International Oak Society

Oak News & Notes

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Attendees at the 9th International Oak Society Conference outside the UC Davis Conference Center © Guy Sternberg

Davis Delivers Outstanding Conference

by Roderick Cameron

The 9th International Oak Society Conference held at UC Davis last October was probably the most ambitious IOS Conference to date – and it was a memorable success. Though the Conference itself took place over four days from October 21 to 24, the associated Tours took off October 15 and ended October 29, so for those lucky few who participated in the entire program, it was a continuous two weeks of oaking. There were 282 registered participants, not including spouses and guests. We had 60 speakers, 15 poster presenters, 5 workshop leaders, 15 local tour leaders, 1 case study presenter, 1 film presenter, and 80 friendly, ever-smiling staff and volunteers who ensured everything ran smoothly.

The 2018 Conference introduced several novel features:

- We had concurrent sessions for most of the Conference, following an initial plenary session for all. The concurrent sessions involved two tracks, sometimes three, and were constructed so as to group presentations by theme and by level of technical complexity, allowing participants to choose tracks most suited to their interests.
- The Conference had an overriding theme: "Oak Landscapes for the Future: Adapting to Climate Change", which was reflected in the subjects chosen for the Keynote Addresses at the Opening Reception and Gala Dinner, and also in many of the presentations. However, there was still a great variety of subjects, as is typical for our diverse Society. The theme was revisited in a wrap-up discussion at the Meeting of Members at the close of the Conference.
- Lightning Talks, an exciting new format of strictly timed 5-minute talks, were included in a session, and 13 presenters opted for this format.
- Pre- and Post-Conference Tours were split in two, so we had four Tours in all, Sierra Nevada and North Coast before, and San Francisco Bay Area and Central Coast after the Conference, allowing participants to choose options according to their budgets and availability.
- Three optional Pre-Conference Day-Trips took place on the Sunday prior to the Opening Reception, as well as an Oak Discovery Day in Shields Oak Grove in UC Davis Arboretum.

In addition, the schedule included an afternoon of local tours, the traditional Gala Dinner (held in the Sacramento Library Galleria), our second silent auction, presentation of IOS Service Awards, satellite meetings, workshops, a meeting of members, and a mammoth seed exchange.

One of the most anticipated moments of the Conference took place at the Gala Dinner, when Dr. Fuh-Jiunn Pan announced that the 2021 Conference will take place in Taiwan, hosted by the Taiwan Forest Research Institute.

Summary reports on Tours and Day Trips follow below and have been published on the website (see Articles section). Full reports will appear in the next issue of *International Oaks*, the Proceedings of the 9th International Oak Society Conference, due out around May 2019.

Warm congratulations and thanks are due to Conference Organizer Emily Griswold and the Conference Committee: Shannon Still (sadly not able to accompany us at the Conference due to illness), Stewart Winchester, David Muffly, Zarah Wyly, Rachel Davis, Abbey Hart, and Melissa Cruz. This was indeed a Conference for the history books – and a pleasure to attend!

Pre-Conference Day Trips

On Sunday, October 21, prior to the evening Opening Reception that kicked off the Conference, participants could choose one of three Day Trips to nearby destinations. Below are brief reports of these outings, kindly provided by members who participated in each one.

Frog Pond Trail – Oaks in the Berryessa Snow Mountain National Monument

by Ron Lance

Andrew Fulks, Assistant Director of the UC Davis Arboretum and Public Garden, drove ten tour participants north and west of Davis, ultimately climbing to the head of Rumsey Valley. The Central Valley's agricultural lands had shifted to oak woodland by the time we arrived at the parking destination of Cache Creek Canyon Regional Park. Here the 5-mile loop hike on the Frog Pond Trail began, across the Cache River and among interior live oak (*Quercus wislizeni),* valley oak (*Q. lobata*) and gray pine (*Pinus sabiniana*). Ascending slopes and ridges of the Blue Ridge Range, the crew passed under many fine blue oaks (*Q. douglasii*) and an occasional California black oak (*Q. kelloggii*). Interesting smaller companion trees and shrubs, as well as frequent smatterings of acorns and scenic views slowed the pace. Ultimately, the natural conversion of oak woodland to chaparral was shown to be abrupt and keyed to soil type, in this case dominated by chamise (*Adenostoma fasciculatum*). After crossing a wide fire line cleared to mineral soil, the trail wound through some of the essentially impenetrable chaparral to reach another "oaky" destination. Even though the seasonal Frog Pond was dry, the lunch spot among a grove of blue oak provided an idyllic terminus. Thanks go to Andrew for a splendid jaunt.

Lunching under *Quercus douglasii* in Berryessa Snow Mountain National Monument © Ron Lance

The Oaks of Pepperwood – Research, Land Management and Fire

by Christina Carrero and Emily Beckman

Established in 2005 by Jane and Herb Dwight, Pepperwood Preserve in Santa Rosa, CA encompasses 3,200 acres, over 750 species of plants, 150 species of wildlife, and the Dwight Center for Conservation Science. Pepperwood is dedicated to engaging its visitors in conservation science, leadership, and education. They also have a wicked cool diversity of oaks (14 species and hybrids). We, as oak fanatics, fawned over the diversity of species on the preserve, including *Quercus lobata, Q. durata, Q. agrifolia,* and a few of questionable taxonomy. We learned about the Preserve's grazing program for sustainable management, ate lunch on a peak with a perfect view of Mount Saint Helena, and, of course, became bemused by the promiscuous nature of oaks, contesting the identity of specific individuals in our path. One unexpected highlight was experiencing the aftermath of a major wildfire and its implications for forest regrowth a year later. In October of 2017, the Tubbs Fire burned through forests in Napa, Sonoma, and Lake Counties. Claimed to be the most destructive wildfire in California history, it burned an estimated 36,810 acres including most of the Pepperwood Preserve. Though the fire is responsible for immense amounts of damage and heartbreak, it also created the opportunity for unprecedented growth and potential in the forest. Our last stop was a small area of the Preserve where a prescribed burn had been planned, but the Tubbs Fire made it first. We skipped around new sprouts of poison oak and thistle to see burnt and dying Douglas-fir (*Pseudotsuga menziesii*). The Douglas-fir grow fast and grow tall, crowding out the species underneath and restricting their ability to receive sunlight. With these trees gone, oaks in the area began exhibiting

regrowth and basal sprouting. Having already planned for a prescribed burn, the area was full of experimental plots and environmental monitoring stations allowing the unique opportunity to record the forest regrowth in a statistically meaningful way. Pepperwood plans to use this data and experience in future prescribed burns.

