THE WINSTON BARN MYSTERY:

AN UNUSUAL PINE SPECIES FROM THE RIVERVIEW AREA, SOUTHEASTERN NEW BRUNSWICK

André Robichaud and Colin P. Laroque

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Mount Allison University, Department of Geography and Environment
Mount Allison Dendrochronology Lab

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Abstract

A small piece of a mysterious wood species was mailed to the MAD lab in the winter of 2007 . The wood has characteristics of many of the pine species that are known to grow naturally in New Brunswick, but specific indicators prove that it is not one of the three species (*Pinus strobus*: eastern white pine; *P. resinosa*: red pine; *P. banksiana*: jack pine). Specific cellular characteristics indicate that it is of the yellow pine family commonly found in the southern US. Through informant knowledge and studying the spatial extent of the closest members of the yellow pine family, the best guess is that the species is pitch pine (*Pinus rigida*). If true, this would suggest that when the wood was cut in the Riverview area of New Brunswick, it was the only known stand of pitch pine in the province, and only stand known of north of southern Maine.

Introduction

During the Moncton Heritage Fair held the 17th of February 2007 and part of the Heritage Week activities, Mr. Winston B. Jones brought to the attention of the MAD Lab a peculiar problem about the beams that were used to build his 140 year old family barn. He described the wood as pine-like, but particularly heavy, strong and rot resistant, unlike the usual pine wood found in the Riverview region where he dwells. He suggested it to be pitch pine (*Pinus rigida*), a tree not found in New Brunswick. To corroborate his observations, the MAD Lab offered to analyze the wood in an attempt to identify it.

Wood analysis

A shard of wood taken from one of the beams was sent to us by mail. In the laboratory, fragments were cut with a razor blade on a wooden bloc under a dissecting microscope to expose the tangential and radial sections of the wood. 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).

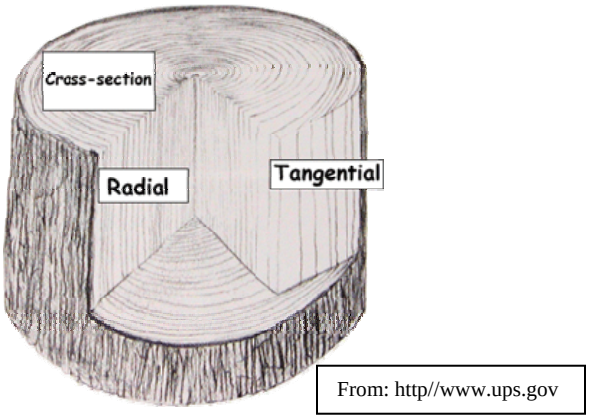

Figure 1: A diagram illustrating the various views of the wood. In this analysis we cut the wood in tangential and radial directions for analysis of the unknown wood species.

Observations of anatomical structures (Figures 2 and 3) revealed characteristics more typical of the yellow pine group and ruled out any of the common pines from the Riverview region (*Pinus strobus*: eastern white pine; *P. resinosa*: red pine; *P. banksiana*: jack pine).

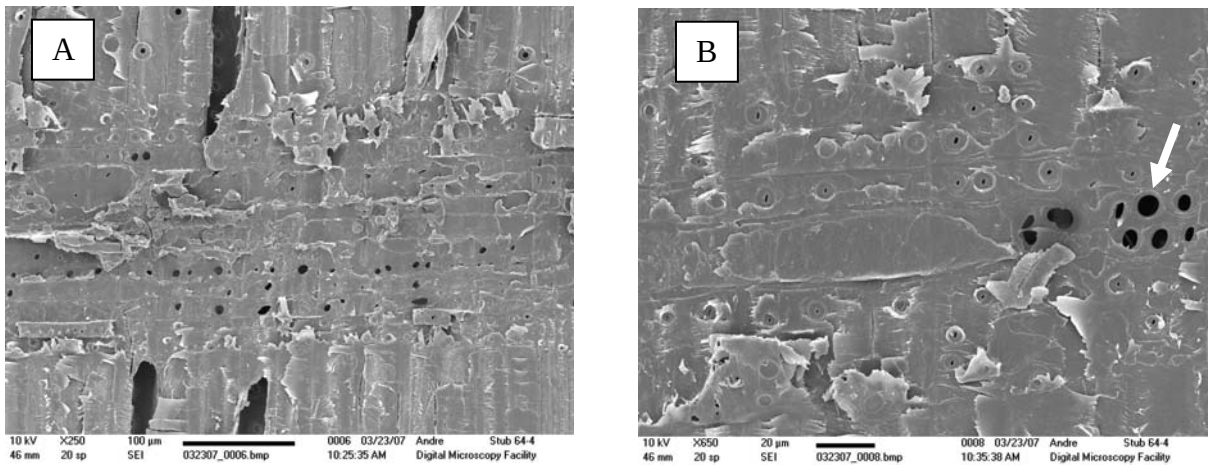

Figure 2: (A) Radial view showing a ray with parenchyma cells displaying small window-like pits, bordered by transverse tracheids. (B) Closer view illustrating the small window-like pits to the right (arrow) and several rows of transverse tracheids above and below the parenchyma cells.

