

New England Botanical Club – Minutes of the 970th Meeting

14-15 September 2001 Lisa Standley & Paul Somers, Recording Secretaries *pro tempore*

The 743rd meeting of the New England Botanical Club, Inc., being the 970th meeting since the original organization, was convened at the Waquoit Bay National Estuarine Research Reserve in Falmouth, Massachusetts on 14 Sept 2001, with 28 members and guests in attendance. Paul Somers apologized for the late start of the meeting, as some off-cape members learned the hard way that Route 28 South actually goes northeast. Following introductions of guests, Paul Somers announced the publication and availability of *BioMap: Guiding Land Conservation for Biodiversity in Massachusetts*. Garry VanWart noted the publication of Arthur Haines' *The Genus Viola in Maine*. Then Paul Somers introduced the evening's presenters, Dr. Richard Backus and Pamela Polloni, our hosts from the Botanical Club of Cape Cod and the Islands. Dr. Backus, curator emeritus of the herbarium at the Marine Biological Laboratory, specialized in ichthyology throughout much of his career, retiring as Senior Scientist of the Woods Hole Oceanographic Institution. Since his retirement he has been working of the flora of Falmouth, MA. Pam, Acting Curator of the MBL herbarium, is a consulting botanist with the Massachusetts Natural Heritage & Endangered Species Program. Their topic was "The Floral History of Penikese Island."

Penikese is a 75-acre island owned by the MA Division of Fisheries and Wildlife in the Elizabeth Islands chain off of Cape Cod. Currently, it is occupied by the Penikese Island School for troubled boys as well as a large nesting colony of gulls and terns and one of the state's two nesting colonies of Leach's storm petrels. In the 1800s sheep, turkeys, and rabbits were raised on the island, and it housed the short-lived Anderson School of Natural History, founded by Louis Agassiz in 1873.

One of the first persons to describe Penikese Island was Gosnold following his expedition of 1602. He described the island as being covered with cedars, some of which were cut by his party. David Starr Jordan, later president of Stanford University, wrote the first flora of Penikese in 1873 and described the island as a "absolutely treeless and nearly shrubless... about as barren looking a pile of rock and stone as one could well imagine." Nonetheless, Jordan recorded 114 species of vascular plants. Subsequent floristic surveys were undertaken in 1923, 1947 (149 species), and 1973 (160 species). The present study is based on field work conducted in 1998 and 1999. The flora currently stands at 219 species, of which 47% are aliens.

The principal change in the flora of Penikese appears to be the increasing diversity and dominance of shrubs and vines since the cessation of grazing, with 9 new species established on the island in the 50 years between 1923 and 1973. Interestingly, the first record of poison ivy was in 1947, and red cedar was first observed to return to the island in 1999. Currently, 80-90% of the island is covered by woody shrubs and vines but there are no ericads or grapes on the entire island. Other interesting observations made by the team include the loss over time of fern diversity. Hay-scented fern was a dominant species in 1923 and is currently restricted to a single plant. Marsh fern, once abundant around the ephemeral ponds, had disappeared by 1960.

The current floristic survey has revealed many possibilities for further study, particularly in the realm of disturbance and ecological succession. Dr. Backus predicts, in the absence of disturbance, an eventual return to the red cedar landscape described by Gosnold. The presenters suggest controlled burns for managing aggressive woody shrubs and vines and encouraging native grasses, which might also improve nesting sites for sea birds as well.

FIELD TRIPS: About 20 Club members and friends participated in a Friday afternoon tour of Crane Wildlife Management Area and Waquoit Bay National Estuarine Research Reserve in Falmouth, with the drizzle holding off until dinner time. Paul Somers, Maile Neel, and Pamela Polloni interpreted research being conducted on habitat restoration for *Agalinis acuta*, the federally endangered sandplain gerardia. Starting at Crane WMA, the group examined flowering and fruiting plants of *A. acuta* in and adjacent to plots established in December 1997. The 1998 results showed that grassland plots prepared for seed sowing by burning of thatch, soil scarification and removal of thatch, or burning followed by soil scarification each produced significantly more *A. acuta* plants than control plots. Maintenance of the experimental area by spring mowing in 1999 and 2000 and burning in 2001 has resulted in a gradually increasing and spreading population. Two highlights of the botanical exploring in the area were the discovery of a new colony of *Agalinis* to the north of the experimental area and a healthy population of *Scleria pauciflora* var. *caroliniana*, a state-listed rare species not previously known from Crane WMA. At Waquoit Bay NERR, a series of smaller experimental plots that preceded the Crane WMA plots were examined and discussed. These research plots tested seed banking and management by burning, scarification, and mowing on a smaller scale. The seed bank plots have revealed that *Agalinis acuta* can remain in the seed bank for at least four years. At Waquoit, Maile Neel discussed pollination studies she initiated there in 2000. Her study, using bagged flower buds, has demonstrated that *A. acuta* is capable of a very high level of selfing but that seed set is typically lower than when cross pollination occurs. Today a population with over 30,000 plants is being maintained by winter and spring mowing at the experimental site. The group also visited a neighboring cemetery where a portion is being managed for sandplain gerardia.

On a beautiful early fall Saturday morning, 20 club members toured the Mary Dunn coastal plain pond complex in Hyannis led by BCCCI member and founding President, Mario DiGregorio. Mario and The Nature Conservancy hydrologist Rich McHorney provided a history of the botanical exploration of the ponds and an explanation of their unique hydrology. The group foraged around the pond edges and was rewarded with *Coreopsis rosea*, *Drosera filiformis*, *Eleocharis melanocarpa*, *E. robbinsii*, *Lachnanthes caroliniana* (in fruit), *Panicum wrightianum*, *Polygala cruciata*, *Rhynchospora macrostachya*, *Scleria*, and *Stachys hyssopifolia*. One late-blooming *Sabatia kennedyana* was found. After lunch, current BCCCI President Don Schall led 12 botanists on a walk at Sandy Neck beach in Barnstable. The interdunal swales contained small cranberry-dominated wetlands with *D. filiformis*, *Euthamia tenuifolia*, *Pogonia ophioglossoides*, and *Lycopodium appressum* present, and with *Carex silicea* at the fringes. The nearby salt marsh was distinguished by *Pluchea* in full bloom, *Scirpus robustus*, and *Aster subulatus*. Several handsome specimens of *Panicum amarum* were found near the marsh edge. (Note: for convenient reference, all nomenclature follows Gleason & Cronquist 1991. Up-to-date botanists will note that *Aster* is now *Symphotrichum* and that *Lycopodium* is now placed in *Lycopodiella*).