



Newsletter of the **FRIENDS**
OF THE
FARLOW

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L.B. Berard, editor

**Lichens and Bryophytes of
the Boston Harbor Islands**

Scott LaGreca

Harvard University Herbaria

The Farlow Herbarium is currently participating in a two-year overview and assessment of the resources of the Boston Harbor Islands National Recreation Area. This project involves an unprecedented, comprehensive survey of the cultural, historical, and biological resources of the Islands, combining such diverse fields as archeology, sociology, geology, oceanography, toxicology, and biology. The biological research is overseen and funded by the Massachusetts Natural Heritage and Endangered Species Program together with The Island Alliance, a non-profit group that helps manage the islands. Since 2001, Farlow Herbarium botanists have been compiling a list of the bryophytes (liverworts and mosses) and lichens of the Recreation Area's 31 locales. Elisabeth Lay, Douglas Greene, Elizabeth Kneiper, and I comprise the lichenologist contingent; Mary Lincoln and Ray Abair are the bryologists.

Species Diversity on the Islands

To date about 100 species of lichens and 60 species of bryophytes have been recorded from the Recreation Area. Our knowledge of the bryophytes is incomplete. Presently all that we can say definitely about the bryoflora is that the common moss *Ceratodon purpureus* domi-

nates the islands, and liverworts are almost non-existent—only a few species found so far. Because more ground was covered by the lichenologists, most of the examples presented here are lichenological.

Although identification of samples is ongoing, some patterns of species diversity are already clear. Most of the species of lichens, and almost all of the bryophytes, are commonly found in the Greater Boston area. The numbers of species are, on the whole, lower than those recorded for areas of comparable size on the mainland. For example, we have collected 52 lichen species on Peddock's Island (188 acres) compared with 150 species recorded by Phil May on Mt. Wachusett (130 acres) (per. comm.)

Because lichens and mosses are, in general, quite sensitive to air pollution, there may be fewer on the islands due to higher air pollution levels in the Boston area than in other comparable areas. Indeed, the islands farther from Boston seem to have a higher number of species than those closer to the city. For example, Peddock's Island has about twice the lichens on Thompson's Island, which is comparable in size (157 acres) but much closer to Boston.

FOF Annual Meeting
Saturday, November 2, 2002. See page 4.



Photo courtesy of Sherman Morss, Jr.

Doug Greene and Scott LaGreca collecting lichens at The Graves lighthouse in September 2001.

In addition, the Recreation Area's smaller islands have fewer species than larger ones. For example, Green Island (1.7 acres) has only 5 species of lichens, but nearby Calf Island (17 acres) has 17 species. This fits nicely with previous studies of biological diversity on other groups of islands, where more habitats result in greater species diversity. The only exceptions to this rule are large islands in the Recreation Area where the flora is suffering perhaps as a result of either a) proximity to air pollutants from Boston or b) recent development as on Spectacle and Deer Islands.

Effects of Substrate on Species Diversity

The Boston Harbor Islands are drumlins, consisting of glacial till on top of a solid core of sedimentary rocks (e.g., Cambridge argillite; D. FitzGerald, pers. comm.) On the islands of the outer harbor, however, much of the till has been eroded away, leaving extensive rock outcrops.

These two substrates, till and rock, support two different maritime lichen floristic elements: coastal plain and rocky shore, respectively. Coastal plain lichens include species which grow on till (sand/soil) in back-dune habitats, such as *Cladina* spp. and *Cetraria arenaria*. Rocky shore lichens, on the other hand, prefer rocks at or above the high-tide level, the supralittoral zone, where they occur in distinct

belts—much like the algae and invertebrates found on the rocks below them in the eulittoral and sublittoral zones. Of the total lichen species on the islands 20% belong to these two floristic elements. Some, such as *Caloplaca verruculifera*, have not been recorded previously in Massachusetts.

The human introduction of various substrates—e.g. bricks, cement, imported stones—may have actually helped to increase, or at least stabilize, the species diversity in certain areas. For example, the moss *Schistidium apocarpum* and the lichen *Lecanora dispersa* thrive on cement and mortar, and they may not have been present on the islands in the absence of these materials. Similarly, the lichen *Theleocarpon laureri*, which is commonly found on rotting timber in the northeast, grows on abandoned buildings and docks on some Islands.

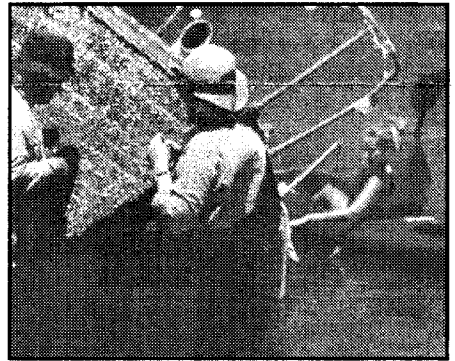


Photo courtesy of Sherman Morss, Jr.