Wine Country Tour and Tastings
by Lloyd Kenyon

As we set off on Sunday morning for Napa Valley to visit the wine country, there was a bit of mist and the temperature remained low. Our first stop was at an oxbow on the Napa River, a beautifully isolated green oasis in the middle of the city. Thirty minutes to view a mature specimen of *Quercus agrifolia* and a number of other native trees. Next stop was Mumm Napa. After a brief introduction to the vineyard we were seated at a table confronted by four glasses of sparkling white wine: champagne in all respects, though out of deference to European legislation they call it sparkling white wine. It was not long before a fifth glass appeared, a wine specially selected by the manager and not yet available to purchase. Going uphill we entered the Rutherford Hill Vineyard, by which time the mist had lifted and we were in brilliant sunshine. Here we ate our lunch in the shade of a magnificent *Q. kelloggii* and other oaks, accompanied by a selection of their wines. A brief visit to their Gift Shop was made before proceeding. Beringer Vineyard provided pure theater. Guided by Jesus (we were never given his family name), we were then plied with more wine and introduced to the herb garden where we were able understand the flavors so often used to describe the wines. We were then ushered upstairs to a room where, at each seat, a further three glasses awaited us. In between the explanation of the wines and their relationship with different foods, Jesus did his best to persuade us of the benefits of joining the Beringer Club. Unfortunately, this did not extend to free overseas shipping, so most members declined.

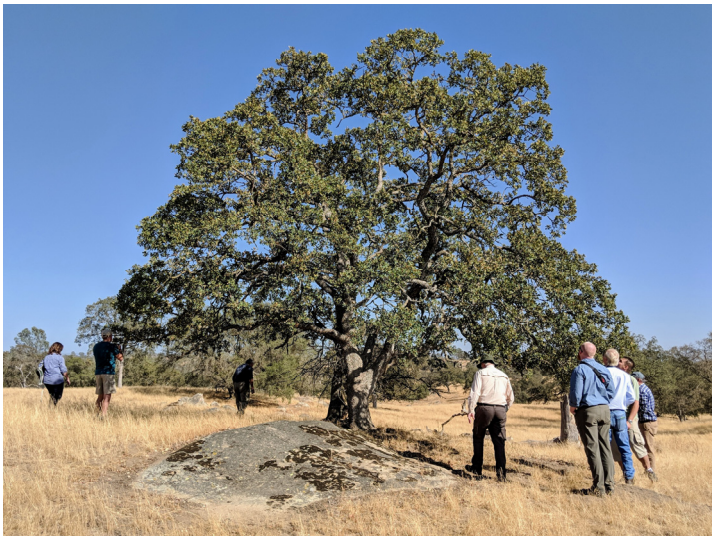
Conference Tours

The Conference Committee at Davis doubled up on Tours and participants could choose from a total of four. Brief reports follow (more photos available on the IOS website, and full reports will be published in *International Oaks* No. 29)

Pre-Conference Tour #1: Sierra Nevada
by Dirk Giseburt

Forty-one participants from nine countries gathered at Davis, California on October 15 for a four-day trek across the Sierra Nevada and back. Stunning was the diversity of landscapes we saw.

On Day 1, we crossed the Central Valley of California, ultimately reaching the outskirts of Yosemite National Park. Along the way, we stopped three times. The first was Cosumnes River Preserve not far from Sacramento – a remnant of riparian woodland and grassland with really big *Quercus lobata* of spreading habit. The second was the San Joaquin Experimental Range, which hosts a rare patch of *Q. douglasii* savanna in public



Admiring the *Quercus douglasii* at San Joaquin Experimental Range
© Bryan Denig

Another Successful Silent Auction at Davis

by Ryan Russell

The Silent Auction held at the IOS Conference in Davis, CA was another great success. The total amount raised surpassed USD 2,600, and an additional USD 1,000 was received as a private donation to the fund. The proceeds from the auction held at The Morton Conference in 2015 were used to fund five scholarships to the Davis Conference. Thanks to the money raised from this auction, we will be able to offer more scholarships to Taiwan in 2021. We would like to thank everyone who bid and especially the following people for donating items to be auctioned:

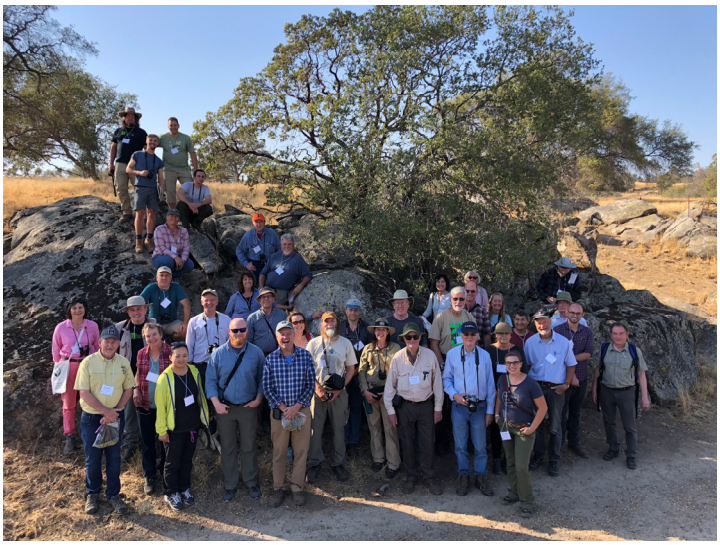
Bill Spradley – Bonnie Jean Berckes – California Flora Nursery and Phil Van Soelen – Charles Snyers d'Attenhoven – Christine Battle – City Of Columbia, Missouri – Dan Keiser – Diana Gardner – Gert Fortgens – Guy Sternberg – Gary Handy of Handy Nursery, Oregon – Kyle Spradley – Lisa Fowler – Mark and Jolly Krautmann – Michael Meléndrez – Min Deng – Nancy Leonard – Rachel Vail – Ryan, Tammie, and Ryder Russell – Julianne Skai Arbor (TreeGirl) – William Guion

hands (US Forest Service) and is the location of important studies on the failure of *Q. douglasii* regeneration. *Quercus wislizeni* were intermixed with the *Q. douglasii* in the rockier terrain closer to watercourses. The staff welcomed acorn collection! Third was the Lewis Creek Trail in the Sierra National Forest, an exciting short, steep trail to a stream allowing contact with *Q. chrysolepis* and *Q. kelloggii.*

Day 2 led us first to the Mariposa Grove of *Sequoiadendron giganteum* and then to an overlook of the Yosemite Valley and El Capitan. Then at the bottom of the valley we had options for strolling among the *Q. kelloggii* in the valley meadows or hiking to the base of Lower Yosemite Falls. We climbed out of the valley westward, past scenes of both moderately and incredibly destructive fires of the summer months, and then turned east again to cross the Sierra crest at Tioga Pass, stopping at Olmsted Point to see *Q. vacciniifolia* growing out of almost sheer granite amongst large, fetching *Juniperus grandis.*

