

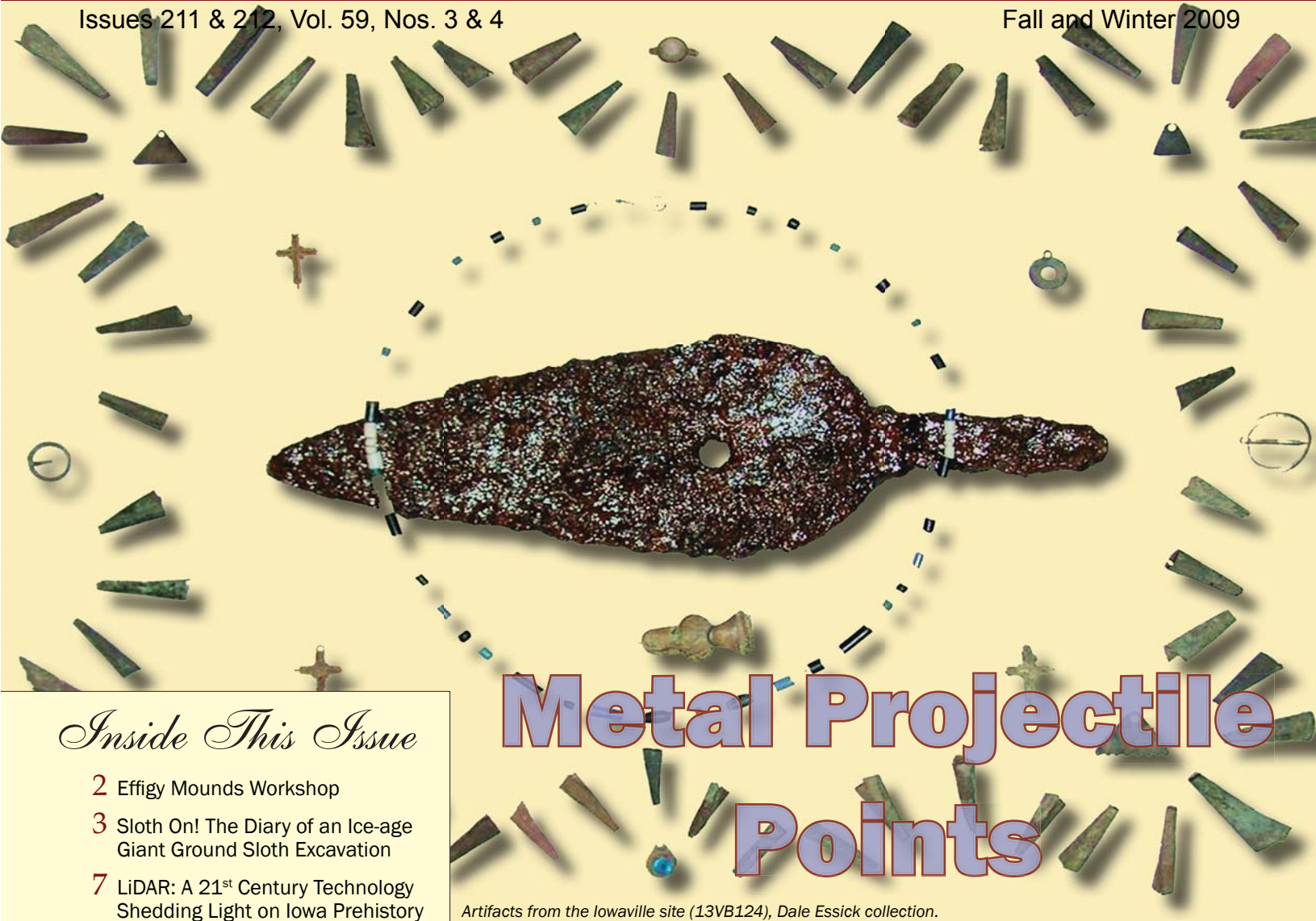
Newsletter of the *Iowa Archeological Society*



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Metal Projectile Points

Artifacts from the lowaville site (13VB124), Dale Essick collection.

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Summer Teacher Institute—Exploring the Past: Archaeology in the Upper Mississippi River Valley

John F. Doershuk

One of the fun things I get to do as State Archaeologist is field inquiries from people about very specific aspects of Iowa archaeology. I like these questions because they are the ideal pretext to delve into the collections of the OSA Repository. Increasingly, searches of the collections start as electronic exercises via a computer. It is now possible for me to quickly search many thousands of catalog pages and site forms for a keyword like "copper," and in just minutes compile a list I can take to the repository shelves as a sort of finder's guide.

Not all of OSA's catalog sheets can be electronically searched as yet, but the number is growing. And, as powerful as these searches of old-but-now-scanned forms may be, many handwritten entries can't be deciphered by the computer. Some search terms are problematic. "Iron" yields many unwanted results when the objects of interest are projectiles and not the bits of pipe, nails, and bolts typical of a historic farmstead assemblage. This occurs because the usual format of the scanned catalog sheet is to have a descriptor like "copper" in one column and "point" or "tinkler" in another,

—continued on page 2

but the computer is generally unable to correctly distinguish my interest in copper points. If the catalog were entirely housed in an appropriately configured relational database, this could be a reasonable expectation, but we are not yet at this stage of development. Nonetheless, searching electronically sure beats flipping pages and scanning by eye!

I also like getting asked questions about Iowa archaeology because it gives me the perfect excuse to pick my colleagues' brains and learn a little of what they know. Queries run the gamut from "How do I get a job as an archaeologist?" to "How old do you think this artifact might be?" to simply "Have you ever seen anything like this before!?" I often lean heavily on OSA staff to help answer these questions, especially Mark Anderson when it comes to stone tools and Bill Whittaker or Cherié Haury-Artz when animal bones are the subject, as these folks really know their stuff.

Recently I was asked about metal points, specifically those made from European-source metals (e.g., iron, copper, or brass) as opposed to Archaic period spear points manufactured from native copper. I know of several of the latter, including a fine example illustrated on page 7 of the Summer 2009 IAS *Newsletter* collected by David Horst. I assumed that points manufactured from European-source iron, copper, or brass would be common, but my search has thus far produced just a few examples from a handful of sites. The one exception is the Iowaville site (13VB124) where nearly 100 of these metal points have been recovered.

The Gillett Grove site (13CY2) is a late Oneota village site located along the Little

Sioux River southeast of Spencer, Iowa. Accelerator mass spectrometry dating suggests occupation after A.D. 1650 and ending by 1700. In his Iowa State University M.A. thesis, Jason Titcomb discusses four metal points he recorded in the Parker Barglof Collection from Gillett Grove. All four of these are iron. No examples of brass or copper points are yet known from this site despite many tinkler cones, folded bits of "wire," and small pieces of scrap of these materials present in both the Barglof Collection and recovered during the 10 seasons of field school excavations at this site. Pictured below (a) is the fifth known iron point from the site that came from a test unit excavated in 1996.

