

## **THE CHANNEL ISLANDS: SPECIAL PLACES IN THE GARDEN'S HISTORY**

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The Northern Channel Islands are a familiar sight for the residents of the Santa Barbara area. Situated just off our coast, the islands of San Miguel, Santa Rosa, Santa Cruz, and Anacapa are often clearly visible from the mainland. For more than a century, the plants of the Channel Islands have captured the interest and imagination of botanists and horticulturists from around the world. The Garden has played an important role in making the public aware of the beauty, utility, horticultural requirements, and scientific characteristics of island plants, many of which are widely used and admired by gardeners today.

### **Island Studies at the Garden from the 1920s until the 1940s**

When the Garden was officially founded in March 1926, it was part of the Santa Barbara Museum of Natural History. As we can tie our very beginnings to the Museum, we can tie our island legacy to Ralph Hoffmann. Hoffmann, who was the Museum's director from 1925 to 1932, made dozens of plant collecting trips to the Channel Islands. He was often accompanied by other botanists and undoubtedly influenced the Garden's new staff. A meticulous collector who was unafraid of steep cliffs, Hoffmann made many exciting discoveries on the islands. His herbarium specimens (many of which are now in the Garden's herbarium), unpublished flora of the Northern Channel Islands, and published papers on island plants have contributed significantly to our current knowledge of the island flora. Among the plants named in his honor are Hoffmann's rock cress (*Arabis hoffmannii*), known only from Santa Rosa and Santa Cruz islands, and Hoffmann's snake root (*Sanicula hoffmannii*), found on the islands and in coastal areas on the mainland. Ralph Hoffmann would have undoubtedly made many more discoveries, but tragically fell to his death on San Miguel Island in July 1932.

From its inception, the Garden has shown an institution-wide interest in the plants found on our local islands. Santa Barbara County's official tree and the Garden's logo, the Santa Cruz Island ironwood (*Lyonothamnus floribundus* subsp. *aspleniifolius*), is native only to Santa Rosa, Santa Cruz, and San Clemente islands. Because of its striking appearance, the island ironwood was one of the first plants brought from the islands to the mainland in the 1890s and it was planted in the Garden as early as 1928. A number of other island species were also among the first plants displayed on our grounds and others later became the subject of intensive study by Garden horticulturists and botanists.

An island section was incorporated into our displays from the very beginning of the Garden. By 1928, 75 species native to the islands had been planted and Garden superintendent Robert Canterbury made two collecting trips to the islands during that year. Collecting trips to the islands continued in the following years. For example, Maunsell van Rensselaer, Garden director from 1936 to 1950, made several trips to Santa Cruz Island in 1936.

Island buckwheats, especially the Santa Cruz Island buckwheat (*Eriogonum arborescens*) and St. Catherine's lace (*Eriogonum giganteum* subsp. *giganteum*) were featured along a buckwheat trail located on the east side of the meadow. Garden staff soon learned that island plants could hybridize and further, that they could be very susceptible to disease if they received too much water. Several volunteer plants representing a natural hybrid between the two island buckwheats listed above were seen in the spring of 1935. This newly-discovered hybrid was named *Eriogonum blissianum* in honor of Garden founder Anna Dorinda Blaksley Bliss and her daughter Mrs. Robert Woods Bliss in 1938. Unfortunately, downy mildew was found on *Eriogonum blissianum* in the spring of 1939 and could not be controlled. In order to prevent the spread of the mildew, all plants of *E. blissianum* were removed in 1940 and 1941, along with all of the St. Catherine's lace and 80% of the Santa Cruz Island buckwheats. Their removal caused a significant gap in the display and the island buckwheats were replanted in 1944 to replace what had reportedly become "one of the Garden's most attractive midsummer features".

When Elmer J. Bissell, the Garden's first official director, passed away in January 1940, a fresh wreath of silver lace (*Constancea nevinii*) was maintained at the Memorial Boulder (on the west side of the lower meadow) for a month in his honor. Silver lace is native only to Santa Barbara, Santa Catalina, and San Clemente islands and was reportedly one of Dr. Bissell's most cherished plants.

### **Island Studies at the Garden from the 1950s until the 1980s**

Island collecting trips were largely curtailed during World War II, but the Garden's focus on the plant life of the Channel Islands increased dramatically in the 1950s. Under Garden Director Katherine Muller, grounds superintendent E.R. "Jim" Blakley began the task of documenting the flora of each island in 1958. A generous bequest from the estate of Kathleen Burke Hale in the early 1960s made it possible for the Garden's Board of Trustees to establish a research program, hire a taxonomic botanist, and intensify the study of island plants. After Martin Piehl was hired as taxonomist in 1962, he and Jim Blakley continued to make extensive collections on the islands.

Ralph Philbrick, who replaced Martin Piehl in 1964, also emphasized island plants in his studies. Dr. Philbrick made numerous collecting trips to the islands off southern California and Baja California, often accompanied by Garden research associate Michael Benedict. The Garden sponsored the first symposium on the biology of the California Islands in 1965 and published the proceedings of that meeting in 1967. Ralph Philbrick edited the symposium volume and then published a paper documenting the flora of Santa Barbara Island in 1972. In 1977, Philbrick and Bob Haller wrote a book chapter on the vegetation of the Channel Islands. In 1978, Philbrick published a popular article on the plants of Santa Cruz Island.