Day 3 was on the back side of the Sierras with three stops in remote and difficult environments. At the Gray's Meadow Campground on the road west of Independence, we saw a narrow riparian community marked by *Q. kelloggii* and surrounded by near-desert, and then we pushed up to 9,200 feet to see red fir (*Abies magnifica*) and foxtail pine (*Pinus balfouriana*) at Onion Valley Campground, along with the very striking local Fagaceae representative, *Chrysolepis sempervirens*. Thence back east again, across Owens Valley, to the crest of the White Mountains Range and the Shulman Grove of the Ancient Bristlecone Pine Forest (*P. longaeva*) at over 10,000 feet. On the descent we stopped to admire the cross-valley views to the Sierras and the "forest" of single-leaf pinyon pine, *P. monophylla.*

After a night at Mammoth Lakes, the group explored the Tuolumne Meadows back in Yosemite and then descended our way back to Davis, stopping first at the Rim of the World vista point on Highway 120 near Groveland, with an expansive view over heavily damaged landscapes left by at least four giant fires since 1949, and later to admire gray pines (*P. sabiniana*), *Q. douglasii,* and *Q. wislizeni* along the hilly banks of Don Pedro Lake.



Nearly the entire group gathered round a very productive *Quercus wislizeni*, San Joaquin Experimental Range © Abbey Hart

Rich and amazing! The warmest thanks go to our excellent tour planners and guides, Abbey Hart of the UC Davis Arboretum and Stew Winchester of Merritt College.

Pre-Conference Tour #2: North Coast
by Mark Krautmann

Forty enthusiastic IOS members ventured from UC Davis through Sonoma wine country toward the north California coast. Abbey Hart of UC Davis Arboretum was our capable Tour coordinator. Abbey, Emily Griswold, and other arboretum staff spent weeks of diligent effort to book Tour sites, pre-check them, confirm hotels, keep costs reasonable, and generally accomplish the remarkable feat of keeping order with the diverse interests and enthusiasm of all participants. We visited sites of enormous habitat contrast that included many species of native oaks and the giant redwoods, unique in all the world.

On several Pre-Tour occasions, our intrepid IOS guide, Stewart Winchester, emphasized the edaphic influence of serpentine on the distribution and growth habit of California oaks.

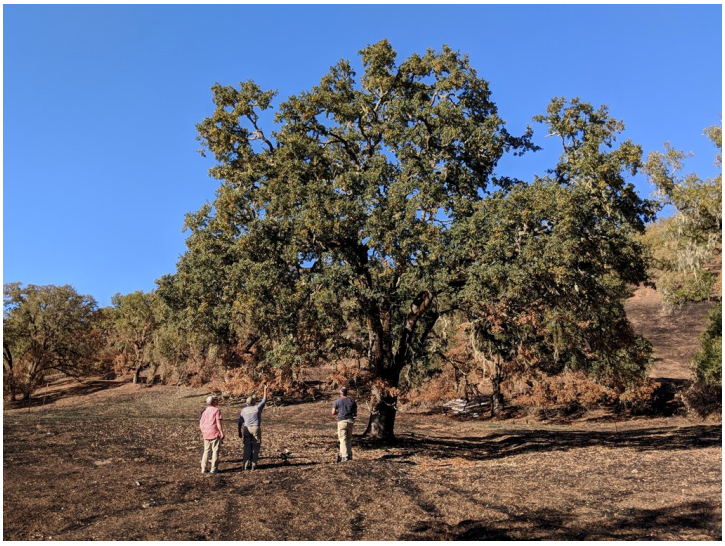
We stopped at Sugarloaf Ridge State Park to see diminutive, aptly-named *Quercus durata*. Merely a meter tall, it shares its serpentine outcrop niche with *Ceanothus jepsonii* and *Umbellularia californica.* Serpentine soil is shallow, rocky, and extremely deficient in essential plant nutrients: calcium, nitrogen, and phosphorus.

Undaunted, our little leather oak amigo has evolved through the eons to also tolerate high soil concentrations of magnesium and toxic heavy metals.

Quercus durata gathers just enough soil moisture in this edaphic wasteland, so toxic to most plants, to generously offer IOS members its gift of a few acorns among its tiny, leathery leaves when we saw this plant again in Mendocino County.

Only a few hundred meters distant, obviously on more fertile hillside soils, we saw much larger *Q. douglasii, Q. lobata*, and, adorned with reddish fruits, *Arbutus menziesii.* Tragically, many of these madrones are in decline or dying from *Phytopthora ramorum,* the foliar pathogen that attacks so many Mediterranean climate broadleaf evergreen genera. Fortunately, the dominant White Oaks (Section Quercus), California's finest, resist this pernicious foliar infection.

The soil fertility contrast of Sugarloaf Ridge State Park serpentine to fertile Mendocino Valley alluvium, where valley oak dominates, is difficult to comprehend. The following day, we had our opportunity, however. We collected large acorns under the magnificent, 153-foot tall National Champion *Q. lobata.* Beneath the frame of



Quercus douglasii **at Hopland Research and Extension Center, in an area recently affected by fire © Bryan Denig**

this monarch California oak, we felt in awe. Our compulsion to gather the abundant acorns was overwhelming. We gathered them from the ground beneath this venerable tree just as Native Americans did before us for hundreds of years. Its habitat and nutritional value was obvious: this single oak is an entire ecosystem. A big thank you to Ben Fetzer for allowing us access to the farm and to his family for their efforts preserving this magnificent oak.

Apart from our Tour companions, a person could linger to quietly observe this benevolent creature's multitude of wildlife friends. Its 4-inch bark is pock-marked with thousands of holes made by acorn woodpeckers to sequester their abundant acorn reserves.

So get this: it not only provides the acorn currency of life within its niche, it offers wildlife a storehouse to bank its wealth even after it generously gives all its mast away. How humbling is that?

To wrap up our North Coast Pre-Tour, on the afternoon of October 20th we visited the Hopland Research and Extension Center (HREC), where we were kindly welcomed and guided by Kerry Heise and Emily Allen. HREC is one of nine such centers operated by the UC Division of Agriculture and Natural Resources. The Center's 5,358 acres are a living laboratory for study of more than 600 plant species within the four major vegetation types, namely grass, woodland-grass, dense woodland, and chaparral. Within the Coast Range foothills of the Mayacamas Mountains, this is an expansive UC resource of rugged terrain and exceptional research value for such study areas such as oak regeneration, and now the aftereffects of widespread range and woodland fire.

