



*An Asian Woodland
in the
Valley of the Moon*

The Quarryhill Quarterly

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Magnolias Captured in Ice

William McNamara, Executive Director

In early April I was in China for two weeks of field-work on magnolias with Dr. Zhang Shouzhou of the Shenzhen FairyLake Botanical Garden, Dr. Wang Yaling of the Xian Botanical Garden, and Andy Hill, Curator of the David C. Lam Asian Garden at the University of British Columbia Botanical Garden. We traveled a great deal, covering much territory

in western and northern Sichuan. A typical day began early with a few hours' drive to a new location followed by several hours of hiking, often until dark, and then a long drive to a hotel, usually arriving at 10 or 11 in the evening. Winter was slow to end this year in China, so rain, mud, snow, and ice were daily occurrences. Some of the magnolias we found had half-opened flowers frozen in ice.

With information from herbarium specimens and the help of local people, we managed to locate several magnolia species in the Yulania section and numerous individuals of some species, including *Magnolia dawsoniana*, *Magnolia sargentiana*, and *Magnolia sprengeri*. We also found a significant population of one magnolia species in the Oyama section, the highly endangered *Magnolia wilsonii*. We took new specimens and marked their locations with a GPS so that we can return at a later date to their precise locations for seed. Most of the trees, however, required difficult hikes to reach, up steep mountains, cutting through bamboo, roses, and other shrubs and vines. The lack of trees lower down is due to their value as medicine, which usually results in their demise. Several of the magnolias we saw had most of their lower bark stripped off. Despite our travails, we spotted many magnolias; their large white or pink flowers are

beacons in the verdant Chinese wilderness. Our GPS coordinates will help us locate them this fall when we can collect their seed, after the plants, long out of flower, have receded back into anonymity among the dense vegetation, nearly impossible to spot.



Frozen *Magnolia sprengeri* flower in northeastern Sichuan

While in China, I also had meetings at Sichuan University with Professor Tang Ya to begin our three-year conservation project in Sichuan. I made a preliminary visit to Qing Cheng Shan, one of the conservation sites to be studied. This site is at a critical juncture, as the sacred mountain sustained significant damage from the devastating May 2008 earthquake, and there is currently a massive effort to rebuild, with hopes for an influx of tourists.

On route to Sichuan, I stopped in Beijing to meet with Dr. Zhao Shiwei, the Deputy Director of Beijing Botanical Garden. Despite our enormous differences in size and visitation, we both agreed that our gardens should establish a close relationship and work together to further our conservation efforts. The Beijing Botanical Garden has about 4 million visitors a year, about 500 employees, and a budget of \$15 million, four-fifths of which comes from the government and the rest from entrance fees, events, weddings, gift shops, restaurants, and a hotel.

Upon my return, I stopped in Taicang, near Shanghai, to meet with Mr. Shen Meilin,

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Magnolias Captured in Ice *Continued from page 1*

the Director of the Taicang Agricultural Commission, to thank him for their generous donation to Quarryhill's Chinese Heritage Rose Garden. I toured the newly built En Tian Rose Park, located within the Modern Agriculture district of Taicang. The Rose Garden is dedicated to the memory of Ms. Jiang Entian (1908-1975), mother of Quarryhill member and supporter Dean Chen.

Ms. Jiang Entian, considered to be China's greatest modern rosarian, contributed enormously to rose history research, the development of new varieties, and the cultivation and promotion of roses in Chinese gardens. Mr. Shen and I have agreed to collaborate in establishing significant collections of Chinese species roses at our respective locations. We are currently vegetatively propagating several of our Chinese rose species for their rose garden and are working on plans to collect species not yet in our collection, to be made available for research and display.

Bark of *Magnolia sargentiana* stripped for its medicinal value.



Welcome Christine!

Quarryhill gained a vital staff member in February. Christine Walker, our new development officer and administrator, will work with us to seek grants, manage our membership base, coordinate garden events, and assist our Board in developing marketing strategies. Christine comes to us with work experience in marketing and volunteer coordination from the Asian Art Museum of San Francisco. Furthermore,

she has been employed as a buyer and marketing manager for two local wholesale nurseries. Having lived in Japan for a year, Christine gained an appreciation for both Asian culture and art. Quarryhill is a fitting destination for Christine, as she has the opportunity to combine her professional abilities with her love of plants and people. We look forward to working with her!