The Milford site (13DK1) is another late Oneota village site in northwestern Iowa that has yielded at least one possible metal projectile point. In addition to the iron point (b), a second metal point is listed in the catalog but at present can't be found in the OSA Repository. Milford was likely occupied ca. A.D. 1690 to 1720, possibly immediately after—or partially overlapping—use of the Gillett Grove site. Dale Henning reports that the Blood Run site (13LO2) has also yielded projectile points made from European-source metals and that Darrell Frerichs' collection from the site includes two examples. Henning also reports that Frerichs has two metal points from the Milford site. Point "c" is cropped from a photograph taken in 1995.

A third site known to have yielded a metal point, in this case also iron, is 13WH158 located in Winneshiek County just east of Fort Atkinson. This site was partially excavated during the summer of

2001 by a University of Iowa archaeological field school co-taught by Richard Fishel and me. While not yet confirmed, we believe this is likely a Ho-chunk camp dating to the late 1830s or early 1840s. The 13WH158 point (d) has easily recognized barbs and base and appears to have been used as the tip is deformed.

The image shown on the front cover includes

just a few of the many artifacts collected by Dale Essick from the Iowaville site (13VB124). Iowaville was a principal village of the Ioway Indians between about A.D. 1760 and 1820. The Ioway are likely Oneota descendants. Iowaville is situated on the left bank of the Des Moines River about half-way between the villages of Eldon and Selma, in the northwestern corner of Van Buren County. Bill Green has looked at three private collections from the site, mostly acquired through metal detecting and surface inspection. Bill and his former student at Beloit College, Saul Schwartz, tallied up 97 metal points in these collections. These points include 87 brass (or other copper-based metal) and 10 iron examples, including one very large iron point (see Saul's article on Iowaville in the Fall 2008 IAS *Newsletter*).

I discovered one other iron point (e) in the OSA Repository by electronically searching the digitized catalog sheets for the Charles R. Keyes Collection. Ernest Gunn donated this item to Keyes in 1925 after collecting it from "an old Indian trail between Herring and Odebolt." Herring is no longer extant but was formerly a small town on the Boyer River southeast of Odebolt. The Iowa Site File reveals no currently recorded archaeological sites for this area, but Gunn's donation of this point and other artifacts to Keyes suggests at least one site could be added if a more precise location can be identified.

IAS members who know of metal points in collections or from sites, please help us expand our understanding of their distribution across Iowa. Send a photo or scan of the point to me at john-doershuk@uiowa.edu.

Iron points from Iowa sites (shown approximately life size): a, Gillett Grove; b and c, Milford; d, 13WH158; e, unrecorded site between Herring and Odebolt.



Effigy Mounds Workshop

Please join us at Effigy Mounds National Monument for a workshop series *Rock Shelters, Mansions, and Farms: Domestic Life and Food Production in the Upper Mississippi River Valley—900 B.C. to 2010 A.D.*, June 12, 26, July 10, 24, and August 7, 2010. Credit is available. Contact Merle Frommelt, e-mail: merle_frommelt@nps.gov, phone (563) 873-3491, fax (563) 873-3743. Registration deadline March 19, 2010.





Sloth On!

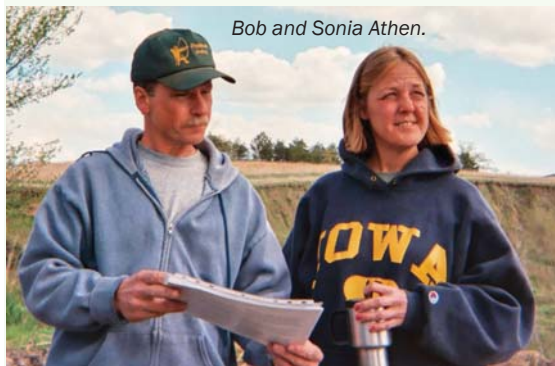
The Diary of an Ice-age Giant Ground Sloth Excavation

Meghann Mahoney, Holmes Semken, David Brenzel, and Sarah Horgen

THE OSA AND THE IAS have been major partners in one of the most significant ice-age discoveries in North America—a trio of Jefferson’s giant ground sloths (*Megalonyx jeffersonii*) in the West Tarkio valley. What started as a short-term salvage excavation turned into a complex eight-year, multi-agency effort. The following is a log of the project. The remains will compliment an existing model of *Megalonyx* presently on display at the University of Iowa Museum of Natural History.

1917–1923, Landscape Alteration. The uncovering of the sloths began 90 years ago when Page County conservation administrators decided to straighten the West Tarkio Creek. This initiated a process of valley entrenchment and brought the stream within striking distance and depth of the sloths.

1988, Urban Flight. Bob and Sonia Athen leave Northboro, Iowa, population 100, due to overcrowding and settle on an acreage overlooking the West Tarkio.



Bob and Sonia Athen.

Spring 1993, Unearthed. The creek cuts down to its final gradient of 7 m (24 feet) below the surface and then begins cutting into the south valley walls. When the great 1993 floods receded, the north bank, owned by Dean and Loreta Tiemann of Lincoln, Nebraska, suddenly hosts the channel, and incision into the bone-bearing unit is underway.

August 2001, Discovery. Bob Athen frequently walks along his creek looking for artifacts. The creek is low after a dry summer, and Bob spots a red object protruding from the creek bed. He pries away the surrounding clay, and a femur appears. He knows the bone does not belong to anything living today. Ice has fractured the bone, but Bob collects all 47 pieces and glues them together over the winter.

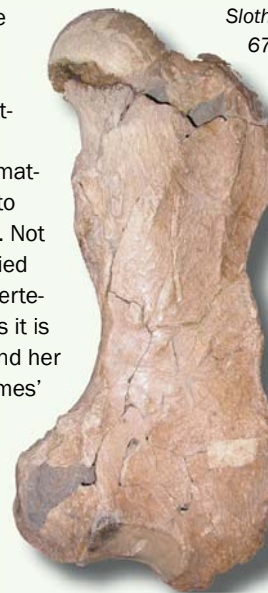
August 5, 2002, Identification. Holmes Semken receives a call from Julia Golden,

curator of the UI Geoscience Paleontological Repository. Visitors had brought in four bones to identify. Disappointment is usually the result of coming to Holmes for such matters—thrilling finds turn out to be just a horse or cow bone. Not today. A femur is accompanied by a rib, toe bone, and tail vertebra. One glance tells Holmes it is a giant sloth. Sonia Athen and her daughter Kate later say Holmes’ jaw dropped.

