



# Sourcing Sandstone Effigy Pipes of the Lower Mississippi Valley

Mallory A. Melton and Vincas P. Steponaitis (University of North Carolina at Chapel Hill)

## INTRODUCTION

Mississippian effigy pipes from the Lower Mississippi Valley (LMV) are typically made of either limestone or sandstone. Prior to this study, the limestone was known to come from the Glendon Formation near Vicksburg, MS<sup>5</sup>, but the source of the sandstone was unknown. Our goal is to find this source.

Iconographically, many of the sandstone pipes fall into the Bellaire style, while others, more crudely made, are idiosyncratic and cannot be assigned to a named style.<sup>1,6</sup> Several distinctive themes are represented, including, in order of frequency, Pot (5), Crouching Human (3), Quadruped (3), Pipe Holder (2), Raptor (1), Frog (1), and Panther (1).

## OUTCROP SAMPLING

The Catahoula and Hattiesburg Formations in south Mississippi were identified as possible sources of the pipes' sandstone due to similarities in appearance and location (Fig. 2). The geographic center of the Bellaire pipes lies within the Catahoula Formation, which suggests it was a possible source (Fig. 3).

Nine sandstone samples were collected from waterfall and streambed outcrops in Claiborne, Jefferson, Adams, and Wilkinson counties (Fig. 4). Our samples encompass both formations.

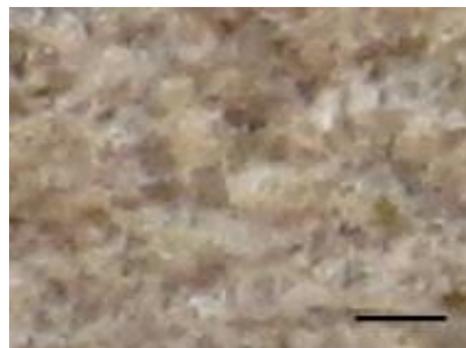


Figure 5. Pot effigy pipe from Adams County. Scale bar measures 0.5mm.

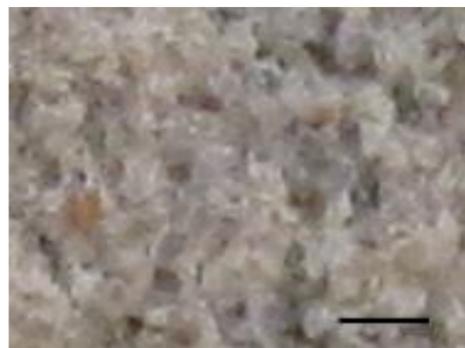


Figure 6. Pot effigy pipe from Mayes Mound in Catahoula Parish, Louisiana. Scale bar measures 0.5mm.

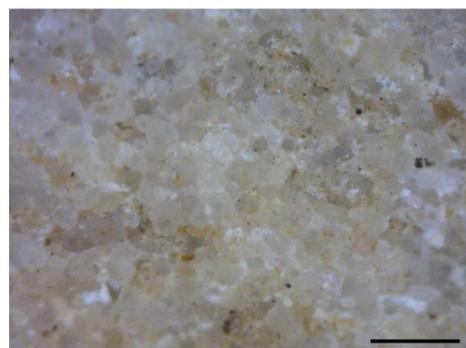


Figure 7. Catahoula sample collected from Blueskin Creek in Jefferson County. Scale bar measures 0.5mm.

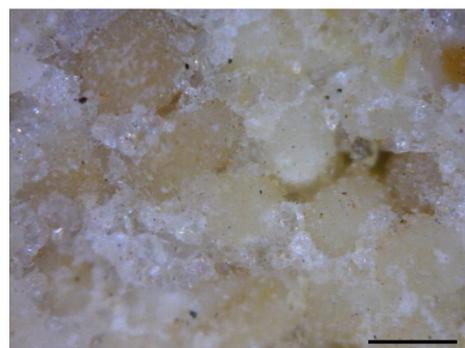


Figure 8. Catahoula sample collected from Whitens Creek in Jefferson County. Scale bar measures 0.5mm.

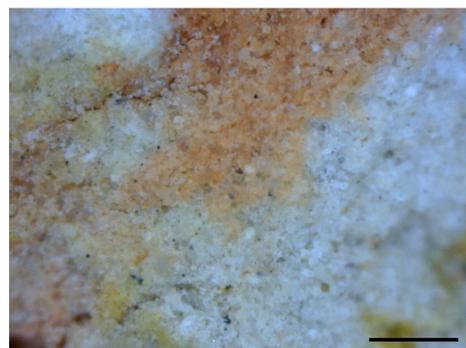


Figure 9. Hattiesburg sample collected from Clarks Creek in Wilkinson County. Scale bar measures 0.5mm.

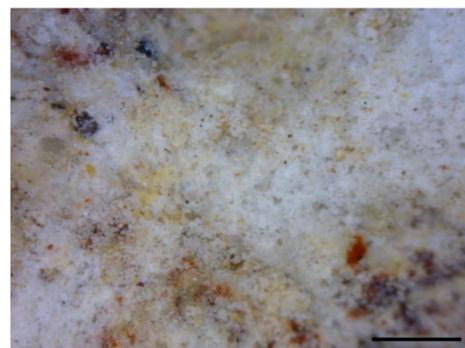


Figure 10. Hattiesburg sample collected from Clarks Creek in Wilkinson County. Scale bar measures 0.5mm.

