The First and Last Pre-Clovis Occupations of the Topper Site, Allendale County, South Carolina

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Abstract

The Topper site is a prehistoric chert quarry in South Carolina used by multiple cultures over thousands of years. Excavations conducted between 1998 and 2012 identified the pre-Clovis Clariant complex, characterized by a core-and-flake technology dated by OSL and radiocarbon methods to approximately 30–50 ka. More recent investigations revealed a later occupation immediately beneath Clovis deposits containing small lanceolate bifaces in sediments dated by OSL to approximately 18–19 ka. Their stratigraphic position indicates that the earliest Clovis occupants were living on the final land surfaces of an older Pleistocene terrace. These lanceolates closely resemble other proposed pre-Clovis biface traditions from the eastern United States, including Miller Lanceolate, Haw River, Page-Ladson, and Cactus Hill forms. At Topper, they are referred to as Haw River points in recognition of the early use of that term. The in-situ occurrence and pre-13 ka age of these artifacts demonstrate that they are genuinely pre-Clovis and technologically distinct from later Clovis bifaces and preforms. In contrast, the older Clariant core-and-flake industry resembles Old World Paleolithic technologies, particularly Southeast Asian industries where bifaces are generally absent.

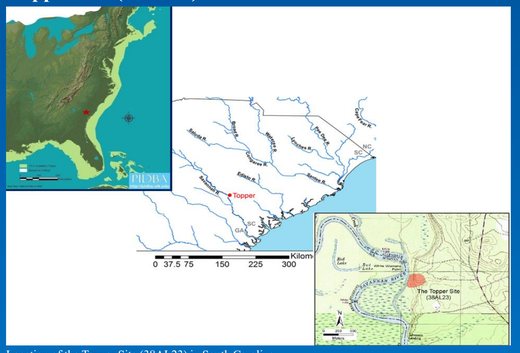
The Topper Site and the Search for Pre-Clovis

The Topper site (38AL23) is a large, multicomponent archaeological site on the east bank of the Savannah River in Allendale County, South Carolina. Located on a Pleistocene alluvial terrace below the Coastal Plain uplands, the site lies adjacent to extensive outcrops of high-quality Allendale Coastal Plain chert, a major lithic resource repeatedly used by Indigenous peoples. Surveys by Albert Goodyear and Tommy Charles in the 1980s identified Topper as one of several important chert quarry localities in the central Savannah River valley, and initial excavations documented intact archaeological deposits.

Topper became a major focus of Paleoamerican research when Al Goodyear returned to the site with the Allendale Paleoindian Expedition in 1998. Excavations first exposed a substantial Clovis occupation, but Goodyear deliberately extended excavations into the underlying Pleistocene sediments to test for evidence older than Clovis. Lithic material recovered beneath the Clovis horizon initiated a long-term research program focused specifically on the antiquity and cultural origin of these deeper deposits.

Subsequent work concentrated on the Pleistocene terrace, where proposed pre-Clovis artifacts occur beneath the stratigraphically distinct Clovis occupation. Geoarchaeological studies established the terrace stratigraphy and demonstrated that the deeper artifact-bearing sediments are older than Clovis, although the cultural origin of some early specimens was initially debated. Continued excavation and technological analysis led Goodyear and Sain (2018) to define the deeper core-and-flake assemblage as the Clariant Complex. Together with the later Haw River lanceolate occupation, these deposits form the principal focus of ongoing research into the pre-Clovis sequence at Topper.

Topper Site (38AL23)

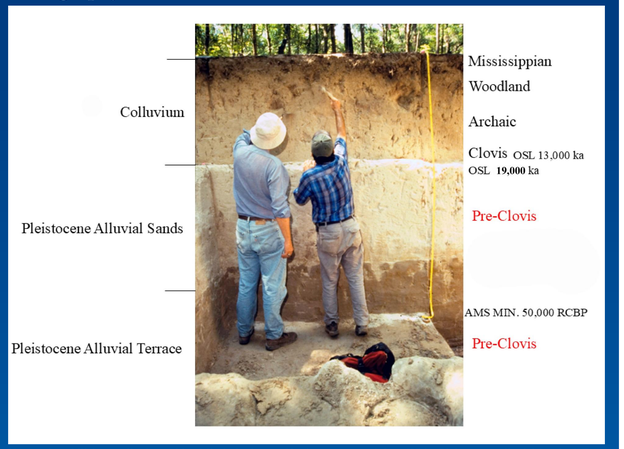


Location of the Topper Site (38AL23) in South Carolina.

