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# **CURRENT RESEARCH IN THE PLEISTOCENE**

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The Frazier Site: Preliminary Report on a Clovis/Gainey Site in Southeastern Wisconsin .....	41
<i>Daniel J. Joyce and Ruth A. Blazina-Joyce</i>	
A Chronological Assessment of the Schaefer Mammoth Site, Southeastern Wisconsin .....	43
<i>Daniel J. Joyce and Ruth A. Blazina-Joyce</i>	
Japan's Early-Palaeolithic Hoax and Two Sites .....	46
<i>Charles T. Keally</i>	
The Cody-complex Component at Locality V of the Hell Gap Site, Wyoming .....	49
<i>Edward J. Knell, Matthew Glenn Hill, Andres Izeta, Marcel Kornfeld, C. Vance Haynes, Jr., and George C. Frison</i>	
Slim Arrow, the Long-forgotten Yuma-type Site in Eastern Colorado .....	52
<i>Jason M. LaBelle</i>	
Early-Holocene Charnstone Assemblage from the Skyrocket Site (CA-Cal-629/630) .....	55
<i>Roger Marks La Jeunesse and John Howard Pryor</i>	
Field Investigations at a Likely Source for New Mexico Obsidian Folsom Artifacts .....	57
<i>Philippe D. LeTourneau and Anastasia Steffen</i>	
Late-Pleistocene Lake Otero, Tularosa Basin, Southern New Mexico .....	59
<i>Spencer G. Lucas, Gary S. Morgan, John W. Hawley, and Mark E. Gordon</i>	
Geoarchaeology of the Winger Site (14ST401), a Late-Paleoindian Bison Bonebed in Southwestern Kansas .....	61
<i>Rolfe D. Mandel and Jack L. Hofman</i>	
Beyond 12 Mile Creek: Other Paleoamerican Evidence from Logan and Wallace Counties, Kansas .....	64
<i>Janice A. McLean</i>	
A Folsom Site in Northeastern Minnesota .....	68
<i>Susan C. Mulholland and Stephen L. Mulholland</i>	
An AMS <sup>14</sup> C Date from a Late-Pleistocene Deposit in the Ilaló Region, Ecuador: Implications for Highland Paleoindian Occupation .....	70
<i>Hugo G. Nami</i>	
The Haskey Area, a Cody Complex Site from the Quill Lakes Region, Saskatchewan, Canada .....	73
<i>Brad Novacosky</i>	
The Chance Gulch Late-Paleoindian Site, Gunnison Basin, Colorado .....	74
<i>Bonnie L. Pitblado</i>	
The Spatial Component of the Western Clovis Chronology .....	76
<i>Donna C. Roper and Brian T. Wygal</i>	
Late-Pleistocene Terrace in the Middle Yukon River Region at Eagle, Alaska .....	78
<i>Robert A. Sattler and Robin O. Mills</i>	
The Mountaineer Site, a Large Folsom Camp near Gunnison, Colorado .....	80
<i>Mark Stiger</i>	
<b>Physical Anthropology</b>	
A Late-Paleoindian Secondary Ritual Burial from Lagoa Santa, Minas Gerais, Brazil .....	83
<i>Walter A. Neves, Mark O. R. Hübbe, and Astolfo G. M. Araújo</i>	
<b>Lithic Studies</b>	
Paleoindian Obsidian Procurement and Mobility in the Western Great Basin .....	87
<i>Kelly E. Graf</i>	

## Physical Anthropology

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### A Late-Paleoindian Secondary Ritual Burial from Lagoa Santa, Minas Gerais, Brazil

*Walter A. Neves, Mark O. R. Hübbe, and Astolfo G. M. Araújo*

Since the pioneering paleontological work carried out by Peter Lund from 1833 to 1844 in several caves and rockshelters in Lagoa Santa, central Brazil, this region has become famous worldwide as an important area where the first Americans could be investigated. Since Lund's work, most research carried out in the region has been descriptive in nature, even that undertaken by professional archaeologists (see Kipnis 1998 for a review). Notwithstanding, by the early 1980s several points were already firmly established for the region (Prous and Fogaça 1999): (1) humans were present by the very end of the Pleistocene; (2) rockshelters were used as both camp sites and burial places; (3) local lithic industry was expedient; (4) subsistence was based primarily on small game and vegetable items, despite the probable presence of megafauna in the local ecosystem; and (5) most human bodies were deposited in the ground in highly flexed position and are often associated with blocks of stones.

From the beginning of the 1980s until very recently, there have been no major archaeological investigations carried out in Lagoa Santa. Most Paleoindian research in Minas Gerais has been focused in the north of the State, where many Pleistocene/early-Holocene sites are found that offer much better preservation (Prous 1986). In July 2001 we began a long-term paleoanthropological research project in the area with multiple objectives: (1) to test the hypothesis of a pre-Clovis occupation; (2) to understand the relationship between the local population and the megafauna; (3) to temporally contextualize the collections of human skeletal remains uncovered in the area in the last 150 years of research; (4) to search for new human skeletal material that could be precisely dated; (5) to more clearly understand the Paleoindian settlement-subsistence pattern; and (6) to reconstruct the landscape that existed at the time of the Paleoindians.