August 26, 2002, Want a Sloth? Bob offers to donate his find to the University if they would excavate it, with one additional proviso—students are to be included throughout. How do you refuse an offer like that?

May 30, 2003, Reconnaissance. Holmes visits the site. The good news, Bob has collected ribs, shoulder blades, vertebrae, and foot and hand bones. Elements from both fore and aft, large and small, indicated there had not been any stream transport. The bad news—they are below the water table and either in the creek or under as much as 7 m of overburden, and someone else owns the north side of the creek. Holmes calls the Tiemanns. They give their go-ahead and, like the Athens, become avid dig participants.

Summer 2003, Organizing. Holmes meets with Dave Brenzel, coordinator of the UI Museum of Natural History. The plan is to use museum students and volunteers to excavate a 1-x-5-m trench along the creek



Sloth femur found in 2002. Its length measures 67 cm.

to gather information on the deposit and practice recovery techniques. Holmes discusses the bone scatter with Bob and decides that the animal had likely hunkered down on the spot to die. He predicts it could be recovered in two weeks.

September 6–7, 2003, Exploratory Excavation. Eleven-plus volunteers work in 104 °F heat on the valley floor. Excavation establishes there is a buried surface of erosion immediately above the blue-grey clay that holds the bones and that some have weathered before burial. Others extend to an additional depth of 45 cm. The modern channel has cut 40

cm into the clay, and some bone has been moved—possibly into the four pools 20 m downstream. Diverting the Tarkio around the pools and pumping them dry becomes the next goal. Holmes extends his prediction for recovery time to one month.

Recovery: sternal ribs, half of the palate, a thoracic vertebra, and a number of bone fragments.

September 26, 2003, Diversion. Mather and Sons, a local excavating contractor, brings a bulldozer and excavator to the south

(Athen-owned) bank and carves a road down to the creek. A canal is dug diverting the Tarkio around the site and pools. The diversion is immediately complicated when beavers move in that night. Bob destroys their dam, but it is back the following morning. Ever try to dismember a beaver dam? It is clear that the beavers



Loretta and Dean Tiemanns.

had more staying power than Bob, so they live in peace until the day before whirlpool dig. Holmes extends his time estimate for sloth recovery to two months.

October 3–5, 2003, Pools. Eight volunteers travel to the site to empty the pools. In preparation, Bob starts a portable pump to drain the water. The pump's capacity declines significantly with depth, and the pools prove deeper than expected. A bucket brigade finishes the task and then serves to pass the bottom contents up to a screening area. All bones are saved for analysis in Iowa City. An entrenched gravel stringer is uncovered leading from the sloth accumulation upstream. It yields one sloth bone fragment. Conclusion: any bone removed in modern times occurred before the pools formed and is probably lost.

Recovery: one unidentifiable fragment and numerous elements of modern animals (e.g., horse, cow, or deer).

November 7, 2003, Rain-out. Overnight rain produces a torrent over the site. Topographic maps show the site is located in the mouth of a funnel, created by entrenchment, which drains about 170 km of the West Tarkio basin. Five centimeters of rain upstream translates to 2.5 m of water over the sloth. A bank-side soil probe reveals there is glacial till 1.2 m below the sloth-bearing matrix.

Recovery: matrix samples taken previously yielded a frog phalanx.

November–December, 2003, Site Preparation. Bob hand digs a 5-x-2.5-m, Louis Leakey-caliber excavation trench (Bob's Cut) into the north (Tiemann-owned) bank in preparation for the next trip.

January 9–11, 2004, January Thaw. A week-long January thaw stirs the investigators into action. Volunteers arrive Friday afternoon in shirt sleeves. The temperature drops to 11 °F overnight. Eleven hardy volunteers, now questioning the wisdom of their leaders, pull chunks of frozen muck off the still-soft clay underneath. The bones, soon exposed,



Volunteers clearing the pit during April of 2004.

overcome any worries about frostbite. Most of the bones are stable and can be removed by hand. A badly weathered vertebral string is wrapped in plaster for extraction. Bone exposed in the wall of the cut is covered, and the excavator is alerted to stand by for another dig. Holmes revises his recovery estimate to six months.

Recovery: remainder of the palate, a clavicle, six semi-articulated vertebrae, vertebral ribs, an ulna-radius pair, several carpals or tarsals, five teeth, a sesamoid, phalanges, and two claws. Non-sloth material includes a rodent scapula and humerus, as well as part of a pond turtle carapace.

March 17, 2004, Widening the Circle. Mather and Sons digs a road down to creek level and remove the overburden around Bob's cut. Most of the overburden is piled into hills on the north bluff; some goes to erect a 1.5-m-high coffer dam to protect the excavated area. The new pit extends the working area 6 m to the north and east, and 3 m to the west—elbow room. Bob says that the excavator is preferable to his shovel.

April 16–17, 2004, Another Cluster. Seventeen volunteers turn out. The levee has kept the creek out but retained all the rain and a healthy influx of ground water. Another bucket brigade. Diggers shortly discover a gravel deposit in the north-central part of the pit. It is clearly entrenched into the sloth-bearing, blue-grey clay. The distal end of a radius and a carpal/tarsal are recovered. Some skeletal elements were clearly reworked shortly after the sloth died—gravel means there was high velocity. The

pelvis is discovered immediately east of Bob's cut, but time runs out. It is covered with sand bags for protection. Holmes extends his prediction to one year.

Recovery: two humeri, four ribs, complete mandible, skull, 11 teeth in a cluster.

May 1–2, 2004, Mammoths Danced on It. Nine volunteers embark to collect the pelvis. Further clearing shows it is a jumble of large and small fragments. Someone suggests a mammoth had danced on it. Weathering has reduced a bone that was originally 1.2 m high and 5.8 m in circumference, to a 1.8-x-2.5-m oval mass, 10–30 cm thick. Both acetabulae are intact and almost opposite each other. The bone is removed in two plaster jackets. Workers en-



counter a radius while clearing space. Excavation 3 m to the southeast of the pelvis finds entrenched muck from modern erosion—any bone that was there is lost.

Recovery: fragmented pelvis and a radius.

November 2–3, 2004, Widening the Search. Mather and Sons enlarges the north bank excavation 6 m to the northeast and 4.5 m to the east.

November 12–14, 2004, Flameout. We try a new digging technique using a crawler to clean the surface down to the clay. Nineteen volunteers excavate the target area but recover only one bone—a carpal or tarsal about 4 m northwest of the main concentration. State Highway Patrol officers provide a welcome break in the afternoon, arriving en masse to break up a suspected meth lab—we



Bob's Cut, January, 2004. South Tarkio Creek is shown in the foreground.

had been spotted by a bear in the air. Either they believed our story or reasoned drug dealers would be better dressed than these crazy people.

