International Oak Society

Oak News & Notes

The Newsletter of the International Oak Society, Volume 22, No. 1, 2018

Participants at the Starhill Forest Oak Open Day pose with *Quercus* ×*schuettei* 'Silver Shadow', planted to mark the 25th anniversary of the IOS © Charles Snyers

IOS 25th Birthday Fêted at Starhill Forest Arboretum

by Charles Snyers

On Saturday morning, September 2, 2017, 24 members and nonmembers showed up at Starhill Forest Arboretum to celebrate the 25th anniversary of the IOS. Ryan Russell had suggested Starhill as the place to celebrate in the USA, after the European anniversary celebration in the Czech Republic in July. And an obvious choice it was. There is no other oak collection in the world whose history is so intertwined with the history of the IOS. The day started with an introduction of every attendee. Twenty-three were from the USA, mostly Illinois, Indiana, Missouri, and Nebraska. Only one European attended, the author of these lines. Guy talked about some of his selections, particularly the offspring of *Quercus* ×*warei,* starting with the tree at the Riverbank Lodge, and continuing with hybrids of *Q.* ×*warei* with other oaks. He then detailed the program for the day. We all received a folder with a few documents related to the day and the history of the Society. Guy's phenomenal acorn collection was also on display for the occasion.

There followed a couple of demonstrations: a pruning demonstration by Guy Sternberg in person, and a chainsaw mill demonstration by Scott Pantier, manager and arborist at Starhill. One of Scott's hobbies is log milling. We then walked back for lunch. The weather was sunny and we all had lunch on the lawn in front of the field lab. We had also brought some acorns to close lunch with a traditional seed exchange.

Ryan Russell had brought a specimen of the cultivar which is his selection, *Q.* ×*schuettei* 'Silver Shadow', to mirror the planting done in July at the Plaček Quercetum to commemorate the silver (25th) anniversary of the Society. Just after lunch, we proceeded with the planting ceremony in South Field.

After the planting, Guy also took the traditional group picture. We then split into three groups, each headed to a different part of the arboretum. I followed Warren Chatwin to the Bur Oak Field, a field with trees sourced from all over the natural range of the species (*Q. macrocarpa).*

Although there are species other than *Quercus* in the arboretum, the oak collection amounts to nearly 240 taxa, of which about a third are hybrids and cultivars. The day ended for some of us with an early dinner at a Mexican restaurant in Petersburg.

A full report of the event will appear in International Oaks No. 29

Participants in the San Francisco Bay Area Post-Conference Tour will visit moss-covered *Quercus chrysolepis* © David Muffly

9th International Oak Society Conference Update

by Emily Griswold

***** Registration opens April 1 *****

Oak experts and enthusiasts will converge in Davis, California October 22-24 for the 9th International Oak Society Conference to be hosted by the UC Davis Arboretum and Public Garden. Current IOS members will have one week of priority registration for the Conference before the event is advertised to a wider audience. Conference registration will be limited to 240 attendees, and Pre- and Post-Conference Tours will have limited seating. Based on the overwhelming response received by the call for proposals, the Conference is expected to sell out, so don't delay in registering!

Conference Tours

A series of tours and day trips are being planned to allow options for varying travel schedules and budgets. Tour destinations will include a variety of wild and cultivated oak destinations in California's diverse and spectacular landscapes.

October 15 - 18

Sierra Nevada Pre-Conference Tour – This tour will focus on wildland species in the Central Valley, Sierra Foothills, High Sierra, Eastern Sierra, and White Mountains. Highlights will include fall color and the world-famous Yosemite Valley.

October 19 - 20

Cascade-Siskiyou Pre-Conference Tour – This tour will focus on the diversity of species growing in the northwestern part of California, including the unique *Quercus sadleriana.* Visits to Mount Shasta and *Q. garryana* var. *breweri* in fall color will also be on the itinerary.

October 21

Pre-Conference Day Trips – Multiple tour options are being planned in Northern California's beautiful wine country and Interior Coast Range.

October 25 - 26

San Francisco Bay Area Post-Conference Tour – This tour will include a variety of urban landscapes, botanical collections, and open space lands in the East Bay and South Bay.

October 27 - 29

South Coast Post-Conference Tour – This tour will include a mix of urban and wild destinations in Santa Cruz, Paso Robles, Santa Barbara, and Los Angeles. Highlights will include giant heritage oaks, elfin coastal oaks, and the rare *Q. engelmannii.*

Pre-Conference Events

Plan on arriving before the Conference begins to enjoy Oak Discovery Day in Shields Oak Grove at the UC Davis Arboretum and an evening welcome reception on Sunday, October 21. Oak Discovery Day, a free public outreach event, will include Native Californian acorn grinding and food preparation demonstrations, self-guided tours, and a variety of oak activities for visitors of all ages. The event will be organized by UC Davis students in the Learning by Leading Program, a model environmental leadership program developed by the UC Davis Arboretum and Public Garden.

