

Beannachtaí na Cásca

POLLINIA



Ophrys tenthredinifera

NEWSLETTER OF THE IRISH ORCHID SOCIETY

Cumann Magairlíne na hÉireann

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POLLINIA

(pol-LIN-ee-uh)

The compact packets of pollen found in orchid flowers. Plural of *Pollinium*.

Waxy pollen clumps or grains usually found in the anthers of most orchids; often yellow, distinct, and found under the pollen cap of the column.

Pollinia contain the male reproductive cells.

Latin *pollin-*, stem of pollen "fine flour, dust."



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Cumann Magairlíne
na hÉireann



THOUGHTS ON WATERING

Although I consider myself a gardener and as such is interested in all aspects of biology, chemistry and physics, visitors frequently ask what kind of biology I specialize in. I explain I have a PhD in plant physiology. Quite a few look surprised and politely remark they did not know plants needed psychologists.

A plant physiologist studies the function of plant cells and tissues, and may spend time in laboratories for in depth studies of the role of e.g. plant hormones, vitamins, enzymes, mineral uptake, photosynthesis, symbioses, seed germination and reactions to pests, fungi, virus and bacteria. However, I have found that the greatest need for a plant physiologist in daily life is when it comes to the subject of watering.

For instance, an Australian friend recently told me about a governmental tree planting project somewhere on our planet, where the planting commenced just before the onset of the dry season. My friend was upset and told the organizers the plants would most likely die.

People have good intentions, but many treat plants like garden furniture, not like living beings.



good intentions, treat plants like furniture, not like living beings.

Therefore I thought I should share some basic advice which might be used anywhere, but particularly in a monsoon climate like at Dokmai Garden in Thailand.

An experienced gardener may find some of the advice below to be at kindergarten level, but at Dokmai Garden I meet with workers, students and visiting plant enthusiasts who have very limited knowledge about growing plants, so after a few years here I take no knowledge for granted. You do not have to be a plant physiologist to figure out these recommendations; you simply need experience from cultivation. But a plant

physiologist may explain why a certain practice is successful and another one is detrimental.

1. Plants are living beings and so they need water. All life forms; bacteria, mushrooms, plants and animals, are composed of cells which contain water to enable activity of proteins, which regulate cell activity. Some life forms may survive a dry condition, but they remain inactive until they get water.

2. Different plants have different requirements. Some 300,000 vascular plant species (flowering plants, conifers, ginkgo, cycads, ferns, angel wings, whisk ferns and club mosses) are hitherto known by science. Since they grow in different environments, they have different water requirements. A default watering management suitable for all 300,000 plant species does not exist.

That a plant should be treated differently from another can be terribly difficult to understand for a person who has never left his hometown. He only knows the local plants that survive in his local climate, and he may laugh at you when you introduce an exotic plant and explain it may require special attention, especially from a genus he is used to.

A Sumatran rain forest blood banana (*Musa acuminata* subsp. *zebrina*) requires much more water and no dry season in contrast to a monsoon 'gluay nam wa' banana (*Musa acuminata* x *balbisiana* ABB). A mountain cherry may die at the sea shore due to salty

water, a lowland breadfruit may die at high elevation due to frozen water, a Mediterranean olive may drown or die from rots if watered heavily all year round, a monsoon cassia may have a weak flowering hidden by leaves if watered in the dry season, and a rain forest nutmeg will die if left unattended in the dry Chiang Mai monsoon climate. How would you know? Trial and error is a good way, but will cost time and money. If you know the scientific name of the plant, then you can find out its origin, to learn about its requirements.

3. If you plant a seedling, do so in the early rainy season or make sure you can add water during the phase of establishment. Even if you plant a native seedling during a dry season, it will have severe difficulties establishing itself without help. Natural seed germination usually occur during rains, and to make sure an erratic shower the wrong time of the year does not awaken the innocent seed prematurely, it is often equipped with germination inhibitors which can only leach out if you water generously or if it rains heavily.

4. Terrestrial plants rarely like to expose their roots. Humans can move plants if they know what they are doing, while in nature most plants stay where they germinated. Exposing the roots in the dry air even for just a few minutes may kill some plants. I have seen workers dig up a plant, throw it on the ground in the sun, take a lunch break and then carry on. This will work for cassava and frangipani cuttings, but not for tree saplings. Plant and water the sapling immediately after transferring from a



nursery, or let it recover from transportation inside a new nursery.

The roots may be severely damaged when you liberate them from a pot or net prior to planting, and the remaining roots may therefore not be sufficient for supporting enough water to the leaves. You may have to cut away all leaves of the plant to reduce water losses. If moving a shrub from one place to another, you may want to consider just moving the root ball, cutting away all branches.