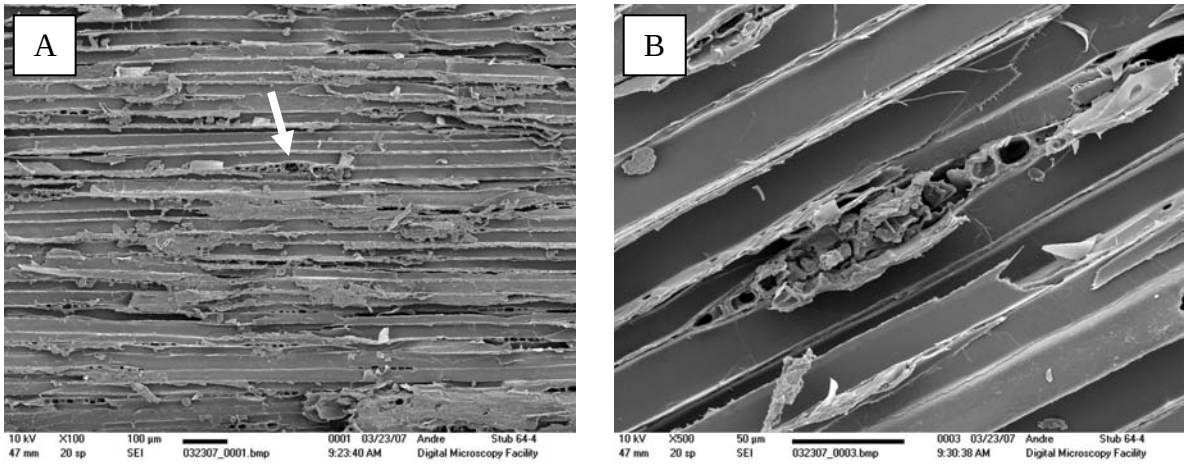

Figure 3: (A) Tangential view showing uniseriate rays that have 6 to 7 cells. A small resin duct is near the centre of the image (arrow). (B) A close-up view of a resin duct.

Discussion

The yellow pine group includes at least ten "southern" species and two "western" species. Four southern species are more common, making up to 90 percent of the Southern Pine timber inventory (http://www.southernpine.com/expert/index):

Pinus taeda – loblolly pine
P. echinata – shortleaf pine
P. plaustris – longleaf pine
P. elliottii – slash pine

The other six southern species are less common and also occur mostly in eastern and southeastern U.S.A.:

Pinus rigida – pitch pine
P. virginiana – Virginia pine
P. serotina – pond pine
P. clausa – sand pine
P. glabra – spruce pine
P. pungens – table mountain pine

The two western species are *Pinus ponderosa* (ponderosa pine) and *Pinus contorta* (lodgepole pine) both distributed in western North America.

The southern yellow pines are considered the strongest and densest commercially significant softwoods. Their wood is described as heavy and hard, which corresponds well with Mr. Jones's depiction of the beams from his barn. Unfortunately, the different species of yellow pines cannot yet be distinguished microscopically (Hoadley, 1990), especially since some species hybridize.

However, geographically, the closest southern yellow pine species to New Brunswick would be the pitch pine reaching southern Maine (Figure 4). The second and third closest are Virginia pine and shortleaf pine, both extending only as far north as the southern tip of the New York state.

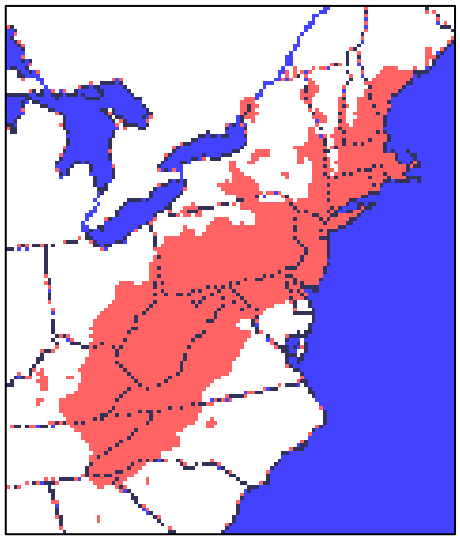

Figure 4: A map illustrating the spatial distribution of pitch pine (http://www.conifers.org/).

Conclusion

According to our analysis, the sample provided by Mr. W.B. Jones is not one of the New Brunswick pine species, but one of the southern yellow pines. The latter cannot be distinguished anatomically, so it is not presently possible to formally identify the sample. Additionally, none of

the southern yellow pines occur naturally in New Brunswick. However, the pine closest to New Brunswick is the pitch pine (*Pinus rigida*) and it is the best candidate for the species that was used for the barn as was suggested by Mr. Jones. Also, according to him, the wood was cut nearby the farm and if pitch pine trees were to be found in New Brunswick, it would be a highly interesting discovery.

Bibliography

Hoadley, R.B. (1990), *Identifying wood: accurate results with simple tools.* Taunton Press, Newtown, Connecticut, USA, 223 pp.