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The 2010 Activities of the Southeastern Paleoamerican Survey

By Albert C. Goodyear

While the Southeastern Paleoamerican Survey (SEPAS) is perhaps best known for its work at the Topper site each summer with the Allendale Paleoamerican Expedition, in fact, this is only one of several important research functions conducted throughout the year. As noted previously in Legacy (Goodyear 2006), the Survey also maintains the S.C. Paleo Point Data Base, conducts artifact mapping, maintains the Southeastern U.S. lithic raw material inventory, and conducts Southeastern U.S. quaternary studies. Progress was made in 2010 in all of these areas of research.

In terms of artifact mapping, a new database was created devoted to worked prismatic blades thought to be Clovis in origin. Based on the extensive work with Clovis macroblades at Topper (Sain 2010) and nearby Big Pine Tree site (Sain and Goodyear 2011), blades are known to be a major part of Clovis manufacturing activities at these quarries. At these sites, however, a relatively small number were worked into tools, especially at Topper, prompting a search for technologically modified blades from sites elsewhere in South Carolina and Georgia. To date, 18 blades, all of Allendale-type chert, have been recorded in the Coastal Plain counties of Georgia and South Carolina. So far such large blades are only known to be associated with Clovis. Their edges have been modified by pressure retouch into knives, scrapers, and graver spurs (Fig. 1). Some blades have two or more worked edges indicating they were probably maintained and reused at more than one site.

The S.C. Paleo Point Data Base saw several new examples added in 2010. A total of 26 new points were recorded, 14 alone by Tommy Charles from the Watson metavolcanic collection donated to the Cayce Museum. At the end of 2010, the database had 571 points. The S.C. Paleo Point Data Base is now 40 years old and ripe for pattern recognition and possible cultural interpretations.

One obvious pattern is the dominance of metavolcanic raw materials in the northern and eastern part of South Carolina. Fig. 2 is a map prepared in 2005 by Robert Allison of the SAS Institute, which shows two basic patterns of Clovis points by raw material, Coastal Plain chert in southern South Carolina and metavolcanic points dominating in North Carolina and northern South Carolina. Metavolcanic lithic materials occur as bedrock in the Piedmont province and prehistoric quarries are known for both S.C. (Benson 2007) and N.C. (Steponaitis 2009).
using a variety of techniques such as x-ray fluorescence (XRF) spectrometry and neodymium-isotope analysis (Steponaitis et al. 2006). Similar methods are currently being applied in a study of S.C. metavolcanic quarries by Mark Brooks and Christopher Moore. Using petrographic descriptions of thin sections by Dr. Gene Yogodinski of USC’s Department of Earth and Ocean Sciences, Christopher Young has recently undertaken an evaluation of lithic raw materials using prehistoric metavolcanic artifacts from the Kolb site (38DA75) and metavolcanic cobbles obtained from the nearby Pee Dee River (Young 2010). In the fall, SCIAA researchers also had access to a hand held Bruker Tracer III-V XRF unit made possible by a loan to Dr. Molly Zuckerman from Bruker Analytical. With this machine, Derek Anderson was able to scan several S.C. metavolcanic artifacts as well as N.C. quarry samples. In late 2010, Young and Goodyear received a grant from SCIAA’s Archaeological Research Trust Board to continue sourcing studies of the Kolb site and the fine-grained material we have called tuff in S.C. A field trip was made in January 2011 to the Asheboro area of N.C. to collect raw material samples from the so-called tuff outcrops known there. Using neodymium-isotope and XRF analysis, tufts from N.C. sources will be compared with tuff artifacts found in S.C. to evaluate their similarities.

One serendipitous discovery reported to us in 2009 was the fact that certain metavolcanic artifacts respond to a magnet. Mike Stephens, a resident of Columbia, brought his father’s artifact collection to SCIAA, which had been made in the 1950’s from family land near Effingham, S.C. Stephens wondered if any of his artifacts would show attraction to a magnet. In fact, some of the metavolcanic bifaces obviously did. When Mr. Stephens demonstrated this to Keith Derting and myself, we were shocked to put it mildly. Since that time numerous metavolcanic artifacts have tested positively (Fig. 12) with the same magnet used by Smith, which he obtained from an office supply store. The possibility exists that certain metavolcanic sources may be magnetic and as such might be an inexpensive way of detecting sources. The rhyolite quarries in the western Piedmont of S.C. on U.S. Forest Service land in Edgefield...
and Saluda Counties all failed to respond to the magnet. However, metavolcanic lithics from the Pee Dee River in both S.C. and N.C. and the Uwharrie Mountains frequently do react suggesting this region may be the source of magnetic artifacts. Magnetic flakes adjacent to the Pee Dee River in both S.C. and N.C. are rather common (Goodyear 2010).