In the tropics you should always try to shade your recently planted treasure, also in the rainy season, because the plant is adapted to the shady conditions inside a nursery, and will have problems or may even die if suddenly exposed to stronger light and heat combined with root damage. Studies of leaves from the same plant individual during shady growth and during sunny growth reveal different amounts of leaf molecules used as sun screens (e.g. carotenoids). In the shade there is no reason for the plant to waste valuable material and energy on excess amounts of sun screens, but if suddenly transferred, the plant is not prepared. A gradual adaptation to stronger light is another method used for large scale tree plantations, i.e. leave the pot out in the sun for five minutes, next day for ten minutes, then 20 minutes and so on.

5. When you water with a hose, check the water temperature with your fingers first. A hose left in full tropical sunshine will not only eventually crack due to UV destruction of the material, but the water

inside could be terribly hot which may cause cell death of shallow roots.

6. When you water with a hose, do not shoot high pressure water at the base of the stem. Sometimes the force of water is so strong the young bark is damaged, and the soil surrounding the stem base is flushed away, exposing the roots which may lead to infections and drought. Instead, water gently around the plant. A leaf litter like in a natural forest is good to reduce the force of rain and to keep the moisture, but make a ring free of litter around the stem base to avoid fungal rots.

Never water orchids with high pressure water, or fruits and flowers will be lost and a year's work is destroyed.

7. Watering is most effective in the evening and night. During the hot day, a lot of sprinkler water evaporates too quickly. Sometimes it is recommended that epiphytic orchids should be watered in the morning so that they can dry out during the day. That applies to indoor or greenhouse conditions where excess moisture may cause rots in orchids from monsoon areas. In a monsoon climate you should observe nature, and here it often rains in the late afternoons, nights and early mornings, so you should do the same. Since the sky is the limit, the moisture level is rarely saturated.

8. A leaf is like a solar panel and should be kept clean. Some plants like citrus may develop more bacterial cankers if their leaves are watered. Although wet during the rainy season, the long droughts in the dry season seem

to limit the cankers, while if watered all year round the cankers may kill the trees. There can also be risks with watering banana leaves, enabling spores of the sigatoka fungus to germinate. These are exceptions and due to introduced diseases. In a natural environment the leaves need the rain to cool down and get rid of dust which reduces light and speed of photosynthesis.

9. Some plants demand more than wet roots, they demand a moist atmosphere. That is why *mangosteen* is so hard to grow in Chiang Mai, which dry climate resembles Central India more than the wetter Bangkok. If you have a rain forest plant, grow it in the shade and consider either daily hand watering of the entire plant or install a misting system. Leaves not adapted to drought will die in dry climates, so you have to change the environment.

10. When potting a plant, make sure the pot has drainage holes. It has happened numerous times that volunteers helping out at Dokmai Garden have been asked to repot some seedlings, and they have taken pots for aquatic plants without drainage holes. The roots of a land plant consume oxygen and if submerged under water for too long they may drown.

A related problem is that you should not add a heavy clay to a pot, which will block the drainage and kill most plants. Use a porous compost with sand to allow drainage. Keeping the soil constantly wet may cause a rot in many plants. It is better to allow the pot to dry out and then water again.

11. When potting an aquatic plant, make sure the pot has no drainage holes. This may seem obvious but apparently it is not. When I noticed a *Persicaria odorata* stand shriveling up in a pot I watered it, contemplating what is going on in people's heads when they ignore a plant obviously screaming for water.

Next day the pot was dry again, so I suspected a crack and felt guilty for my thoughts of blame. I turned the pot and to my surprise there was a neat drainage hole in the bottom.

12. A mangrove may not necessarily demand salty water. It is always good to observe plants in the wild and then try to copy their environment for successful growth in your garden. Mangrove plants are commonly sold in pots (e.g. *Nypa fruticans* and *Sonneratia* subsp.) and many believe one should add salt to the water. I suggest you should not, because they rather endure it than demand it. In nature they are competitive at sea shores because competing plants can not survive being submerged into salty water.

Limestone plants do not necessarily crave calcium rich water, but unlike many other plants they can endure soils poor in phosphorus, a deficiency caused by tight bonding to calcium. As long as the gardener cares for the limestone plant, i.e. removes surrounding competitors, a calcium plant may very well thrive on a neutral soil.

13. Epiphytic orchids demand rain water. Rain water has an almost neutral pH around 6.8 and is poor in minerals, so it is a good precaution to analyze your



orchid irrigation water regarding pH (acidity). A high pH (alkaline water) may lead to nutrient shortage in the epiphytic orchids and if too rich in salts it may lead to cell damage.

14. Consider the edge effect.

Sometimes a gardener can not understand why a plant in his garden suffers tremendously, while it grows handsomely in the forest 5 km away at the same altitude, with the same solar intensity and with the same soil. The reason can be that if a moist-loving tree from inside the forest is grown in a small woodland in a rural area, the moisture levels are lower due to lack of canopy. Trees growing within a 2 km distance from a cut forest edge may suffer from drought stress, the more severe the closer to the edge.

