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# Oak News & Notes

The Newsletter of the International Oak Society, Volume 20, No. 2, 2016

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St. Joseph Plantation Oak. Vacherie, Louisiana, by photographer William Guion (see article on page 4). © William Guion

## UK Oak Open Days: Gooder and Thenford

Once again IOS members gathered in the English countryside in July to visit two remarkable oak collections. A total of 30 participants were involved, hailing from the UK and across Europe as far as the Czech Republic. The weather was splendid on both days, which felt particularly lucky as it had been very wet in the days leading up to the event. Our first stop was David and Carole Gooder's Heanley Farm, near the village of Hurley in Warwickshire.

### Heanley Farm and Halloughton Field (July 17)

We began by visiting the trees in the garden around the house. David started planting oaks here in 2007, and the garden now covers about 1.5 ha. The soil is sandstone based and free draining, and most of the trees are doing very well.

I noted a beautiful *Quercus texana* 'New Madrid', and a *Q. palustris* 'Green Dwarf', which is often used by landscap-

ers to create hedges. A seed-grown *Q. alnifolia* has done quite well over the last several years and displays a lovely golden color on the underside of the leaves. Several Mexican oaks caught my attention: *Q. miquihuanensis*, with dark green leaves with downy undersides; *Q. candicans*; *Q. affinis*; *Q. albocincta*, which had bright green leaves and is unlikely to be very hardy – David joked "It's never had any problems since I planted it...[Pause] I planted it yesterday" – and a *Q. castaneifolia* was starting to show its typical elephant-foot root flare and elephant-skin bark.

Notable Asian oaks in the garden included *Q. semecarpifolia*, a small tree with leathery leaves, dark glossy above, and *Q. dentata* 'Carl Ferris Miller', which was propagated from a plant collected in South Korea in 1976 by Robert and Jelena De Belder of Hemelrijk, Belgium. We also saw *Q. suber* 'Sopron', a particularly hardy selection with leaves that are darker and shinier than is typical. It is



*Quercus robur* 'Timuki' at Heanley Farm (see page 10 for further information on this cultivar).

© Shaun Haddock

named after a city in northeastern Hungary where it originated. Though I was aware *Q. suber* is hardier than *Q. ilex*, I was surprised that it can survive the continental climate of Hungary. Of the North American oaks, I noted *Q. oglethorpensis*, named after Oglethorpe County in the state of Georgia in the U.S., in turn named in honor of General Oglethorpe, the founder of the colony of Georgia. We saw many new accessions in David's polytunnel, where he proudly showed us a *Q. insignis* grown from seed collected in Veracruz, Mexico.

Later that morning we took our cars and drove a couple of miles to the newer part of the arboretum, in what is known as Halloughton Field, a 5-ha site where the bulk of the oak collection has been established. Here the soil is clay and moisture retentive in parts.

David started planting here in 2011 and the collection of oaks is divided in sections by continent of origin. In between the oaks he planted pioneer trees (*Betula pendula* and *Pinus sylvestris*), which give protection to the young

oaks and will eventually be removed. Besides *Quercus*, we also saw *Nyssa*, *Sorbus*, *Liquidambar*, *Betula* and, *Crataegus*.

Before lunch we came across *Q. delgadoana*, a relatively new species that was originally referred to as *Q. eugeniifolia*, found in montane forests in Mexico's Sierra Madre Oriental, and a beautiful *Q. phillyreoides* from Far East Asia, with nice red shoots. Also of Asian origin was *Q. pannosa*, with its tiny leaves formed like the petals of a flower. I recognized *Q. coccifera* subsp. *calliprinos*, which we saw on the IOS trip to Greece in 2011. Here it grows to a full-sized tree.

We were invited by David to lunch, which we enjoyed in the ventilated shelter of a marquee installed in the middle of the arboretum.

North American oaks that caught my eye in Halloughton Field included *Q. palustris* 'Green Pillar', which shows nice growth and doesn't suffer from mildew, and two cultivars of the hybrid *Q. ×warei* (*Q. bicolor* × *robur*), 'Windcandle' and 'Long' (Regal Prince ®). They do very well, with good growth and shiny healthy leaves, and they really stand out amongst the species oaks, reaching 3 m and more after 5-6 years.

All David's oaks were clearly identified with aluminum labels and some trees still had their original labels, which gave us an idea of 'on the origin of species' and the lengths David has gone to in order to obtain his oaks. Nursery names we came across included Edulis, Burncoose, BlueBell, Chris Pattison, Birchfleet, Mallet Court, Pavia, and Pan-global, amongst others. David has also obtained oaks from Béatrice Chassé's trips to Mexico, Vietnam, and Taiwan, and he has traded trees with other arboreta, including the late Michael Heathcoat

Amory's Chevithorne Barton.

We learned that David has lost many plants due to adverse weather: a cold winter in 2010/2011 was followed by drought in 2011 and excessive rainfall in 2011/2012. He has learned that, although there may be advantages to planting out seedlings as soon as possible, many tender small plants have not made it.

After the visit to Halloughton Field we headed back to David's house where his wife Carol had kindly prepared tea for us, bringing to a close our visit to this young but impressively large collection. Including plants in the polytunnel, David has collected over 420 oak taxa, counting species, subspecies, hybrids, and cultivars.

My wife and I stayed overnight at the Manor Cottage, a lovely B&B about a mile from Heanley Farm, hosted by wonderful Nigel and Merry. Nigel owns an antique car, a Lea Francis built in 1928, and he was kind enough to take us on a tour through the village.

### Thenford House (July 18)

The next morning we descended into Northamptonshire and at Thenford's Church Barn we were warmly welcome by Lord Michael Heseltine. We were joined for the day by former IOS President Allen Coombes and dendrologist Hugh Angus, former Head of Tree Collections for the Forestry Commission.