An abundant crop of blue oak (*Q. douglasii*) acorns littered the ground beneath these larger oaks recovering from the fire. Shreve oak (*Q. parvula* var. *shrevei*) grows near the main buildings. We walked along a path where we saw *Q. berberidifolia*, and ended with a group photo.

Stewart informed us, trees inspired us, and we had delightful company with each other on the bus. But the coast redwoods and valley oaks evoked our sense of wonder. Savanna images of oak sentinels centuries old have that effect on our psyche: they help us to connect our heads with our hearts, don't they? In that way we share a seamless bond with all who have encountered them for centuries before we were born.

Post-Conference Tour #1: San Francisco Bay Area

by Roderick Cameron

The day after the 2018 Conference concluded, we set off from Davis in a number of small vans, rather than a tour bus, which meant that our group included the delightful company of several drivers from UC Davis Arboretum staff. Our destination was the University of California Botanical Garden at Berkeley.

Billed as one of the most diverse landscapes in the world, the Garden holds over 10,000 types of plants, with an emphasis on those from Mediterranean climates. It also contains an excellent collection of Mexican oaks. When the Garden was relocated from the University campus to Strawberry Canyon in the 1920s, collections were grouped primarily by geographic regions. Under the informative guidance of Chris Carmichael and Vanessa Handley, we walked through some of the collections in two groups and lingered in the section rich in Mexican oaks.

Driving south past San Francisco towards Santa Clara Valley, we turned up into the hills overlooking the urban conglomeration of Silicon Valley. At Long Ridge Open Space we ambled at length as the afternoon turned to evening, admiring beautifully structured canyon live oak (*Quercus chrysolepis*), as well as interior live oak (*Q. wislizeni*) and Shreve oak (*Q. parvula* var. *shrevei*). Our knowledgeable and enthusiastic guide, arborist Dave Muffly, showed us how to distinguish Shreve oak by the

Our guide Dave Muffly under ***Quercus chrysolepis*****, Long Ridge Open Space © Charles Snyers**

dark green color of the canopy that contrasts with the lighter surrounding oaks.

We spent the night in Cupertino and next morning drove to Stanford to explore an area of oak woodland and savanna known informally as "The Dish", after a prominent radio telescope that sits at the top of a hill. We were welcomed by David Schrom, who has been responsible for restoring the oak woodland together with Dave Muffly. The land is also used for cattle grazing, so establishing oaks has been a challenge, involving the use of tree tubes for protection. We saw coast live oak (*Q. agrifolia*), valley oak (*Q. lobata*), blue oak (*Q. douglasii*), and the hybrid of these last two, Jolon oak (*Q. ×jolonensis*, a particular favorite of Dave's).

Our jovial lunch took place at the headquarters of Magic Inc., an organization founded by David Schrom in the 1970s, and self-described as "people learning and communicating how humans can further common good by practicing valuescience – scientific methods and principles applied to questions of value." We were hosted by David and by Jen and Hilary Bayer, also Magic residents, who had presented a Lighting Talk at the Conference.

The highlight of our Tour was the afternoon's visit to the stunning campus in Cupertino recently built by Apple Inc. Photographs were strictly forbidden, so we had to leave our phones and cameras in the vans, but we were able to walk all the way around the impressive ring-shaped building, among the thousands of oaks planted in the grounds. Nine thousand trees have been planted on the campus, including apricots and other fruit trees, but oaks dominate. The visit to the Dish at Stanford had been ideal preparation for Apple Park, as it was one of Steve Jobs's favorite hikes, and it was the oak woodland there that inspired his vision of what he wanted to create on the campus. In fact, it was by enquiring after the arborist responsible for oak plantings at the Stanford oak woodland that Jobs's team found Dave Muffly, who was hired as the arborist for the new campus.

Jobs originally envisioned planting native oaks, but Dave convinced him to expand the palette, and the result is a varied selection of over 60 oak taxa, from native *Q. douglasii* to exotics from far-off lands like *Q. coccifera* subsp. *calliprinos*. There is no space in this summary to describe the project in detail, but you can find interesting links in the online version of this report in the Articles section of the IOS website.

That evening the first Post-Tour concluded, but for many the fun continued in the second Post-Tour. A huge thank you to our patient and efficient Tour organizer Rachel Davis, to our drivers, Nina Suzuki, Emily Griswold, Miles DaPrato, and Ryan Deering, and to the ebullient Dave Muffly (you should check out his new website, www.oaktopia.org, which is packed full of oak knowledge!).

Post-Conference Tour #2: Central Coast
by Charles Snyers

The first Post-Conference Tour ended in Cupertino on the afternoon of October 19. The smaller group that continued on the second Post-Conference Tour drove south to Santa Cruz where we spent the night. At 8:00 am the next day we boarded the two remaining UC Davis vans to drive south for the next leg of our journey. It took us over three hours, with one stop along US 101, to get to the Halter Ranch Winery near Paso Robles.

Several oak species were present on the ranch, but we were here to see a Red Oak, the "world's largest known coast live oak" (*Quercus agrifolia*). Dr. Matt Ritter, our guide for the day and a Biology professor at Cal Poly in San Luis Obispo, uses a neat device called a clinometer to measure height and spread. It has three high-powered lenses and uses the lenses' focal length to calculate distances. Our tree was 91 ft high (nearly 28 m) and 105 ft (32 m) wide, with a girth of 27 ft (8.23 m).

We then drove to our next stop, Peachy Canyon, through a riparian forest of *Q. agrifolia* and *Q. lobata*, with an occasional *Q. douglasii*. Somewhere along the road we saw a hybrid oak, *Q. lobata* × *berberidifolia,* which had the size and form of *Q. lobata* and the leaves of *Q. berberidifolia.*

We came to Peachy Canyon Road mainly to see the relatively rare Palmer oak (*Q. palmeri*). But there were also great specimens of *Q. berberidifolia*, one of the most common scrub oaks in California. There is also a huge diversity in shape and size of their acorns. We had lunch in the shade of the tallest *Q. berberidifolia*.

After lunch, we walked down the road to look at Palmer oaks growing by the side of the road. Like *Q. chrysolepis*, *Q. palmeri* is an intermediate oak (Section *Protobalanus*). Although *Q. palmeri* is thought of as a shrub oak and not a tree, specimens here were around 5 meters

Quercus engelmannii **grove at the Los Angeles County Arboretum and Botanic Garden © Charles Snyers**

high. Then we boarded the vans again to drive to Los Padres National Forest.