15. Consider drainage. When you design your garden you need to avoid areas of water logging. If you plant a drought-loving plant such as pomegranate you may even want to make a little mound to avoid water logging, while a swamp plant such as pachimira nut may appreciate a pit. Many native monsoon plants can stand shorter periods of water logging, but a general advice is to make a flat surface around a recently planted seedling or sapling. Excellent drainage can be obtained through sandy rather than clayey soils, slopes, deep holes filled with sand and gravel for desert plants, elevated flower beds and drainage tunnels for quick outlets. At Dokmai Garden we have even built an artificial hill for the most vulnerable plants, but also as a feature to break up the flat landscape. It is easier to

add water than to take away water, and excess water may cause soil erosion, so of two evils I prefer drought to flooding.

16. Use a rain meter. Quite often a gardener will observe a rain shower with satisfaction but to his surprise the garden still looks dry the next day. A rain meter will give an objective measurement of how much water you actually got. In a monsoon climate anything below 5 mm should be considered 'nothing' and you need to irrigate in an area with water demanding plants.

Using the rain meter you can actually test your irrigation equipment and measure how long time it takes to get say 10 mm (which equals ten litres of water per square meter, or one regular watering can).

Use a spade to pedagogically show that in spite of a recent shower or a squirt from the hose the soil is still dusty dry just 2 cm down. Asking somebody to 'soak it' may not be a sufficient instruction, as that is a relative amount. Better say 'leave the hose for ten minutes and then move it to the next plant'.

To penetrate to a reasonable depth it is better to 'soak' a plant at intervals (pay attention to the first signs of hanging leaves and you will soon know what a particular plant requires) rather than adding insufficient amounts (2-3 mm) every day. Such a daily watering regime only consumes water and money with little effect on the garden. A plant which sheds its leaves is usually dormant for a long time and must not be watered at all. If you do, it may wake up and perhaps

die from a dry atmosphere, or start making leaves and flowers when you expected flowers only.

17. A young compost may remain dry even after a 30 mm shower, due to the thick layers of not yet decomposed leaves protecting the core. This is why you need to turn the compost to break up the leaf layers. Without water there will be no microbial degradation and no new soil. Composts need irrigation too.

18. Related questions are the installation of irrigation systems, but that field is more of physics and mechanics. I can just mention that you should not install a pump 500 m from the source of water, but as close as you can. A suction over a great distance reduces the pressure, and so does unnecessary pipeline bends. A trench for the pipeline sloping upwards will also reduce pressure, while it is better to use gravity and let the water flow towards the sprinklers. These advice may seem evident but I have seen the strangest irrigation systems so supervision is always crucial to avoid the mistakes mentioned above. Investing in metal sprinkler heads allowing spots, showers and sectors is highly recommended.

ERIC DANELL

Dublin Orchid Fair - National Botanic Garden, Dublin

Saturday 27th and Sunday 28th April 2013

A wide variety of orchids will be on display during the annual Dublin orchid fair, which is being held in the conservatory this year. This event is of interest to both beginner and accomplished growers and will provide an opportunity to source orchids, sundries and books. As part of the fair there will be talks on growing orchids and a tour of the Glasnevin orchid collection.

Times 10.00am-5.00pm. Entry Free

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DONEGAL WILDLIFE

A regularly updated pictorial narrative of the wildlife around Raphoe, Co. Donegal, Ireland.

The Irish Orchid Society welcomes Stuart Dunlop as a regular columnist beginning with this issue of *Pollinia*. Stuart is remembered for his captivating and appreciated talk on wildlife photography at the March 2012 IOS meeting.

Follow his regular postings about local Donegal wildlife at: <http://www.donegal-wildlife.blogspot.com>



DACTYLORHIZA ORCHIDS

I always think Dactylorhiza orchids are at their best when the lowest rank of flowers has just newly opened.

For years, there has been a huge debate about the number of species and descriptions of the species and hybridisation. It is known that they hybridise and back-cross, so I suggest that most specimens are an intermediate 'hybrid' amongst 3 key 'species' in our location: Common Spotted Orchid (CSO), Heath Spotted Orchid (HSO) and Northern Marsh Orchid (NMO).

Given that these 'species' hybridise so regularly, I can't see any uncorrupted ones being possible, so I rather think that we are taking a few distinguishing characteristics and lumping individuals into one bucket or another, depending on what we see.

This one (above) shows the main features of 'CSO'...tall spike, three very clear lobes to the base of the flower, very little frilling:

This one (right) shows more influence of 'HSO', with much frillier lips and a slightly shorter spike.