More Information

The latest Conference updates and Seed Exchange information can be found online at the following address:
http://www.internationaloaksociety.org/content/9th-international-oak-society-conference-2018
Conference questions should be sent to
conference2018@internationaloaksociety.org

Species Spotlight

Quercus semecarpifolia Sm.

by Meenakshi Negi and Ranbeer S. Rawal

There are more than 35 species of oaks in India, many of which extend from Myanmar into Indian Territory. In the context of West Himalaya, five species of evergreen oaks, namely *Quercus leucotrichophora* (local common name: banj), *Q. glauca* (phaliyant), *Q. lanata* subsp. *lanata* (syn. *Q. lanuginosa*) (rianj), *Q. floribunda* (tilonj), and *Q. semecarpifolia* (kharsu), grow naturally in the Kumaun region of northern India. *Quercus leucotrichophora* occurs at lower elevations and *Q. semecarpifolia* forms extensive forests at higher elevations and occurs as a climax species, i.e. dominant as long as sites are not disturbed. *Quercus semecarpifolia*, commonly known as brown oak, is the main forest-forming evergreen tree species from upper temperate to subalpine regions (2,500–3,300 m). The epithet *semecarpifolia* was given by James Edward Smith when he described the species in 1814 and refers to the resemblance of the leaves of this species to those of *Semecarpus anacardium*, an Indian plant known as "marking nut" by Europeans. Ink from the marking nut was used to mark clothing prior to washing, as the ink is insoluble in water (*seme* derives from *semeion*, meaning "a mark" in Greek). *Quercus semecarpifolia* is locally known as kharsu oak in the Kumaun region of Western Himalaya. It is found throughout the Himalaya from Bhutan westwards into Afghanistan, on the Myanmar-Manipur frontier, Thailand, and into China. On the southern slopes of the main Himalayan range this species often forms the limit of tree growth.

Description: A medium to large sized evergreen tree up to 3.5 m in girth and 30 m high. The bark is silvery-grey to blackish, rough, with shallow cracks, exfoliating in irregular woody scales. Its leaves are 5-10 cm long × 2.5-8 cm wide, nearly sessile, oblong-ovate, entire, spinous toothed and obtuse. The upper surface is glabrous, the lower surface is brown and tomentose with lateral nerves bifurcating in 6-12 pairs. The leaf base is cordate (heart-shaped), and petioles are up to 5 mm long. Male catkins are 5-12 cm long, softly pubescent. Female flowers are arranged in few-flowered short spikes. Acorns, borne singly, are dark brown, globose, and smooth. Cupule scales are thin and imbricate, and cover only the base of the nut.

Catkins of *Quercus semecarpifolia* © Meenakshi Negi

Quercus semecarpifolia in Kumaun region, northern India © Meenakshi Negi

The species is important both silviculturally and economically. Its uses have included wood for fuel, leaves for fodder, bark for tanning, and acorns for food by animals and birds. The timber is hard and pinkish brown.

As is the case with most oaks, it commonly reproduces through its seeds. However, the seeds are frequently damaged by insects and also eaten by birds and wild animals, including bears, squirrels, rats, and monkeys. Poor seed crops and high rates of consumption by animals have significantly impacted on the ability of oaks of this species to regenerate naturally.

The seed germination of all the Western Himalayan oaks is hypogeal (occurring on or below ground), the radical emerging from the apex of the nut and the plumule extricating itself by the elongation of the cotyledonary petioles. In the case of *Q. semecarpifolia* this elongation is of an abnormal character with the petioles remaining united in the form of a tube, which serves as a protection to the minute plumule, while the elongation of the united petiole enables the young plant to reach the soil surface as soon as possible. A short period of seed viability combined with vivipary (germination while still attached to the parent plant) and the intolerance of its seedlings to shade are the characteristic features of this oak. The seed maturation and germination of this species is synchronized with the commencement of monsoon rainfall.

A rise in temperature and water stress may advance seed maturation, which might result in the breakdown of the synchrony between the commencement of monsoon rains and seed germination. Moreover, the seedling is a light demander and fails to establish itself under conditions of shade.