Elisabeth Lay, Elisabeth Kneiper, and friend looking for lichens on an old, capsized boat on Snake Island in June of 2001.

Historical Effects and Long-term Prospects

Almost all the islands have endured human disturbance during some part of their history. Military installations were built on many of them during the Revolutionary, Civil, or World Wars. Others were home to hospitals or boarding schools. In terms of species numbers, this has very likely had a negative impact on the

bryophyte and lichen diversity of the Recreation Area. Unfortunately, there are no historical reports or specimens from the islands, so the recovery of the flora over time cannot be tracked.

On Spectacle Island, however, lichens recorded by Elisabeth Lay, a long-time Island activist and volunteer, in 1990 can be directly compared with those in the current study. She recorded 10 species from Spectacle at that time, just before the island was completely capped with material from Boston's "Big Dig" in the mid-1990s. Our work revealed 11 completely different species—almost all of which were imported on rip-rap from inland localities. This non-native lichen community includes species more typical of inland rocky outcrops, and their future in this maritime habitat is uncertain.

Data from our study will be used to guide management decisions regarding the Recreation Area. For example, our final report will include recommendations of places in need of special protection by the National Park Service, the agency which manages the islands. One such place is the isthmus between the East and Middle Heads on Peddock's Island, where the only population of *Cetraria arenaria* on the islands is located. The northeast rocky coast of the north drumlin of Spectacle Island, where the aforementioned non-native lichen community is found, is another such place. A third is a swale on the northern drumlin of World's End, where a population of *Fissidens exilis*—a rare moss of wet soils—was discovered.

Aside from the obvious conservation value of these sites, we hope that some of them might also be useful for educating the public about lichens and bryophytes.

For more information on the Boston Harbor Islands, see: <http://www.bostonislands.org>.

FOF Website URL

Don't forget our webpage URL is: <http://www.huh.harvard.edu/collections/fof/fof.html>.

News of the Farlow

Scott LaGreca

In July **Douglas Greene, Elizabeth Kneiper, Scott LaGreca, Elisabeth Lay, Mary Lincoln, and Philip May**, together with Donald Pfister's graduate student **David Hewitt**, attended the annual meeting of the American Bryological and Lichenological Society in Connecticut.

On July 26 **Kris Peterson**, Don's graduate student, married **Matias Cafaro**, a mycology graduate student at the University of Kansas, Lawrence. Congratulations, Kris!

In August **Don Pfister**, his graduate students **David Hewitt, Brian Perry, and Kris Peterson**, and post-doc **Karen Hansen** traveled to Oslo, Norway, to attend the eighth annual International Mycological Congress. Don, Karen, and Brian gave talks while Kris presented a poster. The group collected with **Roy Kristiansen** in some of his favorite collecting locations near Fredrikstad in eastern Norway. Afterwards David went on a lichenological excursion in Italy and Karen pursued research in Denmark.

Also in August, a number of researchers visited the Farlow. Cornell undergraduate **Heather Root** and her mentor **Robert Dirig** (Assistant Curator, BH and Curator of Lichens, CUP) consulted with **Scott LaGreca** on lichen identifications. University of Pennsylvania undergraduate **James Lendemmer** also visited for some lichenizing and a brief tour. **Dorothy Allard**, working under contract with the state of Vermont, searched the Farlow for Vermont moss specimens under the guidance of **Mary Lincoln** and with partial funding from the FOF.

This fall **Don Pfister** and **David Hibbett** are organizing a new Mycology Discussion Group primarily to discuss topics among graduate students and post-docs. Please contact Don if you wish to be part of the excitement!



Photo courtesy of Elizabeth Kneiper

Members of the Friends of the Farlow and the Boston Mycological Society at the 2002 Clara Cummings Walk in Concord, Massachusetts.

Clara Cummings Walk 2002 Estabrook Woods

Elizabeth Kneiper

Clear skies and cool breezes that kept insects at bay contributed to the success of the 2002 Clara Cummings Walk held in the Estabrook Woods in Concord, Massachusetts on May 11th. More than twenty FOF members and guests walked along Estabrook Road to the old lime quarries in the woods. Mosses, fungi, lichens, and early spring flowers were identified as we made our way to lunch in the quarry.

After the walk, we all gathered at the home of Mary and Robert Lincoln, where morels collected at the base of a snag in the lime quarry were cooked for all to taste by George Riner, President of the Boston Mycological Club.