This would appear to have some NMO influence...much darker markings and a still shorter spike (left).

I'll leave the next few to your own imagination.



The flower (above, left) in this specimen shows the nectar hole being clearly indicated by the purple lines, which act as a guide for insects. The hole suggests that these species need a long-tongued insect like a butterfly or bee to pollinate them.

Pollination is carried out via the pair of brown pollinia which attach pollen to the back of the pollinating insect.



This last one, however, shows a nice feature. The flowers form 'upside down', and only then do they rotate to their final position.

It would be pure 'Common Spotted Orchid' if it wasn't for the (very) short spike.



A reader mentioned in her comments that the inverted flower looks more developed than usual. This is true. A close look reveals that the 'lower' lip has developed too quickly and has jammed against the flower above it. This combination of features will prevent the flower from passing on any pollen, so this is the end of the line for that combination. ♦



STUART DUNLOP
First written in June 2009



Beltany Stone Circle, Raphoe, Co. Donegal



xerophyte

(ZEER-uh-fyt)

MEANING:

noun: A plant adapted to growing in a very dry or desert environment.

ETYMOLOGY:

From Greek xero- (dry) + phyton (plant). Earliest documented use: 1897.

USAGE:

"Saavik's bemused comment when Captain Howe, her former first officer, had sent her a 'get well cactus' was that on Vulcan it was a superfluous xerophyte."

Keith R.A. DeCandido; *Star Trek: Tales of the Dominion War*; Simon & Schuster; 2004.



EARLY-PURPLE ORCHID

Common Name:	Early-purple Orchid
Scientific Name:	<i>Orchis mascula</i>
Irish Name:	<i>Magairlín meidhreach</i>

In tall spikes (up to 40 cm), on neutral or calcareous soil, this stunning orchid can be found from April to June. The colour of the flowers can vary from deep purple, through pink to white and these flowers can be arranged in dense or quite loose spikes. Each flower (8–12 mm long) has a lower lip or labellum which is shallowly lobed with dark purple spots running down the pale upper part of the central, notched lobe. Above this petal is a sepal which forms a hood and there are two more sepals standing erect like little rabbit's ears.

The Irish Orchid Society and *Pollinia* welcome Zoë Devlin as a regular columnist on wild Irish orchids beginning with this issue.

**Zoë's website is
"Wildflowers of Ireland"**

<http://goo.gl/2y2um>

Her book 'Wildflowers of Ireland - A personal Record' is published by the Collins Press, Cork.

One feature which distinguishes this orchid is its long, stout, upturned cylindrical spur. The lower leaves first appear in January as a rosette of four to eight oblong, blunt-tipped leaves which can be plain, spotted or heavily blotched. The flower stem arises in spring and along it are small leaf sheaths. A second distinguishing feature is the distinct smell of tom-cat's pee! Early-purple Orchid grows well in broadleaved woodland, on road verges and on limestone pavement. This perennial is a native plant and it belongs to the Orchidaceae family.

I first identified this wildflower in 1981 on Moneen Mountain in the Burren, County Clare and I photographed it in County Wexford in 2009.

*Therewith fantastic garlands did she make
Of crow-flowers, nettles, daisies and long purples
That liberal shepherds give a grosser name'
But our cull-cold maids do dead-men's fingers call them'*



© Zoë Devlin

It is claimed that when William Shakespeare wrote those lines in Hamlet, his ‘long purples’ referred to the Early-purple Orchid. The lines were spoken by Gertrude and referred to the coronet which Ophelia was wearing when she drowned.

This folklore comes from County Kerry:

‘This herb was used as one part in the making of a charm for coaxing women. This charm was made as follows. Get 10 silk pins. Kill a darn mouse and stick pins in his body until they get rusty. When pins are rusty get a “ballabh aun beake” (sort of mushroom) and stick the pins in it and leave them there for 3 days. Pluck the Manglin Meidreach [sic] and rub the pins to it. Any girl that you stick one of these pins in her clothes will follow you all over the world’. ♦



© Zoë Devlin





Early-purple Orchid
Orchis mascula
Magairlín meidhreach

© Zoë Devlin

WALING-WALING TO BE NEW NATIONAL FLOWER FOR PHILIPPINES

Orchid is endemic to the southern Philippines

Manila: An orchid flower endemic to the southern Philippines has been declared the country's national flower alongside the Sampaguita.

The Sampaguita (*Jasminum sambac*) has long been recognised and taught to Filipino schoolchildren as the national flower but this distinction could soon be shared with the Waling-Waling (*Euanthe sandieriana* also known as *Vanda sandieriana*.)

Department of Environment and Natural Resources (DENR) Secretary, Ramon Paje said the impending declaration of the Waling-waling as the national flower was reasonable.