During recent field studies carried out between 2013 and 2015, involving quantitative ecological analysis of oak forests in the Western Himalaya, reports of failure of natural regeneration of this oak were recorded on Naina Peak (also known as China Peak) in the Nainital region. No individuals were found in the seedling layer, but the cause of this has not yet been ascertained. The declining trends of natural regeneration of *Q. semecarpifolia* need to be taken as a serious warning. It appears that regional climate warming may be one of the reasons driving temporal changes in the temperate oak forests of the Western Himalaya. This scenario, therefore, calls for further long-term investigations on the trends of climatic shift and the possible consequences of changing climate and anthropogenic disturbances on compositional patterns of oak forests.

Cultivar Close-Up

Thread and Lace

by Ryan Russell

As Co-Registrar of oak cultivars I think it's important to periodically remind members about some of the exceptional selections of oaks that are out there in collections and nurseries. In the interest of appealing to a broader group, I thought I would select a cultivar from the Old World and one from the New.

The first selection is an old one but well known among collectors. *Quercus petraea* 'Laciniata Crispa' was published in 1928 in the H.A. Hesse Nursery Catalog. It was selected in the 1920s in Germany. This plant was selected for its fascinating, unusual foliage. A portion of the foliage comes nearly true to species, and then there are leaves that are little more than thread, with the rest in between. This selection is not commonly found in nurseries, but a select few still offer it in Europe, even fewer in the U.S. Although it is rare in cultivation and a bit slow growing, it is certainly a conversation piece in any collection.

The second cultivar is a terrific newer selection by Guy Sternberg of Starhill Forest Arboretum. *Q. alba* 'Gatton Grave' was found in the early 2000s in Walnut Ridge Cemetery, in Cass County, Illinois. It was published by Eike Jablonski in the German Dendrological Society's *Beiträge zur Gehölzkunde* in 2007. The tree is growing near the grave marker for a Mr. Gatton, hence its name. The leaves on this cultivar have very deep sinuses and create a lacy effect. Unlike some white oak cultivars, 'Gatton Grave' has proven itself to be quite amenable to propagation. It is in limited production in the U.S. and in Europe.

Quercus petraea 'Laciniata Crispa' © Jan de Langhe

Quercus alba 'Gatton Grave' © Guy Sternberg

Many more excellent oak selections exist and it's a shame more nurseries do not produce these amazing trees. If you think you have the next fantastic oak that needs to be shared with the world, send an email to Eike Jablonski (eike.jablonski@education.lu) or to me (russellry76@yahoo.com) and we would be glad to help direct you.

Starting an Oak Collection in Porto Botanical Garden, Portugal

by Carlos Vila-Viçosa, Joana Tinoco, and Paulo Farinha Marques

The Botanical Garden of Porto is located on the west side of the city of Porto, on a plateau overlooking the mouth of the Douro River and the Atlantic Ocean. Currently covering 4 hectares, it is part of the grounds of the University of Porto campus and is situated on what was once Quinta do Campo Alegre, a historic estate formerly on the outskirts of Porto. The property was bought in 1949 by the Portuguese government from the Andresen family to create the Botanical Garden, which was formally launched in 1951 as part of the Botanical Institute of the Faculty of Sciences of the University of Porto.

In 1954, Karl Koepp, a German landscape architect, drew its first master plan in order to adapt the estate into a Botanical Garden. The proposed plan focused on the conservation and adaptation of existing spaces as well as the creation of new gardens.

The Shale Garden in Porto Botanical Garden © Joana Tinoco

Today the Botanical Garden is an eclectic set of spaces dominated by the garden design styles of late 19th century/early 20th century and is organized in three main areas:

1. The central terrace, accommodating the main house, laid out with a set of historical theme gardens divided by tall clipped hedges of *Camellia japonica,* reminiscent of the outdoor rooms of the Arts and Crafts movement;

2. The xerophytic garden and the green houses, with a large collection of cactus, orchids, and tropical plants in the intermediate levels;

3. The arboretum, with a significant collection of conifers and palm trees, plus temperate and pine groves, a few emblematic oak specimens (*Quercus suber* and *Q. imbricaria*) and European hornbeam (*Carpinus betulus*), and a large lily pond occupying the lower levels.

Acknowledging the appalling conservation status of Iberian autochthonous flora and vegetation, and considering its increasing rarity and uniqueness, it became one of the main missions of Porto Botanical Garden to increase the number of native species cultivated in the garden, always taking into account biogeographic patterns and congruent floristic assemblages. This ex-situ conservation initiative targeted oaks as topmost elements of the climax stages and tall scrub vegetation of the Mediterranean ecosystems.