Activity at the Topper site began early in 2010 with a February 21st tour for the Advisory Board of the Center for the Study of First Americans (CFSFA) at Texas A&M University (Fig. 4). As part of their Advisory Board’s winter meeting in Charleston, a tour was requested by Dr. Mike Waters, CFSFA Director and Dr. Ted Goebel, Associate Director, to see the site and the facilities available to us at Clariant. The deep Pleistocene stratigraphy is well exposed under the pavilion and open units on the adjacent Hillside allowed inspection of Clovis stratigraphy there. Graduate students Doug Sain and Ashley Smallwood were present to help explain the archaeology and stratigraphy related to their thesis and dissertation research.

In 2010, fieldwork began in early March 2010 with a two-week excavation of the terrace area. For the second year now, a short field school was conducted for University of Tennessee undergraduates on their spring break. These students of Professor David G. Anderson and members of the Anthropology Club spent a week learning excavation techniques and helping us dig a 4 X 4-meter block a few meters north of the pavilion (Fig. 5). This excavation was conducted in order to determine if the preClovis manifestations so prominent under the pavilion exist to the north. A 4 X 4-meter unit needed to be opened in order to safely go down two plus meters to reach the top of the Pleistocene terrace. A rather extensive and dense lithic floor was encountered about a meter below surface in the stratigraphic position of Clovis on the terrace (Fig. 6). This floor was so dense that it wasn’t finished being excavated until early June. Hundreds of lithic artifacts ended up being three dimensionally plotted with the total station. This lithic floor has been the subject of meticulous analysis by Derek Anderson reconstructing micro stratigraphy and refit analysis. His results are presented in this issue of Legacy, pages 16-19.

Starting May 2, 2010 as part of the Allendale Paleoamerican Expedition, six weeks of excavation were conducted variously at four locations at the Clariant Corporation chert quarries. As has been customary, the first two weeks were involved in underwater data recovery at the Big Pine Tree site. This year an airlift was employed to examine the area further out in the creek. Like the results near the collapsed bank, the usual prehistoric artifacts were recovered in profusion representing all time periods. Sediments near the center of the stream channel are removed by the current, leaving artifacts on the hard bottom. The underwater operations were conducted under the supervision of Ashley Deming, Manager of SCIAA’s Sport Diver Program in the SCIAA Charleston office with her capable staff of Carl Naylor and Joe Beatty. Several sport divers participated in 2010 who were needed to ferry the screens back from the center of Smiths Lake Creek. Underwater archaeologists Jessi Halligan from Texas A&M University and Andrew Roberts of SWCA Environmental Consultants of Houston, Texas conducted underwater surveys of Smiths Lake Creek.
and the chute channel of the Savannah River adjacent to Topper mapping and collecting chert cobbles.

Starting Week III, a single two-meter unit was excavated on the land portion of Big Pine Tree site. Shane Miller and Adam Russell directed that work to gather additional geological and paleobotanical from this multicomponent site. Adam Russell is doing his masters thesis from the University of Tennessee on the Allendale (aka “MALA”) occupation. Stephen Carmody of the University of Tennessee was also present to gather flotation samples of charred plant remains. A classic Clovis preform was found at the bottom of the unit, as was expected. Shane Miller is intending to pull together this season’s work plus the previous excavations in the form of a monograph synthesizing this important site.

Starting Week I, excavations continued in the lithic floor in the 4 X 4-meter unit at Topper (Fig. 6) and were completed by Week V. A Taylor point and small endscraper were found indicating an Early Archaic component and a few weathered blades and unifaces were also found that are probably Clovis. Over 1,300 artifacts were mapped using the total-station, which were nearly all lithic reduction debris. The deposit ended fairly abruptly at which point a two-meter unit was set up in the center and excavated in 10 centimeter levels down through the Pleistocene alluvial sands to the top of the Pleistocene terrace. Only one cortical cobble was found in the unit indicating the absence of the normal pre-Clovis industrial chert processing debris as is typical in the area under the pavilion. Later on in June 2010, Dr. Christopher Moore of the Savannah River Archaeology Research Program, helped take OSL samples for the anticipated dating of the lithic floor and redating the Pleistocene sands below.