“The Waling-Waling can best represent the splendour and uniqueness of Philippine biodiversity because it is considered the finest and most beautiful among all species of orchids in the country,” Paje said.

Aside from this the Waling-Waling, dubbed the “Queen of Philippine Orchids” is endemic to the island of Mindanao, where the indigenous Bagobo tribes worship it. The flower can only be found in Davao, Cotabato, and Zamboanga del Sur provinces.

Earlier, both the Senate and the House of Representatives approved a legislative initiative declaring the Waling-Waling as a national flower because of its uniqueness and beauty that caught the attention of flower enthusiasts here and abroad

He said that recognising the Waling-Waling as the national flower would “raise public consciousness on its rarity and boost efforts to protect and conserve the flower.”

Critically endangered

Due to the destruction of its wild habitat, the Waling-Waling is considered a critically endangered plant species under Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora or CITES, an international treaty among governments to ensure that the survival of wild plants and animals are not threatened by their trade.

In 1985 Charita Puentespina, pioneered mass production of the flower through embryo culture, thus saving it from extinction

Today, the trading of Waling-Waling specimens is permitted only in exceptional circumstances, while the DENR imposes certain requirements for their propagation.



“Orchid lovers all over the world consider the Waling-Waling as one of the most unique and beautiful native orchids in the world and that while some adore it, most Filipinos have forgotten its natural beauty,” Senator Edgardo Angara who sponsored House bill 5655 said in a statement.

On the other hand, Sampaguita (*Jasminum sambac*), which was adopted as the country’s national flower as early as 1934, is not endemic to the country because it can also be found across South Asia, Hawaii and even the Middle East, where it is known as Arabian Jasmine. The Sampaguita is also one of Indonesia’s national flowers. ♦



Waling-Waling (*Euanthe sandariana*)

*An té a bhíonn siúlach bíonn sé scéalach.
Travellers have tales*

RECENTLY IN FLOWER AT THE NATIONAL BOTANIC GARDENS

Osmoglossum pulchellum

The genus *Osmoglossum* is a cool to warm growing epiphytic genus. There are 7 species found in seasonally dry forests in Central America. They typically have 1 to 2 leaves on a pseudobulb and blooms on an erect inflorescence with white, spurless, fragrant flowers.

Osmoglossum pulchellum (Bateman ex Lindl.) Schltr. 1916, is the type species of the genus. Previously belonging to the *Odontoglossum* genus, this medium sized, cool to intermediate growing species is found at elevations of 1200 to 2500 meters.

It is often called the 'Lily of the Valley orchid' because of its powerful scent. *Osmoglossum pulchellum* has compressed pseudobulbs enveloped basally by several leaf-bearing sheaths, each pseudobulb has 2 to 3 leaves, up to 30cm in length.

A mature pseudobulb produces a pendulous inflorescence, 12 to 50cm long with 6-10 fragrant, non-resupinate flowers.

The flower spikes appear from the base of the bulb in winter and are white with a yellow smudge at the uppermost part of the lip. The flowers can appear between October and January.



This particular species is found in Mexico, Honduras, Nicaragua, Guatemala, El Salvador, and Costa Rica. They grow best in a fine grade medium orchid mix and positioned in a shady area of a greenhouse. Water sparingly in the winter and feed regularly throughout the growing season. It has to be noted that this is not the easiest of species to grow and they do require a bit of care and attention.

MARIE HOURIGAN



MEMBER FOCUS QUESTIONNAIRE

The Member Focus Questionnaire included with the mailing of the January 2013 issue of *Pollinia* invited Irish Orchid Society Members to share their orchid growing experiences and orchid interests with other Members.

Úna from Dublin begins the series, which will be a regular feature in future issues.

Members who have not completed the Questionnaire may continue to send them to:

Marie Hourigan, Secretary, Irish Orchid Society, National Botanic Gardens
Glasnevin, Dublin 9, Ireland

Úna, Your Interest in orchids began why and when?

~ Many years ago when I watched Brendan Sayers demonstrating how to grow an orchid on a TV show. The humidity tray fascinated me at the time and I decided to try my hand at growing an orchid. I bought my first Phalaenopsis and a Cymbidium at the first Orchid Fair in Glasnevin

What was your first plant?

~ Phalaenopsis

How many plants are in your collection?

~ 49

Where did you purchase them?

~ The Dublin Orchid Fair, Shops and UK websites

Where do you grow them?

~ Greenhouse/House/Conservatory/Apartment

What is your favourite orchid species/hybrid/genus?

~ *Thunia marshalliana* and *Calanthe Mont Nicholle*

How often do you repot plants?

~ Only when they are bursting out of the pots

Which type of potting mix do you use?

~ Bark, large and medium spagnum moss

Which group are you most successful with?

~ Phalaenopsis

Which group do you continually fail with?

