of her life as a college student and will be missed. As a dedicated staff member, she was honored as Eve, Mindy and Melody were before her with a waterlily. She was able to choose a waterlily to name from a pool of outstanding new hybrids created at the International Waterlily Collection.

Griffin is a young lady that as a



student of the Ambleside School in San Angelo visited the IWC on school trips. She was brought there by her teacher, Ms. Reynolds. As a student she was most interested in what Ken's life work has produced. She was one of 8 candidates from about 500 students that visited the IWC on trips. The staff of the IWC determined who was the most deserving of all the scholastic visitors based on their enthusiasm and interest in the IWC. She too chose a waterlily to name from a pool of outstanding new hybrids created at the IWC over the last couple of years.



Nymphaea 'Texas Dawn'

by Tim Davis



Nymphaea 'Texas Dawn' is one of the best yellow-flowered waterlilies since *Nymphaea* 'Marliacea Chromatella' made its appearance in 1887 according to expert, Perry D. Slocum. It received the prestigious International Waterlily and Water Gardening Society's American Award in 1990 and was recognized as 'lily of the decade' during the '80s.

Just recently it was awarded another high accolade. It was named first as one of the Texas Superstar WaterGarden Plants by the Texas A & M Agriculture Program. Then upon final voting, it was named as the leader of the group of waterlilies.

Nymphaea 'Texas Dawn' is a hybrid hardy waterlily created from a native Texas species, *Nymphaea mexicana* and a selected hybrid, *Nymphaea* 'Pink Starlet'. *Nymphaea* 'Texas Dawn' is among the most popular 'yellows' to date. A profuse bloomer whose fragrance is delightfully lemony. This lovely and highly recommended lily was developed by Kenneth Landon in San Angelo, Texas. Ken stated "When I first saw the flower its coloring was reminiscent of a Texas sunrise, hence I named it *N. 'Texas Dawn'*"

It was voted the official state waterlily by the Texas Legislature, and approved by Gov. Rick Perry in June. and was made official at 4 pm on June 17, 2011 It's a hardy lily that will grow in the shade. The fact that it holds its blooms high above the water and blooms more profusely like a tropical has made it a highly sought after plant by pond enthusiasts and hybridizers world-wide.

Here is a link to the House Concurrent Resolution, H.C.R. No. 24 drafted by Representative Drew Darby.

<http://www.sos.state.tx.us/statdoc/bills/hcr/HCR24.pdf>

LILY 2012

FEST

September 15, 2012

The 3rd Saturday in September

Civic League Park

San Angelo, Texas USA

We advertised Lily Fest in 2010 as being the largest collection of waterlilies seen to date. We had nearly 300 different hybrids on display. Many were new hybrids that were on display nowhere else at the time.

For 2012 we are going to expand upon the display of new material. We will have more new waterlilies on display than other botanical gardens have regular material on display. We already have about thirty brand new intersubgeneric (ISG's) hybrids that we will display and should have many more as we near summer. No botanical garden in the world outside of Kew can boast having more than ten ISG's. We are going to devote most of one of the pools to just intersubgenerics. This will include purple ISG's and possibly a few blue ones.

In addition to the intersubgenerics, we have over 100 new hybrids that we can pick from to display. We have several hybridizers from around the world that are sending us material that nearly no one has seen. We have new Australian material that was grown from seed that we will display.

We are planning on having a contest to pick the best new waterlily in the collection this year. You can be a part of this if you are a hybridizer and we may have a way for you to play a part in the judging.

We will have more species material on display than any other water garden. This is the work of Ken Landon and he did not get the nick name "Species Man" without good reason. He has the largest collection of species. He went on a species collecting trip at the end of 2011 and has new material that we may show.

You need to get your passports and travel documents in order now. This year promises to be the best show we have ever put on. San Angelo is less than a 5 hour drive from the cities of San Antonio, Austin and Dallas in the big state of Texas.

Stay tuned to the [IWC website](#) and the [IWC on Facebook](#) for more information.

