

# RISE AND FALL OF A BEECH

(exerpted from Watershed Red: The Life of the Dunk River, Prince Edward Island by Kathy Martin , illustrated by Connie Gaudet. Ragweed Press, 1981.

A mature beech stands on a southfacing hilltop in Rose Valley. The top branches tower 18 meters above the circular patches of yew growing a respectful distance from its base. The thin bark of youth has thickened with age and now stretches reluctantly around its two-meter girth. For over a century, the Rose Valley beech has shared this location with neighbouring sugar maples. With its assortment of lichens, moss, insect egg cases, spider webs, and a flying squirrel's nest, the tree resembles a large and diverse apartment house which never lacks for occupants. There is a greater variety of lifestyles on the beech than there is in the village of Kinkora!

In the original woodland of the Dunk River watershed, beech was probably predominant and this tree in Rose Valley would not have been a noteworthy specimen; but today it reigns as a giant. The extent of this species was described by John Stewart (Account of Prince Edward Island in the Gulf of St. Lawrence, 1806, p. 36):

*This tree grows in great abundance, probably better than one-half of the Island is covered with it, in some districts it forms nine-tenths of the forest, in others it is more mixed with other trees, ....*

## THE RISE

In late April or early May, after its leaves are about one-third grown, the parent beech tree produces flowers of both sexes. Wind carries pollen from the long-stemmed heads of a male stamen to the pistil of a female. After fertilization in the ovary, the embryonic beech is packaged as a seed and enclosed in the type of fruit known as a nut. These are chestnut-brown colored, thin-shelled, and pyrimidal shaped. Usually two or three nuts develop from one flower cluster and these are assembled as a unit and surrounded with a prickly bur, called beech mast.

The seeds in their concentric, protective coverings require the summer to mature. From September to November, especially after the first heavy frost, burs open and the nuts fall to the ground. Seeds are spread by gravity or transported short distances by animals. At this point, the fate of each potential beech tree is uncertain. Most of the seeds will not even have a chance to germinate. While they rest in the leaf litter they are readily found and eaten by squirrels, birds, insects and worms.

There were additional predators when the Rose Valley beech was a nut. Settlers, attuned to the wild harvest, were extremely fond of the sweet nutmeat. Beech stands were extensive and produced such quantities of mast that farmers in the nineteenth century turned their pigs into the woods to forage on it.

During the winter the embryo remains dormant in the nut. Germination occurs the following spring or early summer. Within a week, the seedling has grown a tiny tap root. Two small green leaves develop ten centimeters above ground at the top of the stem. Now the seedling can settle into the regular business of being a little plant. If all goes well, it will continue growing and become a big plant, or more properly a tree. To be successful, it must gather water and minerals from the soil and produce food by using energy from the sun.

A beech tree is actively developing only when it has leaves which are producing food. Every year it grows for at least 150 days, and in doing so adds an annual ring to its trunk. The roots spread down and out to anchor the