Part of East Cuesta Ridge burned in 2015, but *Q. agrifolia* and *Platanus racemosa* generally survived the fire. The dominant oak around us was *Q. agrifolia* with an occasional *Q. wislizeni*. On serpentine, we could see *Q. durata,* which tends to occur only on this type of soil. We also found small plants of *Notholithocarpus densiflorus.*

The next day we drove to Morro Bay, which we could see from the East Cuesta Ridge the day before. Our destination was El Moro Elfin Forest, a 90-acre State Park in Los Osos. Matt Ritter had told us that the climax community on this old Pleistocene dune was an oak woodland of *Q. agrifolia* and that at one point they had been designated as *Q. agrifolia* var. *frutescens* because of their shrubby habit. However, one of his colleagues at Cal Poly, Robert Hoover, had demonstrated that this should be regarded as a synonym of *Q. agrifolia* and that mostly edaphic factors determined their habit.

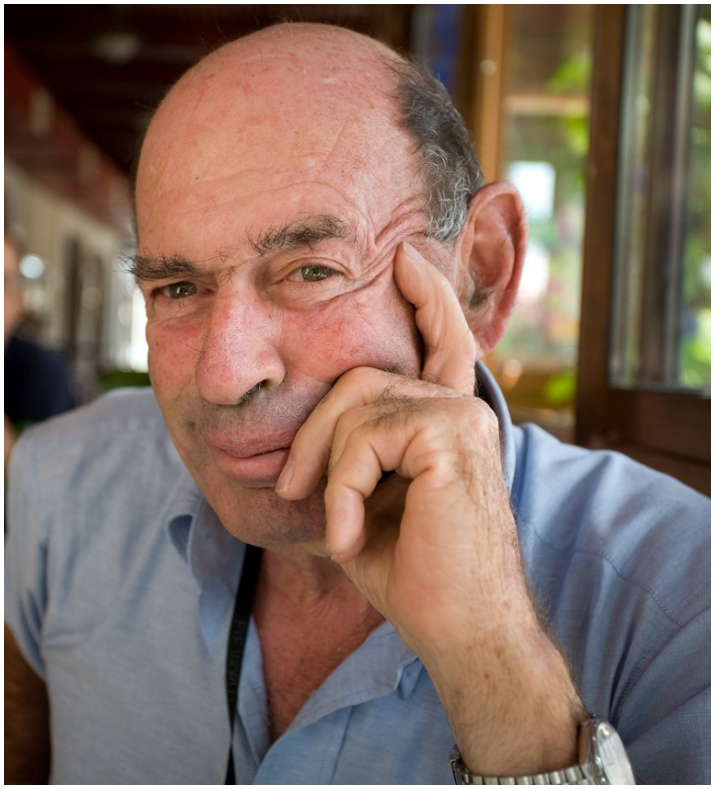
The Santa Barbara Botanic Garden, where we drove after lunch, was founded in 1926 and has increased in size over the years, currently covering 78 acres. It specializes in plants from the California Floristic Province, of which it has over 1,000 taxa. We started at the Meadow, a beautiful plot where we stopped first for a good specimen of *Q. engelmannii.* Our attention was also drawn to fine specimens of *Q. agrifolia*.

We then drove to Hendry's Beach in Santa Barbara to wait for the sunset and had dinner in the center of this picturesque town. Before leaving town the next morning, bound for Arcadia in Greater Los Angeles, we had one more stop at an old restaurant turned fitness center, built around the Witness Tree, a 300-year-old California sycamore, *Platanus racemosa*.

Upon arrival in Arcadia, we stopped very briefly on Fallen Leaf Road to see remnant pre-development *Quercus engelmannii* lined along the street.

Our guide for the day at Los Angeles County Arboretum and Botanic Garden was Jim Henrich, curator of living collections. The Engelmann Oak Grove was clearly the highlight of our visit. In the 2017 Red List of US Oaks *Q. engelmannii* has been placed in the Endangered category. The Arboretum has 224 mature trees, 175 in the grove alone, the rest being scattered throughout the site. A mast year occurs every three years, and in 2013 and 2016 Jim and his team collected acorns from the trees, keeping track of which tree the acorns came from. They then sowed the acorns and replanted the resulting seedlings in the grove under each parent tree.

Our thanks go to Rachel Davis and David Muffly, who planned and led this Tour, and to Miles DaPrato and Ryan Deering, as well as to Dr. Matt Ritter and Jim Henrich, who were generous with their time and shared their passion with us.



Michael Avishai © Amnon Avishai

Dr. Michael Avishai (1935-2018)

by Ori Fragman-Sapir

Dr. Michael Avishai, a leading oak expert, botanist, and horticulturist in Israel and worldwide, passed away last December, leaving a huge emptiness and sadness in the Jerusalem Botanical Gardens and beyond. Michael was born in Berlin and spent his childhood in hiding in Czechoslovakia (1939-1945). He told us of the times he used to run away into the woods from the anti-Semitic village where he was hiding and how this was where his love of oaks was rooted. In 1948 he immigrated to Israel and joined Kibbutz Ein Hamifratz on the northern coast. In 1963 he started working as Prof. Michael Zohary's assistant in establishing the Jerusalem Botanical Gardens and separately in the botanical planning of Ramat Hanadiv gardens. Concurrently, he was working on a Masters degree in botany on the geography and taxonomy of the Middle Eastern oaks. In that period he drew 33 fantastic line drawings of all the oaks of the Middle East, drawings that were published in several publications and in internet websites and are used to this day. In 1978 Michael completed a PhD researching evolutionary genetics of the *Oncocyclus* irises.

Michael helped establish the Jerusalem Botanical Gardens with his own two hands and worked there for over five decades, first as a gardener and then as the Gardens' managing director. During this time he wrote, researched, educated, and taught till his last day. The Gardens harbor today more than 6,000 species, many of which were collected by Michael. His research on oaks

and irises, conducted at the Jerusalem Botanical Gardens, is regarded as trailblazing and is still cited today. Oaks fascinated him his whole life; he created at the Jerusalem Botanical Gardens the largest oak collection in Israel and one of the important ones in the world, with 72 different species, many of which are rare in cultivation, and some of which were introduced to streets, parks, and gardens in Israel. He continued to monitor and study the different oaks in the gardens and only last year he published with his co-authors an important paper: "Comparative systematics and phylogeography of *Quercus* Section *Cerris* in western Eurasia: inferences from plastid and nuclear DNA variation[1]". In this paper he made it clear that *Quercus look* of Mt. Hermon is a good species; the DNA analysis confirmed the observations of his sharp eye in the field. I remember hiking with him a few years ago in Mt. Hermon, looking for this interesting oak. At some point he disappeared and I was a bit worried that he might have gotten lost, calling him with no answer. Hearing some branch movements, I suddenly saw him above me, seven meters above the ground, collecting acorns from a *Q. look* tree. I was much younger than him and I wouldn't have dared to climb that tree; Michael was always young in spirit.