Excavations supervised by Doug Sain continued for all five weeks in the Pleistocene terrace under the pavilion. This is an effort to increase the artifact recovery of this minimally pre-20,000 year old unit, which may be 50,000 years or older. Another well-preserved chert core was found this year in the top of the Pleistocene terrace (Fig. 7). Because of the high moisture content in the terrace, the chert doesn’t tend to weather like it normally does in the upper pre-Clovis and Clovis levels. The work is hard and slow due to the high clay content of the sediments, which need to be wetted before digging then water screened. The geological work of Professor Scott Harris of the College of Charleston and his students, Tina Poston and Katie Luciano,
who analyzed the sediment sizes of the entire four-meter stratigraphic column under the pavilion, was completed in 2010 and was presented as a poster program in the S.C. Academy of Sciences meeting (Harris et al. 2010). The stratigraphic break between Holocene colluvial sands eroding off the hillside with Clovis at the bottom of that unit and the coarser sands of the Pleistocene alluvium below is rather dramatic (Fig. 8). Likewise, the fining up sequence in the Pleistocene terrace with increasing clay and silt at the top is also apparent. A Bt paleosol has also formed in the top of the terrace adding some time for its development. Megan Hoak of the University of Tennessee is doing her masters thesis on debitage distribution from the surface down through the Pleistocene terrace searching for stratigraphic trends and information about site taphonomy (Hoak 2010).

Excavations in the area known as the Hillside continued in 2010. Ashley Smallwood was the overall supervisor this year assisted by supervisors Erik Johanson, Sarah Walters, and Derek Anderson. Three new two-meter units were opened searching for the ubiquitous Clovis occupation. Unit N180/E22 was completed by Ernie Plummer and his team. An interesting abrader was found down at what is thought to be the Clovis zone. One unit was placed much further north than we have gone before to help define the northern extent of the site. N205/E37 was begun by Bill Covington and continued with the help of Derek Anderson in what proved to be an exceptionally deep deposit. A Taylor point and two small end scrapers were found around 110 centimeters below surface, associated with what appears to be culturally related charred nutshell fragments. Charred hickory shells are being AMS radiocarbon dated in an effort to determine if they are Early Archaic in age (> 9,000 RCYR). Because of the artifact density of the Early Archaic deposit, it was not possible to determine if Clovis was below. This will be determined in 2011. If Clovis is found below 110 centimeters below surface, it will be the deepest level yet for the Hillside. The third unit, N207/E64, was supervised by Sarah Walters and Ashley Smallwood, and they encountered Clovis preforms and an exceptionally large number of flake tools. This floor was so dense it was not finished and should be completed in the 2011 season.

Once again the field lab was operated during the dig accommodating the numerous dredge artifacts from Big Pine Tree site and conducting analysis for the terrace 4 X 4-meter unit. Erika Shofner helped start the lab in early May 2010 and Jesse Tune, now a doctoral student at Texas A&M University, spent the remaining five weeks supervising analysis. Plans are being made to increase the amount of lab work for the 2011 season.

Several speakers gave excellent programs in the evening during the 2010 Field Season. These include Dr. Andy Hemmings on organic artifacts from North American Clovis sites, Dr. Randy Daniel on the Uwharrie Mountain N.C. and Allendale S.C. Early Archaic Macaband model, Dr. Barbara Purdy on the incised image of a mammoth on a mineralized bone from the Old Vero site in Florida, Dr. Christopher Moore on excavation results of Carolina Bays in S.C., and Dr. William Andrefsky of Washington State University on methodological approaches to lithic analysis. Dr. Andrefsky (Fig. 9), author of several books on lithic analysis, delivered a fascinating lecture on insights into western U.S. Archaic settlement systems through stone tool studies. We are pleased to have such fine scholars visit our field camp each year providing wider contexts for our Paleoamerican research.

A number of publications on Topper and SEPAS-related research appeared in 2010 and more will appear in 2011. A major synthesis of the Paleoindian Data Base of the Americas (PIDBA) was published by David G. Anderson (2010) and his graduate students, several of whom are Topper site researchers. The S.C. Paleo Point Data Base forms a part of the national database compiled by PIDBA. The graduate student researchers have been especially productive. Shane Miller's revised masters thesis on his Clovis excavations on the Hillside lower firebreak became the first Occasional Paper of SEPAS (Miller 2010), as produced by our series editor Dr. David G. Anderson (Fig. 11). Shane and Ashley Smallwood also published a book chapter on their Topper Clovis excavations in a book.

Fig. 10: John White, Interpreter Ranger, at Rivers Bridge State Historic Site. (Photo by Douglas A. Sain)