The 28-ha park at Thenford is set in the shape of a horseshoe and surrounds an elegant Georgian house built in the 1760s. The grounds feature three



Young growth on David Gooder's *Quercus laurina*.

© Shaun Haddock

large lakes and many smaller ponds, as well as picturesque waterfalls, bridges, and sculptures. *Quercus* is only one of many important collections of rare plants at Thenford, which total over 3,500 species. Thenford only opens to visitors a few days each year, so we were privileged indeed to have the opportunity to delight in its wonders.



A view of St. Mary's Church at Thenford across one of its lakes. © Shaun Haddock

In the morning we visited the south end of the estate where we saw *Q. macranthera* subsp. *sypsiensis*, of Asian origin, near St. Mary's Church, and also the densely evergreen *Q. laurifolia* from southeastern United States.

We came across *Q. look* and most of us didn't have a clue what it was. It grows in northern Israel and Syria, and though in the past it was considered by some to be a synonym of *Q. ithaburensis* subsp. *ithaburensis* or perhaps a stabilized hybrid between *Q. libani* and *Q. macrolepis*, it is now an accepted species.

A group of *Q. dentata* commanded our attention and further on we encountered a *Q.* 'Pondaim' (*Q. pontica* × *Q. dentata*, now classified as *Quercus* Pondaim Group) introduced by Dick van Hoey Smith of Arboretum Trompenburg in Rotterdam. The name is a combination of the first syllable of each of the parent species names, with



*Quercus look* at Thenford. © Shaun Haddock

the common name daimyo oak standing in for *dentata*. You can find several signs of contact with Trompenburg throughout Thenford, such as *Q.* × *libanensis*, a hybrid between *Q. cerris* and *Q. libani*, which originated in van Hoey Smith's Arboretum.

Other interesting hybrids we saw were *Q.* × *ludoviciana* (*Q. pagoda* × *phellos*) and *Q.* × *riparia* (*Q. rubra* × *shumardii*), the latter displaying an attractive Lammas flush of pink leaves.

Just before lunch Peter Wells and I visited St. Mary's Church. The entrance is on the side (Roman Catholic churches have their entrance at 'the base of the cross') with typical stone benches on either side of the portal. At first glance Anglican churches don't seem to differ much from Roman Catholic ones, but as Peter talked about his childhood and the Anglican practices, the English Channel seemed wider and deeper.

Back at the Church Barn we enjoyed what was much more than the announced Ploughman's Lunch.

In the afternoon we visited the north side of the estate. We saw the walled garden that includes a vegetable garden, pleached fruit trees, ornamental borders,

a bird house with multi-colored parrots, greenhouses, and sculptures in the middle of a fountain, which in the afternoon heat seemed to invite us in for a swim. All was in an immaculate state and presented a spectacular sight. Near the entrance to the walled garden we admired a splendid *Q. semecarpifolia*, which was moved a few years ago and seems to be thriving in the new location. We saw The Rill with topiary *Taxus* and

The Water Gardens, consisting of various ponds connected by cascades. East of Thenford House we could admire the very first oak cultivars planted on the estate: large specimens of *Q. frainetto* 'Hungarian Crown', *Q. robur* Fastigiata Group, and a *Q. robur* 'Salicifolia' over 10 meters high.

For those of us who travel from further away, Oak Open Days often offer the opportunity of extra activities before and after the event. This time, on the day prior to meeting up with the group, my wife and I visited BlueBell Nursery at Ashby de la Zouch, one of David Gooder's suppliers of oaks. Robert Vernon and his son (also Robert) have created an interesting arboretum next to the nursery. And the day after Thenford we visited Oxford, including of course the University's Botanic Garden, where I found all of my favorite trees – and reencountered General Oglethorpe, who I discovered was a former student of Oxford's Corpus Christi College.

On behalf of all participants, I would like to thank David Gooder and Michael Heseltine for their generosity and hospitality, and to Tour Director Shaun Haddock for organizing these memorable Oak Open Days.

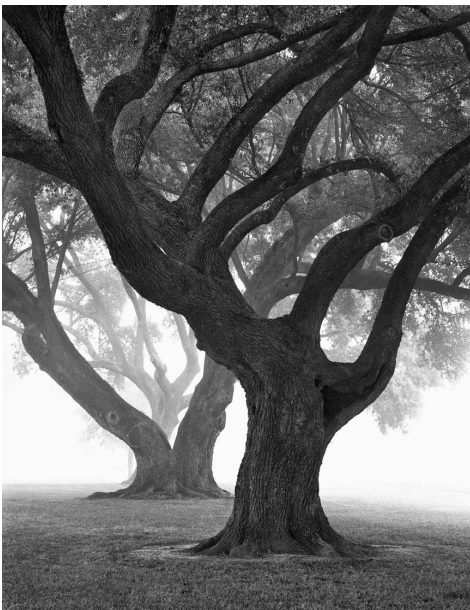
*Christof Van Hulle*

A detailed report on the 2016 UK OODs will appear in next year's issue of International Oaks.

## Quercus Quest – My Ongoing Journey With Louisiana Live Oaks

I was introduced to black-and-white photography as part of my journalistic studies in college and, upon graduation, my interest simply grew over time. In the summer of 1985, I returned home to Louisiana from my first Friends of Photography workshop in Carmel, California. The Friends was founded in 1967 by Ansel Adams and a group of close friends that included Brett Weston, Morley Baer, Liliane de Cock, and Beaumont and Nancy Newhall. Their goal was to promote photography and related education. Between 1985 and 1995, I attended several more Friends workshops. At one, instructor Morley Baer suggested that, if I wanted to make stronger, more meaningful images, I should pick something that I love and photograph it again and again: “Follow what your heart is drawn to,” he said, “and in time, your feelings will begin to show through in your work.”