## ACKNOWLEDGMENTS

Our thanks go to David Dockery, Carolyn Dillian, George Bates, Robert Prospere, and the staffs of the many museums we visited to study the pipes. This research was funded in part by a Summer Undergraduate Research Fellowship (UNC-Chapel Hill).



Figure 1. Sandstone effigy pipe from the Feltus site in Jefferson County. Scale bar measures 5cm.

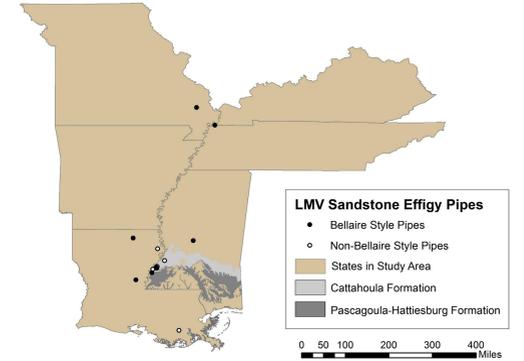


Figure 2. Distribution of sandstone effigy pipes of the Lower Mississippi Valley.

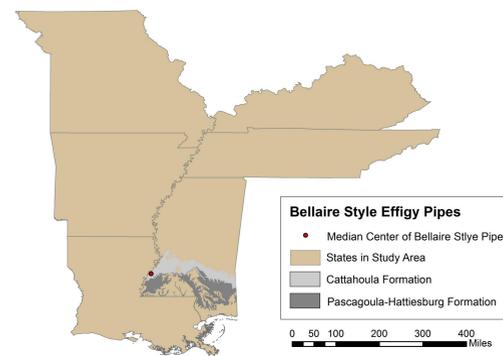


Figure 3. Median center of effigy pipes in the Bellaire style.

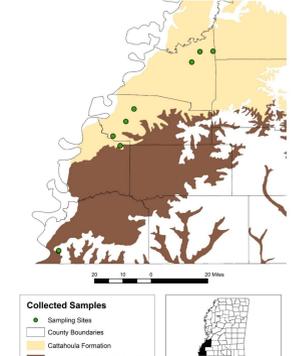


Figure 4. Sample collection sites. Only eight sites are represented on the map due to its scale.

## COMPARATIVE RESULTS

The 14 sandstone pipes in museum collections were examined macroscopically and photographed. The outcrop samples were similarly examined, and in addition were photographed microscopically at 200x.

Macroscopically, the pipes closely resemble the Catahoula samples in color, texture, and hardness. Our Catahoula samples, like the pipes, are medium brown in color and are much harder, less fragile and more uniform than the than our Hattiesburg samples. Scratch tests show that the Catahoula samples have a hardness between that of copper and steel (Mohs 3.3-5.5), while the Hattiesburg samples are softer than a fingernail (Mohs 2.3). Because of their hardness and uniformity, Catahoula sandstones are commonly used for buildings and gravestones, while Hattiesburg sandstones are not.<sup>2</sup> The Hattiesburg Formation contains large amounts of clay, which may reduce the structural strength of its sandstones.<sup>4</sup> These characteristics make the Catahoula sandstones much better suited for carving pipes.

The Catahoula samples exhibit a larger grain size than Hattiesburg samples. Black grains, which are sometimes said to be diagnostic of the Catahoula sandstone, are present in samples collected from both formations.

Although not fully conclusive, our results thus far are consistent with the hypothesis that the sandstones used for carving the LMV effigy pipes came from the Catahoula Formation.

## FUTURE RESEARCH

The geologic distinctions observed in this study are still tentative. Samples were collected from seven outcrops in the Catahoula Formation and only two in the Hattiesburg Formation. More Hattiesburg outcrops will be sampled as this study moves forward. Bellaire style effigy pipes also need to be photographed microscopically. We intend to visit the museums again to capture photographs that match the magnification of photographs taken of outcrop samples.

## REFERENCES

- Brain, J. P., and P. Phillips (1996). *Shell Gorgets: Styles of the Late Prehistoric and Protohistoric Southeast*. Peabody Museum Press, Cambridge, Massachusetts.
- Dockery, D. T., III, and D. E. Thompson (2011). *The Geology of Mississippi*. Kickapoo Press, Clinton, Mississippi.
- Li, Z., and M. A. Meylan (1994). "Lithostratigraphy and Petrology of Neogene and Pleistocene Sedimentary Rocks, South-Central Mississippi." *Gulf Coast Association of Geological Societies Transactions* 44:383-392.
- Rhinehardt, K.F., and M.A. Meylan (1992). "Petrologic Discrimination between the Neogene Formations in Adams and Wilkinson Counties, Southwestern Mississippi." *Gulf Coast Association of Geological Societies Transactions* 42:647-658.
- Steponaitis, V. P., and D. T. Dockery III (2011). "Mississippian Effigy Pipes and the Glendon Limestone." *American Antiquity* 76(2): 345-354.
- Steponaitis V. P., G. E. Lankford, V. J. Knight, Jr., and R. Sharp (2009). "Iconography, Style, and Function of Effigy Pipes in the Lower Mississippi Valley." Paper presented at the annual meeting of the Southeastern Archaeological Conference, Mobile, Alabama.