The checklist of species identified on the walk will be available at the Annual Meeting and will be posted on our FOF webpage: <http://www.huh.harvard.edu/collections/fof/fof.html>.

FOF Annual Meeting November 2, 2002

The 2002 Annual Meeting will be held in the Herbaria Seminar Room on **Saturday, November 2**. The business meeting will begin at **3:30** followed by the featured speakers.

Dorothy Allard, whose work on Vermont bryophytes in the Farlow was partially funded by the FOF, will present a summary of her work cataloging and mapping mosses.

Over the past year our featured speaker, Dr. Richard Fralick, has revisited Farlow's algae collections and collecting sites along the New England coast. His comparison of algae from Farlow's time and the present has yielded some interesting results. A number of species were eliminated from Farlow's list, due to either environmental impacts or taxonomic rearrangement. A larger number was added with the advent of more intensive studies and the use of SCUBA. Dr. Fralich will share the details.

Algae: Nature and Art on Martha's Vineyard

*Judy Warnement
Librarian*

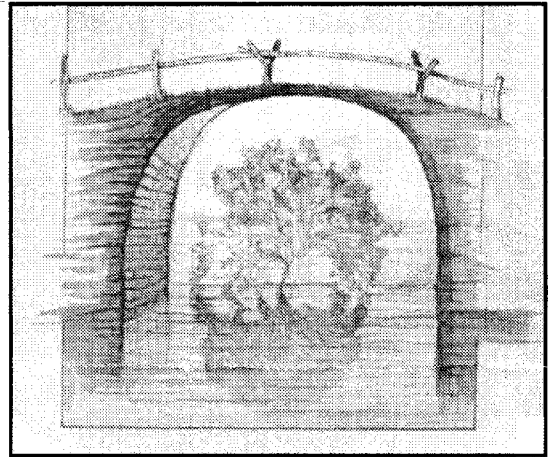
The town on Martha's Vineyard now known as Oaks Bluffs retains much of its early nineteenth century charm as a quaint seaside village. Its Algonquian name, "Ogkeshkuppe," means "wet or damp thicket or woods" and refers to the surrounding marshlands. The first English settlers called it Sanchacantacket Neck because of the strong tides at the opening of the pond. A late eighteenth century map shows thirty-two houses owned by thirty-five families, or about 180 people. By 1905 the village known then as Cottage City had grown to a population of 1,138 residents.

The development of Cottage City is credited to its success as the largest Methodist Camp-Meeting Association in the world. The first camp meeting was held in 1835, and the gatherings grew as steamboats brought companies in from New Bedford, Fall River, and Providence. The first cottage in the area was erected in 1859. Though peddlers were prohibited from the grounds, a lively center of commerce soon developed and a town emerged.

By 1870 Cottage City included the Bluffs, the "Camp-Ground," and the Highlands. It grew large enough to separate from nearby Edgartown. Somewhere in the midst of the Cottage City community lived a talented artist with an interest in the local algae. M. A. Robinson collected and mounted many beautiful specimens in a scrapbook. He or she then adorned many of the specimens with local scenes of rustic shanties, a lighthouse, views of nature, or exquisite borders in watercolors. Robinson compiled a scrapbook of seventy-three specimens, each one a work of art.

This extraordinary scrapbook was donated to the Farlow archive by Mrs. Constance Neelon of Southern Pines, North Carolina in

August. Mrs. Neelon's family summered at Martha's Vineyard starting in 1932. Her husband found the scrapbook around 1950. Quite some time ago Mrs. Neelon inserted a piece of paper upon which she had written: "This seaweed book was compiled on Martha's Vineyard at Cottage City (now Oak Bluffs) in the year 1885. It was done by M. A. Robinson. My husband found it in the attic of an old farmhouse which he bought and restored. The old house had belonged to an old island family the Nortons. It was on Lambert's Cove Road, West Tisbury."



Part of a sample page from M.A. Robinson's scrapbook.

We have many questions about M. A. Robinson. Was this artist and collector a man or a woman? Was he or she native to Cottage City or a seasonal visitor? Is the scrapbook the work of a genteel, well-educated Victorian or an earnest scientist and artist? Was M.A. Robinson related to the Nortons of West Tisbury? We hope the local historical society can supply some of the answers. In any case, we are very grateful to Mrs. Neelon for her generous donation and we welcome her as a new member of the Friends. We also want to acknowledge the assistance of Mary Lee Shanahan who acted as an intermediary for Mrs. Neelon.

Color copies of many of the specimens are currently on display in the Farlow lobby.