~ Pleonies and hybrid Cymbidiums

Which are the oldest specimens and how old are they?

~ My first Phalaenopsis is circa 10 years old and just hanging in.

Do you use insecticides or fungicides? if so which ones

~ Methylated Spirits

Which fertilisers do you use and do you use tap water or rainwater?

~ Rainwater and Orchid Focus to Bloom and Orchid Focus to grow

Which orchid would be your dream plant/group to grow?

~ Thunias and Calanthes

Any funny orchid stories?

~ Mine are all very serious - like myself !!!



Thunia marshalliana

RARE ORCHIDS, BROMELIADS RETURNED TO EVERGLADES NATIONAL PARK

For the past five years, Marie Selby Botanical Gardens in Sarasota has been part of a pioneering effort to return rare bromeliads and orchids to the Everglades. Several botanists waded into the thickets of Everglades National Park to bring endangered plants back into the wild.

It's just after sunrise in the middle of the Everglades National Park. It's not the stereotypical river of grass that you might think. There are some raised islands in it - basically two feet above sea level - where plants such as oaks, mahogany, banyan trees and such have thrived. And this is where many of the rare orchids have been taken. So their mission coming down this trail is to search for the rare mule ear orchid.



"This is called a mule ear orchid. *Trichocentrum undulatum*," says Bruce Holst (above.)

Bruce is the kind of guy you want with you in a trip to a place like the Everglades. He can recite the Latin name of a tree while telling you if its berries are edible - or poisonous. Holst has traveled two hundred miles south from Sarasota, where he's director of botany at Marie Selby Botanical Gardens. For several years, they've grown rare epiphytes - or air plants - such as orchids and ferns and transplanted them back into the wild. Now, they're checking up to see if they survived.

"This is extremely rare in the United States," he says. "Other than this population that we've re-established here, there are about 500 plants in that other area. One of the park's biologists did a count a couple of years back."

When asked if he is afraid that people are going to come in here and take the orchids, like they did in the past, Holst says, "Absolutely. We think it's a very real possibility. We think we've put enough out that are far off the trail and high enough up in the trees - it'll be very difficult - someone will really have to make a concerted effort. They'll be very conspicuous doing so. But we really felt that some of them be visible

as people are hiking around here. I would just love to see the expressions on someone's face as they walk through and see a colony of these in bloom. It would just be just wonderful."

The beauty of rare orchids has been their undoing in heavily-trafficked parts of Everglades National Park. Jimi Sadle is the national park's botanist.

"The main reason we think for the extirpation in this particular hammock is poaching," he says. "This area was frequently accessed, and it was the center of Royal Palm State Park. And there were a lot of visitors here. And at the time, a lot of people viewed orchids as something that could be collected and brought home. I don't know if it was necessarily against any regulations at the time when the initial collecting happened."



The pressure from outlaw collectors seems to have eased. On the way into the park, I saw a dozen roadside nurseries bursting with bromeliads. But Sadle says it only takes one collector to decimate a population.

There's someone trudging through this dense jungle with us who's used to these conditions. After all, Carlton Ward Jr. hiked and kayaked a thousand miles through the heart of Florida earlier this year. His photographs illustrating the Florida Wildlife Corridor Expedition are on display at Selby Gardens - and he couldn't resist grabbing his camera once again to document the action.

"Anyone can sit there and enjoy the beauty and the bloom of an orchid," Ward says. "But it's so amazing to go in



Strangler vine takes over a tree in the Fakahatchee Strand

with some of the people who have actually discovered and named some of these species and know the Latin and have spent many years trying to protect and understand - and in this case, reintroduce these rare species to their native habitats."

The second part of our journey is a trip into a tropical hardwood swamp. It's a dense thicket of gumbo limbo, vines, and the aptly-named Poisonwood tree. Washing with soap and water afterward is heartily recommended.

Holst has to climb down into several deep holes in the hammock to reach where he had planted ferns and bromeliads. These are basically miniature sinkholes - the acidic water caused by decaying vegetation eats away at the limestone rock, creating deep pools whose sloping sides are ideal for these shade-loving plants. I ask him for a report card on their mission.

"Well, we're extremely pleased with the success of the orchid. Those plants are rooting in, they're growing, they're doing fantastic," he says. "The Fragrant Maidenhair fern is not doing very well. The original two plants are surviving - perhaps even growing - and the ones that we've put out are not doing very well. Only two out of 24 are surviving. And the Florida Holly Fern is looking great. It's only been out there for three months, but five of the six plants are found and doing very well.

It's a nice ending, he says, for five year's work - "We're very pleased. Very pleased."

