New England Botanical Club - Minutes of the 1006th Meeting
1 April 2005
Karen Lombard, *Recording Secretary*

The 779th meeting of the New England Botanical Club, being the 1006th since its original organization, was held on Friday, April 1, 2005, in the Lecture Room of the Fairchild Biochemistry Building, Divinity Avenue, Cambridge MA. There were 65 members and guests in attendance. Robert Bertin and Janet Sullivan explained and presented the third Merritt Lyndon Fernald Award for a 2004 paper in *Rhodora*. The recipients are Walter S. Judd and Darin S. Penneys for their paper entitled "Taxonomic studies in the Miconieae (Melastomataceae). VIII. A revision of the species in the *Miconia desportesii* complex on Hispaniola" (*Rhodora* 106: 124-147, 2004). Congratulations!

Council member Kanchi Gandhi then introduced the 2005 Distinguished Speaker, Dr. James L. Reveal, whose talk was entitled "Lewis and Clark's Green World: The Plants of the Lewis and Clark Expedition." Dr. Reveal is Professor Emeritus at the University of Maryland, as well as Honorary Curator at The New York Botanical Garden and a Research Associate at the Academy of Natural Sciences in Philadelphia. His specialty is *Eriogonum*, and the recently released Volume 5 of the *Flora of North America* contains his summary of this genus. Dr. Reveal's interest in Lewis and Clark began when he was asked in 1999 to review the expedition's plant specimens, as well as the plant descriptions in their journals and letters, for the Academy of Natural Sciences. Dr. Reveal has since tried to track down the exact field locations of many of the species represented in the Lewis and Clark Herbarium.

As Dr. Reveal summarized in his abstract for his presentation, "Today we celebrate the bicentennial of their 1804--1806 expedition of discovery by examining their botanical discoveries. It is also an exercise in frustration. Of the more than sixty specimens of plants sent to Jefferson in 1805, the first thirty disappeared after they were received by American Philosophical Society some time prior to the fall of 1807. The rich collection the explorers made in 1805 along the Missouri, and then its branches above Three Forks… were lost to spring flood in 1806 (save one specimen). Only a few specimens survived the 1805 trip from Lemhi Pass to the ocean. The bulk of the extant specimens, some 230, were gathered in 1806 on the return leg…"

Jim regaled the audience with many stories and myths surrounding the expedition. One of the plants collected the first year of the trip, 1804, was *Nicotiana quadrivalvus* var. *quadrivalvus*, which the American Indians smoked in combination with *N. rustica* and *Arctostaphylos uva-ursi*. The last known specimen was grown at the University of California, Berkeley, Botanical Garden in 1924. In 2001, Jim found plants of this variety growing around a flagpole at Fort Union on the North Dakota-Montana border, a National Park Service (NPS) site. Park Service staff told him that a Native American had given seeds to them, and that it was also planted at the Ft. Mandan site. Jim has since collected the seeds and has sent them to interested botanists around the world. Studies of the DNA of this variety showed that it was a cultivar of *Nicotiana quadrivalvus* var. *bigelovii*, which still exists in the wild. Tobacco companies are trying to bring it back into cultivation, as it is a type of tobacco valued in other parts of the world.

One of the plants that the expedition was fed by Native Americans when they were close to starvation was *Camassia quamash*, or blue camas. Members of the expedition experienced "intense bowel problems" after eating camas bulbs in the fall of 1805, and the plants have been blamed for the 200 years! Reveal and a colleague tried eating this plant, which the Nez Perce routinely ate, and did not get sick. Reveal believes that it wasn't the bulbs that sickened members of the expedition, but that they instead suffered from salmonella poisoning, obtained from the dried salmon also given to them by the Nez Perce.

As the expedition was heading back east in 1806 after spending the winter in rainy and cold Oregon, *Dodecatheon poeticum* was collected, a species not found again in the wild until 1935. It was described as a new species in *Rhodora* in 1936. The last plant collection of the trip was in1806 in what is now Kansas. When the expedition was complete, Thomas Jefferson sent Meriwether Lewis's plant collections to the American Philosophical Society in Philadelphia, the most prestigious scientific institution in the New World. There, Benjamin Smith Barton was to help Lewis write up a report of the botanical findings. As Barton was too busy and in poor health, the job was passed on to an assistant, young Frederick Pursh.

Lewis died, and Pursh went off to a new position in London, bringing with him some of the specimens as well as his notes on the collection. For 200 years it was thought that Pursh had stolen the specimens. However, Reveal's research uncovered a letter from Henry Muhlenberg indicating that Pursh took the specimens with permission. Pursh continued his study of the specimens and eventually included the species in his *Flora Americae Septentrionalis*. The specimens became part of the collection of Aylmer Lambert, Pursh's patron. When Lambert died, his collections were broken up into smaller lots and sold at auction. Fortunately, Edward Tuckerman bought one of the lots and brought the specimens back to the US. He eventually traded them to the Academy of Natural Sciences for some lichen specimens, his main interest. Specimens that remained in Philadelphia went into the attic of the American Philosophical Society until they were rediscovered in 1896; they were eventually reunited with the other specimens: 226 in total. Nine of the Lewis and Clark specimens still remain at the Royal Botanic Gardens, Kew.