He taught generations of students in the Hebrew University and in the Botanical Gardens, his classes often ending with rounds of applause – a rare sight these days. Michael wrote dozens of important papers and co-authored the important book: *Cultivated plants of Israel*, which includes identification keys to the whole local garden flora.

He was "Mr. Botanical Gardens" in Israel, with his vision and energy he created the model for botanical gardens in Israel. Other gardens followed the success of the Jerusalem Botanical Gardens, among them the garden in Ein Gedi, Mt. Scopus, and others. He was incredibly knowledgeable, a gentleman with an indomitably energetic spirit; he will be sorely missed. May he rest in peace.

Scouring Arizona for *Quercus ajoensis* and *Q. toumeyi*

by Editorial Staff

The Huntington Botanical Garden, in collaboration with the Arizona-Sonora Desert Museum (ASDM), completed in 2018 an extensive search for two rare oaks, *Quercus ajoensis* and *Q. toumeyi*, in the most xeric public lands in Arizona. Funding came from the US Forest Service and the American Public Gardens Association. (The results of the search are summarized here and are published in more detail on the IOS website in a report by the project's senior collectors John Wiens of the ASDM and Tim Thibault of The Huntington: https://bit.ly/2SuUKbX)

The objectives of the project were to scout localities where the two *Quercus* species had been observed in the past, confirm or deny presence of the species in several mountain ranges that have poorly documented or otherwise dubious records, collect acorns or material for micropropagation, and voucher the species at each location.

The oaks had to be found in their purest forms. Since oaks readily hybridize between species, searchers had to find representative stands of the oaks, and then choose individuals within the stands that were most representative. The search depended heavily on historical records from the 1950s and '60s for *Q. ajoensis,* with more contemporary collections of *Q. toumeyi*. The initial search took place in the spring; seeds were collected in the summer on return visits. The field work occurred between April 12 and August 17, 2018, on 1- or 2-day trips from Tucson, 23 days in total. The complete report published on the IOS website includes a list of the mountain ranges searched, with details of what was found in each location.

Quercus ajoensis were found in very narrow, protected desert mountain canyons at around 850 meters [708-925m]. This tiny niche depends on its ability to hold a small amount of life-sustaining water. It is at imminent risk from climate change. The US range of pure *Q. ajoensis* appears to be contracting to just three canyons in the Ajo Mountains of southern Arizona. Oaks from other old locations were either not found or were hybrids with *Q. turbinella*. A similar search on the Mexican side of the border is recommended, as an online search of herbarium records lists five localities on the Baja Peninsula, with only two collections this century.

Quercus toumeyi was found in ten different mountain ranges throughout Arizona and New Mexico. The species seems very well adapted to the bimodal rainfall of its native range: flowers, early fruit, and mature fruit were found both in January and July, suggesting the species may flower and fruit twice a year. Of concern for both species are studies showing that many plant ranges are already observed to be shifting in response to cli-

Anthocyanous (reddish) new growth on *Quercus ajoensis* in Alamo Canyon, Ajo Mountains, Organ Pipe Cactus National Monument © Matt Jevnikar

[1] *PeerJ* 6:e5793 https://doi.org/10.7717/peerj.5793

mate change.

Acorns collected were to be sent to and grown out at The Huntington, ASDM, Boyce Thompson Arboretum (Superior, Arizona), and Starhill Forest Arboretum in Petersburg, Illinois. This was accomplished with *Q. toumeyi*, but acorns of *Q. ajoensis* began germinating in the collection bags. They were sent to ASDM and sown, and seedlings were later distributed to the other three institutions. Tissue has also been preserved long term in very cold storage at the facilities at The Huntington. This project has successfully preserved rare germplasm that might otherwise have been lost.

SPECIES SPOTLIGHT:

Quercus douglasii Hook. & Arn.

by Zarah Wyly

Quercus douglasii is an endemic California oak tree, affectionately called "the blue oak" due to its distinctive blueish-green leaf color. It is common throughout California and known for growing in locations that create a bathtub ring around California's great Central Valley. The blue oak is often the oak featured in iconic photographs of California's golden hillsides dotted with majestic trees. Considered a foothill tree species, with the majority of its range at elevations of approximately 150 to 700 ft above sea level, several significant groves of very old blue oaks persist on the central valley floor, most notably along the Arcade Creek corridor of Sacramento. The most significant threats to the persistence of blue oak woodlands in California are urban development and a natural regeneration rate below replacement level.

The blue oak is a tough-as-nails member of the oak family, growing in the hottest, driest, and rockiest locations within its range. It is commonly found as the only tree species within open oak savannas or in more exposed and xeric locations within more complex multi-species oak woodland assemblages. When co-located with valley oak (*Q. lobata*), blue oaks will be found on the higher creek terraces or in open grassland spaces, away from the perennial and ephemeral waterways the valley oak prefers. California's Mediterranean climate features wet, cool winters with rainfall occurring on average from November until early May, and hot dry summers without rainfall for the other six months of the year. Blue oak leaf and acorn surfaces sport a waxy surface, helping to retain critical moisture in the summer months where daytime temperatures can frequently exceed 37 °C for weeks at a time. In the most prolonged water-scarce conditions, blue oaks can be drought-deciduous, dropping their leaves and sometimes their entire acorn crop in order to conserve resources for the following season. Achieving a height of 18 m, an open-grown blue oak has a rounded canopy with medium spread and a trunk from 25 cm to 2 m wide. As a very slow-growing oak species, it is common for annual growth to be limited to less than 30 cm a year, especially for mature

A blue oak forest in Rocklin, California © Zarah Wyly

trees. The ability of blue oak to re-sprout from the root crown helps this species maintain its presence and re-grow canopy quickly in California's fire-prone landscapes.

Named for the Scottish botanist David Douglas, *Q. douglasii* is one of more than 80 species of plants and animals that bear his last name. He introduced more than 240 species of plants to Britain from his three North American expeditions between 1823 and 1834. Today, California's blue oak woodlands are a focus for conservation and restoration efforts. As home to more than 300 vertebrate species, oak woodlands are recognized as sustaining higher levels of biodiversity than virtually any other terrestrial ecosystem in California.

For a robust collection of information on various California oak species, visit www.californiaoaks.org.

