

# FREMONTIA

JOURNAL OF THE CALIFORNIA NATIVE PLANT SOCIETY



SPECIAL ISSUE:  
Islands of the Californias



California Native Plant Society  
2707 K Street, Suite 1  
Sacramento, CA 95816-5130

Nonprofit Org.  
U.S. Postage  
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**Alfonso Aguirre-Muñoz** is an oceanographer with an interdisciplinary Ph.D. in Regional Studies and Sustainable Development. He has forty years of professional trajectory in the conservation and sustainable development of coastal, marine and island ecosystems and was the former Director General of GEI (2002 to 2017).

**Matt Guilliams** is the Tucker Plant Systematist at the Santa Barbara Botanic Garden. A native Californian, Matt has worked with the plants of the state since 1998. At the Garden he focuses on biodiversity of the Central Coast and Channel Islands, as well as on studies of the Boraginaceae and Montiaceae.

**Steve Junak** has been exploring the California Islands and studying their plants for almost 50 years. He worked as a botanist at the Santa Barbara Botanic Garden for 37 years, has retired from that job, and is currently a Research Associate there. He co-authored the Flora of Santa Cruz Island (1995), wrote the Flora of San Nicolas Island (2008), and is currently working with several other authors on a flora for Catalina Island.

**Denise Knapp** has a Ph.D. in Ecology from the University of California, Santa Barbara and an M.A. degree in Geography from the University of California, Los Angeles. She has worked on vegetation, fire ecology, invasive species, rare plant, and habitat restoration projects; her current focus is plant-insect interactions, especially pollinators. She has worked as an ecologist in California, particularly the Channel Islands, for two decades.

**John Knapp's** love-affair with the California Islands started when, at two years old, his father would leave him to play on Tin Can Beach (now Bolsa Chica) while he went for a run, and John would look across the Catalina Channel at the mountain in the sea wondering what awaited him out there. What he found was great beauty and the need for dramatic conservation intervention, and after working on the islands for the past two decades he now serves as the California Islands Ecologist with The Nature Conservancy. His goal is to develop strategies, methodologies, and tools to more effectively and efficiently address the conservation challenges facing the islands, which is best summarized by Willis Linn Jepson who wrote in 1907, "*In the long run protection must come by the devices and resources of united effort, high intelligence, and careful handling.*"

**David Merzurkewicz** is a Wildlife Biologist for Channel Islands National Park focused on seabirds and habitat restoration. He has been working on the California Islands for the past decade. The scope of his work within the Park encompasses ecological restoration for seabird nesting habitat and associated plant communities as well as spearheading the Park's Inventory and Monitoring program for seabirds.

**Kathryn McEachern** is interested in exploring how changes in the environment affect populations of rare and endangered plants. She is a Research Plant Ecologist with the U.S. Geological Survey - Western Ecological Research Center's Channel Islands Field Station, in Ventura, California. She has been studying the distribution, abundance and demography of rare plants on the northern Channel Islands for nearly 20 years, providing research to inform and test restoration and recovery actions.

**Bryan Munson** is the Botany program manager for Naval Base Coronado, which includes San Clemente Island and 7 properties in San Diego County. Bryan has worked in environmental compliance for the Navy for 10 years. Bryan graduated from the University of Wisconsin-Madison with a B.S. in Biology and a minor in Environmental Studies.

**Tom Oberbauer** has had a lifelong interest in islands and has had the opportunity to visit most of the California and Baja California Pacific Coast Islands as well as many in the Sea of Cortez. He has written a number of articles describing the botany of the islands including for *Fremontia*.

**Federico Méndez-Sánchez** is an oceanographer with a MSc in Environmental Management from The University of Auckland, New Zealand. He also has twelve years of experience working on conservation, restoration, and sustainable development of the islands and has been the Director General of GEI since March 2017.

**John Randall** is a Lead Scientist for The Nature Conservancy's California Chapter. He supervises a team of four other scientists working to conserve and manage protected areas and corridors with the aim of linking them into a statewide network. His own work is currently focused on the conservation and management of the biodiversity of the Islands of the Californias, and on contributing to an urban conservation program for Greater Los Angeles by assessing the distribution of biodiversity and opportunities for enhancing it across the region.



## EARLY BOTANICAL PERSONALITIES OF THE CHANNEL ISLANDS

Steve Junak

European naturalists began exploring central and southern California in the 1760s, but the history of botanical discovery on the California Islands did not begin until decades later. The first botanical collections were made in 1842 on Santa Catalina Island and not until the 1860s and 1870s on several other islands. The collective story of these collectors is rich in cultural and natural history.