When I looked around my native Louisiana, I was drawn most to the sprawling shapes of native live oaks – *Quercus virginiana*. Individual oaks in fields, oak groves, and the cathedral-like tunnels of oak alleys, all whis-



Three Oaks in Fog, Manresa Retreat, Convent, Louisiana. © William Guion



Quarters Oak Alley, Evergreen Plantation, Edgard, Louisiana. © William Guion

pered to me in a distinct haunting voice. So I photographed live oaks, again and again. The more I slowed my pace to match that of the oaks, the more they revealed about their unique character and moods. As I became more attentive to the minute changes of light and shadow under their limbs, I was awed by the beauty of these primeval-like trees and their relationship to the Southern landscape.

My early photographic work was largely influenced by the West Coast large-format black-and-white approach to photography that was a predominant part of the Friends of Photography style. To this day, I still use a 4” x 5” view camera and black-and-white film for many of my landscape subjects, though in recent years I’ve begun using lighter, more flexible digital and film cameras.

After the devastating one-two blow of Hurricanes Katrina and Rita in late 2005, I was horrified at the loss of many familiar live oaks. Even centuries-old trees were not invincible in category 3 storms. So I turned my focus to these elder oaks in an effort to document them while they were still alive. I began with the Live Oak Society’s first 43 inductee oaks – noted by Dr. Edwin Lewis Stephens in an article he wrote for the *Louisiana Conservation Review* titled, “I Saw in Louisiana a Live Oak Growing.” In his article, Stephens proposed establishing the

Live Oak Society – to preserve and protect the most senior members of this live oak species, and he listed 43 such centenarian oaks with which he was familiar. From this first project, I set a personal goal to photograph the 100 oldest live oaks on the Society’s registry. And to document my progress, I began a blog, titled “The 100 Oaks Project.”

Last year, 2015, marked 30 years that I’ve been photographing live oaks and 10 years since I began The 100 Oaks Project. Though I had photographed many old trees on the Society’s registry, there were still many others I had yet to locate. So to mark this personal milestone of 30 years, I set a goal for 2015 to locate and photograph the very oldest oaks in Louisiana – those trees with girths of 30 feet or more.

These 30-foot-plus girth oaks are significant for many reasons, but according to several local arborists I’ve consulted, oaks of this size are very likely between 400 and 500 years of age. This means that they predate European settlement of the continent – before America was America. To me, these antiquarians are both cultural and historic landmarks that deserve a more significant place in the awareness of the population and some minimal protection. From what I’ve learned over 30 years of documenting oaks, awareness is the most important tool for tree protection. If people realize a tree’s

age and history, it gains value in their eyes and becomes worthy of preservation.

I've also found that these oldest oaks are often the most "at risk" of being lost. Many of the trees' original sponsors (the people who first registered them with the Live Oak Society) had died and surviving family members were often less interested in the trees' welfare. In some cases, the properties where the trees were located had changed owners and, without a living sponsor, the trees were forgotten, died, and some even removed to make way for development.

I included in my search those oaks that had been in the 26- to 30-foot girth size when first registered, since I knew from experience that in 50 to 70 years, a mature live oak, if healthy, could grow up to 10 feet or more in circumference. Taking this into consideration, I narrowed my search from the Live Oak Society registry to approximately 27 oaks in Louisiana that could be in the 30-foot girth category. By year's end, I located, re-measured, and photographed 22 of those trees (plus two which had never been registered with Society). The reports of my ongoing quest with *Quercus virginiana* can be found on my WordPress blog – [The 100 Oaks Project](#).

*William Guion*

An extended version of this article can be found on the IOS website. For more information and to purchase prints, visit [www.williamguion.com](http://www.williamguion.com)

## Ôaks from Test Tubes: An Introduction to Oak Micropropagation

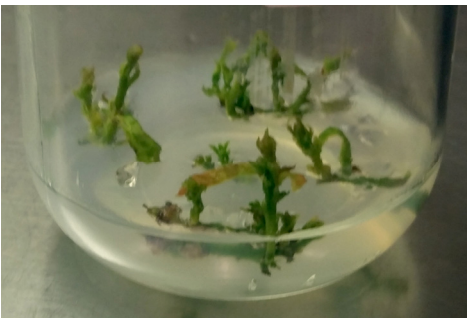
One research focus of the Urban Horticulture Institute (UHI) at Cornell University involves the selection, evaluation, and propagation of superior plants for urban environments. Oaks are especially of interest, as many *Quercus* can tolerate the various stresses associated with growing in

urban landscapes. Hoping to combine the best characteristics from multiple species, we have created a number of interesting hybrids, which we have been propagating and evaluating for about 10 years. The ultimate goal of this long-term project is to introduce these superior hybrid oak selections into the nursery trade as named cultivars.

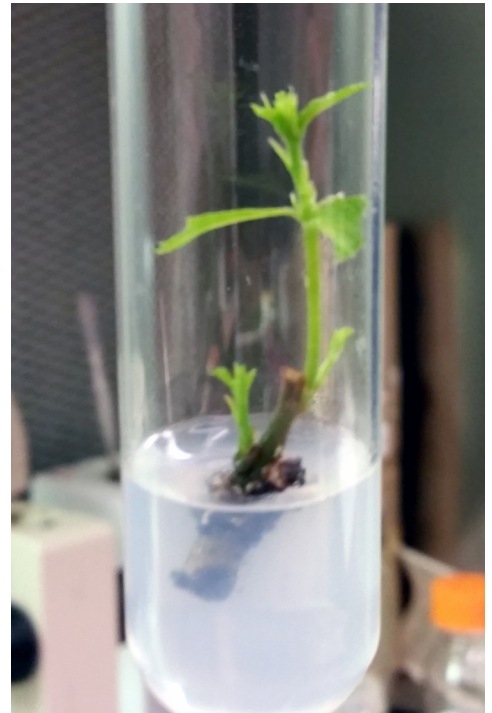
A reliable asexual propagation method for oaks is crucial for meeting our goals, and the UHI has been pursuing such a method for almost 20 years. We have been successful in utilizing a modified stool bed layering technique, which is described in detail in *International Oaks* No. 27 (pp. 99-106), but the yield is too low for commercial applications. Tissue culture techniques are currently being developed as a means of rapid multiplication of clonally propagated oaks. This propagation method is of interest because it allows us to quickly produce large numbers of select genotypes. Greater numbers of these clonally propagated genotypes are currently needed so that we can perform trials to determine which selections possess desirable characteristics. A successful tissue culture method also has great potential for commercial applications.