The Garden possesses several mature spontaneous cork oak (*Q. suber*) specimens, remnants of the local woodland of northwest Portugal, which is a *Q. robur* subsp. *broteroana* forest characteristically enriched with Mediterranean and thermophilic taxa (*Rus-cus aculeatus*, *Arbutus unedo*, and *Viburnum tinus*, among others). Foreign taxa are also included in the collection, in accordance with 19th century taste, and North American oaks are represented (*Q. rugosa, Q. palustris*, and *Q. imbricaria*), as well as Asian species such as *Q. myrsinifolia.*

In order to undertake a future increase in the collection of native oak species, several botanical expeditions are being made to collect acorns and seedlings throughout the country. Acorn collection covers all biogeographic regions and involves thorough georeferencing of mother trees and records of taxonomy and nomenclature, forest association, substrate, and geobotanical framework. In addition, more samples have been received from several arboreta, universities, and botanical gardens, and through foreign contacts with oak ecologists, taxonomists, and private collectors.

We are currently growing more than 100 seedlings of *Q. canariensis*, which is an endangered species according to the Red List of the National Flora (Vila-Viçosa ined.), sourced from a relict population in Southern Portugal (Relva-Grande, Odemira). These seedlings will be used for genetic diversity assessments and also for subsequent reinforcement and habitat recovery of this extremely threatened woodland.

We are also sprouting *Q. pyrenaica* from its southernmost European native area, in order to reinforce its

The nursery in Porto Botanical Garden with oak seedlings destined for the new arboretum © Joana Tinoco

Geronimo Trail Road, in the Peloncillo Mountains, Hidalgo Co, New Mexico, photographed by Charles Snyers during the IOS Tour of New Mexico and Arizona in August 2017, organized and guided by Mike Meléndrez. A detailed report of the trip is available on the IOS website (see Trip Reports on the home page) and will appear in the next issue of International Oaks, to be published in May 2018.

known but severely threatened chorological limits. These typically deciduous woodlands are still surviving, with a marcescent behavior, in the midst of drier Mediterranean conditions and neighboring evergreen open woods. Not only do they enrich the local diversity, but they are also important for biodiversity conservation, as they harbor several taxa that survive in these peculiar edaphoclimatic "islands". Aside from these species, since last October we have also started to germinate acorns of *Q. broteroi*, *Q. coccifera*, *Q.* ×*coutinhoi*, *Q. faginea*, *Q. rivasmartinezii*, *Q. robur* subsp. *broteroana*, *Q. rotundifolia*, *Q. rotundifolia* f. *calycina*, *Q. suber*, and foreign provenances of *Q. frainetto* (Albania), *Q. humboldtii* (Colombia), *Q. boissieri* (Israel), and *Q. rubra*.

Taking advantage of Porto's climatic conditions (temperate macrobioclimate in a thermophile and hyperoceanic belt with mild winters) we can cover a wide variety of climatic and ecological niches, from tropical to Mediterranean ecoregions.

Porto Botanical Garden's staff consists of a Director, Prof. Paulo Farinha Marques, Joana Tinoco, a landscape architect who coordinates the management and maintenance work of the Garden, and a team of five gardeners. The collections stewardship is carried out by a passionate group of volunteers from various academic backgrounds: Iúri Frias, João Junqueira, and Carlos Vila-Viçosa. Using traditional knowledge and common gardening techniques such as sowing, cuttings, and grafting, we try to increase the number of individuals and select the fittest specimens so that they may be more resilient when returned to their natural habitat.

In the future, besides its educational objectives, the Arboretum of Porto Botanical Garden intends to engage in programs of conservation and reforestation, enhancing the ecological, ethnobotanical, and aesthetical interest of native flora. In addition, it aims to become a national reference in maintaining living collections for scientific purposes, particularly those of autochthonous climax species and some noninvasive ornamental exotics with historical relevance in the region, such as *Camellia*, *Magnolia*, *Rhododendron*, *Araucaria*, and *Cedrus.*

This commitment is not only relevant for the stimulation of classical botanical knowledge but more importantly for the conservation and promotion of oak landscapes in natural, rural, and urban contexts. These landscapes have an important role to play in tackling climate change, maintaining native biodiversity values, and significantly contributing to ecosystem services.

The Barva Oak

by Francisco Garín

Since 2012 I have traveled to Costa Rica four times, searching for acorns of some *Quercus* species that were not represented in the collection at Iturraran Botanical Garden.

One of the species I was keenest on was *Q. tonduzii*, which has only been found on Volcán Poas, a volcano and national park about 45 km northeast of the capital San José. I have only ever found immature acorns. My last attempt, in 2017, coincided with a period of volcanic activity and access to the volcano was closed. So *Q. tonduzii* continues to elude me and remains at the top of my wish list.

During my visits to Volcán Poas, in the fields immediately below the National Park, I always noticed a *Quercus* with shiny leaves, more rounded than those of *Q. copeyensis*, similar in shape to *Q. costaricensis.* I never found acorns on these trees, so I am not able to determine what species they may be.