You may view some of Carlton Ward's photos of the almost mythic Ghost Orchid - so named for its ghostly white bloom - at Selby Gardens. He recently finished up a photographic journey to capture the rare orchid in a remote swath of the Fakahatchee Strand near Naples. Tonight, Ward will lead several "walk and talks" at the Sarasota Gardens to take viewers through his journey. ♦

Video: <http://goo.gl/GJuib>

University of South Florida
Tampa



SCIENTISTS CREATE WORLD'S FIRST BLUE PHALENOPSIS

Genetic engineering use to create rare flower

After a decade of relentless efforts, Japanese scientists have finally succeeded in creating the world's first blue *Phalaenopsis aphrodite* orchid.

Researchers at Chiba University used genetic engineering technology to cultivate the plant.

Its blue flowers were shown to reporters in advance of its public debut at the exhibition of orchids in Okinawa Prefecture starting on Saturday.

The orchid doesn't naturally have a gene for producing the blue pigment, so the research team used genes of blue Asiatic dayflowers to create this rare specimen.

The size of the blue *Phalaenopsis aphrodite* flower is about 5 centimeters across. It's a little smaller than *Phalaenopsis aphrodite* seen in nature, but one plant bears nearly 30 flowers.

Yoshihiro Hanashiro is the managing director of the association hosting the exhibition. He says he wants many people to come see the rare blue flowers. They will be on display at the exhibition through February 11th. ♦



NEW CUBAN ORCHID SPECIES

Researchers from the University of Vigo, in collaboration with the Environmental Services Unit at the Alejandro de Humboldt National Park (Cuba), have discovered two new species of Caribbean orchid.

The Caribbean islands have been natural laboratories and a source of inspiration for biologists for over two centuries now. Suffice to say that the studies by Charles Darwin and Alfred Russel Wallace in the tropical archipelagos contributed to the emergence of the theory of evolution.

In this case, a Spanish research team from the University of Vigo has discovered two new species belonging to the orchid family (Orchidaceae: Laeliinae) in Cuba. They have been called *Tetramicra riparia* and *Encyclia navarroi*. The two plants were found in the eastern and western zones of the island respectively.

"The first species described, *Encyclia navarroi*, is an orchid with considerably large flowers. A year later we discovered the *Tetramicra riparia* species, with very small flowers. The latter is so named because it grows on the banks of stony streams in the mountains of Baracoa, one of the rainiest and least explored areas in Cuba," as Ángel Vale explained. Vale is a researcher at the University of Vigo and co-author of the studies published by the journals **Systematic Botany** and **Annales Botanici Fennici**.

Darwin was very much drawn to the orchid family, and used it to propose certain hypotheses about the importance of the relations between flowers and pollinators for biodiversity. Between 25,000 and 30,000 species of these plants are estimated to exist. However, the mechanisms that explain this amazing variety are only now being discovered.

"We could highlight their extraordinary capacity to interact with different types of pollinators. Contrary to most plants, many orchids do not produce nectar or other substances to compensate insects and birds that visit them," explained the researcher.

Orchids' deceit pollination

Despite this, floral visitors are attracted by orchids' colours and shapes, which enables the plants' sexual reproduction. This is known as deceit pollination.

The University of Vigo Plant Ecology and Evolution research team, which Vale belongs to, is studying the ecological and evolutionary consequences of deceit pollination in orchids that are endemic to the Greater Antilles: Cuba, Jamaica, Hispaniola and Puerto Rico. One of the mysteries they aim to solve is if the deceit orchids have a greater taxonomic and genetic diversity than other nectar-producing species.

Vale and his team are drawing up studies in the Antilles not only to reconstruct the evolutionary history of orchids but also to analyse the effect of pollinators in the reproduction of plants, and how this interaction has modelled the colourful aspect of these Caribbean flowers.

"Despite the fact that *T. riparia's* flowers have a complete central petal, just like other species that make up a subgenre endemic to Cuba; the way they grow is very similar to a more widespread group that seems to have diverged on the neighbouring island of Hispaniola. Our work provides molecular evidence of the greater relationship of *T. riparia* with these species on the neighbouring island. This is in consonance with the geological history of the Caribbean islands, according to which the eastern end of Cuba was in close contact with that land," pointed out Vale.

Scientists are currently trying to estimate how many millions of years ago this and other Caribbean species saw the light of day. This will enable them to test whether the ancestor of this species was already in Cuba, or if on the contrary, it evolved from an ancestor that colonised the island from neighbouring archipelagos.