Recovery: a carpal or tarsal.

November 19–20, 2005, New Search Direction. Rain and high water put the project on hold for a year. Mather and Sons excavates a 6-x-6-m area to the west of the main bone concentration. Nine eager volunteers, now dubbed the Sloth Rapid Response Team, return to the site. Locals want to know why they have to wait nine months for Mather and Sons to dig a basement, and we get three-day service. The entire area is tested without finding anything. We have demonstrated that sloth remains are not present in a 7-x-15-m area surrounding the main concentration. Only one direction remained—south into the creek. It is crazy to start exploring the near-freezing water—luckily Aaron Last was along. Probing the creek uncovers a partial vertebra, and Holmes then finds what is thought to be part of a calcaneum, demonstrating the sloth bone scatter extended into the creek and probably under the south bank. Holmes adds another year to his estimate for recovery.

Recovery: partial vertebra and calcaneum. The former was later identified as part of a juvenile sloth pelvis.

April 21–23, 2006, Pay Dirt. Mather and Sons uses their excavator to redirect the West Tarkio into the abandoned north excavation area. The levee that protected the north bank excavations is now keeping the Tarkio off of the south bank and the former creek bed. After bailing and clearing muck, 11 volunteers



Repairing the breached levee, May 2006.

start uncovering numerous small ribs. Their identity becomes clear with the discovery of a distal humerus and then a small scapula. There are two sloths—one a juvenile. We have the first case in North America of an adult and juvenile sloth found together! Holmes predicts completion in two years.

Recovery: two scapulae, a clavicle, three vertebrae, a distal humerus, 12 ribs, and five bone fragments—all juvenile.

May 26–27, 2006, Katrina II. Sixteen excited volunteers who have traveled to Shenandoah are surprised by an early morning thunderstorm. The creek breaches the levee, threatening the bone deposit. Sarah Horgen covers two counties in a vain search for sand bags, visiting FEMA, Army National Guard, Army Reserve, and other government facilities. Ever ready, Ace Hardware comes to the rescue with heavy-duty Hefty™ plastic bags. The crew works through the storm to repair the levee. Meghann Mahoney becomes stuck in the mud while colleagues debate the pros and cons of rescuing her and take photos.

June 9–10, 2006, More “Toddler.” Bob starts pumping Friday evening, and by morn-

ing most of the water is out of the dig enclosure. Will Mott returns with a crawler, clears the old south road to the east end of the dig, and then removes the muck from the excavation floor. Then seven volunteers reinforce the coffer dam. By afternoon, nine juvenile bones have been exposed. Heavy rain overnight results in water topping the levee, proving again the wisdom of extracting all bones before departing the site at night. The volunteers retreat, and Holmes says another year more or less wouldn't matter.

Recovery: one vertebra, a clavicle, seven juvenile ribs, and a turtle shell fragment.

November 2–5, 2006 “Baby.” Holmes and Will Mott arrive on Thursday to prepare the site. Overnight pumping removes most of the water from the pit. Will uses the crawler to open a 6-x-12-m area on the old stream bed. Thirty-five volunteers start on opposite ends of the area and work toward the center where the juvenile sloth had been recovered. One of the first bones encountered is another shoulder blade, two-thirds the size of the two juvenile scapulae previously found. Sloth #3! Sarah later reports, “I think Holmes went into shock.”

Recovery: scapula, ilium, and seven more ribs. Also finger clams, large clams, concretions, and a stone-filled pit.



Juvenile sloth remains, April 2006.



Bob Athen with the infant sloth scapula, November 2006.

2007–2008, Wet Hiatus. Unusually heavy rains, culminating in the statewide flood of 2008, prevent digging for two years. Page County is designated a national disaster area.

August 27, 2008, Repair Plans. Dave, Holmes, Bob, and Phil Mather meet at the site to check for damage and devise a plan to extend the sloth excavation into the south bank. They determine that the upstream levee has to be raised and the south road down to the pit repaired. Phil builds a working platform to bear the weight of the excavator. The initial obstacle proves to be a downstream beaver dam that increases the water level by a meter over the bone-bearing deposit. Bob had experimented previously with removing the dam

by hand and, a glutton for punishment, tries again. These beavers also have a strong work ethic. Each excavation is initiated by attacking the dam.

October 3, 2008, Playground. Holmes and Dave return to oversee Mather and Sons' efforts. At day's end, the south bank is pulled back 10 x 14 m. A ramp for crawler access is built, and a stream-side levee protects the excavation. Phil notes, "We have a big hole to play in on the next dig."

December 4, 2008, Best Laid Plans. Dave drives to Shenandoah to meet Will Mott and prepare the site for the weekend dig. The expected blue-grey clay is an oxidized brown with scattered blue patches. After the bulk of the overburden has been moved, Will attaches a blade he has fabricated to the bucket of the crawler and begins shaving off thin layers of clay, hopefully reducing the work of the weekend crew. Dave stands by watching for traces of bone. At day's end, Will had used the bucket to dig a sump. To satisfy Dave's curiosity about the thickness of the clay, Will deepens the sump to approximately 1.5 m, whereupon he strikes fine white sand. Water, under pressure, spouts. So much for the sump idea. On the bright side, the beavers capitulate and do not rebuild.

December 5-6, 2008, Empty Handed. Volunteers arrive Saturday morning. Bailing is the first step. Bilge pumps run all day to keep up with Dave's spring. Volunteers form a line and begin cutting matrix. The 3-x-10-m area proves barren except for one snapping turtle bone. While disappointing in terms of sloth bone recovery, the dig serves to further delimit the bone scatter.

Recovery: snapping turtle carapace fragment.

April 26, 2009, Juveniles Cluster. Will relocates the levee about 3 m to the north, closer to the area excavated previously, and then starts clearing a new 3-x-12-m area north of the December 2009 dig. The clay is mostly brown as in December. We encounter bones just inside the north wall and collect three toddler ribs and the other baby shoulder blade. They are at least as well preserved as those we found in the blue-gray clay.

Recovery: baby scapula and three toddler ribs.

July 11-12, 2009, Another Rain-out. Will brings a gasoline-powered pump that quickly removes the accumulated water from inside the levee. He relocates the levee about 4 m north and then removes the muck. This is accomplished by 7:00 p.m. Overnight thunderstorms last into the following morning. The rain leaves the hillside slick and unsafe for the crawler and workers. Further effort is postponed.

August 14-15, 2009, South Bank Finished. The UI contingent leaves Iowa City at 6:30 a.m. to meet Will at the site. Rain has left a thick deposit of slope wash in the pit which keeps Will clearing muck until dusk. Meghann gets stuck again. Eighteen volunteers, many from the Central Iowa Mineral Society, arrive on Saturday. Occasional drizzle and sloppy footing does not deter the volunteers. Shortly after noon, the base of a marker stake is encountered, verifying we had united the north and south bank excavations.

