THE VAL COMEAU CANOE:

WOOD IDENTIFICATION

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MAD Lab Report 2007-01

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Table of Contents

Abstract

As part of the overall analysis on the Val Comeau canoe project, the Mount Allison Dendrochronology Laboratory undertook a wood identification analysis on the First Nation artifact for the provincial museum. A small sample of one of the increment cores was used to obtain a radial, and tangential view of the wood. Due to the presence of diagnostic shaped resin canals and ray features, the species was determined to be white pine (*Pinus strobus*), a species common to the region.

Introduction

In the summer of 2003 a dugout canoe was found in Val Comeau, slightly buried on a beach. It has been identified as one of the few large First Nation artifacts ever found in New Brunswick. The canoe measures approximately 4.8m long, and through a radiocarbon dating process, the New Brunswick provincial Museum has estimated that the artifact is approximately 450 years old. What the Museum really wants to know, is exactly how old the structure is before it goes on permanent display in the museum.

In order to answer the question of when exactly the canoe was built, the Mount Allison Dendrochronolgy Lab (MAD Lab) was contacted, as it is the only lab in Atlantic Canada that can answer this question, and we have agreed to take on this puzzle. The project methodology will use patterns of tree growth with a known date to compare to patterns of tree-ring growth from the canoe. To do this we need samples from the canoe and samples from tree-growth that is locked in time.

The first step of the project was to extract sample cores from the dugout canoe. The sample cores will be used to find the ring pattern of the canoe, and a pattern-match of the trees with the same species will be conducted during the summer of 2007. The first simple step in the process will be to positively identify the species of the wood. The goal of this report is to accomplish this objective.

Methods

Excess wood from a core taken from the canoe was dried slowly at room temperature for a week to ensure cell structures would not deteriorate with desiccation. Small fragments were then cut with a razor blade on a wooden block under a dissecting microscope to expose the tangential and radial sections of the wood (Figure 1). The best pieces were glued on a metal stub and taken to the Mount Allison Digital Microscopy Facility (http://www.mta.ca/dmf/), where they were prepared for viewing under a Scanning Electron Microscope (SEM).

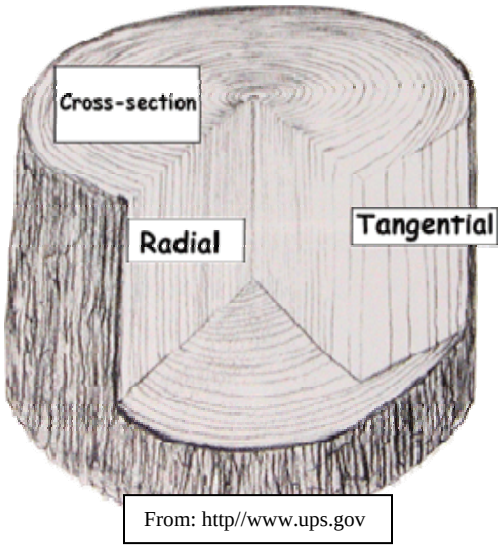

Figure 1: A cross section of a log illustrating the radial and tangential faces of the wood.

Results

Observations of anatomical structures revealed characteristics typical of white pine (*Pinus strobus*). The ray features (Figure 2A) and the large resin canals (Figure 2B) leave no doubt that the species is white pine.

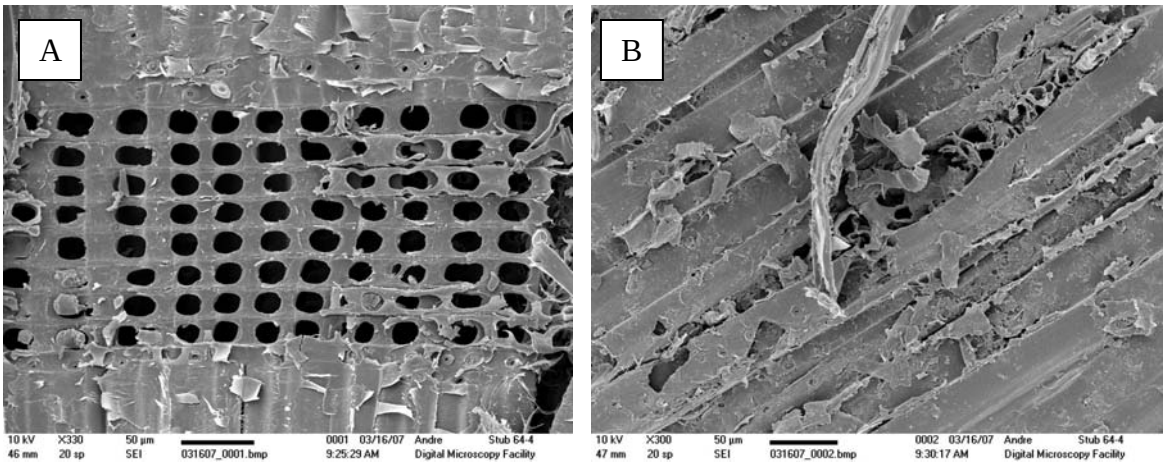

Figure 2: (A) Radial view showing a ray with window-like pits distinctive of white pine. (B) Tangential view of a resin canal.

Conclusion

Our analysis concludes that based on the presence of diagnostic shaped resin canals and ray features, the species is white pine (*Pinus strobus*), a species common to the region. The next step of the overall analysis is to establish a growth pattern for the canoe, and match it up to a growth pattern of live trees from the region.