Geomorphology

The Topper site sits upon two phases of a Pleistocene alluvial terrace dating from at least 50k radiocarbon years up through approximately 18k years ago. The lowest phase is comprised of alluvium when the Savannah River flowed in a meander phase with back swamps similar to the modern river. Referred to informally as the Pleistocene terrace it is present in the lowest two meters where it terminated with two argillic B horizons. AMS dates consistently return as infinite in that phase. The color of light to dark gray is a function of a high moisture due to the water table. It subsequently transitioned to a point bar like floodplain with coarser sediments and small chute channels. No datable carbon is present in what we call the White Pleistocene Alluvial Sands (WPAS). This zone is approximately 1.0 meter thick with OSL dates ranging from 36k to 18k (Waters et. al 2009). The last geologic stratum was formed by colluvium with slope wash observable today during rain. Taken altogether Topper is something of an anomaly as it survived the continental wide Pleistocene degradation known to have eroded away the late Pleistocene alluvial deposits flushing out river basins including the Savannah (Segovia. Russell Resv. Report). The preservation of the Topper late Pleistocene deposits leaving a 4m deep artifact bearing deposit starting with the last 50k years of human occupation is truly remarkable that it survived (Goodyear and Sain 2018).

Stratigraphy



Upper ~1 m: hillslope colluvium with a Mississippian-to-Clovis sequence, ~1-2 m: White Pleistocene Alluvial Sands (WPAS), the principal upper Clariant deposit; ~2-4+ m: older Pleistocene terrace alluvium containing related Clariant artifacts.

Allendale Coastal Plain Chert (ACP)

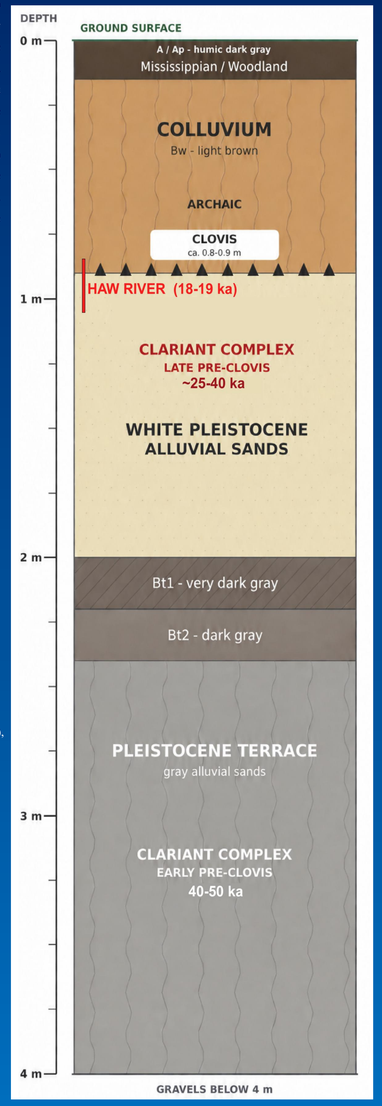
Coastal Plain chert at Topper, commonly called Allendale-Brier Creek chert, was a major tool stone used across South Carolina and much of Georgia. It occurs in terrestrial deposits at Topper and in the Savannah River, where river-worn pieces are smoother and more stained than heavily weathered terrestrial material. The chert is marine in origin and dates to the Oligocene, with later terrestrial silicification linked to weathering of clay-rich sediments (Upchurch et al., in press). Because the material is prone to desilicification, this alteration is often visible on pre-Clovis, Clovis, and some Archaic artifacts. Toolmakers first had to remove the weathered limestone cortex to expose the high-quality chert beneath.





Allendale Coastal Plain Chert (ACP) nodules fractured to expose the weathering rind and interior unaltered chert.