### What is plant tissue culture?

Plant tissue culture refers to various techniques used to grow plant cells, tissues, organs, or whole plants in vitro ("in glass") on a nutrient medium. This is done aseptically, meaning that the containers are free from microorganisms, insects, etc. These containers, usually test tubes or small glass jars, essentially act as tiny greenhouses,



New shoots a few weeks into multiplication cycle.  
© Bryan Denig



New shoot growth ready for multiplication.  
© Bryan Denig

maintaining ideal humidity levels. They are kept in a growth room that is controlled for temperature, photoperiod, and light intensity. The media that the plants grow on are carefully created to provide the right mixtures of macro- and micro-nutrients, vitamins, and plant hormones. All these factors add up to an extremely controlled environment, one that is designed to provide ideal growing conditions.

The techniques associated with plant tissue culture can be used for many diverse purposes. Our interest in plant tissue culture at the UHI is for the purpose of asexually propagating (cloning) our hybrid oaks. This type of plant tissue culture is often referred to as micropropagation. Micropropagation takes advantage of a remarkable ability inherent in plant cells. Even just a single cell is capable of multiplying and differentiating into an entire plant.

When grown in vitro, plants adjust their growth based on the media compositions. Media manipulation will produce varied effects, such as root or shoot development, and typically the plants stay small-statured. This is important, as it allows them to be grown in these confined spaces. Because of

the reduced size, these micropropagated plants are often referred to as “plantlets.” Once planted outside of the laboratory, the plantlet will once again produce normal sized leaves and reassume its normal features.

Plant tissue culture may seem like a new technology, but it has been utilized on a commercial scale longer

than one might expect. Since the 1950s it has been a component of the orchid industry. Woody plants have not been commercially micropropagated as long as orchids, but today in the United States there are wholesale laboratories producing a variety of trees and shrubs. Birches, apples, maples, lillacs, and flowering cherries are just a

few examples of the woody plants currently available from commercial micropropagation companies. We are unaware of any company currently offering micropropagated oaks, but a handful of researchers around the world have developed plant tissue culture protocols that have proven successful with a small number of *Quercus* species.

### How we micropropagate oaks

In traditional propagation, one seed or one cutting usually results in one plant. Using micropropagation, one small piece of stem can theoretically produce an infinite number of plants. The process of micropropagation is often broken down into five stages, and what follows is a summary of the stages as it relates to our work with oaks.

#### STAGE 0: Stock Plant Selection and Preparation

There are a number of factors that influence successful initiation of plants into tissue culture. Not every shoot can be taken into tissue culture. Juvenile

shoots have the highest affinity for establishment in culture, but success has also been achieved using epicormic buds forced from mature trees. For the most part, our cultures have come from the stock plants we used for our stool bed propagation procedure. Because they are cut back each year, these stock plants grow new stems

from the ground that exhibit juvenile characteristics. We collect the shoots early in the spring, when they are about half the thickness of a pencil and between 5 and 10 cm in length.

#### STAGE I: Establishment of Aseptic Cultures

After collecting suitable shoots, we cut them into small pieces (a few cm in length) that possess at least one bud. In order to remove fungi, bacteria, etc., they undergo a soaking in ethanol, followed by a soaking

in a dilute bleach solution. Sterilizing everything around the oak shoot without harming the shoot itself can prove difficult at times. After disinfection, the shoot is placed into a test tube and is stuck into a medium that contains plant hormones that induce shoot production. Once shoots are produced (which may take a few months), the cultures are ready to be taken into the multiplication stage.

#### STAGE II: Multiplication

Once new shoots develop, the shoots are cut up, and all leaves and apical buds are removed. The shoots are then placed horizontally on fresh medium in jars. This is done to encourage the lat-

eral buds to develop into shoots. This procedure, along with manipulation of plant hormones in the medium, allows the oaks to grow continuously throughout the year. During the multiplication phase, the plantlets are transferred to fresh medium every two weeks. After six weeks, there is enough shoot growth for them to be divided. The shoots are cut into pieces as previously described, and the multiplication cycle is repeated. This stage can go on indefinitely.

#### STAGE III: In Vitro Rooting

When it is desired to root the oak plantlets, they are taken out of the multiplication cycle and go into the rooting stage. After a complete multiplication cycle, rather than dividing the plantlets, shoots of sufficient length are selected for rooting. The lower leaves are removed, and these shoots are then placed into a medium that contains a rooting hormone. After a week, they are transferred to another medium that has no hormones. It is here that the plantlets develop roots, which usually takes about a month.

#### STAGE IV: Transplanting and Acclimatization (Hardening Off)

When sufficient roots have developed, the oak plantlets can be taken out of the medium and potted up. Much like a cutting or seedling, they will have to be managed with care until they become acclimatized to the world *ex vitro*. Right now our research is focused on stages 0, I, and II, which we believe to be the most difficult. Our experience with stages III and IV is limited at this time, but we hope to do more with them in the future. There is still much work for us to do in order to develop a reliable method for micropropagating oaks!

Bryan R. Denig,  
Miles Schwartz Sax &  
Nina L. Bassuk

Additional photographs can be viewed on the IOS website in the [online version](#) of this article.



