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Update on Research at the Topper Site
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The last time I reported on our activities at Topper was in the spring issue of Legacy in 2007. The previous year the pavilion was constructed over the deep excavation at Topper, which was celebrated with a barbeque and tour in the fall of 2006 (Goodyear 2007). Our host, Clariant Corporation, graciously offered to build a viewing deck inside the pavilion to allow tours to safely observe excavations down in the terrace (Fig. 1). Clariant provided the lumber and several of their employees donated their time and expertise in constructing this deck. This was done in time for the 2007 dig. It is a valuable addition to our work and allows up to 30 people at a time to step inside the building and safely view the excavations. In the past three seasons (2006-2008), several important discoveries and program developments have transpired.

In the 2006 season, we excavated in two places. The first was down in the deep unit with the early preClovis occupation known as the Pleistocene terrace, which also produced the 50,000-year radiocarbon dates (Goodyear 2005). The second location was on what is being called the Hillside at Topper, in recognition of the extensive Clovis site on the upland overlooking the terrace below.

In 2006, the permanent roofed structure we call the pavilion was built allowing us to dig for the first time in the deep terrace units with shade from the sun and without any intrusions by rain and flooding. Excavations here consisted of one-meter squares dug to the depth of the 50,000-year radiocarbon dates, or about 95.40 meters. The goal is to recover chert artifacts from the top of the terrace at approximately 97.30 meters, downward two meters to the level of the dates (Fig. 2). Numerous examples of the distinctive bend break tools have been found throughout the terrace including one with an obvious graver spur (Fig. 3). This artifact is considered of unquestionable human manufacture and was found in the upper portion of the terrace (Fig. 2).

Another exciting find was a reddish core of unweathered chert with four areas of battering and several flake detachments (Fig. 4). This artifact was recovered in situ at a depth of 96.05 meters, some 60 centimeters above the 50,000-year dates (Fig. 2). Like the spurred piece, it is considered a definitive artifact.

On the Hillside in 2006, graduate students began digging large block excavations in an effort to reveal what has turned out to be a very extensive Clovis occupation. Shane Miller, then a graduate student from the University of Tennessee, completed a 64-square-meter block on the south side of the hill in the footprint of Clariant’s firebreak (Fig. 5). Referred to as the lower firebreak, this area was initially tested and exposed in 2005 in preparation for tours related to the 2005 Clovis in the Southeast conference. Shane’s work revealed a dense Clovis deposit throughout the block with typical

Fig. 1: The viewing deck in the pavilion overlooking the 2007 Pleistocene terrace excavations. (SCIAA photo by Al Goodyear)

Fig. 2: Profile drawing of the four-meter continuous stratigraphic section from present day surface down to the 50k radiocarbon level in the Pleistocene terrace.

Fig. 3: Bend break tool with graver spur accessory found in the Pleistocene terrace. (Left: SCIAA photo by Daryl P. Miller; Right: Photo from Texas A&M Digital Imaging Center by Jim Weiderhold)
Topper Clovis artifacts such as broken Clovis point preforms, blades and unifaces (Miller 2007). One tool in particular has turned out thus far to be unique. It is a large (155.55 gram) uniface, which appears to have been used in a haft based on heavy lateral edge grinding (Fig. 6). Such an implement might imply heavy-duty woodworking at Topper in conjunction with quarrying and tool manufacture (Miller and Goodyear 2008).

Ashley M. Smallwood, a doctoral student from Texas A&M University, started a second block immediately north of the firebreak in 2006. Ashley has spent three seasons at the Hillside excavation adding contiguous excavation squares each year to form a single large 48-square-meter block unit. In 2006, she had an auspicious beginning by finding the base of a rhyolite Clovis point (Fig. 7), one of only four points found thus far from the site. Data from her block excavations plus all Clovis bifaces from Topper will form part of her doctoral dissertation.

In 2007, work continued down in the Pleistocene terrace revealing more of the typical preClovis bend-break tools and simple unifaces. Because of the high clay content of these sediments, digging is slow and the soil must be wetted to permit ease of digging, and so as not to damage the chert artifacts. All sediments from the terrace are water screened over one-eighth-inch mesh. In five weeks of excavation, a single one-meter square can only be taken down about 1.0 meter. Thus, two seasons are needed to take a unit to the 50,000-year level. The terrace was formed by over bank flooding with significantly lower energy than the upper Pleistocene sands (Fig. 2). Because of the high clay content, they can also be described as back swamp deposits. Under the supervision of Doug Sain, several volunteers, such as Jean Guilleux, Carey Geiger, Carol Reed, and Paula Zitzelberger have devoted themselves to this task of slow, difficult digging. They and their fellow weekly volunteers have been responsible for excavating approximately 13 cubic meters of the terrace from 2005-2008.

