

**The Atlatl**  
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**Ancient Spearthrowers from the**  
**Museum of Indian Arts and Culture/**  
**Laboratory of Anthropology**  
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Although we WAA members know atlatls very well, their archaeological evidence in the American Southwest is neither plentiful nor well documented. Only 61 whole and fragmentary specimens were identified during a recent regional survey of spearthrowers by Ronald Fields, Research Associate for the Laboratory of Anthropology/ Museum of Indian Arts & Culture. Of those, most have little to no contextual data, twenty-four have relative dates, two have been indirectly radiocarbon dated and only two have been directly radiocarbon dated.

Over the past two years, Fields and the Laboratory have conducted research on three of these rare artifacts housed in the collections of the Museum of Indian Arts & Culture/Laboratory of Anthropology. All three were unearthed in the early 1930s when the Laboratory of Anthropology conducted excavations at a series of dry caves in the Lincoln National Forest. The complete and broken specimens found in Little Pine Cave #1, Little Pine Cave #2, and the Rock Fall Cave were only briefly mentioned in H.P. Mera's 1938 *Reconnaissance and Excavation in Southeastern New Mexico* and no research had been done on these rare artifacts since that time. Our new research focused on describing the morphological characteristics of the specimens, determining their age, and identifying the residue and paints adhering to them.

Of the three specimens, only the Little Pine Cave 1 (MIAC 13427/11) has an intact shaft. Although the finger-loops are missing, the artifact has a remarkably well-preserved shaft 50.3 cm in length. The maker initially split a sapling or tree limb of an unidentified hardwood and after scraping and sanding the shaft, carved out a hook and parallel-sided channel groove into which the end of the spear rested. At the opposite end, he shaped a tapered handle and cut notches to provide a secure attachment for the finger loops. After completion of the shaping, the atlatl was coated in red and perhaps, black paint.

The other specimens, though more fragmentary, still give us very interesting cultural information. The atlatl midsection from Rock Fall Cave (MIAC 13533/11) exhibits a break in the finger notches. This area is the weakest point on a spearthrower and many broke at the finger grips. Another interesting feature of this specimen is that the distal hook end had been intentionally scored and snapped off. Several Texas atlatls also exhibit purposefully removed hooks but at the moment, there is no clear explanation for this behavior. The Rock Fall Cave atlatl also has a coating of residue that may represent pine pitch. If so, it have been used as an adhesive to glue the finger loops and possible weights to the atlatl shafts.

Thanks to the Museum's Conservation Department, the research has applied a wealth of sophisticated scientific techniques to learn more about these spearthrowers. To our knowledge, these specimens will be the most thoroughly studied atlatls from North America. Employing technologies that were unheard of in the 1930s, we are making great strides in our scientific understanding of these ancient weapons.

Grants from the New Mexico Archaeological Council have allowed the Little Pine Cave and Rock Fall Cave specimens to be directly dated. Slivers of wood were extracted from the atlatls by the Museum's conservator and submitted to Beta Analytic for accelerator mass spectrometer (AMS) radiocarbon determinations. The Little Pine Cave atlatl produced a calibrated 2-sigma date from cal 790 to 410 BC. The Rock Fall Cave specimen yielded a 2-sigma date from cal 1140 to 920 BC. Two-sigma means there is a 96 percent probability that the specimen dates between the extremes. Certainly the aforementioned dates fall within the expected temporal

range for the atlatl in the Southwest but for the first time we have absolute dates for the raised hook and parallel-sided atlatl variety in the Southwest.

None of the specimens retained the fingerloops, weights, or fetishes at the time of their discovery; however, with the aid of a Multi Spectral Imaging System (MuSIS) 2007, images captured in Infra-Red, Near Infra-Red, and Ultraviolet wavelengths clearly reveal where the original finger-loops were attached to the handle of the Little Pine Cave #1 atlatl. The same wavelengths reveal bands on the back of this atlatl that may suggest the attachment of fetishes/weights.

All three atlatls exhibit a resinous substance adhering to their surfaces. Samples of this material were analyzed a Fourier Transform Infra-Red (FTIR) Spectrometer. The initial findings suggest that the residue is pine pitch but we are currently examining the charts and comparing these with modern samples to confirm the original source.

Red pigments are also visible on the spearthrowers. Microscopic analysis performed on these specimens confirmed that the Little Pine Cave #1 atlatl was painted with an iron-oxide pigment. The analysis also suggests that a resinous layer was purposely applied to these atlatls. Could this be evidence that prehistorically these specimens were varnished or lacquered to preserve the wood and retain underlying pigments? Only by further examination of these specimens as well as others will we have our answer.

Finally, Ron Fields replicated the Little Pine Cave #1 atlatl to the exact dimensions of the original. Numerous tests have been performed on this specimen and it works beautifully. Another interesting discovery was made while warping the replica in the fork of a tree. Prehistorically, someone had warped this specimen so that the hook would form the highest part on the atlatl. While warping the replica, Ron noticed that the surface had rubbed against the bark of the tree and crushed and polished the atlatl's surface. Upon examining the original, the same attributes were observed in the same location!

After being safely tucked in draws for seventy-three years, the Museum's spearthrowers are now shedding new light on New Mexico's cultural traditions. Using new techniques and innovative tools we are now discovering much more about New Mexico's heritage without digging one centimeter into the ground. These specimens will be on display at the Museum of Indian Arts & Culture during the 2004 Sun Mountain Gathering to be held in Santa Fe, New Mexico, on October 9 and 10<sup>th</sup>.

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