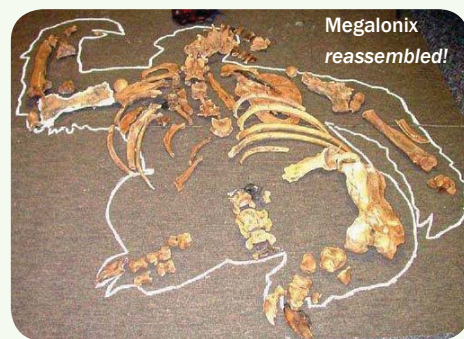
Recovery: baby scapula, 14 juvenile (baby or toddler) rib fragments and two unidentified elements.

September 11-13, 2009, Walking the Plank. Dave and Holmes meet Will at 9:00 a.m. He sets to work shifting the levee so the volunteers expected the next day can explore an area under the original north bank levee. Will breaches the ramp into the site to redirect part of the Tarkio into the south excavation, turning the target area into an island to reduce the pressure on the levees. The Sloth Rapid Response Team arrives to



find a plank is needed to access Brenzel Isle, and the 1.4-m-drop to the water looks intimidating. All cross safely and clearing efforts start. With no bones forthcoming, volunteers dig several deep trenches for Joe Artz, OSA's geoarchaeologist, to examine for stratigraphy which we are able to expose for the first time, providing a fruitful climax to the dig. After the volunteers leave, Bob and his dog Pardner head down to the site to retrieve Holmes' pocket knife. As they are leaving, a beaver swims around the bend and stops when he sees them. Bob, for the first time in eight years, waves at it with all of his fingers.

September 28, 2009, Beavers Recapture the Tarkio Locality. Bob calls to say that the beavers now have a dam on both sides of Brenzel Island. They can stay if the pool proves to be good for catfish.



More details on the project are posted on the University of Iowa Museum of Natural History web site lime.weeg.uiowa.edu/~nathist/slothsite/megalonyx.

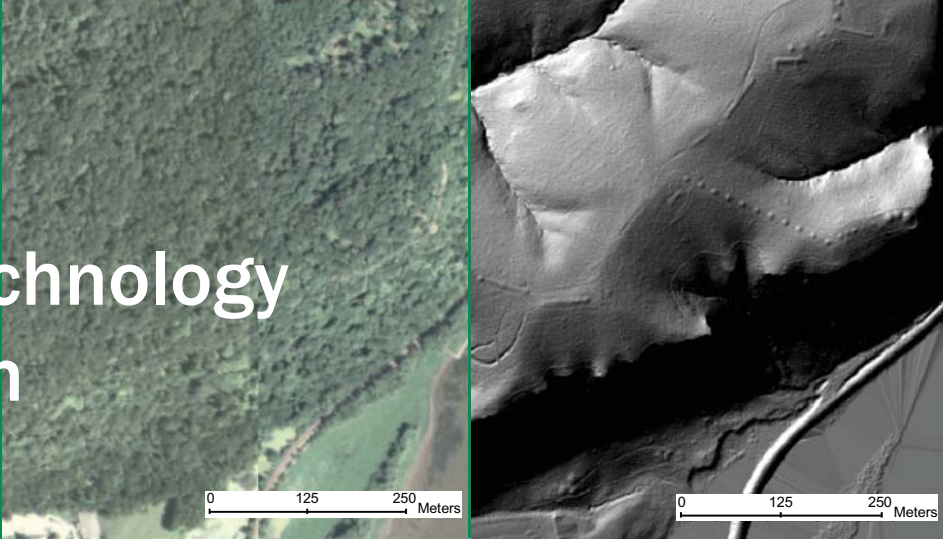
Acknowledgements

The project is a joint venture of the Museum of Natural History, Department of Geoscience, and the OSA. Cooperating agencies include the IAS; National Science Foundation; U.S. Corps of Engineers, Rock Island; Department of Radiology, UI College of Medicine; U.S. Department of Agriculture, Des Moines; Department of Biomedical Engineering, Rapid Prototyping Laboratory, UI College of Engineering; Centre for Ancient DNA, McMaster University; Stable Isotope Laboratory, Penn State University. The Iowa Academy of Science provided funding to purchase repository cases for the sloth.



LIDAR

A 21st Century Technology Shedding Light on Iowa Prehistory



Left: Aerial photo over Effigy Mounds National Monument showing tree cover. Right: Same area from a shaded relief of a LiDAR image revealing Little Bear and Great Bear Mound Groups.

Melanie Riley



AIRBORNE LIGHT DETECTION AND RANGING (LiDAR) is a remote sensing technology used to gather elevation data over a large area. Iowa has

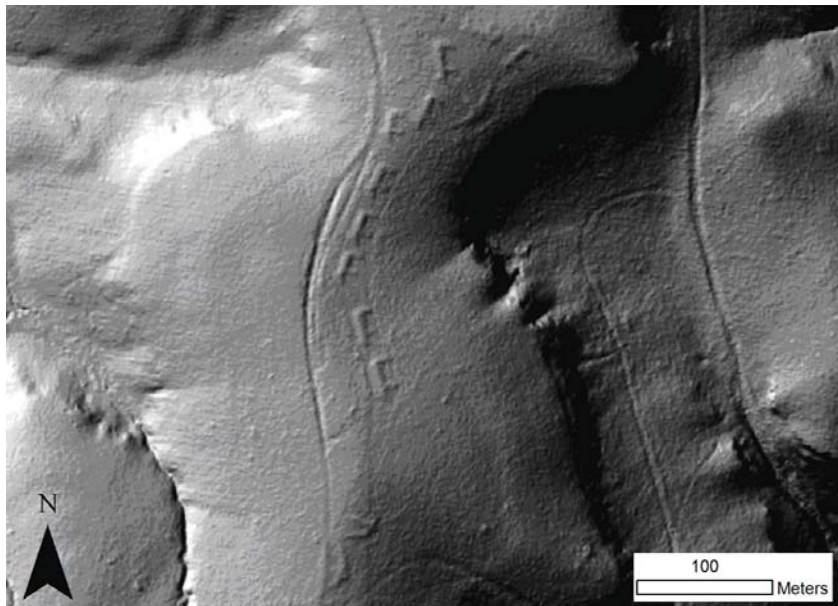
the proud distinction of being the second state to undergo a statewide collection of LiDAR data. To collect the data, an aircraft is mounted with a device that scans the surface with a laser. The elevation of an object or the ground surface itself is determined by the time it takes a laser pulse to reflect back to a sensor. As many as 2.5 million elevation points are needed for a 4 km² area to meet the resolution and accuracy required for the Iowa project. The elevation data includes tops of buildings, tree branches, cars, and ground—anything from which the laser reflects.