William Gambel (1821-1849) was the first scientist to collect botanical specimens on the California Islands and the first trained naturalist to spend significant time in California. In addition to plants, he discovered many new birds in the western United States, including Gambel's quail.

As a young man, Gambel had the good fortune to become an apprentice to Thomas Nuttall, one of America's leading naturalists. He spent time in the field with Nuttall, and in 1841, had the opportunity to travel west with a group of trappers to collect scientific specimens for his mentor. On this trip he first described the Gambel oak (*Quercus gambelii*). In 1842 he reached Santa Catalina Island when California was

still Mexican territory. Among Gambel's discoveries on Santa Catalina was the island snapdragon (*Gambelia speciosa*).

Gambel eventually returned to the east coast where he completed his medical training and got married. With a new degree and wife, he planned to begin his medical career. As fate would have it, there was a great need for medical care in California due to the Gold Rush. In 1849, traveling West with a group of settlers, hardship beset the caravan as they traversed the Sierra Nevada in winter. Tragedy struck most of the group, but Gambel survived, finally reaching California again at Rose's Bar on the Yuba River. Soon after, however, Gambel came down with typhoid fever and died in December of 1849.

Since Gambel's trip to Santa Catalina Island, hundreds of individuals have collected herbarium specimens on the California Islands. In this article, some of their stories are told and some of the island plants named for these explorers are highlighted.

### FIRST BOTANICAL EXPLORERS ON THE NORTHERN CHANNEL ISLANDS

In 1870, William G.W. Harford was the first to collect botanical specimens on San Miguel Island. On that trip, he landed on Prince Island, an islet situated in

Above left: Blanche Trask, image courtesy of the University and Jepson Herbaria Archives, University of California, Berkeley, CA. Above right: Lorenzo Yates party collecting on Middle Anacapa, from the Bancroft Library, University of California, Berkeley, CA.

San Miguel's Cuyler Harbor, and discovered the iconic giant coreopsis (*Leptosyne gigantea*). In 1872, Harford made it to Santa Rosa Island and collected the first botanical specimens there as well. Among his discoveries on Santa Rosa was the Northern Island bush poppy (*Dendromecon harfordii*), which was named in his honor.

In 1874, Harford and his friend Albert Kellogg, were, again, the first botanical collectors on Santa Cruz Island. They were able to reach these northern islands with the help of the United States Coast Survey. Unfortunately, sheep were introduced to the islands before any comprehensive botanizing was completed there and little is known about the undisturbed vegetation. Some endemic plants may have been lost.

William G. W. Harford (1825-1911) was a naturalist who specialized in conchology (the scientific study of mollusk shells). He was the Director of the California Academy of Sciences in San Francisco from 1876 to 1886. The genus *Hartfordia*, which is endemic to Baja California, was named in his honor.

Albert Kellogg (1813-1877) was a physician and California's first resident botanist. He arrived in California in the summer of 1849 having traveled west by ship from the east coast. He had hoped to strike it rich as a miner in the gold fields but lack of success forced him to move to San Francisco where he opened a drugstore. In his time there he was one of the seven founders of the California Academy of Sciences.

Kellogg was fascinated by the trees that he saw in California. The first island plant that Kellogg described was the island tree mallow (*Lavatera assurgentiflora*), which had reportedly been collected on Anacapa Island prior to 1854. He also published several other papers describing new plants of the Channel Islands. In addition to his work on the islands, he initiated a detailed study of the giant sequoias and eventually published a manual of the forest trees of the state.

## FIRST BOTANICAL INVENTORIES ON THE NORTHERN CHANNEL ISLANDS

Harford and Kellogg only collected a few specimens from the islands that they visited. It was not until the 1880s that two energetic and competitive field botanists, Edward L. Greene and Townshend S. Brandegee, began to systematically document the plants of the Northern Channel Islands.

Edward Lee Greene (1843-1915) was a deeply religious man who served as an Episcopal deacon and priest in the 1870s, converted to Catholicism in the 1880s, and eventually became a Professor of Botany at the University of California at Berkeley. During the Civil War, he served as a private in the Union Army and collected plants between battles! At six feet tall, he was a fearless, self-sufficient hiker who often walked 20 to 40 miles in a day. He "always went alone, afoot, unarmed, carrying but a portfolio, a notebook, and a dull knife for digging up the roots of plants." (McIntosh 1983).