As I thought it strange that *Q. tonduzii* should only occur on Volcán Poas, I have searched for it in similar locations, mainly on Volcán Barva. This volcano is in Sector Barva of Braulio Carrillo National Park, about 20 km north of San José. The sector conserves an area of almost virgin forest made up principally of very old specimens of *Q. copeyensis*. Near the entrance one also finds *Q. seemannii* and some trees of an oak that at first I thought could be *Q. tonduzii*. Then I discarded that idea as the leaves were quite large, and *Q. tonduzii* has relatively small leaves. I had also found no acorns on this oak, and I thought it may be a variety of *Q. copeyensis*, or similar to the oaks on Volcán Poas.

Leaves and cupules of the oak on Volcán Barva © Francisco Garín

This year, however, I was able to find acorns for the first time on some trees and I found that they are completely different to *Q. copeyensis* and have other characteristics that indicate this may be a new species, as yet undescribed, that has been confused with *Q. copeyensis.*

Acorns of the Barva oak © Francisco Garín

Several acorns germinated and I have seedlings growing in Iturraran. Hoping that someone may be able to study this tree in depth in the near future, the following is what I can say about it at this stage:

Description: Subgenus *Quercus, Section Quercus.*

Presumed distribution: Verified to exist on the Cordillera Volcánica Central in Costa Rica, from Volcán Poas to Turrialba. Possibly also on the Cordillera de Talamanca.

Evergreen tree to 40 m or more.

Bark thick, greyish-red, deeply fissured with small plaques. Thick twigs, dark brown, covered with prominent white lenticels.

Buds ovoid, tomentose, dark brown, to 1cm in length.

Leaves thick, elliptical, coriaceous, 7-15 × 2.5-6 cm, apex rounded or acute, margin entire, base truncate to rounded. The upper surface is dark green, the new growth is bright red (in young specimens there can be some teeth near the apex). Both surfaces covered overall with simple stellate hairs, dark brown at the base and along the veins, sometimes also on the margin. These hairs are far more abundant on the lower surface, which is of a slightly lighter color than the upper surface. There are 9-11 secondary veins, impressed on top and protruding below, joining together at the margin. The petiole is thick and covered in hairs, 0.5-1cm long.

Cupules are hemispherical, light brown, darker towards the apex. They cover about one third of the acorn.

The acorns are oblong to conical, to 3.5 cm long by 1.5-2 cm wide, dark brown, with an elongated apex.

Many (not all) of the acorns germinate laterally, like those of *Q. corrugata*. They ripen annually and cluster on a peduncle 7-10 cm long and 0.5-0.7 cm in diameter.

Ecology: It grows at an elevation between 2,500 and 3,000 m, in a cool tropical climate with high rainfall (cloud forest), in association with *Q. copeyensis*, *Q. seemannii*, *Q. tonduzii*, *Billia hippocastanum*, *Drimys granadensis*, *Viburnum costaricanum*, *Oreopanax xalapensis*, *O. nubigenus*, *Clusia* sp., etc.

It is most similar to *Q. copeyensis*, from which it differs by the oblong-conical acorns with an elongated apex. *Q. copeyensis* acorns are spherical with a rounded apex.

Donations Sought for Silent Auction

The first IOS silent auction was held at the 8th IOS Conference in 2015 at the Morton Arboretum. By all accounts the auction was a success, raising $2,138 in total, with the proceeds going towards a scholarship fund to help students get to the next Conference. Members really made this event special, donating items such as books, rare oak seedlings, jewelry, photographs, *International Oaks* Journal sets, and artwork. In anticipation of the 9th Triennial Conference in 2018 at UC Davis, we would like to solicit donations from the membership once again. If you have items you would consider donating, please contact Ryan Russell at russellry76@yahoo.com or Emily Griswold at ebgriswold@ucdavis.edu for more information.

Trees and Shrubs Online Project

by Shaun Haddock

Many of you will have seen the reference on the IOS website to the publication online of the 8th edition of W.J. Bean's *Trees and Shrubs Hardy in the British Isles* under the auspices of the International Dendrology Society (IDS), and many, particularly those who are members of the IDS, will be aware of the subsequent publication, with the cooperation of the Royal Botanic Gardens, Kew, of New Trees, which, in effect, brought "Bean" up to date by covering trees introduced to cultivation after Bean's publication in the 1970s.