A coppiced stock plant with shoots appropriate for use in tissue culture (putative hybrid *Q. montana* × *geminata*)  
© Bryan Denig



Shoots at the start of the rooting stage.  
© Bryan Denig

# Oak Open Days in Argentina

The first IOS Oak Open Day event south of the Equator took place April 22-24, 2016 in Argentina. Originally planned as a two-day event visiting the two principal oak collections in South America, a third day was added to include a visit to Argentina's first commercial truffle-oak plantation. A combined total of 55 people attended the event, with several attendees participating in one or two of the days: a core of 17 stayed the entire course and visited all three locations (the metaphor is apt, and indeed the event might have been called the Argentine Oak Rally, as participants covered about 450 km

getting from starting point to end point, without counting travel to and from home!). The point of this particular OOD was not so much to get IOS members together as to spread the oak gospel to the uninitiated; while we had a full turnout of local members from Argentina and Uruguay (four, one unable to come but ably represented by an enthusiastic stand in), members were far outnumbered by guests.

## Grigadale Arboretum

Day One took place at Grigadale Arboretum, whose oaks were planted by late IOS member Duncan Cameron. Activities began with a presentation that provided a brief introduction to the



OOD participants pose in front of *Rhus typhina* at San Miguel Arboretum. © Gustavo Belén

genus, under the title "An Invitation to Quercophilia." The morning was spent meandering along the path that runs through the quercetum, where established trees of close to 100 taxa are closely packed into about 1 ha. Highlights were a *Quercus baloot*, grown from seed collected by Shaun Haddock in Pakistan, and presumed to be the exsitu champion of the species; a *Q. dentata* that has responded well to corrective pruning; a thriving *Q. ×warburgii* with mottled acorns; and a young *Q. leucotrichophora* much admired for the pale undersides of its leaves. We saw a new plantation featuring Asian species and ended the morning with an aperitif amongst a stand of *Q. palustris* that were just beginning to turn color. We returned to the main house for lunch, after which we convened under a cork oak (*Q. suber*), the

largest oak in the arboretum, planted in 1992, for a group photo. The afternoon was spent at a plantation that featured many oaks and which, being close to Grigadale's lake, had suffered losses due to flooding last year. After tea we closed proceedings relatively early at five o'clock, so as to leave time for the 275-km drive to Coronel Pringles, where most participants spent the night.

## Estancia San Miguel

The next morning we convened at Peter Laharra-gue's arboretum at Estancia San Miguel, where Peter began by telling us of the history of the property and the arboretum, which includes impressive specimens of many different genera. Then the

group started trekking around the 100-ha park, at first on foot then in vehicles, including a large people-carrying trailer pulled by a tractor. The tour naturally focused on the 114 oak taxa represented in 7 different querceta, but also took time to admire impressive specimens of "non-oaks." Being further inland than Grigadale, San Miguel had advanced further into autumn with many oaks that were turning color: a jaw-dropping *Q. alba* won the beauty contest with a *Q. ×bebbiana* a close runner-up. There was jubilation when acorns were spotted on a *Q. nigra*, according to Peter the first time this species had fruited in his collection. After lunch we formed up for the group photo in front of a striking backdrop of *Rhus typhina*. The afternoon tour took us to plantations seeded thanks to IOS seed exchanges, featuring impressive specimens of *Q. crassipes*, *Q. coccinea*, *Q. shumardii*, and *Q. dentata*, among many others. The tour ended in Peter's polytunnel, crammed with



Discussing contrasting *Quercus robur* Fastigiata Group specimens in Grigadale. © Beth Dos Santos



Fall colors at San Miguel Arboretum, *Quercus alba* on the right. © Roderick Cameron

seedlings grown from acorns picked up during the IOS Conference at The Morton Arboretum. To close the day, a smorgasbord of acorns was offered to all participants, with acorns from both collections we had visited: 47 different taxa in all.

Sunday saw us 150 km to the northwest, in Espartillar, where we visited the 50-ha truffle-oak plantation of Trufas del Nuevo Mundo. After an introductory presentation where we learnt about truffle production and the characteristics of the commercial project, we braved a stiff, chilly breeze to visit the plantation of over 20,000 trees, principally *Q. robur* and *Q. ilex*. It is an exciting time as the first truffles are likely to be found soon, even this coming winter. Around several trees we could see the area of weed-free soil, known as *brûlé* (“burnt” in French), which indicates the presence of the truffle fungus underground.

Thanks are due to Peter Laharrague for receiving us at San Miguel with flawless logistics, and to the folk at Trufas del Nuevo Mundo for sharing their impressive project. It was a memorable three days, and many seeds of “oak enthusiasm” were sown.

*Roderick Cameron*

*A detailed report on the Argentine OODs will appear in next year's issue of International Oaks.*

## Aiken Revisited

Those who were fortunate enough to attend the OOD in Aiken, South Carolina in November 2013 will likely have fond memories of the trees and the uniqueness of the city. The remaining IOS members were able to later read about the trip, the Aiken Citywide Arboretum, and Bob McCartney's 30-plus years of building one of the most diverse collections of trees and shrubs in the nation. During a recent vacation, my family and I stopped in to see Bob and catch up on the new oak plantings since the 2013 OOD. There have been several exciting new plantings in the



*Quercus coccifera*, a new addition to Aiken's Citywide Arboretum. © Ryan Russell

last couple of years and some new developments in the Citywide Arboretum. A short list of new plantings includes *Q. cornelius-mulleri*, *Q. blakei*, *Q. insignis*, *Q. berberidifolia*, *Q. ×alentejana*, and *Q. coccifera*. In all, around 50 new oaks have been added to what was already one of the most comprehensive oak collections in the U.S. The City of Aiken has seen the benefit to the community and is now supplying rubber mulch mats for new plantings. In addition, the City is mulching two miles of older plantings, (where one can find a different oak species every 55 ft) as well as providing regular weed control and mowing



*Quercus macrolepis* with rubber mulch mat provided by the City of Aiken. © Ryan Russell

to keep these plantings looking great. During my visit, Bob and I met with Aiken City Manager John Klimm and Assistant City Manager Stuart Bedenbaugh. Mr. Klimm explained that they are contemplating the creation of a new position whose responsibilities would be identifying, documenting, interpreting, publicizing, and facilitating maintenance of any trees designated as integral to the Aiken Citywide Arboretum. Hopefully in the next year or so, Aiken will have a new employee that can carry on the tradition and build upon the unique Aiken Citywide Arboretum.