Visitor & Education Center

The finishing touches are being placed on the new Quarryhill Visitor & Education Center. Our sincere thanks go to Board member Harvey Shein for his commitment to this handsome project that will soon house classes for our fourth and fifth grade field trip students and anchor the visitor experience. When construction draws to a close, maps, photographs, and interpretive displays will be installed in the center over the course of several months. We are actively seeking grant and donor support to equip the building with everything from a mounted LCD projector to a cash register, and staffing it with a full-time receptionist. These resources will all serve to orient visitors and ensure that they come away with a full picture of what Quarryhill has accomplished and is continuing to undertake in its efforts to conserve the flora of Asia.



Acer pentaphyllum Conservation Grove

William McNamara, Executive Director



Baldo Larios Moya



Acer pentaphyllum



Accession tag

We recently completed a major step in our efforts to conserve the Chinese maple *Acer pentaphyllum*. Two hundred trees of these rare and endangered maples were planted in the southeast corner of Quarryhill on June 21st (the summer solstice) and 22nd. The summer solstice was not our target date, but continual delays, caused mostly by abundant spring rain this year, postponed what was to be an early spring planting. This propitious planting date will no doubt add to the mystique of this important *ex situ* conservation project. The trees were grown from seed collected off 19 individual plants in three small, isolated, naturally occurring populations in 2005 and 2006. By planting a large number of trees from numerous individuals, we should have sufficient representation of the species' gene pool to produce large quantities of viable seed for seed banking and other conservation efforts.

Acer pentaphyllum occurs only along the Yalong River and its tributaries in Tibetan areas of western Sichuan. Of the approximately 200 trees left in the wild, most, if not all, will soon be submerged under water behind several new dams under construction along the Yalong River for the production of hydroelectric power. Subsistence farmers that live near the maples have long used the trees as a source of fuel for cooking and heating. Introduced by Joseph Rock in 1929 and later by T. T. Yu in 1937, the only trees that survived in cultivation were a couple of individuals at the San Francisco

Botanical Garden at Strybing Arboretum. It is believed that all *Acer pentaphyllum* in cultivation, other than the recent introductions by Quarryhill, are derived from the trees at Strybing.

Funding for this important conservation project was generously provided by Thomas P. Rohlen and Thomas R. Anderson. Consisting of far more than collecting the seed in the wild and planting the trees, we installed 1/3 mile of road, a 5,000 gallon water tank and booster pump, a three-inch water line and a conduit from one of our wells, and a drip irrigation system with pressure compensating emitters. The young trees average 2 - 3 feet tall and were heavily mulched after planting. Due to the late planting, they were also caged and covered with shade cloth. Many thanks to Garden Supervisor Sal Calderon, Gardeners Baldo Larios Moya, Amado Tinoco, Jose Martinez-Ortega, Guillermo Calderon, Nursery Manager Corey Barnes, Head of Horticulture Howard Higson, Development Officer Christine Walker, and contractor Manuel Larios and his crew for their dedicated work in making this project possible. We also thank volunteers Liz Landreth, Art Acosta, Carol Brant, Liz Barnes, Millicent Meade, and Stephanie Corriea for all their help with the planting.

The rare and endangered Chinese maple *Acer pentaphyllum* may be almost extinct in the wild, but it is clearly thriving at Quarryhill Botanical Garden.

Save the Date

2nd Annual Fall Garden Tour

Wednesday September 15, 2010. Buses will depart from Quarryhill at 10, 11, 1, and 2.
Refreshments will be provided. \$100 for members, \$150 Non-members. Look for your invitation in the mail.