On the Hillside in 2007, work continued on Ashley’s block excavation and units were opened further up the hill in the upper firebreak. Shane Miller functioned as the Senior Site Supervisor for the Hillside overseeing all units plus managing the instrument recording. Shane also completed his master’s thesis at the University of Tennessee based on his analysis of the lower firebreak block (Miller 2007). Starting in 2007, all Hillside Clovis artifacts were recorded using a total station. Tom Pertierra

Fig. 4: Large preClovis core found in situ down in the Pleistocene terrace. (SCIAA photo by Al Goodyear)

Fig. 5: View of 2006 lower firebreak excavation resulting in 64 square meter block excavation supervised by D. Shane Miller. (SCIAA photo by Al Goodyear)

Fig. 6: Line drawing of probable hafted uniface tool from 2006 firebreak Clovis excavation. (Drawing by Darby Erd)

Fig. 7: View of 2006 lower firebreak excavation resulting in 64 square meter block excavation supervised by D. Shane Miller. (SCIAA photo by Al Goodyear)
had formerly been misclassified as the Clovis Comet hypothesis. This was a multi-authored paper published in the Proceedings of the National Academy of Sciences (Firestone et al. 2007). Topper played a role in this discovery as Clovis age sediments collected by Allen West there in 2005 contained several markers such as iridium diagnostic of an extraterrestrial impact. One marker, which has been particularly diagnostic of an impact, has been the presence of nanodiamonds. Subsequent analysis of Topper sediments and other Clovis age sites has resulted in overwhelming evidence of nanodiamonds (Kennett et al. 2009). I also incidentally contributed to this research while identifying the presence of the Redstone fluted point in the South Carolina Paleo Point database. While reclassifying fluted points as Redstone, which had formerly been misclassified as Clovis, I found that there were four to five times more Clovis points than Redstones, the fluted point believed to exist after Clovis and before Dalton (Goodyear 2006). This same disproportionate ratio can be found from Virginia down to Florida suggesting a possible pan Southeastern U.S. decline in Paleoamerican populations where numbers of projectile points are a proxy for people. Such a decline would be consistent with widespread damage from an extraterrestrial impact suspected in causing the extinction of several key Pleistocene species such as mammoths and mastodons. If this were indeed the case, such an environmental disaster would also have severely damaged human groups. Archaeologists are beginning to look more closely at not only post-Clovis projectile point densities, but also radiocarbon dates and paleo environmental data to check for anomalies (Anderson et al. 2008).

The year of 2008 saw an expansion in nearly every area of our program. In February, our Southeastern Paleoamerican Survey and its support organization headed by Tom Pertierra (SEPAS, Inc.) co-sponsored with the University of Texas (host), Texas A&M University’s Center for the Study of First Americans, and the Smithsonian Institution, a conference on issues related to the early peopling of the Americas (Smallwood 2008a). Entitled the 2008 Paleoamerican Origins Workshop, leading scholars were invited to present papers on their sites over a three-day period, which included ample time for questions and discussion plus an evening of showing artifacts. The consensus was that a number of sites in North America are clearly from 1,000 to 2,000 years older than Clovis, and evidence is emerging for even earlier sites, some dating before that Last Glacial Maximum (20,000 years) (Collins et al. 2008). Based on the encouraging results of this conference, plans are in the making for a future hemispheric-wide conference on the peopling of the Americas, which would be open to the public.

Fieldwork in 2008 included the usual deep terrace pre-Clovis excavations, the Clovis occupation of the Hillside and the return to the Big Pine Tree (38AL143) site for underwater data recovery. Located about a mile away from Topper on the modern Savannah River floodplain, Big Pine Tree has long been known as a rich Paleoindian and Archaic site, especially for Clovis (Goodyear 1999). A good portion of the site has eroded into Smiths Lake Creek and was previously investigated by dredging operations in 1995 and 1997. Given the increased interest in Clovis technology as revealed at Topper, we decided to team up with SCIAA’s Maritime Research Division (MRD) to continue underwater data recovery. Lora Holland and her staff of Joe Beatty and Carl Naylor did great service manning the dredge and working with the volunteers. One Clovis and a Dalton were found, as well as numerous early unifacial flake tools and prismatic blades. Dredging is planned for the first two weeks of the 2009 season at Big Pine Tree in an effort to continue to build a scientifically valuable collection of stone tools from this important site.