Little has been reported on LiDAR in U.S. archaeology. Only in the last decade has large-area LiDAR collection been affordable and computationally practical for state and county agencies and large municipalities. It is a technology that requires specialized skills to use, and very

few states have undertaken large-area collection. Collection also can be cost-prohibitive for individual research projects.

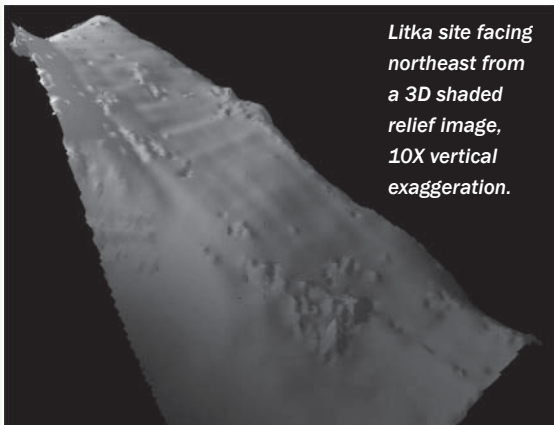
As soon as LiDAR data collection efforts began in Iowa, the benefits to archaeology became apparent. After sorting out the non-ground points from the data using specialized software, the remaining ground elevation points are used to create a continuous surface which resembles a moonscape void of vegetation. Interpreting the LiDAR surface in areas of known archaeological sites proved the data sufficient to detect burial mounds as small as 5 m in diameter and 30 cm high, village fortification features, prehistoric house depressions, and Iowa's only surveyed ridged field site. In fact, the imagery confirmed the true extent of the Litka site (13OB31) which is more than twice the size of the area surveyed in 2005.

The LiDAR data has already been implemented at the OSA in several different aspects—presurvey planning, monitoring for erosion and looting, modifying site boundaries, relocating sites with uncertain locations, and finding new potential



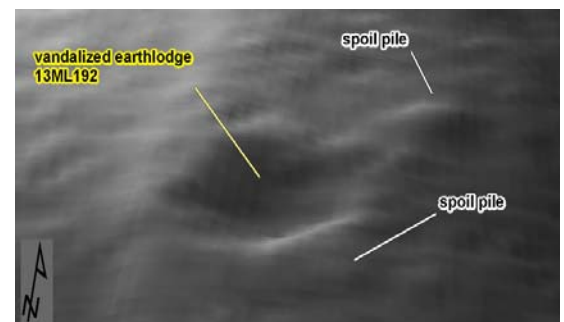
Marching Bear Mound Group at Effigy Mounds National Monument from shaded relief of a LiDAR image.

sites. As LiDAR data becomes more widely available in other states and efforts on how to use the technology increase, archaeologists nationwide will undoubtedly embrace the technology in their research and cultural resource management endeavors.



Litka site facing northeast from a 3D shaded relief image, 10X vertical exaggeration.

LiDAR 3D image of a Glenwood earthlodge in Mills County with evidence of recent looting.



Garrison Graves at Old Fort Madison

John Hansman

IN 1808 THE U.S. ARMY POST of Fort Madison was established on the upper Mississippi River at a site now occupied by the city of that name, in what is now southeastern Iowa. Garrisoned, in part, by soldiers of the First U.S. Infantry Regiment, the fort sustained increasing attacks by area Indians and was abandoned and burnt in November 1813. During these five years, some 15 known soldiers of the fort garrison were either killed through hostile action or died from other causes. Utilizing various sources, I have identified known fort casualties and consider a possible location where some of these men were interred (Jackson 1966). The following roster, correlated from diverse historical sources by Eugene Watkins, manager of the reconstructed Old Fort, includes date and cause of death, when available, for each soldier listed.

Name	Date of Death	Cause of Death
Private Nicholas Tracy	August 1809	—
Private John King	September 1809	—
Private Daniel O'Flanagan	February 1810	—
Private James Moore	October 1811	—
Corporal James Leonard	March, 3 1812	Indian attack
Private —	March, 29-30 1812	Indian attack
Private John Cox	September, 5 1812	drowned
Private Thomas Sampson	February, 6 1813	Indian attack
Private John Minard	July, 8 1813	Indian attack
Private Samuel Heritage	July, 8 1813	Indian attack
Private Thomas Faulkner	July, 16 1813	Indian attack
Private John Bowers	July, 16 1813	Indian attack
Private John Ritts	July, 6 1813	Indian attack
Corporal William Elsey	July, 16 1813	Indian attack
Private Daniel Brewer	1813	—

Assessing the Site

Foundation remnants of different structures at the original fort site were excavated by the OSA in 1965 and 1966 (McKusick 1980) and by myself in 1981 (Hansman 1987). These remains lay within the city block bound by Third and Fourth streets east-west, and Avenues G and H north-south.

A scale outline representation of the fort, based upon the 1810 plan preserved at the National Archives, was superimposed on a modern aerial photograph of the area. Placement has been determined through comparative surveying methods, using the locations of fort remains discovered in the 1965 excavation.

The only known contemporary reference to garrison graves at Fort Madison is a letter addressed to the Secretary of

War, Washington, D.C., preserved at the National Archives. Received on November 8, 1811, and signed by "A Democrat," this communication complains of poor conditions then alleged to exist at the fort. Among the criticisms, the writer asserts that while the grave of the infant daughter of a trader at the fort was enclosed with "pailings [sic]...the honest Soldiers who had died at the same post, their graves are left exposed to be destroy'd by Hogs, Cattle and Horses, no headstone or any thing to mark the traces of their buddies!" (Jackson 1960).

These graves were apparently located in an area just west of the fort that bordered on the ravine from which hostile Indians besieged the garrison for several days beginning on September 5, 1812. During this assault, the Indians killed livestock and shot flaming arrows from the nearby stable onto the roof of the blockhouse (*Niles Register* 1912).

Bluff-top Graves

What of other areas, apart from that referenced, where soldiers who died at the fort may be interred? The possibility of a separate burial ground would seem likely in respect of an article published in the *Fort Madison Plain Dealer* on January 16, 1873, written by then city clerk, William Lowery (1873). This piece describes several features relating to the fort then still visible, including the garrison well and part of a cobblestone walk that surrounded some of the lost fort buildings. The article also attests that "On the bluff west of Mr. Hull's nursery, graves of white men are yet to be seen, who were members of the garrison."

Lee Hull's plant and tree nursery occupied much of the city block bound north to south by what are now Avenues D and E, and east to west by present U.S. Highway 61 and Third Street. This extensive tract is located two blocks northeast of the fort site.