I am delighted to report that the project has not stopped there, and, with the excellent John Grimshaw as editor-in-chief, the text of *New Trees* has now been fully integrated with Bean, and can now be found at: www.treesandshrubsonline.org

The limitation of Bean for those of us who do not live in the UK is that it was rather too Anglocentric, as is of course made clear by the title. In *New Trees* John Grimshaw and Ross Bayton corresponded widely both within Europe and across the Atlantic, and largely overcame this flaw. Now, excitingly, the project moves into the phase of updating the original content of Bean to the same standard (to become what is jokingly referred to as "Broad Bean"). A mere moment's consideration brings one to the realization of what an immense project this is (the 8th edition was published in four fat volumes plus an additional appendix), and indeed John, whilst remaining editor-in-chief, will not undertake it on his own. Experts on the various larger genera will be commissioned to write the text, which will first be professionally proofread and then copyedited to maintain a common and consistent standard. There are not many people in the world able to write the section on *Quercus*, and even fewer both able and willing. Thus we are more than fortunate that former IOS President Allen Coombes has agreed to take on the task for what promises to be the ultimate online oak guide. As many will know, Allen is now based in Mexico, the evolutionary epicenter of the genus, which will be an enormous additional benefit to the breadth of his treatment.

Although the result will be free to the online end user, needless to say a project of this scope comes at a price: in addition to author's fees there will be proofreading and copyediting costs, followed by the cost of putting the information online and subsequent ongoing maintenance. For *Quercus*, which is one of the largest hardy tree genera, the proportional cost is estimated to be around £UK 30,000, of which the IDS has already contributed £10,000, and private donors £3,000. So the halfway point has almost been reached, and thus a start has already been made. But this is where you come in. Any contribution towards the goal of the ultimate free *Quercus* resource would be welcome in order to reach the final total, whether you are a private donor or part of an institution with an oak bias. And although I write of *Quercus*, there is an immense list of genera ranging from *Abelia* to *Ziziphus* for which sponsorship is sought, should you have another pet genus! So, if you would like to contribute (and I hope you will!), please contact John Grimshaw directly via: editor@treesandshrubsonline.org

OACN's 2017 Year in Review

by Audrey Denvir

The Oaks of the Americas Conservation Network (OACN) is an interdisciplinary consortium of oak experts from universities, botanic gardens, arboreta, conservation NGOs, and industry and government agencies aiming to address the research and conservation needs for oaks in the Western Hemisphere. In the short time since its founding in 2016, OACN has been able to make important progress on a number of projects and initiatives focused on oaks in the Americas. Here is a review of some of the work OACN has completed in 2017:

Integrated Research and Conservation of *Quercus brandegeei*

This year, The Morton Arboretum and the Universidad Nacional Autónoma de Mexico (UNAM) completed a demographic study of and acorn collection from 11 populations of *Q. brandegeei* in Baja California Sur, Mexico (spanning the entire range of the species). In December, the project team sent hundreds of acorns to 12 botanical gardens in Mexico and the United States in order to build ex-situ collections of this endangered, endemic species with the help of Antonio González Rodríguez at UNAM, Jeannine Cavender-Bares at University of Minnesota, Neil Gerlowski at Vallarta Botanical Gardens, and Tim Thibault at Huntington Botanical Gardens.

OACN members looking at *Quercus insignis* in the Mt. Uyuca Biological Reserve at Zamorano University in Honduras © Audrey Denvir

Meeting at ATBC

In July, OACN held a satellite meeting at the Association of Tropical Biology and Conservation Annual Conference in Merida, Mexico. Oak experts from Costa Rica, Guatemala, Mexico, Panama, and the United States discussed the pressing conservation and research issues for oaks in these different countries.

The Red List of US Oaks

In July, The Morton Arboretum published the IUCN Red List assessments for all oak species in the United States and Canada. Next, the Arboretum aims to complete assessments for all Mexican oak species. If you can contribute information to these assessments or act as a reviewer, please reach out to Diana Jerome (djerome@mortonarb.org).

Workshop on the Taxonomy of Rare Mexican Oaks

In September, OACN held a workshop at the Botanic Garden of the Benemérita Universidad Autónoma de Puebla (BUAP) on the taxonomy of rare Mexican oak species. Thirty oak experts attended from across Mexico to discuss 16 rare oak species. During the workshop, participants advanced Red List assessments for these 16 species and completed a working list of all Mexican oak species for which The Morton Arboretum is still seeking input; to access the list, please contact Diana Jerome (djerome@mortonarb.org).

Workshop on the Conservation of *Q. insignis* and its Habitat

In October, OACN held a workshop on *Q. insignis* at Zamorano University in Honduras. Participants came from 5 different countries in North and Central America, and their expertise spanned research and conservation practice. This workshop was a first step towards increased international collaboration for research and protection of this rare species and its threatened habitat.