The impact of Tom Pertierra’s assistance through SEPAS, Inc. was evident in our 2008 fieldwork. Not the least of these is the addition of a mobile laboratory and equipment carrier (Fig. 9). This is a new 18-foot trailer with hand tools, screens, pumps and a workshop in the back, plus an air conditioned field lab in the front. The lab has a wet sink, microscope, digital scanners, air compressor and a computer where field records can be scanned and entered daily. It is affectionately called the Science Wagon. In addition to this, Tom provided a second total station for piece plotting on the Hillside excavation, plus four digital laser levels. For the Pleistocene terrace dig, a roofed
screen deck on skids was constructed to aid in the water screening. SEPAS, Inc. also provided two floating screens for the dredge work at Big Pine Tree and a metal screening table all of which proved most useful. Through his ingenuity and generosity, Tom has brought the Allendale Paleoamerican Expedition to a state-of-the-art level, which is ideal for our work at Clariant or any other site in the Southeast that may merit fieldwork.

A positive development that has been growing since 2005 is the participation of graduate students from different universities in the supervision of fieldwork and research. One master’s thesis on the Hillside Clovis has been completed by D. Shane Miller at the University of Tennessee (Miller 2007). Shane has functioned as the senior site supervisor from 2006-2008. He is now a doctoral student at the University of Arizona and remains a research associate through studies of Topper site formation processes. Ashley M. Smallwood, Texas A&M, has led excavations of Hillside Clovis from 2006-2008 and recently was awarded a National Science Foundation dissertation improvement grant (Smallwood 2008b), which will include Topper as part of her regional studies of Clovis in the Southeast. Doug Sain has supervised the Pleistocene terrace excavations from 2006-2008 and is completing his master’s at Eastern New Mexico University using the Clovis blade technology at Topper for his thesis (Sain 2008). Given the tremendous potential for prehistoric research at Topper and Big Pine Tree, we hope to involve more graduate and undergraduate students in the future.

In 2008, there was a renewed interest in Topper by the media. The Clovis Comet story was the subject of two History Channel shows. One, a two-hour piece called *Journey to 10,000 B.C.* produced by David Padrusch, and a second one-hour show called *The Comet Storm* produced by Simone Swink. The latter had a fair amount of coverage of Topper. SCETV came each week to the dig gathering footage and produced an excellent 30-

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**Fig. 8:** Excavating the Clovis layer on the Hillside, 2008, showing the density of Clovis artifacts. (SCIAA photo by Meg Gaillard)

**Fig. 9:** Tom Pertierra with the mobile laboratory and equipment carrier. (SEPAS, Inc. photo by Betsy Pertierra)
minute show called “Finding Clovis” (Fig. 10). It is being provided to South Carolina public schools. A DVD can be purchased from ETV at myetv.org. A new PBS show called TimeTeamAmerica directed by Graham Dixon brought a large group from Oregon and elsewhere to film for nearly a week in June. The show is modeled off the British TimeTeam program produced by Dixon. This will be a one-hour show devoted to Topper to be broadcast sometime in 2009. Topper was included in two magazines, Science Illustrated for the 50,000-year archaeological claim and in American Archaeology for Clovis. A copy of the latter article can be found on our web site along with several popular and scientific publications at www.allendale-expedition.net.

Presently, folks are signing up for the 2009 expedition, which begins May 4th and ends June 6th. The first week will include the Pleistocene terrace dig and underwater work at Big Pine Tree. The second week will continue these plus the Hillside Clovis excavation begins. The third weeks through fifth weeks are Hillside and Pleistocene terrace digs only. Free tours are available to the public on Saturdays from 10:00 AM until noon. Please call the Institute or email me (Goodyear@sc.edu) if you are bringing a large group. For more information on how to sign up for the dig, go to www.allendale-expedition.net. Registration is by a tax-deductible gift to the University of South Carolina (See back page for registration information).

I wish to thank all the members of the Allendale Paleoamerican Expedition who have signed up in recent years. Without their help none of this would be possible. David Anderson and Jenalee Muse Anderson have continued to graciously open up their lovely home in Williston, South Carolina, for the much-fabled Paleocarnivore Ball featuring David’s marinated steaks. This past year we were pleased to have our recently arrived new SCIAA Director Dr. Charlie Cobb and his wife Terri Price in attendance for inclusion in the traditional group photo on the front porch of their home (Fig. 11). Clariant Corporation who hosts our dig every year was again extraordinarily accommodating. Bill Hartford, recently retired Plant Manager, over the years gave us great assistance, including help with the pavilion and viewing platform. His replacement, Eric Riden, has also helped in many ways, as has Daniel Bessinger, Human Resources Manager. Bill and Jack Kneft of Colonial Packaging have provided Ziploc bags for our field and lab work, which is much appreciated. Darrell Barnes of Yesterday’s restaurant has contributed critical supplies and storage. Several donors have given beyond the dig registration allowing us to keep going on this interesting journey to the past. Thanks to all.

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Fig. 11: 2008 Allendale Paleoamerican Expedition volunteers and staff at the Anderson home in Williston, South Carolina. (SCIAA photo by Meg Gaillard)