*Ryan Russell*



## Species Spotlight

***Quercus ilicifolia* Wangenh.**

*Quercus ilicifolia* is a little oak with a big name: bear oak. With such a powerful-sounding name one might expect a towering giant of a tree with thick branches and large acorns. However, bear oak is not an impressive behemoth but a gnarled, branching shrub. Furthermore, this oak is not a sturdy, long-lived survivor and seems quite persnickety in its choice of habitat. Nevertheless, it is an intriguing species.

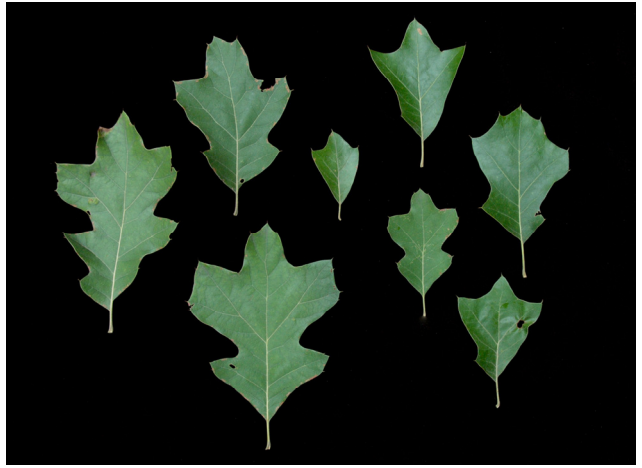
*Q. ilicifolia* is a small tree, or shrub, that can reach 1-8 m in height. Its name, which derives from *Ilex* (holly) and *folium* (leaf), suggests that its leaves have a holly-like appearance. However, bear oak leaves have little resemblance to actual holly leaves, or the so-called “holly oaks,” which have small leathery leaves. Rather, the leaves of bear oak often resemble shade leaves of *Q. velutina*, with fewer lobes (3-7) and bristle tips. Some three-lobed forms many even resemble *Q. marilandica* or *Q. falcata*. The leaves are glossy and green, with beautiful silvery hairs on the underside. The buds and twigs are likewise covered in small hairs. In the fall the foliage turns a fiery orange to purplish red.

Bear oak owes its memorable common name to the bears that feed on its acorns. Like most oaks, bear oak provides a rich source of nutrients for many species of wildlife including bears, deer, wild turkey, and flying

squirrels. It has also been documented that the Iroquois used the acorns to ease menstrual cramps. The foliage of bear oaks is also of ecological significance – acting as a host for insects, birds, and small mammals. Ruffed grouse, in particular, use thick colonies of bear oak for cover during feather molts. Many rare and endangered species of *Lepidoptera* also use it as a larval host. In fact, bear oak stands have been reported to house one of the most diverse arrays of insects of any oak in the oak-barren community.

Bear oak is native to the North American east coast, ranging from northern Maine to the mountains of Virginia. While the species abruptly stops south of Virginia border, there are two extant populations of bear oak in North Carolina at Pilot Mountain and Crowder’s Mountain. Within its range, bear oak is restricted to high mountain tops, rock outcrops, and pine barrens. It can also occur in disturbed woodlands – alongside other shrubs and hardwoods such as black cherry, hickory, blueberry, and huckleberry. Bear oak also shares a habitat with many other species of oak: *Q. coccinea*, *Q. falcata*, *Q. montana*, *Q. prinoides*, *Q. rubra*, *Q. stellata*, and *Q. velutina*. It is known to hybridize with many of its Red Oak neighbors.

Within these mixed hardwood regions, bear oak requires open thickets to thrive due to its high intolerance of shade. As a result, it is often out-competed by fast succession species such as maple and sassafras. Bear oak also prefers dry, acidic, nutrient-poor soils, which make it both slow growing and short-lived, sur-



*Quercus ilicifolia* leaves from a specimen on Crowder’s Mountain, North Carolina. © Rebecca Dellinger-Johnston

living only 20-30 years. It has been reported that bear oak is also sensitive to salt spray, which further restricts it from coastal areas. Thus, unlike its “bear” namesake, *Q. ilicifolia* is not highly competitive nor is it enduring.

With all of these limitations, bear oak hardly seems formidable – except in the presence of fire. Although its stems live roughly two or three decades, bear oak has a shallow root system that sprouts rapidly after fire. Like many scrub species, bear oak has adopted a strategy of aggressive asexual reproduction to produce new stem growth after fire and even colonize areas with sprouting clones. These clones emerge from a shallow, irregularly shaped taproot, which often produces multiple lateral roots running just below the surface. This shallow, branching root system gives it an advantage to grow on barren outcrops where other species cannot.

Although bear oak may not seem impressive, it has still met the challenges of its environment with specific adaptations. Nevertheless, the species is currently listed as endangered due to loss of habitat through fire suppression. With additional management through prescribed burns, this persistent little oak could reclaim the mountain tops and continue supporting a rich community of wildlife.

*Rebecca Dellinger-Johnston*



*Quercus ilicifolia* in Aiken Citywide Arboretum, South Carolina. © Rebecca Dellinger-Johnston

Hybrid Highlight

***Quercus* × *heterophylla*  
F. Michx.**

Named in honor of one of America's first botanists, John Bartram, *Quercus* × *heterophylla* is known by many as Bartram's oak. This interesting hybrid can be found in the U.S. where the parent species *Q. rubra* and *Q. phellos* overlap (essentially most of the midwestern to southeastern states)



Detail of leaves of a *Quercus* × *heterophylla* growing in the Garden Kingdom of Dessau-Wörlitz. © Andreas Gomolka

and in collections. This hybrid can also be found in Europe in arboreta and private collections. One of the largest European specimens stands in the Garden Kingdom of Dessau-Wörlitz, Germany. It measures over 15 ft in circumference and is 65 ft tall. A note-



*Quercus* × *heterophylla* showing good structure. © Ryan Russell

worthy specimen in the U.S. is located in Philadelphia, Pennsylvania and has dimensions nearly identical to the grand European tree (16 ft circumference, 61 ft tall). This tree is believed to be a direct descendant of a *Q.* × *heterophylla* grown by John Bartram on his property.

