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Dendrochronological Dating of the Linnabary House, Worthington, Ohio

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Dendrochronological Dating of the Linnabary House, Worthington, Ohio

Sampled: May 19th 2011
39°48'25.62"N 82°17'49.82"

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<http://treering.voices.wooster.edu/about-2/>

Objective:

To provide a calendar date for the felling of timber from the historical Linnabary House structure using dendrochronology and to develop a ring-width tree-ring chronology from the timber used in the construction of the structure. Tree-ring crossdating shows that the beam in the Linnabary House was cut in the spring of 1823.

Methods and Analyses:

A single core taken from the beam in the Linnabary House was prepared and crossdated using standard dendrochronological techniques. Rings were measured to the nearest 0.001 mm (Fig. 1) and then crossdated against each other, developing a “floating” site chronology before matching ring-widths with the calendar dated Northeastern Ohio oak series (Table 1, Figure 1).

The oak series was successfully calendar dated and the core had a clear outer ring. Because this outer ring was not fully formed at the time the timber was cut, it shows that the timber was felled in the spring of 1823. While we are confident that 1823 is the correct date that the timber was felled, we typically would want more samples to determine when the overall structure was built.

Archiving of Samples and Data:

All cores and data are archived at the Wooster Tree Ring Lab, housed in the Department of Geology, The College of Wooster.

Table 1: Table of the inner and outer calendar dates for Linnabary House core that was dated. The asterisk on the outer ring year denotes the presence of the bark year.

Core	Inner Year	Outer Year	Total Year
LH1	1678	*1823	145

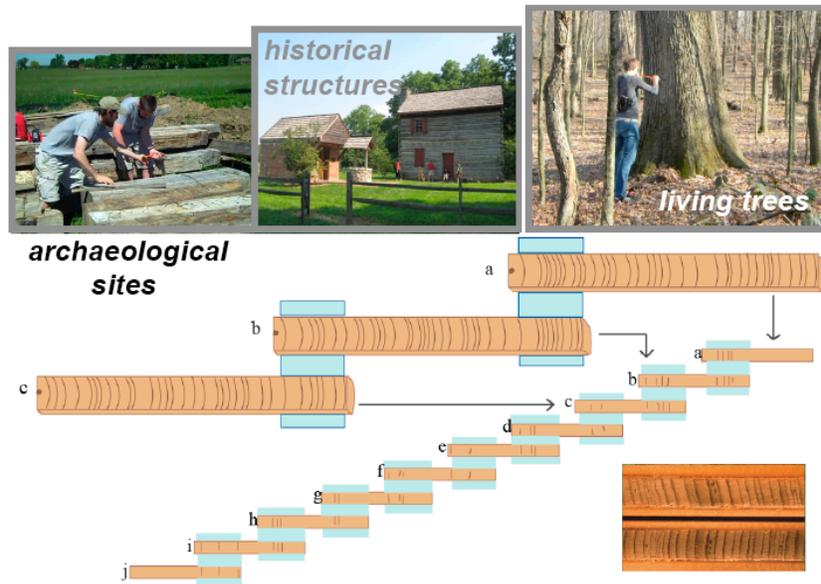


Figure 1. Diagram illustrating tree-ring crossdating. Patterns in ring widths from historic structures and wood associated with archeological sites are matched to living tree-ring chronologies and thus calendar dates can be assigned to each ring.

Archive Statement:

All cores are archived at the Wooster Tree Ring Lab, housed in the Department of Geology, at The College of Wooster.

References:

Holmes, R. L. 1983. Computer-assisted quality control in tree-ring dating and measurement. *Tree Ring Bulletin*, **43** (1), 69-78.

Stokes M. A., and Smiley, T. L., 1968, An introduction to tree-ring dating: Tucson: University of Arizona Press.