BOTANY

Northeastern Fern Identifier

By Richard S. Mitchell and Laurie Danaher. 1998. New York State Museum, Albany, New York. U.S. $19.95.

This computerized guide to 70 fern species of northeastern North America has been loosely based upon Eugene Ogden's *Field Guide to Northeastern Ferns*, published by the New York State Museum in 1981, one of the earliest publications to employ random-access keys in fern identification.

According to the introduction to the CD, "this package provides a menu-driven, fully color-illustrated guide and random-access key to ferns of the northeastern United States and eastern Canada. With it, the user may identify a fern by merely matching its characteristics with illustrations on screens provided. This allows a beginner to proceed with the identification of a fern after learning about five simple terms indicated on the help screen. As each feature of the fern in question is chosen, a decreasing number is displayed on the main screen, indicating how many regional fern species share that combination of characters."

Unfortunately, the Northeastern Fern Identifier is a DOS-based program. Its approach to interacting with a computer's video card is not compatible with recent operating systems, and it will not function on most computers running Windows NT, 2000, or XP. It will function on older computers running Windows 95 or 98. This is a serious limitation that means the program cannot be used on the vast majority of current computers. I was unable to contact the author by e-mail to determine whether or not a version more compatible with more up to date operating systems is planned.

Once a sufficiently out-of-date computer was found using Windows 98, an analysis of the efficacy of the program on the CD was carried out. Generally, it was found that the random access method can be as efficient as the traditional dichotomous keying method of species identification. The program allows the selection of any one of 24 identification options, including position of sori, indusia, vein branching, leafy margins, vascular bundles, etc. It then becomes possible to eliminate possible choices of species after each option selection, resulting in a decreasing number of applicable species. However, many of the selections result in a rather high number of possibilities making the selection process somewhat difficult. For instance, the two position of sori choices (marginal or not marginal) brings up 30 possibilities for marginal and 42 for non-marginal sori positions.

The photographs of the various species, mostly taken from 35 mm slides, are generally good, both in colour and clarity. Each page includes the name and possible synonyms of the species, the distribution range, habitat and description of similar species. It also includes, where applicable, a small photograph of the sori positions.

In general, the concept of a CD presentation of species identification methods has good potential. However, the *Northeastern Fern Identifier* requires an updated version if it is to be accepted and widely used by amateur botanists.

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Flora of the Hudson Bay Lowland and its Postglacial Origins

By John L. Riley. 2003. National Research Council of Canada, Research Press, Ottawa, Ontario, Canada. $49.95 (postage included).

The Hudson Bay Lowland is an area south and west of Hudson and James Bays measuring 325 000 square kilometers in northern Ontario, northeastern Manitoba and a small part of northwestern Quebec. In the introduction it is described as one of the Earth's largest more or less continuous wetland landscapes. The author describes its geology and glacial history, vegetation, soils, permafrost, and tree line, climate, climate change and other recent stresses and his objectives.

This flora is not like other floras such as *Vascular Plants of Continental Northwest Territories, Canada* by Porsild and Cody (1980) or *Flora of the Yukon Territory* by Cody (1996) which are organized in taxonomic sequence with keys, descriptions, habitat and range information in considerable detail. This book, however, does contain a wealth of information. In the Introduction section there is "Geology and glacial history information", "Descriptions of the vegetation, soils, permafrost and the tree line", "Climate, climate change, and other recent stresses" and "Objectives". This is followed by "Methods" which include a wealth of information under the titles "Data assembly and field surveys", "Data collection areas" and "Floristic analysis". Then Results information is provided under "Data collection areas", "Coincident distribution patterns" and "Floristic zonation". The next section entitled "Postglacial origins of the Flora" contains fine information and maps regarding "Early vegetation development", "Species migration", "Widespread species of the Hudson Bay Lowland", "Eastern species of the Hudson Bay Lowland", "Western species of the Hudson Bay Lowland", "Coastal species of the Hudson Bay Lowland", "Arctic species of the Hudson Bay Lowland", "Other themes in the flora of the Hudson Bay Lowland – including introduced and rare species". This is followed by Acknowledgments and References plus four pages which contain beautiful colour pictures of 32 species accompanied by four pages with pertinent information. All of the