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(56) 2011 Annual Meeting, Seattle, Washington

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AAG Annual Meeting

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Palynological and Chemical Analyses of Pipe Residues as Evidence of Tobacco Use in the Southeastern U.S.

is part of the Paper Session:

Reconstructions of Paleoenvironments and Past Human- Environment Interactions II: Eastern North America

scheduled on Saturday, 4/16/11 at 10:00 AM.

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Abstract:

The prehistory of tobacco (*Nicotiana* spp.) in the New World has long interested archaeologists, anthropologists, and geographers. Native Americans used several species of *Nicotiana* for medicinal, ceremonial, and recreational purposes. *Nicotiana rustica*, the most widespread species in prehistoric eastern North America, is an Andean hybrid that was transported to Central America and Mexico by 7000 BP, and reached the Mississippi Valley between 4000 and 3000 BP. Because other plant materials were also smoked, archaeological pipes do not necessarily document tobacco use. Additional evidence comes from analyses of pollen and other components in pipe residues (dottle). Hall (unpublished) carried out pollen analysis of archaeological pipes from northern California, and identified *Nicotiana* pollen in three specimens (age range 850-250 BP). Rafferty (J. Archaeological Science 29, 2002) identified a chemical signature for nicotine in a pipe from West Virginia (age ~2075 BP) using gas chromatography/mass spectrometry (GC/MS). Here we describe our efforts to build upon the work of Hall and Rafferty by searching for pollen and chemical evidence of tobacco in pipes from archaeological sites in the southeastern U.S. curated in the University of Tennessee's McClung Museum. We found sufficient dottle for analysis in several pipes dating from before 2000 to 500 BP. Dottle samples were prepared using conventional palynological techniques and compared to pollen samples prepared from commercially available tobacco. Pollen results together with initial analyses of chemical signatures using GC/MS contribute to ongoing investigations of the transmission, use, and customs surrounding tobacco and the smoking culture in eastern North America.

Keywords:

Pollen analysis, Archaeology

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