This is an attractive hybrid typically characterized by long, slender leaves with 6-8 shallow lobes. Acorns are typically small (3/8-1/2 in diameter) with shallow, flattened cups. The acorns are usually light to medium brown with dark striations. Seedling trees will vary of course, some having larger leaves or larger acorns. This hybrid makes a pleasing street tree and there exists a great opportunity to make superior selections.

Ryan Russell



Cultivar Close-ups

***Quercus robur* ‘Timuki’**

This cultivar was selected by Raimond Cinovskis, from the Botanical Garden of the Academy of Sciences, Salaspils, Latvia and was introduced by Silva Tarouca Research Institute for Landscape and Ornamental Gardening, Průhonice, Czech Republic.

It was named after the location in Latvia where the original tree was found, a spontaneous seedling with outstanding purple foliage. The foliage keeps its purple color all season and will even darken (nearing black at times) as the season wears on. This selection was first propagated from the ortet in 1997 and was registered in the Czech Republic in 2010. ‘Timuki’ was published in *Enzyklopädie der Gartengehölze* (Bärtels 2001) and *Acta Horticulturae* (2011). This selection is said to maintain a straight central leader and develop a pleasing pyramidal shape in youth, broadening to a typical decurrent shape at maturity. This selection is offered only in Europe at this time and can be found at Pavia Nurse-



Dramatic coloring on *Quercus robur* ‘Timuki’. © Kurt Van Nieuwenhuysse

ries, Bömer Nursery, and a few others.

***Quercus* × *bebbiana* ‘Taco’**

Found in the late 1980s by Guy Sternberg in Springfield, Illinois, this selection was noted early on for its rapid growth rate and strong central leader. The rights to the tree were purchased by Sternberg from the landowner in June 1991. The parent plant is a spontaneous seedling that popped up in a narrow space between a paved parking lot (of a Taco Bell restaurant, hence the cultivar name) and a steep retention wall. Despite a tremendously restricted root zone, this tree has consistently put on a meter or more of growth each year. Leaves, caps, and acorns favor the *Q. alba* parent but ‘Taco’ shows characteristics of each parent in its makeup and its progeny.



Ortet tree of *Quercus* × *bebbiana* ‘Taco’ in Springfield, Illinois. © Guy Sternberg

Fall color is generally tan-yellow in most years and not spectacular, but the tree's resilience under adverse conditions is the reason it was selected. This cultivar was registered in 2008, and an F<sub>2</sub> seedling ('Taco II') has been selected for its red fall color and is currently under evaluation. This plant was initially offered in Europe via Pavia Nurseries, but is now available in the United States as well from Forrest Keeling Nursery and their online retail branch G2Gardens.

Ryan Russell

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**A Year of Oak Leaves**

**T**he *Oak Year*, an artwork by Scottish artist Anne Gilchrist, will be showing for two days at Edinburgh Palette, 151 London Road, Edinburgh, UK. It comprises 24 painted panels 5 ft × 4 ft and depicts portraits of many hundreds of oak leaves from real specimens from an oak wood on the shore of Loch Tay, Perthshire. It shows a whole year's worth of leaves, and the close observational depiction shows variety of shape, size, predation, autumn colors, first leaves, and winter fallen leaves. Each leaf in *The Oak Year* is painted from a real specimen, all from one oak wood.

"Having started in April 2014, this work is now finished," says Anne Gilchrist. "It is made up of many hundreds of individual oak leaves painted from real-life specimens gathered week by week. Each leaf's portrait is my immediate response to color, form, and character. In painting each leaf I left a trace of my observations and experiences, a trail of time passing through growth and change and decay. The whole year is now represented, from tiny emergent leaves breaking the monotonous brown of winter, through the bright green of spring, the tough, dark leaves of summer, the color bursts of autumn, and back again to the browns of winter. I am showing all these panels at Edinburgh Palette alongside examples of the work in dif-

ferent printed formats (posters, cards etc.), a scale model showing a suggested display, as well as related work on oaks I have produced over the years (drawings, paintings, installations)." More info at:

[www.edinburghpalette.co.uk](http://www.edinburghpalette.co.uk)



Study for *The Oak Year* by Anne Gilchrist.

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**Oaks of the Americas Conservation Network**

**A** new professional network is being formed by botanists and conservationists from across North and Central America. Oaks of the Americas Conservation Network (OACN) is a consortium of experts from universities, botanical gardens, arboreta, industry, conservation NGOs, and government agencies dedicated to protecting threatened oak species from extinction. OACN was first conceived at the International Workshop on Oak Conservation (March 13-16, 2016), where 50 experts from seven countries convened at the Escuela Nacional de Estudios Superiores at UNAM in Morelia, Mexico. The objective of the workshop was to facilitate collaborations and catalyze action for oak conservation in Mexico and Central America (MX & CAM) by identifying critical knowledge gaps, defining conservation objectives, prioritizing next steps, and strengthening the network of oak research and conservation experts. The workshop agenda included presenta-

tions and group discussions on a range of topics relating to MX & CAM oak species, which fell under three broad themes: in-situ conservation, ex-situ conservation, and fundamental research. The most significant outcome of the workshop was the establishment of OACN. OACN has now committed to writing a scientific paper outlining the importance of oaks and oak diversity in MX & CAM and calling for additional resources and effort towards oak research and conservation. OACN has identified the urgent need for a conservation gap analysis for oaks in MX & CAM, a protocol for which is now being developed by The Morton Arboretum and the Global Trees Campaign (a joint initiative between Botanic Gardens Conservation International and Fauna & Flora International). OACN has also identified critical training and capacity building needs, especially in the area of oak taxonomy and field identification. Specific conservation opportunities are being identified and collaborative projects involving OACN members are now underway. Follow up workshops and oak-focused conference sessions are being planned for the future (e.g., Associa-