It has long been suspected that the Paleoindians at Lagoa Santa culturally

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manipulated human bones in complex fashions. Walter (1958), for instance, described the finding of a pipe fashioned from a human long-bone diaphysis at Sumidouro rockshelter. The lack of precise chronological context for this finding, however, prevents a clear association of this instrument with the Paleoindian horizon. Messias and Mello e Alvim (1961) noted that amongst the two "primary" burials found by Hurt and Blasi in 1956 in Boleiras Rockshelter (Hurt and Blasi 1969), which we have recently dated by AMS on collagen at 8000–9000 yr B.P., several cut marks are found on the tibias, femurs, and patellae of two of the individuals. In fact, remains of five individuals were found in the two "primary" burials described by the excavators.

During the curation (1995–99) of the Harold Walter collection of human skeletal material from several Lagoa Santa sites, one of us (WAN) noticed that the diaphyses of several tibias and femurs bore cutmarks suggesting their epiphyses had been intentionally removed by cutting. Although no absolute chronology exists for this material, all the epiphyses are heavily fossilized and are likely to represent Paleoindian material.

As part of our recent paleoanthropological research in the area (July 2001) we have undertaken re-excavations at the Boleiras rockshelter in Lagoa Santa. Boleiras, a major limestone rockshelter near the city of Matozinhos, is 60 m long and 12 m maximum width, with a sheltered area of 420 m<sup>2</sup>. It is part of a limestone outcrop facing two dolines, one of them still active today as a swallet of an intermittent stream. Our re-excavations have yielded further evidence that complex manipulation of human bones was part of Paleoindian mortuary practices.

Three human burials were found during our excavations at the site. All burials are of unarticulated parts of human skeletons, but for two of them the possibility of bioturbation to explain their incompleteness and configuration could not be excluded. On the other hand, one of the burials (Burial 3) was clearly a secondary burial that had a very organized and formal configuration and also showed intensive manipulation of the bones.

**General configuration** Burial 3 was formed by several long bones of the arms and legs of an early adolescent individual displayed in roughly parallel position, with the cranial vault on top of them. The face was laid down separated from the cranial vault and occupied a kind of marginal position in the assemblage. Apparently the bundle of long bones was placed inside the cranial vault. The other parts of the skeleton were found below the first layer of bones or were organized around it. The entire assemblage occupied a circular area only 30 cm in diameter. Remains of a ceremonial hearth (charcoal and ashes) were present in the southernmost part of the burial, near the skull.

**Chronology** All burials found at Boleiras date between 8000 and 9000 yr B.P. This date is based on conventional C-14 dating on wood charcoal associated with three of the burials and on AMS dating on bone collagen from two of them. In particular, wood charcoal removed from the ritual hearth directly associated with Burial 3 generated an absolute date of 8360 ± 50 yr B.P. (Beta-159244). There is no evidence of funerary activity in the rockshelter after the late-Paleoindian horizon.

**Bone manipulation** Most of the skeleton of Burial 3 was painted with red ocher, but the intensity of this operation varied from bone to bone. The proximal epiphysis of the left ulna had been completely removed by cutting and was not found among the assemblage. Since red ocher was found covering the region of cutting, we assume the painting process was carried out during the reburial process. Further evidence for this view is that several fragments of both femurs are heavily painted externally and internally. In fact, the femurs seem to have been intentionally fragmented as part of this process, and the fragments used as sticks and spatulas to process the ocher.

Vast "functional" reburial has already been described by Prous (1980–81) as a feature of the Paleoindian settlement in the Lagoa Santa region, particularly for the site of Santana do Riacho, where 28 burials were found in a small area of 15 m<sup>2</sup>. Because of the high density of interments in the site, emptying old burial pits to displace a new corpse seems to have been common in Santana do Riacho. The main parts of the removed skeletons were interred over the new burials (or by the side of them). However, a process of secundarization, done particularly for ritual reasons, was never proved for Santana do Riacho.

Boleiras Burial 3, therefore, provides the first direct evidence that late Paleoindians in Lagoa Santa practiced secondary funerary activities that seem to have been motivated by ritual reasons. This conclusion is reinforced by two other pieces of information. One, the low density of burials at Boleiras suggests there was little pressure to reuse burial pits. Second, there was no primary interment found below or adjacent to Burial 3.

It is now clear that removal of body parts to be transformed into functional instruments and eventually adornments took place during the reburial procedure and that Lagoa Santa Paleoindians had a very elaborated funerary system.

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