On many of his journeys, he ventured into little-known regions populated by Native Americans. Once, while plant collecting in an isolated area, he encountered a party of about 100 mounted warriors. Rather than fleeing, he approached the group and challenged two of the riders to a wrestling match—winning one and losing the other.



Santa Cruz ironwood (*Lyonothamnus floribundus* subsp. *aspleniifolius*) on Santa Rosa Island. Photo by Michael Kauffmann

**William Gambel**, in 1842, was the first scientist to collect botanical specimens on the California Islands and the first trained naturalist to spend significant time in California.



*Gambelia speciosa*



*Dudleya greenei*

**Edward Lee Greene** visited Santa Cruz Island in 1886. His research increased the known flora from five taxa to 321, with 20 previously undescribed.



1830

1840

1850

1860

1870

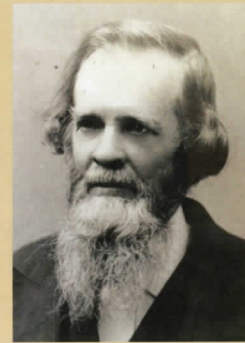


*Harfordia macroptera*



*Dendromecon harfordii*

**William G. W. Harford**, was the first to collect botanical specimens on San Miguel Island in 1870 and in 1872 he explored Santa Rosa Island.



**Albert Kellogg** often collected with his friend William Harford. He was a physician and California's first resident botanist.

Greene visited Santa Cruz Island in July and August of 1886. His research increased the known flora from five taxa to 321, of which more than 20 were previously undescribed. He was the first botanist to collect extensively on the island and this work led to the publication of the first annotated checklist. Much of his time was spent at the main ranch in the island's Central Valley from which he explored much of the island on foot—refusing to accept a saddle horse or guide from the Caire family who owned the island. He often botanized until after dark causing the Caires to fear he had lost his way on the unfamiliar terrain (Jepson, 1927).

After returning to the mainland he took advantage of an opportunity to visit San Miguel Island. On that occasion, the 30+ mile boat trip from Santa Barbara to the island took nine days! Once on the island, Greene spent two weeks thoroughly exploring and documenting 121 plant taxa, including several chaparral species that are now presumed extinct. Insular endemics named for Greene include island rush-rose (*Crocantemum greenei*) and Greene's live-forever (*Dudleya greenei*) of San Miguel, Santa Rosa, Santa Cruz, and Santa Catalina islands, and Greene's tarplant (*Deinandra greeneana* subsp. *greeneana*) of Guadalupe Island.

The first extensive botanical collections on Santa

Rosa Island were made by Townshend S. Brandegee (1843-1925) in June of 1888. After the visit, Brandegee reported about 200 plant taxa.

On Santa Cruz Island in 1888, he also made extensive collections—adding about 80 taxa to the known flora. Brandegee also made important collections on Santa Catalina and San Clemente islands. On the islands of Baja California he described several California Island endemic plants including island tarweed (*Hemizonia clementina*). At least two plants occurring on the Channel Islands have been named for him including *Mimulus brandegeei*.

Trained as an engineer and surveyor, Brandegee was well-known for his travels in the western United States and Mexico. While on these trips, he never missed an opportunity to collect botanical specimens, finding a number of undescribed species in the process. After his excursions to Santa Rosa and Santa Cruz, he gave up engineering altogether and devoted his time to the collection and study of plants. In 1889, Brandegee married botanist Katharine Layne Curran, just after returning from his first trip down the Baja California

Above: Plant photos by Steve Junak. Edward Lee Greene, William G.W. Harford, and Albert Kellogg images courtesy of the Hunt Institute for Botanical Documentation, Carnegie Mellon University, Pittsburgh, PA.



**Townshend S. Brandegee**, in 1888, was the first to extensively collect plants on Santa Rosa Island, including adding 200 taxa to the known flora.

*Salvia brandegeei*



**Blanche Trask** collected extensively on the Southern Channel Islands during the late 1890s and early 1900s.



*Eriodictyon traskiae* subsp. *traskiae*

1880

1890

1900

1910

1920



*Lyonothamnus floribundus* subsp. *aspleniifolius*

**William S. Lyon** made a number of plant collections on Catalina Island and reported 140 native and 11 non-native plant taxa.



