

Dr. David E. Fairbrothers



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The work of Dr. David E. Fairbrothers, Professor Emeritus and former chair of the Department of Biological Sciences of Rutgers University, has been very diverse, covering plant systematics, taxonomy, serology, botanical history, and biodiversity conservation. His work has greatly impacted the state of New Jersey's natural areas and living organisms and future generations will continue to benefit from his efforts.



Dr. Fairbrothers

Dr. Fairbrothers served as Curator of the Chrysler Herbarium from 1954 to 1988. During this time, the Chrysler Herbarium collection grew from 37,000 specimens to 120,000 specimens. He utilized the unique specimens in the herbarium to document the locality and rarity of plant species and implement conservation plans for the nature of New Jersey.

Rare and Endangered Species

Dr. Fairbrothers and other researchers used Chrysler herbarium specimens to produce the first State list of Rare and Endangered Plants in the United States (1973).

This publication was significant in helping persuade the United States Congress to enact the first U.S. Endangered Species Act in 1973, and the Congress' request for publication of the *Endangered and Threatened Plant Species of the United States* in 1975.

Information obtained from the Chrysler Herbarium's specimens is especially important for the conservation of rare plants such as the bog asphodel and Knieskern's beaked-rush. New Jersey represents the global stronghold for another rare plant, the swamp pink, harboring more than 70 percent of the world's population of this species. The herbarium provides critical records needed to assess the status of plants in New Jersey, and Northeastern USA.



Photo: USFWS, Gene Nieminen

▲ The swamp pink is listed as threatened nationally and as endangered in NJ.



▲ The pine barren gentian (*Gentiana autumnalis*) is a rare plant in New Jersey.



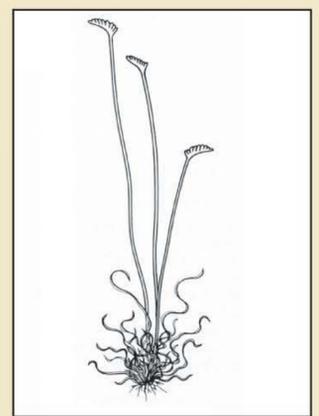
▲ A specimen of the swamp pink (*Helonias bullata*), collected in 1883, by then state botanist Nathaniel Lord Britton.

Plant Chemosystematics

Dr. Fairbrothers was a pioneer in the 1950's - 1970's in chemosystematics and the use of serological methods to assess systematic relationships between closely related plant taxa. By combining pollen morphology and the use of protein antisera he merged the use of traditional morphology and modern technology. He was also the first researcher to develop techniques to utilize allozyme analysis to study populations of endangered plant species, a precursor to today's large field of molecular systematics.

Pinelands National Reserve

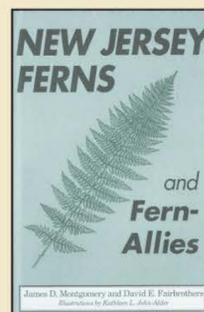
The one-million acre Pinelands National Reserve, was established under the leadership of Professor Fairbrothers. In 1983 the reserve was designated an International Biosphere Reserve by the United Nations.



▲ The vast majority of curly grass fern (*Schizaea pusilla*) populations exist only in the New Jersey pinelands.

New Jersey Ferns

In 1992 Dr. Fairbrothers and J. D. Montgomery authored the book *New Jersey Ferns and Fern-Allies*. This book is the most thorough field guide of ferns and reference for naturalists, ecologists, botanists, hikers, and gardeners in the greater New York area.



▲ The book contains detailed information for all fern species of New Jersey. The maps were made using specimens in the Chrysler Herbarium.



▲ This specimen of curly grass fern (*Schizaea pusilla*), from the Chrysler herbarium, was collected by famed botanist John Torrey (possibly in 1834) at a stage coach stop in the pinelands called Quaker Bridge. This is the same locality where this species was originally discovered in 1805.