But where on the bluff west of Hull's

Nursery would the soldiers' burial place have been located? A potentially helpful indication may be provided through long-established oral tradition. Robert Fahey, an 85-year-old school teacher, advised me that his grandfather, Michael Fahey, told him soldiers from Old Fort Madison were buried on the high bluff that ran behind the fort. This local tradition had been passed down to Michael from his own father, Richard Fahey, who settled in Fort Madison in 1838. The relevant area of the bluff lies to the west of the former Hull Nursery, an association that accommodates the 1873 *Plain Dealer* description.

On exploring the bluff top at the designated area, I noted an isolated level area of land lying between rising and falling sections of the bluff parallel to the town. This parcel could have formed an extension of Fourth Street to the north if the bluff side in that area had not been too steep to accommodate a continuance of the street.

At its southern extremity,



Aerial photograph of a part of Fort Madison, Iowa, showing: A, the outline of the 1810 plan of the 1808-1813 U.S. Army fort superimposed on excavated foundation remains of several fort buildings; B, the general location of the first garrison cemetery immediately west of the fort; C, a small, level area on the high bluff north of the Mississippi at Fort Madison where site survey, archival information, and local oral tradition place a second fort burial grounds.



Matthew Roberts surveys the postulated military burial site on a high bluff overlooking the Mississippi River at Fort Madison, Iowa.

Fourth Street runs closely adjacent to the site of Old Fort Madison. We thus have located a site on the bluff that would satisfy the criteria of both oral tradition and written reference which identified a discernible military burial ground in 1873. But does this level place contain human remains? Ground penetrating radar or magnetometry surveys have not yet been available to further examine this bluff-top location.

The references cited, of course, introduce a theoretical burial site based on historic and topographic evidence correlated with oral tradition. The 1811 letter complaining against the then location of garrison graves at Old Fort Madison, suggests the possibility that an alternate place of burial was subsequently chosen. Local oral tradition and an 1873 newspaper article fixed a garrison grave site on the high bluff behind the present fort remains. A level area on the bluff-top above the fort site is of a size that suggests a reasonable location for a burial place compatible with the other sources. No further evaluation can be postulated, however, until the relevant features are examined through professional, nondestructive investigation. Such research would have to be conducted in accordance with Iowa's protective burial legislation.

If, however, surviving metal regimental buttons or other period artifacts associated with human remains or evidence for graves should be found, the site could be confirmed as the earliest military cemetery in Iowa. The remains would represent soldiers killed by British-incited tribal elements in the only skirmishes of the War of 1812 that took place in the territory which became the future state.

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- 1966 Old Fort Madison. *The Palimpsest* 47:1-66.
- William Lowery
1873 Old Fort Madison. *Fort Madison Plain Dealer* 16 January:1. Fort Madison, Iowa.

Marshall B. McKusick

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The Annals of Iowa

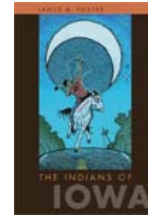
1897 Fort Madison. *The Annals of Iowa*, 3rd series, 1897:104-105.



The author in 1977 excavating at the Julfar site, an Arabian port in the United Arab Emirates. Currently he is an Associate of Clare Hall, Cambridge University and a Fellow of the Society of Antiquities, both in the U.K.

Book Review

The Indians of Iowa



In the *The Indians of Iowa*, Lance Foster has written a book that finally illuminates the history of Iowa's native peoples, a compilation that was desperately lacking. Perhaps this void exists because Iowa's early settlement saw very little conflict between

pioneers and American Indians, and this aspect of Iowa's history was not seen as interesting. Perhaps it was also because most of the tribes that occupied Iowa at contact had been removed from the state when settlement began.

Foster provides short histories of the 28 tribes once residing in Iowa. Each chapter begins with a section that describes the meaning of the tribe's name, the language family for the tribe, the time period the tribe resided in Iowa, and the location of the tribe today. At the end of each chapter there is a section titled "A Closer Look." These sections provide highlights of the native cultures. Topics include Indian Women in Iowa, Traditional Ways of Life, Indian History, Languages and Place Names, Indian Houses and Landscapes, Going to a Powwow, and Indians in Iowa Today. The last section of the book lists archaeological and historical sites to visit in Iowa, tribal contact information, and recommended books and websites to explore.

As an educator who addresses native peoples of Iowa, I am excited that teachers finally have access to this type of resource. Very few Iowans know that our state was named after a tribe—one of Iowa's first governors invented the story that the state was named after the Iowa River, and this idea has been perpetuated in textbooks ever since. Now, students can learn that the name "Ioway" was given to a resident people by the Sioux, and likely means "Sleepy Ones." In their own language, the tribe's name is Baxoje, the "Gray Heads" or "Gray Snow." I always delight in telling students that perhaps our state's name should really be Baxoje.

A delightful aspect of *The Indians of Iowa* is that Foster has illustrated the book with his own drawings. An accomplished artist and an alumnus of the Institute of American Indian Arts, Foster has been an active painter since 1978. He also has graduate degrees in anthropology and landscape architecture from Iowa State University.

Finally, Iowa has a complete reference of its Native past. This book should be in every classroom in the state. Perhaps then, I will no longer get answers such as "Seminole, Cherokee, and Pueblo" to my question: "What tribes once called Iowa home?"

—GAIL BARELS

The Indians of Iowa by Lance Foster is published by the University of Iowa Press (uiopress.uiowa.edu).

A Prehistoric Face Emerges

The past summer's work on the Lower Sand Lake Archaeological District site complex near LaCrosse, Wisconsin, by the Mississippi Valley Archaeology Center at the University of Wisconsin-La Crosse, revealed numerous storage pits reflecting seasonal use of the site area by Oneota groups. Oneota sites are common in the area. One of the most remarkable finds is this small, sculpted sandstone artifact. A human face is depicted on one side with the "forked eye" motif suggesting Mississippian cultural influence and what appears to be part of an eagle or Thunderbird engraving on the opposite side. The artifact is on exhibit at the Mississippi Valley Archaeology Center in LaCrosse.

—JEAN DOWIASCH



Errata

In the last issue of the *Newsletter*, John Palmquist's name was incorrectly spelled in the table of contents. The issue was also numbered incorrectly on the first page. It should have read Issue 210, Vol. 59, No.2.



Students from Diane Moritz's sixth grade class at Wilton Elementary participating in a Project Archaeology gridding activity. Diane is one of Iowa's Project Archaeology veteran teachers.

Project Archaeology Online Professional Development Opportunity *Knowing Shelter—Knowing People*

PROJECT ARCHAEOLOGY is an educational organization and a national network of archaeologists, educators, and concerned citizens working to make archaeology education accessible to students and teachers nationwide through professional development and high-quality educational materials. Museum educators, youth group leaders, and heritage site interpreters use Project Archaeology materials in informal learning environments. Project Archaeology is a joint program of the U.S. Bureau of Land Management and Montana State University.