*Boecheera hoffmannii*

**Ralph Hoffmann** was the most active botanical explorer on the Channel Islands from the mid-1920s until the early 1930s.



peninsula. For their honeymoon, the newlyweds walked from San Diego to San Francisco collecting plants along the way!

Lorenzo G. Yates (1837-1909) was an English-born dentist, naturalist, horticulturist, and author who moved to Santa Barbara in 1882. He became president of the Santa Barbara Society of Natural History and had a wide variety of interests, including anthropology, botany, conchology, mineralogy, paleontology, and zoology.

Yates was the first to collect herbarium specimens from Anacapa Island in the late 1880s or early 1890s. Uncertainty exists around the date of his first visit because labels on his specimens are dated "about 1893" but photographs document his presence on Middle Anacapa Island in 1889.

### A BOTANIST WHO DIED BEFORE COMPLETING HIS ISLAND INVENTORY

Ralph Hoffmann (1870-1932), ornithologist, educator, and botanist, was Director of the Santa Barbara Museum of Natural History from 1923 until 1932. He was the most active botanical explorer on the Channel Islands from the mid-1920s until the early 1930s.

A meticulous and brazen collector, he tragically fell

to his death on San Miguel Island 1932, while gathering plants on a series of steep cliffs. The flora he was compiling was never completed, however his unpublished checklist and published works contributed significantly to our current knowledge of botanical resources and the spread of invasive non-native plants during that era. Hoffmann's rockcress (*Boecheera hoffmannii*), endemic to Santa Rosa and Santa Cruz islands, and Hoffmann's slender-flowered gilia (*Gilia tenuiflora* subsp. *hoffmannii*), known only from Santa Rosa Island, were named for him.

### FIRST BOTANICAL EXPLORERS ON THE SOUTHERN CHANNEL ISLANDS

Before the year 1900, botanical explorers had reached all of the Southern Channel Islands. As mentioned William Gambel collected plants on Santa Catalina Island in 1842. Santa Barbara Island was explored by James G. Cooper in 1863, and then in 1871 by Albert Kellogg and William Harford. In the spring of 1885, William S. Lyon and Joseph C. Nevin collected plants on San Clemente Island. In 1897, Blanche Trask made

Above: Plant photos by Steve Junak. Townshend S. Brandegee: Library, Academy of Natural Sciences of Drexel University, Philadelphia, PA. Ralph Hoffmann: Library, Santa Barbara Museum of Natural History, Santa Barbara, CA

extensive plant collections on San Nicolas Island.

James G. Cooper (1830-1902) was a physician and field naturalist who visited Santa Barbara Island in 1863 while working as a zoologist for the California Geological Survey. He also explored San Nicolas, Santa Catalina, and San Clemente islands between May and July 1863.

William S. Lyon (1851-1916) was a nurseryman and horticulturist who was born in New York and moved to Los Angeles. He was appointed as head forester of the California State Board of Forestry in 1888. During the summer and fall of 1885, Lyon made a number of plant collections on Santa Catalina Island where he reported 140 native and 11 non-native plant taxa. He recognized the Catalina Island ironwood as a unique tree and sent a specimen to botanist Asa Gray, who named a new genus (*Lyonothamnus*) in his honor. Insular endemic *Phacelia lyonii*, known only from Santa Catalina and San Clemente islands, was also named for him.

Joseph C. Nevin (1835-1913) was a Presbyterian minister, accomplished linguist, and missionary to China. While he was in China in the 1860s and 1870s, he became interested in plants. Arriving in Los Angeles in 1878, he began to collect regional plants. He made significant botanical discoveries on the mainland (including *Berberis nevinii* and *Brickellia nevinii*). Nevin and Lyon discovered several insular endemics on their trip to San Clemente Island including *Astragalus nevinii*, *Constancea nevinii*, and *Gilia nevinii*.

## SANTA CATALINA ISLAND'S RESIDENT BOTANISTS

One of Santa Catalina's well-known residents was Blanche Trask (1865-1916), who lived there from the early 1890s until about 1915. While living much of the year in the town of Avalon, she also had a house at Fisherman's Cove near the Isthmus. In 1909 it was reported that "Sixteen years ago Mrs. Trask came to the island an invalid, today she can out-walk nearly everyone here. Often during the winter she walks from the Isthmus, taking to the trails, and covers the journey of fifteen miles in a little over three hours." (Anonymous. 1909). Her husband, Walter J. Trask, was a promi-



James G. Cooper: Library, Academy of Natural Sciences of Drexel University, Philadelphia, PA

nent attorney in Los Angeles and divorced her in December 1895, after Blanche "deserted" him to live on the island.

