



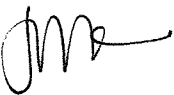
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212-72-2565

DATE: November 4, 2002

TO: David Givens
Jamestown Rediscovery Project
1367 Colonial Parkway
Jamestown, Virginia 23081

FROM: Justine McKnight 

RE: Wood Identification

David - I am returning to you the two wood specimens submitted from your well. As we discussed last week - the well ring wood fibers were intact, and I am confident that they are a red oak species (*Quercus spp. ERYTHROBALANUS group*). Unfortunately, the shoe peg fibers were very distorted - and their drying (which I had hoped would help to bring out some key features) - was not very helpful. All I can say for sure is that they are from some deciduous taxa. I put together the following few paragraphs that describe the analysis - and I am including a disk with a copy of this (Word Perfect v. 10).

Two discrete wood samples were submitted for identification from a well ring and a discarded shoe peg recovered from water saturated contexts at the base of an early 17th century well, Jamestown, Virginia. Wooden elements were sampled for species identification by removing a small section of wood fibers. Wood samples were maintained in a wet condition prior to analysis - stored as-recovered in vinyl bags filled with water. In order to achieve the clear traverse section of wood fibers required for identification, exposed fibers were shaved with a scalpel. Each specimen was then examined under 10X-40X magnification and key anatomical features were noted. The structure of each specimen was compared with appropriate keys (Constantine 1987; Edlin 1969; Hoadley 1990; Panshin and deZeeuw 1980) and checked against wood specimens from a modern comparative collection representative of the forest cover of tidewater Virginia.

Classification of waterlogged wood is often hampered by the deterioration of diagnostic features due to post-depositional processes (Pearsall 2000). Cell walls can disintegrate due to repeated freezing and thawing, and decay caused by anaerobic bacteria and fungi often obliterate key morphological characteristics (Dumbleby 1978). Examination of wood fibers recovered from the Jamestown well revealed that the well ring was very well-preserved, but that the shoe peg fragment had suffered from the considerable destruction of minute features which prevented species identification.

The well ring wood fibers were securely identified as a red oak species (*Quercus spp.* *ERYTHROBALANUS* group). Although segregation of the particular species of oak is not possible based on minute anatomy (Panshin and deZeeuw 1980:568), the two major groups of the genus *Quercus* (the red oak group and the white oak group) can be distinguished. Species of the red oak group (*ERYTHROBALANUS*) native to the James River region include southern red oak (*Quercus falcata*), northern red oak (*Quercus rubra*), black oak (*Quercus velutina*), blackjack oak (*Quercus marilandica*), pin oak (*Quercus palustris*), and willow oak (*Quercus phellos*). The presence of these oak species within this archeobotanical assemblage is consistent with the native forest cover of the project area (Braun 1950; Little 1980). Oak lumber has historically been used for applications requiring hardness, resiliency and natural durability (Panshin and deZeeuw 1980:568-572; USDA 1971:797).

The wood fragment submitted from a shoe peg fragments was highly degraded, and many minute features were not recognizable. A genus identification was not possible, but the specimen is representative of a deciduous taxon.

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United States Department of Agriculture

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