Barbara Barton Remembered



The Quarryhill community has suffered a great loss in the passing of Barbara Barton, the garden's first volunteer tour docent and one of its most ardent admirers and supporters. Barbara left us on May 11 after a many-year struggle with cancer. Barbara was a spirited presence at the garden during the early years of Quarryhill's development, and served on the Quarryhill board

beginning just after founder Jane Davenport Jansen's death in 2001. She was instrumental in recruiting and introducing new volunteers to the garden and helped in their training for many years. From working as a librarian in San Francisco, Barbara turned to her love of plants and horticulture by installing gardens for clients, later plying her trade in Sonoma County where she also developed a keen interest in rare and unusual plants, and worked closely with Western Hills Nursery in Occidental. Barbara was also an accomplished writer, publishing two successful works including the award-winning *Gardening by Mail*, initially self-published and later transferred to Houghton Mifflin for a total of 6 editions, and *Perennials* for Sunset Books. She also was a founder of the Marshall Olbrich Garden Club and a long-time member of the California Horticultural Society.

Barbara will be greatly missed and fondly remembered by all Quarryhill staff and volunteers who remember her exuberant and enthusiastic love of the garden, plants, the SF Giants, and life in general.

Quarryhill Volunteers

Quarryhill couldn't operate without its dedicated band of volunteers, who assist in the nursery and at special events, act as docents leading garden and education tours, and even lend a hand in the office. It's a small but growing group of great folks. Consider coming to join our volunteers in one of these areas!

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|-----------------------------|------------------------|
| Art Acosta | Diane Jacobson |
| Carol Anderson | Diane Johnson |
| Kathleen Aspenns | Ames Kanemoto |
| Liz Barnes | Linda King |
| Chris & Scott Barnes | Candace Krout |
| Cheryl Belitsky | Liz Landreth |
| Mary Boehm | Lou Leal |
| Carol Brant | Josie Lee |
| Oralia Briggs | Jenny Maybee |
| Pat Brownlie | Rosemary McCreary |
| Alan Brubaker | Joyce McNamara |
| Nancy Bruce | Millicent Meade |
| Kathleen Bunte | Dan Milhollin |
| Michele Burton | Dorothy Nickolai |
| Nancy Coddling | Jefra Parlett |
| Gay Collins | Ann Peden |
| Stephanie Correia | Gaius & Alan Robinson |
| Barbara Daly | Tim Roveda |
| Marie Duca | Janet Sanchez |
| Patricia & Steve Edelstein | Karen Simmons |
| Jim Ethridge | Shaun Simmons |
| Jeanette Evans | Marilyn & Robert Smith |
| Susan Fletcher | Charmaine Starks |
| Lisa Floyd | Cathy Stevenson |
| Christie Flum | Stephanie Sugars |
| Sherry & Michael Franchetti | Adie Varin |
| Peter Fritsch | Domitila Velazquez |
| Reggie Gasaway | Gerrie Walker |
| Helen Giss | Nina Wang |
| J. Claire Green | Gail West |
| Yvonne Hall | Cameron W. Wolfe, Jr. |
| Steven Hightower | Tina Yesson |

Music in the Garden

2010 SUMMER SERIES

Saturday, July 17
Cool, smooth Jazz with **EZ Kewl**

Saturday, August 21
Bach to Broadway on Brass with **Bright Brass Quintet**

Saturday, September 18
Classic Rock with the **Phat Barbees**

Bring your family, bring a picnic, and enjoy a relaxing summer evening in your world-class botanical garden. Proceeds will benefit the conservation of rare and endangered Asian plant species.

See Events Calendar for registration details. No-host bar will be available. Contact us for more information at 707-996-3166, info@quarryhillbg.org, or visit our web site at www.quarryhillbg.org

Our Scientific Link with the California Academy of Sciences

Dr. Peter W. Fritsch, Curator, Department of Botany, California Academy of Sciences

In order to fulfill part of its mission to study the flora of Asia, Quarryhill Botanical Garden has maintained strong links with several scientific institutions. One of these, the Bay Area's own California Academy of Sciences, has contributed two consecutively serving scientific trustees to Quarryhill's board, Dr. Bruce Bartholomew and myself. Both of us hail from the Academy's Department of Botany. Dr. Bartholomew, who recently retired as the department's Collections Manager, but has remained on as Research Associate, has conducted over 25 expeditions across China to collect and study its flora. He is also one of the main editors of, and a contributor to, the monumental Flora of China Project based at Missouri Botanical Garden, which is nearing completion of its 24-year effort to document the over 31,500 species of China's vascular plants. Bill McNamara is an Associate Member of the Editorial Committee of the Flora of China project and a Field Associate of the California Academy of Sciences.