HYBRID HIGHLIGHT:

Quercus ×morehus Kellogg

by Ryan Russell

Quercus ×morehus was initially called Abram's oak by the author Albert Kellogg in his original 1863 description and was thought to be a unique species at the time (although his description was based on a single specimen). Current taxonomy designates this as a hybrid of *Q. kelloggii* and *Q. wislizeni* and is now known as the Oracle oak thanks to Willis Linn Jepson's book *The Silva of California,* written in 1910.

While it is unclear exactly why Kellogg named this species *Quercus morehus* (also spelled *moreha* in some literature), it seems that the intention was to pay homage to the Biblical Oak of Moreh (*moreh* being a derivative of *yarah* meaning to teach or give direction, or one who

***Quercus* ×*morehus* © Timothy Ives**

is an oracle). Another way to put it would be "Abram's oak of Moreh", or Abram's oak. The name Moreh can be applied to a hill, as well as an oak tree at Shechem where Abram (Abraham) stopped as he entered Canaan.

Winter is the best opportunity to find *Q.* ×*morehus* in areas where the parent species overlap as the California black oak (*Q. kelloggii*) are deciduous and the Interior live oak (*Q. wislizeni*) are evergreen. Oracle oaks are semi-evergreen (or maybe more appropriately tardily-deciduous) and will generally have lost many of their leaves by mid-winter and will often have a yellow/brown appearance allowing them to stick out.

I have read recent reports on the lack of seed production of this hybrid, but older accounts speak of better fruit production.

Interestingly, this oak is well known around the state, or at least the name Oracle oak is, and many claim to know of Oracle oaks in their area. On one of the recent Conference Pre-Tours, we saw an "Oracle" oak with the putative parentage of *Q. kelloggii* × *parvula* var. *shrevei*. A recent posting on a social media page touted an "Oracle" oak in southern California that had the supposed parentage of *Q. kelloggii* × *chrysolepis*. Another had the putative parentage of *Q. kelloggii* × *agrifolia* (which is the very similar *Q.* ×*ganderi*). While none of these are the correct hybrid, it goes to show how well known this name is, even if people do not know or understand what parents are actually involved.

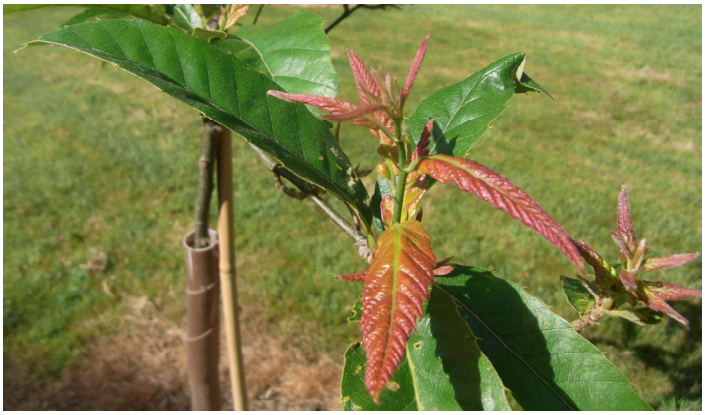
There are websites such as iNaturalist (www.inaturalist.org) where you can log on and plot your findings and upload photos, and many have plotted Oracle oak sightings over a 600-mile range from Redding to San Diego.

The Oracle oak is no doubt an interesting plant to be admired by any who are lucky enough to see one or ponder what it can teach (or *moreh*) us.

The Quercetum at Mallet Court: One Year On

by James Harris

The oaks (newly planted in March 2017) had a rude awakening by the harsh conditions in 2018. Between the end of May and September there was precious little rain – probably about ½ in. The ground became very dry and cracked. Despite these adverse conditions all the oaks planted not only survived but looked well. They were given almost no extra water. The oaks from western USA, for example California, were quite content. *Quercus chrysolepis* and *Q. agrifolia* retained a fresh and lustrous green foliage and put on a small amount of growth. The Asian oaks showed no distress: *Quercus acutissima* put on 12 in of growth and *Q.variabilis* exhibited some atypical red and then yellowish foliage. Will the foliage in the next season be normal? *Quercus sadleriana* put on no noticeable growth. *Quercus aucheri* which is about 9 in high did well but put on little growth. The star of the lot was *Q. cerris*, which was grown from acorns collected in North Greece. Planted out in March 2018 it did well



***Quercus variabilis* in the new Quercetum at Mallet Court, Somerset, UK © James Harris**

and put on about 18 in of growth. In September, the leaves of *Q. mongolica* dropped early. Was this a defense mechanism or has it succumbed? Examined in December, the young growth on this looked dead. Other trees plants in the quercetum also did well, and these included *Magnolia macrophylla* and *Sequoia sempervirens*. The lesson that I have learned is that once the roots have settled, the oak can withstand adverse conditions.

TOUR UPDATE:

UK Oak Open Days 2019

by Shaun Haddock

Our first event this year will be UK Oak Open Days (OODs) in June, visiting Thorp Perrow Arboretum on the 17th, and the Yorkshire Arboretum at Castle Howard on the 18th, both in North Yorkshire and just

over an hour apart by road. It will also be possible to visit Lloyd and Sally Kenyon's collection at Gredington in North Wales.

Thorp Perrow (www.thorpperrow.com) is a delightful arboretum of 100 acres near Bedale, postcode DL8 2PS. The impressive 128-acre Yorkshire Arboretum (www.yorkshirearboretum.org) is on the estate of Castle Howard near Malton, YO60 7BY. Director John Grimshaw and Collection Manager Jonathan Burton will guide our visit. Lunch will be available at both locations, and will be pre-arranged for those that wish. Entry fees will be payable, RHS members gain reduced entry at the Yorkshire Arboretum. The nearest airport for both venues is Leeds-Bradford, but Manchester, with more flights available, is under two hours away by road (around 170 km/105 miles). For those driving up from the south, or for those flying via Manchester Airport, Gredington (SY13 3DJ) is easy to reach (just over an hour to the southwest of the Airport). Whether we visit before or after the 17th/18th will be decided in order to suit the travel plans of the majority. More information regarding the venues will be made available on the website, and our visit to Lloyd and Sally Kenyon's 80-acre park in July 2015 was reported in *International Oaks* No. 28 p. 95. Further details regarding times, entry fees, suggested hotels, etc., will be sent to those who register for the event via tours@internationaloaksociety.org. Please express your interest now, and a cut-off date will be published nearer the event to confirm your attendance for meals, etc. As is usual for OODs, you may register for individual days (please specify when you register): there is no requirement to attend the entire event.