OACN Article and other Publications

Members continue to work on an article establishing OACN within the context of the overarching research and conservation needs of oaks in the Americas, based on the primary research of Dr. Hernando Rodríguez-Correa. Moreover, 2017 proved to be a prolific year for oak publications, including: priority areas for oak conservation in Oaxaca, phylogeographic patterns for Central American oaks, the origins of major oak clades in the Americas, and many more.

In 2018, OACN is looking forward to continuing all of these efforts, as well as continuing to share and develop new ideas within our OACN network. This year the group plans to conduct greenhouse seedling survival experiments for *Q. brandegeei*, collect important and rare species in southern and eastern Mexico, and conduct reforestation experiments with *Q. insignis* in Veracruz.

If you are interested in joining OACN, please contact Audrey Denvir at adenvir@mortonarb.org

A Forum for Garden-Sourced Oak Seed?

by Shaun Haddock

It was a mast year in 2017 here in southwest France, spreading acorns so thickly under some trees they formed a solid carpet. So *Quercus pubescens* is evidently not in danger for now, but what of less plentiful species elsewhere? The Nagoya Protocol, however well meant, will have the effect of putting obstacles in the way of obtaining wild-collected seed outside of the country of origin. As most of us are aware, oaks are something of a special case when it comes to their conservation: although research is ongoing into the cryopreservation of oak embryos, it cannot as yet be guaranteed. Thus, for species severely threatened in the wild, trees already in collections are a vital resource which we undervalue at our peril (in this respect I think the importance of private collections is often overlooked by the "big players", but then I would say that, wouldn't I?).

So what can we do to widen the footprint of at-risk species? We can of course use vegetative propagation to multiply rare oaks; cuttings in the case of some species or, more reliably as long as the rootstocks are chosen carefully, by grafting. The latter may even be used to confer additional benefits such as enabling a calcifuge oak grafted onto a lime-tolerant stock to tolerate high pH soils.

But back to those acorns… Seeds are wonderful things, they are easily posted or otherwise transported, and can provide enough natural intraspecific variation to aid resistance to environmental challenges, which reduces the risk one takes with vegetative cloning that all will simultaneously fall prey to the same pest or malady.

Quercus monimotricha **acorn (and next year's developing acorns) at Chevithorne Barton, on a tree descended form the specimen growing at Hillier Gardens © James MacEwen**

Quercus baloot in **Arboretum de la Bergerette © Shaun Haddock**

The conventional wisdom is that arboretum-produced acorns should be rejected out of hand due to the risk of hybridization. But in fact the risk of hybridization does not apply in all cases – yes, one should be cautious, but there are several, perhaps many, species which reproduce true from seed (the statistical probability of this will vary both according to species and to the proximity of potential suitors, and may change from year to year as flowering timing varies). Perhaps the best known of these is *Q. monimotricha* at the Sir Harold Hillier Gardens, a seemingly unfailing pure source of this species. Amongst those of which I have experience, *Q. baloot*, *Q. dolicholepis*, *Q. hypoleucoides*, *Q. miquihuaensis,* and of commoner species, *Q. ilex*, *Q. phillyreoides*, and *Q. variabilis* provide a useful percentage of true offspring. Oak pollen can travel a long way, so a spatial barrier to hybridization is not always effective, but there are other barriers, both biological (for instance a Red Oak cannot fertilize a White Oak, and vice versa) and temporal (not all species flower at the same time as each other).

So where are these thoughts leading me? I feel it would be useful to have an internet forum relating to oak seed: a forum which can be approached in two directions – by those who are searching for a particular species, and by those who have seed from wild-collected parents, particularly if they are known to produce a reasonable percentage of true offspring. If such a forum would interest you, and/or if you have data relating to the production of true offspring from seed of particular species, please contact me at shaun.haddock@orange.fr

Because of the problems of importing seed into some countries (notably the USA), and the short life of certain acorns, the traditional exchange with a central "bank" would not work. I would envisage instead that those who wish to exchange or donate seed would do so directly (via a "wants" list and a "haves" list). This would also avoid the expense of posting seed which is not actually required.

Barking up the Right Trees

by Gert Fortgens

Some observations of overgrowing wounds of *Quercus* 'Maya' and *Q. agrifolia* in Trompenburg Gardens

A young and vigorously growing *Quercus* 'Maya' that we planted in 2007 showed a minor crack at the base of the trunk after the winter of 2011-2012. It was the first time that the leaves of this tree turned brown after a relatively cold winter. So we considered the crack to be caused by the low temperature (-10 Celsius). Two years later the smooth grey bark of the crack had dried out and split open showing the wound. To my surprise I noticed that, on the surface of the wood that was exposed by the missing bark, protruding tissue had formed in patches. In three years' time this tissue had overgrown the entire wound surface. In contrast to the smooth, original bark, this newly formed bark is warty.