As Collections Manager, Dr. Bartholomew was responsible for the proper curation of the Academy's over 1.8 million plant museum specimens. These are collections taken from the field, pressed flat, dried, mounted on paper with a label describing where the plant was collected and the way it looked when it was alive, and stored in metal cabinets for long-term preservation and study. The Academy's nearly 150,000 botanical specimens from eastern Asia include many important historical collections, such as those of E. H. Wilson, Joseph Rock, and important Chinese collectors, as well as numerous recent collections, including those of Dr. Bartholomew's. These specimens often serve as vouchers for seeds and cuttings intended for cultivation in botanical gardens, and in fact most of such vouchers from our own Bill McNamara's collecting trips are deposited at the Academy (see image). Thus, although these plants were often collected in remote areas of Asia, scientists can study them even if they cannot examine them directly in the field or in ex situ cultivation by requesting a loan of vouchers from the Academy. Although not all features of the plant are preserved in the dried state (for example, flower color and scent), many critical aspects can be used for all sorts of comparative and other studies by researchers around the world.

In 1998, Dr. Bartholomew and I embarked on a long-term biodiversity survey and analysis of the Gaoligong Mountains of far western Yunnan Province, China, adjacent to the border with Burma. This project, funded primarily by the National Science Foundation and National Geographic Society, focuses on southern parts of the same large mountainous region, the Hengduan Mountains, where Bill McNamara and colleagues have conducted much of their field collecting for Quarryhill. The project made over 150,000 dried collections of vascular plants over the course of nine years, which are now deposited in several major museums, in addition to the Academy, that specialize in Asian botany, i.e., those at Harvard, Edinburgh, and Kunming (in Yunnan). Seeds were also collected and resulting plants are currently making their way to botanical

gardens around the world. The project is currently has funding from the MacArthur Foundation to complete specimen identifications and to analyze patterns of biodiversity in the region that can be used for conservation management in this biodiversity hotspot.

In the process of studying the flora of the Gaoligong, many species new to science have been described by taxonomic experts, and many new records to the flora of China have been added. For example, my colleagues and I have discovered, with molecular data, that plants of the genus *Gaultheria* with long hairs at the ends of the marginal leaf teeth, all considered part of a single species, actually represent up to seven species, some of which have been described as varieties of this or other species, and some of which are as yet completely un-described. This example of "cryptic" species suggests that the plant diversity in the region is even higher than is currently believed. In fact, whether cryptic or not, new species will continue to be discovered through additional study of the flora from projects such as those conducted by the Academy and Quarryhill.



Voucher specimen of the rare *Acer pentaphyllum* collected by Kirkham, Ruddy, Flanagan, and McNamara in 2001 in Western Sichuan.

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Advancing the Conservation, Study, and Cultivation of the Flora of Asia

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Events Calendar

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www.quarryhillbg.org

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| June | 19 | Third Saturday Docent Tour | Members: Free Non Members: \$10 |
| July | 17 | Music in the Garden <i>EZ Kew</i> | Members: \$15/event, \$40/series Non Members: \$20/event, \$55/series |
| | 17 | Third Saturday Docent Tour | Members: Free Non Members: \$10 |
| August | 21 | Music in the Garden <i>Bright Brass Quintet</i> | Members: \$15/event, \$40/series Non Members: \$20/event, \$55/series |
| | 21 | Third Saturday Docent Tour | Members: Free Non Members: \$10 |
| September | 4 | Medicinal Herb Walk | Members: \$10 Non Members: \$15 |
| | 15 | Fall Garden Tour | Members: \$100 Non Members: \$150 |
| | 18 | Third Saturday Docent Tour | Members: Free Non Members: \$10 |
| | 18 | Music in the Garden <i>Phat Barbees</i> | Members: \$15/event, \$40/series Non Members: \$20/event, \$55/series |
| | 23 | Full Moon Walk | Members: \$20 Non Members: \$25 |
| October | 16 | Third Saturday Docent Tour | Members: Free Non Members: \$10 |