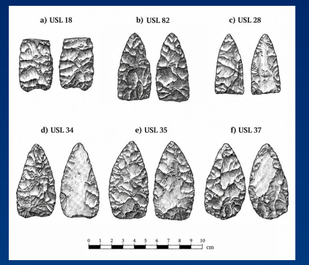
Generalized Topper Site Profile



Colluvium Artifacts



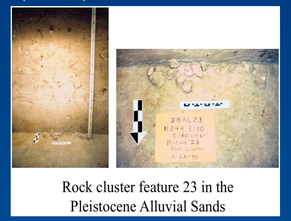
Clovis Points & Blades from 38AL23



USL/Haw River points from 38AL23. Drawings by D. Erd.

White Pleistocene Alluvial Sands (WPAS) Artifacts

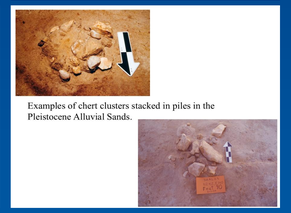




Rock cluster feature 23 in the Pleistocene Alluvial Sands

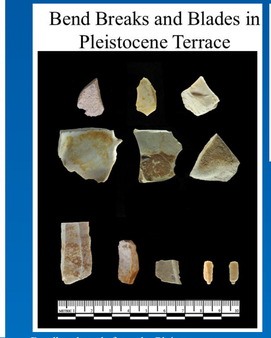


Lithic Reduction feature around boulder sized anvil with associated flake tools.

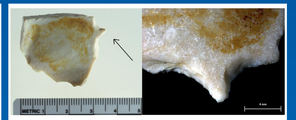


Examples of chert clusters stacked in piles in the Pleistocene Alluvial Sands.

Pleistocene Terrace Artifacts



Bendbreak tools from the Pleistocene terrace.



Bend break tool with graver spur from Pleistocene Terrace



Large pre-Clovis core found in situ in the Pleistocene terrace.

Topper Pre-Clovis

Haw River Lanceolate Tradition. The Haw River type, first described by Painter (1982, 1983) and later discussed by Peck (2008), is a small, unfluted lanceolate form recognized in the Carolinas and proposed as an early Paleoindian or possible pre-Clovis point type. At Topper, Haw River points occur from the Clovis level downward about 10–15 cm, principally between 100 and 110 cm. OSL ages place this occupation at approximately 19,000–18,000 years ago. Haw River points were manufactured at Topper and used as both projectile points and hafted knives. Characteristic features include blade resharpening that produces asymmetrical forms, partial ventral-face flaking, concave or occasionally straight bases, basal thinning without fluting, and an absence of the basal grinding typical of Clovis points. Blood-residue analyses (Moore et al. 2023) indicate preservation on some specimens, including bovine residue on Haw River 18 and proboscidean residue on a Haw River point from Allendale County, South Carolina.

The Clariant Complex, named by Goodyear and Sain (2018), is a pre-Clovis core-and-flake industry based on locally available Topper chert. It occurs below the Haw River-bearing deposits in the lower Pleistocene terrace and overlying White Pleistocene Alluvial Sands (WPAS). The assemblage includes cores, heavy core tools, flake tools, bladelets, microliths, and numerous burin-like bendbreaks. Of 225 examined nodules, 158 (70%) showed flake removals, while thermal alteration was essentially absent. Experimental replication by Scott Jones reproduced the technology by smashing nodules against a large stone anvil. Core and flake tools include choppers, scrapers, concave-edged tools, microchipped pieces, and bendbreaks. The WPAS also contains stacked chert and quartz cobble features, while a similar feature in the radiocarbon-dead lower terrace included a large chert anvil with refitted spalls and associated culturally modified flakes.

Clariant Complex: Core and Flake Industry

The larger flakes with striking platforms and bulbs in the Alluvial Sands are a result of retouching cobbles for choppers and planes.



Bend Breaks and Blades in Pleistocene Terrace



Conclusions

The Topper site preserves a deep Pleistocene sequence interpreted as evidence for two distinct pre-Clovis occupations. The older Clariant Complex comprises a core-and-flake industry with heavy core tools, small flake tools, bendbreaks, and stone features in deposits assigned ages of approximately 30–50 ka. A later occupation contains Haw River lanceolate bifaces in sediments dated by OSL to approximately 18–19 ka, immediately beneath Clovis. Stratigraphy, technological analysis, experimental replication, and refitted artifacts together support the interpretation of repeated human use of this chert quarry before Clovis and highlight Topper's importance for investigating the antiquity and technological diversity of early American populations.

References

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