Encyclia navarroi

"Just as with most orchids, which offer no compensation to their pollinators, *Encyclia navarroi* and *Tetramicra riparia* receive very few visits from bees. This is one of the basic reasons that guarantee the survival of these plants, and also help protect the populations of their pollinators," explained the scientist. ♦

<http://goo.gl/OUyk6>

Journal References:

1. Ángel Vale, Danny Rojas, Yosvanis Acanda, Natividad L. Sánchez-Abad, Luis Navarro. A New Species of *Tetramicra* (Orchidaceae: Laeliinae) from Baracoa, Eastern Cuba. **Systematic Botany**, 2012; 37 (4): 883
2. Ángel Vale, Danny Rojas. *Encyclia navarroi* (Orchidaceae), a new species from Cuba. **Annales Botanici Fennici**, 49: 83 - 86, 26; 2012



Tetramicra riparia



Encyclia navarroi

ORCHID SEEDS BEHAVE LIKE MUSHROOM SPORES

On the theme of orchid seeds; recently I have studied how an orchid fruit (*Bulbophyllum careyanum*, Orchidaceae) disperse its seeds. In fact, a huge proportion is dropped just below the fruit.

You can see the light and dust-like orchid seeds on the mango bark, just below the brown and dry orchid fruit. I remember scientific studies on spore dispersal of mushrooms. In that case, the vast majority of spores fell immediately below the mushroom cap or within the immediate vicinity of the fruitbody. It seems only a fraction of orchid seeds or mushroom spores travel far, but of course extreme events such as storms may change that. However, this time of the year we rarely have storms, and the limited long-range dispersal may explain the limited geographical distribution ranges of some species.

In addition, orchid seeds need the symbiosis with a fungus to obtain enough carbohydrates for growth until it can make its leaves, and it needs a special insect for its pollination. Which one is largely unknown to science. These factors explain the fact that although an established epiphytic orchid from a garden centre can grow on concrete, plastic or any bark, the successful establishment of an orchid seedling demands a very special environment. Seed germination is best obtained in the laboratory or kitchen, but in this case I shall follow the fate of these seeds on the bark.



Bulbophyllum careyanum is a relatively common species in evergreen or deciduous lowland forests of northern Thailand and the Himalayas. A characteristic is the shiny, angular and reddish pseudobulb seen at the top of the picture. The orchid can survive a drought without problems and may even grow on rocks or on the ground. It flowers in the mid rainy season and in spite of an abundance of flowers, there was only one fruit. ♦

COVER ORCHID

Ophrys tenthredinifera is a species of orchid native to the Mediterranean.

Ophrys tenthredinifera Willd. (1805) are monopodial and terrestrial orchids of the subtribe Orchidinae in the Orchidaceae family of the genus *Ophrys*. They are often called the Sawfly orchid.

Plants bloom from winter to spring and can grow 3 to 8 flowers that are 2.5cm wide per an inflorescence. They are found in areas with partial shade. Plants rely on a fungus in the soil which allows them to obtain sufficient nutrients. The flowers are pollinated by a male insect which is attracted when the flower release a similar scent to female pheromones.



IOS ANNOUNCEMENT

Dear Society Members,

I shall be standing down as Chairman at the AGM in June after four years tenure.

This now gives someone else the opportunity to take on the role and offering a fresh approach.

Change is key to maintaining the vibrancy of any organisation and, for that matter, life in general.

Therefore, if you are interested in the position, please make yourself known to the committee directly or via email:

info@irishorchidsociety.org

I want to deeply thank you all for your loyalty. I am honoured to have served you.

SHANE KERR



The Enid Haupt Conservatory Exhibit

NEW YORK BOTANICAL GARDEN

The Orchid Show

March 2- April 22, 2013

The 11th annual exhibition celebrates this storied flower in all its amazing forms with thousands of brilliantly colored orchids. The largest exhibition of its kind in the United States also offers insight into caring for orchids. There are more than 7,000 orchids of 3,075 taxa in the Garden's permanent collection. The New York Botanical Garden has orchids from all of the floristic regions of the world, including Australia, Africa, South America, and Madagascar.

<http://goo.gl/i7n2V>



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April 2013							May 2013							June 2013						
Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
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28	29	30					26	27	28	29	30	31		23	24	25	26	27	28	2
														30						

April – There will be no Irish Orchid Society Meeting

April 27th and 28th - National Botanic Gardens Orchid Fair

The annual orchid fair organised by the National Botanic Gardens is to be held this weekend in the conservatory at the gardens in Glasnevin. This is the premier annual orchid event in Ireland with a large selection of species and hybrids for sale.

Burnham's and Ray Creek nurseries will be participating. Members are invited to bring their flowering specimens to the show for display and to enter our traditional competition. This is an important promotional showcase and fundraising event so please contribute in any way. We shall also hold our very popular raffle.

Opening hours: 10 am – 5pm, Admission free.

May – There will be no Irish Orchid Society Meeting

June 10th 7pm – Annual General Meeting

The traditional state of the Society address will be given with the Committee proposing ideas to advance the society in the year ahead. It is also the forum for members to give their feedback and suggestions.

Irish Bank Holidays 2013

Easter Monday: Monday 1st April

May Day: Monday 6th May

June Bank Holiday: Monday 3rd June



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