

## **The Biology of Economic Ferns**

Only three species of fern have currently any major economic significance: Ostrich fern as a food plant, *Azolla* as a green manure of rice fields, and bracken as a food plant and an aggressive and poisonous weed of agriculture and forestry. In all three species, wide-ranging investigations of many aspects of their biology are being carried out in several laboratories in different parts of the world.

## The edible fiddlehead—*Matteuccia struthiopteris* (Ostrich fern)

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### Synopsis

*Matteuccia struthiopteris* is distributed throughout most of the boreal region of the northern hemisphere. It has been variously recorded as a vermifuge and an ingredient in beer manufacture as well as a food. Young leaves, alternatively known as croziers or fiddleheads, are picked before they have unfurled and are boiled or steamed and served as a hot vegetable. The market, between Malecite Indian and colonists, developed in the Fredericton area of New Brunswick 200 years ago, following a particularly severe winter. The newly arrived United Empire Loyalists, having emigrated from the United States, were so short of food that by the spring of 1784, they were reduced to eating any sort of provender nature could supply. Specific mention is made of fiddleheads, which became a traditional spring vegetable in New Brunswick. This market spread into Maine in the United States, particularly into those areas bordering the St John River. The present market is still predominantly in New Brunswick, where the wild harvest is between 150–200 t/yr, a yield which is approximately four times the harvest in neighbouring Maine. Food companies process about one third of the crop. In Maine, this is done by a single canning company in Wilton, whereas in New Brunswick, tinned fiddleheads have largely been superseded by the frozen product which is the monopoly of a company working in Florenceville. In addition, Canadian companies have recently sprung up which export the fresh spring vegetable in refrigerated lorries to larger centres west of the province. These companies account for less than a quarter of the harvest. The remainder is sold from either roadside stands, or to a wholesaler who distributes them to outlets in the region. The harvest is still predominantly done by natives. Much greater detail of both harvest, food preparation, and economic history is given by von Aderkas (1984). It has recently come to the author's attention that crowns of *M. struthiopteris* are sold also as a garden ornamental. Over 5000 plants/yr are sold by one Ontario distributor alone. Estimates from other nurseries in West Germany and the United States which do the same trade are presently unavailable.

### Reference

- von Aderkas, P. 1984. Economic history of the Ostrich Fern, *Matteuccia struthiopteris*, the edible fiddlehead. *Econ. Bot.* 38, 14–23.