Participants of the International Workshop on Oak Conservation.

tion for Tropical Biology and Conservation in Merida, Mexico in 2017). For more information about the International Workshop on Oak Conservation and OACN, please contact Murphy Westwood ([mwestwood@mortonarb.org](mailto:mwestwood@mortonarb.org)). The international workshop was organized and supported by The Morton Arboretum, UNAM, and the University of Minnesota.

Murphy Westwood

## Saying goodbye to Michael Heathcoat Amory

Around 600 people, undampened by light rain, came together on June 29 at St. Luke's church in Sydney Street, Brompton, London, for a service in memory of Michael Heathcoat Amory, who for many years was in every sense a towering figure in the oak world. It is fair to say that his encouragement and sponsorship have immeasurably enriched the diversity of oak species now grown in Europe: his friendliness and approachability will continue to be greatly missed by both novice and expert, but at least there will always remain as his memorial the oak collection at Chevithorne Barton.

During the service, led by the Reverend Brian Leathard, friends and three generations of family offered moving eulogies or readings in celebration of his rich life, from his youth when sport took precedence over academia (and throughout his life he never lost his competitive urge) to the middle years of his love for his family, his addiction to fishing, his travels, his business interests; and finally his later years and the inescapable difficulties of his illness. A visceral poem by Ted Hughes conjured the very essence of fishing; a poem by his grandchildren ended with the touching line: 'But whenever we see an oak tree, we'll know that you're still here'.

Oaks, a driving passion, were a facet of Michael's varied life represented admirably in a eulogy by Tony Kirkham, Head of the Arboretum at the Royal Botanic Gardens, Kew, who began by relating amusingly his first meeting with Michael who, having heard of Tony's forthcoming visit to Taiwan, promptly buttonholed him and proceeded to pressgang him into searching for the rare endemic *Quercus tarokoensis*. Somewhat overawed, Tony felt obliged to claim some knowledge of the species and its location; by blessed happenstance he was let off the hook when it subsequently transpired to be on the itinerary previously planned by his Taiwanese contacts.

All our lives, to some degree, are lived in different compartments, and perhaps only the closest of family or friends get even the merest glimpse into them all. Michael, with his wide interests, prob-

ably had more compartments than most: only a tiny proportion of the 600 present was from the "oak world," and I was reminded of the considerable significance of his business life when, awaiting my return flight home at Heathrow airport, I realised I was sitting opposite two enormous advertisements for Jupiter, his investment company. Nevertheless, we quercophiles were privileged to inhabit a compartment of great importance to him and which absorbed his interest and gave him pleasure until the end of his life.

Adieu, Michael.

*Shaun Haddock*

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## From the Board

The Board held its Spring e-meeting in April (given that Board Members reside in different countries on three continents, we use a Forum on our website to conduct Society matters). I am sorry to report that our newest Board Member, Robert Routon, resigned from the Board invoking the workload as not compatible with the demands of his employment. The responsibility of membership management has been reassigned to the Secretary of the IOS, Gert Fortgens, but the workload itself was distributed among several Board Members. For all membership management matters, write to [membership@internationaloaksociety.org](mailto:membership@internationaloaksociety.org). And remember that renewing your membership in time saves us a lot of time and effort.

We also have two new Committee Members: Dirk Giseburt from Washington State, USA joined the Editorial Committee and Francisco Vázquez Pardo from Spain joined the Taxonomy Committee. I thank them both.

Roderick Cameron covered key agenda items of the Board Meeting in the June issue of The Cupule, our electronic newsletter. I will just mention two of these:

The Board approved the full 2015 finance report. The report is available on our website. I encourage you to read it (see <http://bit.ly/2b9ecUW>).

The Board also discussed the venue of the 10th International Oak Society Conference. We envisaged holding it in the Far East, but we wanted to sur-

vey our membership about that. A survey was included in the last issue of The Cupule. Just 7 members answered the survey. I am sure we can do better than that. Check the following URL: <http://bit.ly/2b1h8le>. Alternatively, drop me an email.

Speaking about The Cupule, if you do not receive it (and the last quarterly issue was our tenth), it means that we have no email address on file for you or, more probably, that your SPAM filter blocks our emails. This is notably the case for all members with an AT&T or baby bell email address. Add IOS email addresses in your contact list. This might solve the problem. For The Cupule, the address is [website@internationaloaksociety.org](mailto:website@internationaloaksociety.org).

To contact me, please write to [charles@internationaloaksociety.org](mailto:charles@internationaloaksociety.org)

*Charles Snyers*

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## Tours Update

The UK Oak Open Days were well attended, with 30 members attending on one or both days (see report by Christof van Hulle on page 1).

To my surprise, there is still space on Mike Meléndrez's amazing New Mexico Tour this fall, September 24th to 29th. You could ask for no better guide to the area and its oaks, so snap up a place right now at [tours@internationaloaksociety.org](mailto:tours@internationaloaksociety.org).

Mike is still working on an exact price as he is negotiating group discounts for the accommodation, but to let you work out a ball-park figure, US\$70 to \$90 per night for accommodation (discounts may subsequently reduce this), and a figure of around \$1,500 for two mini-buses will be shared between up to 30 participants, thus, depending on final numbers, somewhere between \$50 and \$100 per person plus gas for the tour.

*Shaun Haddock*

### Points of Contact

#### Submissions for the Newsletter

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#### Submissions for the Journal

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