Blanche Trask collected extensively on the Southern Channel Islands during the late 1890s and early 1900s. She collected vascular plants, lichens, Native American artifacts, minerals, and other natural history specimens. In the spring of 1897, she was the first to collect botanical specimens on San Nicolas Island. She published notes on the flora of Santa Catalina in 1899 and on the flora of San Clemente in 1904.

Willis Linn Jepson, professor of botany at the University of California at Berkeley, explored Santa Catalina Island with Trask in 1908 and they became friends. Jepson wrote about her in his journal:

*No one knows so much about [Santa] Catalina Island as Mrs. Blanche Trask, who has been here about 17 years... For the island as a whole, its rocks, cliffs and canons, as well as its plants, trees, and shrubs, this woman has a most remarkable love. ... I have never known anyone anywhere who knows the plants individually over such a large area as she does. She seems to know the individual trees and shrubs like old friends and knows whether they have changed in the last ten years and how much. If a *Dendromecon* shrub has disappeared from the flood plain of Swain's Canon, she misses it and finally locates the old stump... Mrs. Trask has lived so long in the open (she has a camp on the south side) that in appearance she does not suggest the woman she is, being bronzed by the desert sun. A heavy head of brown, slightly grey above the temples, good features, a happy smile when she is making some quaint joke, brown eyes (I think)—she is in her curious shepherd-like costume, with the blanket and staff or stock for climbing which she always carries, her short skirt scarcely reaching the knees, the lower part of the leg from the knee down encased in leggings of leather, a tall peaked straw hat with broad brim. The costume would be the wonderment of the Avalonians but that she departs on her trips early in the morning when only a few people are astir and returns in the watches of the night.*

Unfortunately, Trask's botanical specimens were deposited at the California Academy of Sciences and were destroyed during San Francisco's 1906 earthquake and subsequent fire. Her personal herbarium collection was also destroyed in a large fire at Avalon



Blanche Trask and a friend on Santa Catalina Island. Image courtesy of the University and Jepson Herbaria Archives, University of California, Berkeley, CA.

in November 1915, so only duplicate specimens distributed to other institutions can be examined today.

Seven plants restricted to one or more of the Channel Islands have been named in honor of Blanche Trask. They include *Acmispon dendroideus* var. *traskiae* of San Clemente Island, *Astragalus traskiae* of Santa Barbara and San Nicolas islands, *Cercocarpus traskiae* of Santa Catalina Island, *Cryptantha traskiae* of San Nicolas and San Clemente islands, *Dudleya traskiae* of Santa Barbara Island, *Eriodictyon traskiae* subsp. *traskiae* of Santa Catalina Island, and *Mimulus traskiae* of Santa Catalina Island.

In November 1916, Blanche Trask died in northern California. Jepson attended her funeral in San Francisco and wrote:

*"Mrs. Trask was, as Miss Eastwood expressed it, "a wild woman." She had given up all that wealth could afford and the pleasures of a social career to live her life on [Santa] Catalina! If she had died on [Santa] Catalina it would have seemed fitting. But she was buried in a great city with only two or three persons present who had known her and no relatives! It seemed tragic, and as the words of the service went on, my mind left the confines of the undertaking chapel and I saw Mrs. Trask, once again, standing on a high ridge beyond Avalon in the moonlit shadows far in the night in silent worship of the sea and air, completely controlled by love of strange beauty and mysticism. Mrs. Trask botanized ardently on her island. She took long journeys on foot, with a shepherd's staff and a bit of food. She discovered several new species and collected many rarities."*

The other botanist who lived in Avalon was Meryl B. Dunkle (1888-1969), who was the principal of the Santa Catalina Island Schools from 1923 until

1932. Dunkle collected extensively on the California Channel Islands, beginning with specimens taken on Catalina between February 1928 and May 1932. As field botanist for the Los Angeles County Natural History Museum's Channel Islands Biological Survey, he visited the other seven Channel Islands between April 1939 and September 1941.

The combined efforts of the collectors listed above have provided vital information for understanding the botanical resources of the Channel Islands. Their publications and field notes, as well as the herbarium specimens that they collected, have provided us with the baseline data and tools needed to document changes in the natural resources of the islands over time. I appreciate their legacy and their observations on a daily basis!

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