

New England Botanical Club – Minutes of the 967th Meeting

6 April 2001 Prepared by Karen Searcy, Recording Secretary *pro tempore*

The 740th meeting of the New England Botanical Club, being the 967th since the original organization, met in the Main Lecture Hall of the Biological Laboratories, Harvard University, Cambridge Massachusetts on Friday, April 6, 2001. Vice-President Paul Somers called the meeting to order at 7 PM, with 79 members and guests present, including many students from several New England colleges and universities.

The Distinguished Speaker for 2001 was Dr. Robert Kral, Professor Emeritus of Biology at Vanderbilt University and Resident Research Associate, Botanical Research Institute of Texas. He spoke on "Biology and Management of Rare Plants in the Southeastern United States." He began his talk with the statement "Let's face it; you're doomed." However, what followed was an opportunity to hear how he became involved in an extensive project on rare plants, what constitutes a rare plant in his view, and details of a few of the over 300 rare plants discussed in his resulting book.

Dr. Kral pointed out that the original Endangered Species Act of 1973 did not include plants. He and other taxonomists were asked to develop a list of plants that was published in 1974 by the Smithsonian Institution. Shortly thereafter, Dr. Nathan Byrd of the U.S. Fish and Wildlife Service asked if he would be interested in evaluating the forest-related rare plant species in the South, an area extending from Virginia to Lake Okeechobee, Florida, and west to Arkansas, eastern Oklahoma, and eastern Texas. Dr. Kral, who attributes his invitation to become involved to a degree in forest management, started the project in 1975. He began by developing a list of species, checking nomenclature, doing literature searches, and checking collections. He was charged with finding the rare species, developing a list of associated species, describing the habitat in such a way that it would fit into a system of forest types, discussing the impact of forestry management practices on the plants, and making management recommendations. The study that covered some 322 taxa was completed in 1983 with the publication of the two-volume "Report on Some Rare, Threatened or Endangered Forest-Related Vascular Plants of the South." Editing such a work was described as a humbling experience.

An important aspect of Kral's work was to come up with management recommendations, and to do that, it was important to determine why plants were rare. Some species are rare because they have very narrowly defined niches and small population sizes, either because they are initial endemics ("baby species") or are "old species," described as "too much junk in the nucleus." In contrast, some rare species of restricted or specialized habitats are abundant or may even be considered weeds where they are found. Irrespective of the population size, these species are particularly susceptible to loss of habitat. Another group of rare plants are those that were once abundant, but have had their habitat destroyed because the "land they occupy is too valuable." These include plants of prairies and wetlands. Finally he mentioned threats from exotics. Bob pointed out that continental drift separated many species of plants, but that "Homo saps" were reuniting them. Many of these exotics have wide tolerances and disperse rapidly, so rapidly, that some of the early explorers of North America considered some exotics to be native.

From Dr. Kral's perspective, problems that remain in protecting rare species are not just those associated with instituting recovery programs. It is important for forest and landscape managers to leave the land in a better condition than when they started. In addition, it is important to train young biologists to read the landscape as a way to help preserve biodiversity. He concluded this portion of his talk with some questions. How can trained biologists provide input before management decisions are made? Who will become involved, and who will pay? What is the role of academic institutions in these issues?

Finally, Dr. Kral illustrated a number of the points he had made with a selection of slides. Plants illustrated included *Hymenocallis coronaria* and *Sagittaria secundifolia* growing in or near rocky, swiftly flowing streams that could be affected by changes in water level and quality. Changes in water level also affects plants of sink-hole ponds such as *Rhexia salicifolia*, *Xyris longisepala* and *Hypericum lissophloeus*. Some of the plants found around ponds of fluctuating water level, such as *Fimbristylis perpusilla*, are abundant some years but absent others. *Zephranthes treatiae* and *Lilium iridollae* are plants of wet areas but are maintained by periodic fire that reduces competition from other plants. In contrast, woodland species, such as *Silene polypetala*, *Veratrum woodii*, and several species of trillium, *Trillium pusillum* v. *ozarkanum* and *T. texanum*, are threatened by removal of the forest canopy. *T. texanum* is also threatened by erosion from the conversion of nearby sand-hill forests to pine plantations. Quite a few plants that Bob illustrated were from scrub-lands and old dunes of northern Florida that are threatened by development, including *Nolina brittoniana*, *Dicerandra immaculata*, *Asiminea tetramera*, and *Liatris ohlingeriae*. Some of the rare plants he mentioned, such as *Carex biltmoreana* and *Eriocaulon kornickianum*, are plants of extreme habitat and limited population size. Others, like *Levenworthia stylosa* and *Streptathus squamiformis*, are abundant or even weedy where they occur. A few plants like *Clematis socialis* are known from only a single site, while others like the pitcher plants, including *Sarracenia alabamensis*, were more wide-spread, but are becoming rare because of habitat loss involving drainage and invasive species. Throughout his talk, Bob's love for the region and its landscape became clear as he spoke of "Gardens of Eden" and black water streams that make you want to say "Thank you."

The meeting concluded with refreshments and lively conversation.