

HUNTER-GATHERER STONE TECHNOLOGIES AT THE LATE PLEISTOCENE SITE OF MOCHENA BORAGO ROCKSHELTER

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Since 2006 the Southwest Ethiopia Archaeological Project (SWEAP), directed by Steven Brandt (UF Anthropology), has been investigating the archaeology of human behavioral evolution in Africa during a period known as the Late Pleistocene (128,000-12,000 years ago). It is during this time that culturally and behaviorally complex—what many still call “fully modern”—*Homo sapiens* emerged in Africa and dispersed across the globe. By about 50,000 years ago these people, the ancestors of every person living today, had populated most of the planet. However, because few archaeological sites in Africa are securely dated to these periods, the social and economic landscapes populated by our Pleistocene ancestors remain largely unexplored.

The site of Mochena Borago rockshelter has furnished one of the most thoroughly dated stratigraphic sequences in eastern Africa, with fifty-nine radiocarbon dates spanning a period between greater-than 49,000 and roughly 36,000 years ago. My research focuses on two aspects of this important record: pigment grinding tools, or grinding stones, and variation in stone raw-materials in a broader regional context of social and environmental change.

The earliest evidence for grinding stone tools in Africa suggests that this technology emerged as a means of processing both vegetal materials (presumably for food) and naturally occurring earth pigments, most commonly iron-rich red and yellow ochres. The grinding stone assemblage from Mochena Borago is remarkable for its size and its age. More than 150 grinding stones have been found interspersed throughout the artifact assemblage, but there are noteworthy concentrations below dates of greater-than 49,000 years ago. These tools include both upper (held in the hand) and lower (used as a base) ground stones and most still preserve the vibrant red and yellow hues that we think their users were trying to produce. Until recently, it was assumed that these tools had achieved their distinctive shapes through sustained use, but recent studies have found evidence for intentional modification to achieve a desired shape or working surface.

Alongside analyses of ground and flaked stone tools at Mochena Borago, my work going forward will focus on the social and economic landscapes populated by these hunting and gathering peoples through a study of raw-material economy. In the context of the extreme environmental hardship and likely resource

scarcity of the Late Pleistocene, little work has been done to understand the relationship between sheltered occupation sites like Mochena Borago and the raw-material sources from which the workable stone for tool manufacture was acquired. I am currently studying how stone materials at Mochena Borago, most notably a fine black obsidian (volcanic glass), were acquired, conserved, and perhaps traded in by the people living at Mochena Borago and other sites within the surrounding region. I have begun to quantify obsidian elemental signatures at Mochena and several presumed obsidian quarries nearby. My hope is that the products of this research – a comparative database that can be used to identify geological sources of obsidian artifacts – will eventually be useful to archaeologists working throughout the region.

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