Another smooth barked specimen oak in our collection is a *Q. agrifolia,* planted in 1996. In 2014 the bark was showing considerable cracks and splits.

***Quercus* 'Maya' in Trompenburg Gardens: showing frost damage in 2014 (left) and with healed bark in 2017 (right) © Gert Fortgens**

These cracks revealed the wood underneath the bark. Again the same phenomenon occurred as with the wounds on *Q. 'Maya'*: a new tissue started to develop on the surface of the wood. The wounds were covered within three growing seasons, leaving the tree with a smooth bark and patches of the new warty bark.

***Quercus agrifolia* damaged by frost in 2014 (left) and healed with new bark three years later (right) © Gert Fortgens**

I had not seen this phenomenon before. Many wounds on trees start to grow new tissue (callus) from the sides of the wound, growing inwards to cover the wound in a couple of years (sometimes it takes many years). This tissue that regenerated on the wound surface was new to me. My theory is that, apparently, the conditions in the cracks and under the old smooth bark are such that the collenchyma tissue does not die off and starts growing a new bark immediately.

Oaks are full of surprises!

Stretching the Rules

by Shaun Haddock

An oak which breaks the rules... Do oaks have rules? Well, I think so: the rule of survival of the fittest implies that all unnecessary branch structure is unaffordably costly in resources – the aim of a tree should be to display the maximum leaf area for photosynthesis attached to the minimum possible structure. And the culprit in question? *Quercus saltillensis,* the two plants of which here at Arboretum de la Bergerette bizarrely throw out long branches with a minimal sprinkling of small leaves. It appears to do the same at Beatrice Chassé's Arboretum de Pouyouleix, although it has to be said that our plants probably come from the same seed collection (Chassé G992). I have taken to broaching the subject with visitors, one of whom suggested the habit might exhaust and discourage predatory caterpillars…

Quercus saltillensis **stretching out a limb with scant photosynthesizing surface in Arboretum de la Bergerette © Shaun Haddock**

And more rule-breaking, this time by bees! In mid-May 2017, in the blessed peace which ensued when my brushcutter ran out of fuel, there was an overwhelming buzz of bees. At the edge of a patch of woodland, there was not a flower in sight. Finally I looked up, and over my head the yellow catkins on a *Q. suber* were populated with bees, working steadily up and down the catkins. Now, everyone knows that oaks are wind-pollinated, so what was going on? Yes, I know that there is so-called "oak honey", but this is made from the, ahem, by-products of aphids feeding on the leaves. So I checked out the few catkins which were in reach to see if they also were infested with aphids, but no. So, were the bees "stealing" the pollen without providing any pollination function in return? Your thoughts please: shaun.haddock@orange.fr

Bees beguiled by ***Quercus muehlenbergii*** **catkins in Grigadale Arboretum, Argentina © Roderick Cameron**

Points of Contact

Submissions for the Newsletter

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Submissions for the Journal

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From the Board

This is the first newsletter of the year and I urge those of you who need to renew their membership to do so at once. If you received *Oak News & Notes* by post and it included a printed membership form, it means that your membership expired. You can use that paper form to renew by sending it back to our Treasurer, Jim Hitz, or you can renew online. Our online payment system is PayPal, which allows payment through a PayPal account or by credit card. Remember that the Society is run by volunteers and late renewals create more paper work, which is not plants-people's favorite activity. If you do not intend to renew, please drop us an email at membership@internationaloaksociety.org.

2018 is also a Conference year. We will hold our 9th Conference in Davis, California on October 22-24, 2018. See p. 2 for the Conference Committee's latest update on the Conference and associated Tours. You can also find more information about the Conference on our website under "Events." See also http://bit.ly/2E8k6VO.

Registration for the Conference will open April 1.

A Triennial Conference is also the time our bylaws foresee that Board members are elected or re-elected for a new three-year term. The bylaws allow up to 10 board members. We currently are 7, some of whom will step down in October. We are therefore looking for volunteers willing to serve on the Society's Board. Do not hesitate to contact current Board members about joining.

Obviously, candidates for Board positions should be members in good standing of the Society. Candidates with experience in website management, financial management, and membership administration are especially encouraged to apply.

We have also introduced a change in the election procedure. The bylaws state that the directors are elected during the Conference by the members present. They also state that the Society may hold the election by mail. Until now, we have conducted such an election by mail. However, it seems a waste to have an election by mail when the number of candidates is lower than the number of positions to fill. We have therefore decided to have the proposed Board confirmed ("elected") by the members attending the "meeting of members" at the Conference, as the bylaws foresee

I wish you a great year 2018 and I hope to see many of you at the Conference in October.

Charles Snyers, President

To contact me, please write to
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