Looking ahead, 2020 will be a busy year, with tours planned for both sides of the Atlantic, at Boston/ Martha's Vineyard and Cyprus. We hope that a tour in Israel can be planned consecutively with the latter, as Tel Aviv, Israel, is only just over an hour from Larnaca, Cyprus, by air. There will again be UK Oak Open Days, this time at Penrice Castle, where Thomas Methuen-Campbell has been planting interesting oaks for many years, and at a second venue as yet to be decided. There is also the possibility of a tour in Northern California which will visit areas which the large group on the 2018 Conference Pre-Tours were unable to access. Details will be put on the website once available, and also publicized in *Oak News & Notes*.

From the Board

by Roderick Cameron

A new Board of Directors was elected during the Triennial Meeting of Members at Davis. As had been announced, on this occasion the Board was confirmed by show of hands of members present at the meeting, rather than by mail. Two Board Members stepped down: Gert Fortgens served as our diligent and efficient Secretary for two terms, having joined the Board at the Bordeaux Conference in 2012; Charles Snyers d'Attenhoven joined at the Puebla Conference in 2009, serving as Vice-President for two terms and then taking on the role of President in 2015 – in addition, Charles served as Website Administrator throughout his time as Board Member, and he has been instrumental in revamping and maintaining our website since 2012 and overseeing our membership management system (CiviCRM). Gert and Charles will be missed and we are extremely grateful for all they have done for the Society while serving on the Board.

The good news is that three new members have joined the Board: Dirk Giseburt has dived into the deep end and accepted the role of Treasurer; Tim Boland has formed a new Committee and serves as its Chair (see inset next page); and Dan Kostka has joined the Finance Committee. You can read more about our three new Board Members in the Member Profiles on our website. A warm welcome to them, and thank you for stepping up!

The Officers for next three-year term are as follows:

President: Shaun Haddock
Vice-President: Roderick Cameron
Secretary: Jim Hitz
Treasurer: Dirk Giseburt

2018 IOS Service Awards

At the Gala Dinner during the 2018 Conference, as is tradition, IOS Service Awards were presented to persons who have devoted significant efforts to the genus *Quercus* and/or the advancement of the goals of the IOS. The Lifetime Service Award is for individuals retired from professional life and the Special Service Award to those who are not. These were the recipients of the 2018 Awards. A full account of the Awards ceremony, including a description of the services that merited each Award, can be found on the IOS website.

Special Service Award
Andrew Hipp (USA)
David Richardson (USA)
Mike Meléndrez (USA)
Charles Snyers d'Attenhoven (Belgium)

Lifetime Service Award
James Harris (UK)

The IOS Service Awards consisted of plaques made from 'Pathfinder', the last know trail-marker oak in Illinois © Andrew Hipp

The minutes of the Meeting of Members have been posted on the website (https://bit.ly/2N6Vf63) and you are encouraged to read them.

Finally, many thanks to all members who renewed their membership this year. If your membership expired at the end of 2018, please renew as soon as possible. You can renew online by logging into the IOS website and clicking on "Renewal" in the Member Menu. If you run into difficulties, contact Secretary Jim Hitz by writing to membership@internationaloaksociety.org.

FROM THE PRESIDENT:

Reflections on the Atlantic

by Shaun Haddock

The group of enthusiasts who coalesced to become the International Oak Society formed an interim Board of Directors by the time of the first Conference at The Morton Arboretum in Illinois in 1994. This Board consisted of four U.S.A. residents and one from the UK. That first Conference had 35 participants, 6 from the UK, 1 each from Romania and Turkey, and the remaining 27 from the States. Since those early days, the membership has of course grown, but even today our membership in the U.S.A. still slightly outnumbers all those in the rest of the world added together. The Society first ventured a Conference outside the U.S.A. in 2003 (in Winchester, England), and since then in Puebla, Mexico, in 2009 and in Bordeaux, France, in 2012.

So where am I heading with all these statistics? Well, I am both proud and honored to have been elected IOS President at the 2018 Conference in California, but at the same time, if you will forgive me for saying so, there is something rather odd about this. I am resident in France, and despite our U.S.A. bias in membership, since 2003 we have not had a President resident in that country. Perhaps there is good reason for this; perhaps we Europeans are (relatively!) creatures of leisure, and in North America you all work too damned hard! But personally, I would very much like to see this imbalance redressed, so I am glad to be able to report that I can at last sense those Atlantic currents starting to eddy into reverse. Our previous Board had seven members, only two of which resided in the U.S.A.; now we have eight, with only two residing in Europe. A sea-change indeed! Our excellent Vice-President and webmaster, Roderick Cameron, who works ceaselessly on behalf of the Society, is resident west of "the Pond" in Uruguay, and with our new Board we now also have a wide pool of US talent for the future. After me, it seems highly likely that someone from the Americas will pick up the cudgel (or rather, the gavel – the President's "badge of office" is a charming wooden gavel, the head in the shape of an acorn, which was unfortunately unavailable at last year's handover: it is now safely here in France).

If I may continue the discussion on a similar tack, I find myself perplexed as to what we can do to encourage more participation amongst our U.S.A. membership. Although our Conferences there are always well attended, we have found it very difficult to attract members to stand-alone Tours or Oak Open Days in North America (thus please make a note "Boston and Martha's Vineyard Tour, September 2020", in your diaries). Our IOS "founding fathers" foresaw the forming of Chapters, an idea which subsequently fell by the wayside but is perhaps worth pursuing. Although there has never been an official Chapter in the UK, events there are always well attended, more particularly by a core of "the usual suspects", a sort of pseudo-chapter. If being locked into a date far in advance is what inhibits our North American supporters, then would the formation of "micro-chapters" who can organize an Oak Open Day at short notice amongst friends but throw it open to others via the IOS website (and perhaps in addition via an optional e-mail group) be a way to bring members together? Ideas welcome, please.

My apologies to "the rest of the world" if I have concentrated unduly on the Western Hemisphere. Your thoughts and ideas are most welcome also: we, the Board, are here for all.

The IOS Research & Conservation Committee

The establishment of this Committee is in response to IOS members' clear mandate to have the Society be more proactive in oak conservation. The primary objective of the Committee is the development and management of a conservation research fund to support activities and actions that conserve oaks now and into the future.

The Committee and its success is informed by IOS members and their insights on what we believe are the most pressing issues a conservation fund could support.

The Committee is preparing a survey for our members to further define the mission, goals, and metrics of success for the conservation research fund. With the results of the survey, we will be able to focus the fund on supporting those projects that most closely align with the vision and conservation goals of the IOS members.

Keep an eye out for the survey link in an upcoming newsletter and social media posts!

The current Committee members are Murphy Westwood, Mark and Jolly Krautmann, and Charles Snyers. The Committee is chaired by IOS Board Member, Tim Boland.

Points of Contact

Submissions for the Newsletter
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