A few years after he replaced Katherine Muller as the Garden's director in 1974, Dr. Philbrick expanded the Garden's research program to include ecological and resource management studies as well as floristic and taxonomic research. In 1978, the Garden and the Santa Barbara Museum of Natural History joined forces in a multidisciplinary study of the natural resources of the Channel Islands National Monument, which then included San Miguel, Anacapa, and Santa Barbara islands. During the study, Garden staff documented the vegetation and flora of the Monument islands, produced maps of plant communities and rare plant distributions for each island, described historical changes in the flora, established permanent transects for long-term vegetation monitoring, and made management recommendations based on their findings. Mary Carroll (then Mary Hochberg), Steve Junak, and Steven Timbrook, who were all hired by the Garden in the 1970s, assisted Ralph Philbrick with these island studies.

In 1979, the Garden was hired by The Nature Conservancy to map the rare plants of Santa Cruz Island, establish vegetation transects to study historical changes, study the effects of feral sheep on the island's vegetation, and formulate management recommendations.

Overall, Garden staff and research associates wrote or co-authored 17 publications on the plants of the California Islands during the 1980s. Joint publications involving 3 or more staff members included: reports on the natural resources of San Miguel, Santa Cruz, Anacapa, and Santa Barbara islands, a checklist of the plants of Channel Islands National Park, a report on vegetation transect measurements made on Santa Barbara Island over a 4-year period, and papers on the plant communities and historical changes in the vegetation of Anacapa Island.

During the 1980s, Michael Benedict co-authored a description of a new species of live-forever (*Dudleya pachyphytum*) from Cedros Island. Mary Carroll published a paper on comparative studies of island plants and their mainland relatives, concentrating on the ecological factors affecting leaf sizes. Steve Junak co-authored a paper on natural hybridization between two species of island chicory on San Nicolas Island, and checklists for San Nicolas, Todos Santos, and San Martin islands. Ralph Philbrick wrote a paper on the distribution and evolution of endemic island plants, described a new subspecies of island tree mallow (*Lavatera assurgentiflora* subsp. *glabra*), and documented natural hybridization between two species of island chicory on San Miguel Island. Nancy Vivrette published her studies on the distribution of coastal plant species with respect to salt levels in the soil on Santa Cruz Island. The late 1970s and 1980s were a very productive time at the Garden, marked by exciting multidisciplinary and cooperative studies.

### **Island Studies at the Garden from the 1990s until the present**

The Garden's institutional focus on studying and helping to protect rare plants was expanded from the islands to the California mainland in the 1990s, when the Garden became a member of the Center for Plant Conservation (CPC). The CPC is a national organization dedicated to conserving and restoring rare native plants of the United States. Our current efforts in plant conservation include 1) the acquisition and maintenance of seeds and plants of rare and endangered species for research and recovery activities, 2) plant inventories in the Central Coast region of California and on the California Islands, 3) research on the life history and ecological requirements of endangered species, and 4) cooperative investigations with government agencies, land managers, and other conservation organizations to obtain accurate plant conservation information. All of these activities are directed at developing effective monitoring, management, and restoration plans for some of California's endangered plants.

The Garden currently maintains seed collections of 13 rare plant species from the Channel Islands in our state-of-the-art facility. The life history and ecological requirements of several rare plants from the islands, including island jepsonia, Santa Cruz Island live forever, Santa Cruz Island bush mallow, and Hoffmann's rock cress, have been studied. Collaborating agencies and organizations on these projects have included Island Conservation, the National Park Service, the U.S. Department of Defense, the U.S. Geological Survey's Biological Research Division, the U.S. Fish and Wildlife Service, and California Department of Fish and Game.

Garden staff and volunteers have continued to document the flora of the islands of southern and Baja California. Revised plant checklists for three Baja California islands (San Benito, Natividad, and Guadalupe) were published in 2000 and 2005, a flora of Santa Cruz Island was published in 2005, and a flora of San Nicolas Island was published in 2008.

Populations of many rare plants on the islands have increased dramatically in recent years, especially as a result of feral animal removal programs. Some of the most dramatic changes have occurred on Guadalupe Island in Baja California, where Garden staff members have contributed to rare plant conservation efforts by mapping their locations, assisting in the planning and construction of fenced exclosures to protect some populations, and monitoring vegetation transects to document long-term changes.

The horticultural requirements of a number of island plants have been intensively studied and evaluated by Garden staff. Eight cultivars of island taxa have been introduced into the nursery trade as a result of these trials. These have included selections of *Ceanothus*, *Eriophyllum*, *Galvezia*, *Salvia*, and *Verbena* from the California Islands during the last decade.

Onsite, the Garden's island and mainland research efforts are supported by an active horticulture program, a library with more than 15,000 volumes, a

herbarium with more than 150,000 specimens, our recently upgraded seed bank, and extensive computerized databases. The Garden's herbarium, now the official depository for specimens from Channel Islands National Park and several other federal agencies, has one of the most complete collections of vascular plants and lichens from the California Channel Islands anywhere in the world.