Investigating Shelter Series

Project Archaeology has produced a new curriculum, *Project Archaeology: Investigating Shelter* (by Cali A. Letts and Jeanne M.

Moe, Montana State University, 2009), which leads students to discover how people lived in North America long ago, how they got their food, and how they spent their time. Appropriate for grades 3–5, the curriculum meets many U.S. national standards in social studies, science, literacy, mathematics, visual arts, and life skills. The curriculum engages students in the processes of scientific inquiry and teaches skills such as observing, inferring, using evidence, questioning, and classifying. The National Council for the Social Studies recently endorsed *Investigating Shelter* as a program that “seeks to educate children on the cultures of the past and how they have endured to the present.”

The published curriculum contains a complete archaeological investigation of a Pawnee earthlodge, a dwelling type of the Central Plains of the U.S. One of its teaching activities, *Every Picture Tells a Story*, is located on the Smithsonian's Department of Anthropology webpage anthropology.si.edu/outreach/Teaching_Activities.

There are eight other shelter investigations: Plains Tipi, Northwest Coast Plank House, Slave Cabin, Ute Rock Shelter, Historic Homestead, Earthfast House, Pueblo, and Great Basin Wickiup.

Each investigation contains oral histories, historic photographs or drawings, archaeological site maps, and artifact illustrations, all of which allow students to use authentic primary data to investigate past

cultures. Some investigations are available in interactive format and include voice overs so that students can hear the oral histories while they are reading. Additional resources such as historic photographs, illustrations, and lists of appropriate children's books are also available online. Classroom-ready activity pages are available for download.

Project Archaeology began offering an online course nationally on January 18, 2010, in partnership with the Smithsonian Museum and the Utah Museum of Natural History at the University of Utah. Additional online courses are scheduled beginning March 15 and October 1. To register, contact Madlyn Runburg at mrunburg@umnh.utah.edu.

Project Archaeology's shelter investigations are also available through professional development. In addition to the new online opportunity, educators may attend in-service and pre-service workshops through one of 27 state and regional Project Archaeology programs. Locate your local program by visiting projectarchaeology.org.

—JEANNE M. MOE

(Modified from an article by the author in *AnthroNotes*, Vol. 30, No. 2, Fall 2009.)

Project Archaeology in Iowa is coordinated by Lynn M. Alex, OSA. Iowa has hosted three Project Archaeology workshops attended by teachers, professional archaeologists, and conservation and museum educators from throughout the state. Iowa is hoping to prepare a shelter investigation based on a native Midwestern wickiup in the near future. To host a workshop in your area, contact Lynn at lynn-alex@uiowa.edu.

What's the Point?

Over the last few years, I have been trying to relocate prehistoric sites in Lucas County, Iowa, first documented by Harry Cooper LaRue and Charles Reuben Keyes between 1933 and 1945. LaRue and Keyes gave only brief directions to a section within a township, leaving the exact site locations open to guess work. Relocating these sites has not been easy because a lot of the tillable ground is now idle grassland in the government's set-aside program, meaning the land goes without any tillage for several years.

In search of sites recorded by LaRue and

Keyes, I have found other unrecorded sites close to those they documented. In 2006 I found and documented 13LC113. A small portion of this site is tilled and planted in corn or soybeans, so hunting is very limited. At that time, all I found was fire-cracked rock and waste flakes. I revisited the site several times in search of a datable piece, and in 2007, this point was found.



The point is not the biggest I have found, but it is my favorite because of its unusual color and the material. Most of the artifacts, I believe, were made from local raw material picked up in nearby streambeds.

The material used to make this point is very unusual. I have never seen these colors in an artifact before. The waste flakes are multicolored and very

few are the same color or material. Other artifacts I have found in the same area date to both the Woodland and Archaic periods.

—DALE CLARK

Guess the material, age, and type of Dale's point, and send your responses to william-whittaker@uiowa.edu.

Last issue's winners. The projectile point illustrated in the last issue of the *Newsletter* is identified as a Table Rock point, dating to the Late Archaic, 3000–1000 B.C. The material is almost certainly Knife River flint. IAS members who submitted correct answers were Larry E. Van Gorden, David Harvey Sr., Steven Kroeger, Paul Naumann, Damien Reinhart, and Gary Stam.

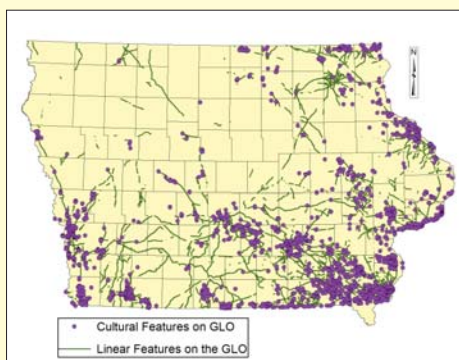
News from OSA's Geospatial Program

Relocating Minnesota Mounds. The Geospatial Program was awarded \$50,000 by the Minnesota Historical Society to relocate and accurately record prehistoric burial mounds first documented in the 19th century. The project will utilize LiDAR data collected for two counties (see article by Riley on page 7 of this issue for an explanation of LiDAR). Staff will assess the data collected for its utility in relocating mounds in Minnesota under various land use and vegetation cover.

Riley Completes Honored Thesis. Melanie Riley, the Geospatial Program's GIS Specialist, completed her master's thesis *Automated Detection of Prehistoric Conical Burial Mounds from LiDAR Bare-Earth Digital Elevation Models* utilizing data from the Iowa statewide LiDAR project. Riley developed a prototype tool that scans LiDAR data and flags features that fit the given criterion for a burial mound. Her thesis was awarded Northwest Missouri State University Outstanding Thesis 2009 and nominated for the Midwestern Association of Graduate Schools' 2010 Distinguished Master's Thesis Award.

Early Survey Maps Digitized. From 1832 to 1859, surveyors with the General Land

Office (GLO) survey worked from east to west across Iowa, gridding the land into sections and townships. During 2007 and 2008, the OSA, University of Iowa Libraries, Iowa Geological Survey, and the GIS Facility at Iowa State University worked together to digitally scan the 1,640 Iowa GLO survey plats from State Historical Society of Iowa (SHSI) microfilm. Staff matched the section corners laid out by the surveyors to the corresponding points on USGS topographic maps. This created a seamless, digital state-wide GLO map. The map can be viewed on the Iowa Geographic Map Server <http://maps.gis.iastate.edu>.



In 2009 a grant from the SHSI allowed us to return to mid 19th-century Iowa. Carefully viewing each GLO plat in turn, we digitized thousands of individual fields, cabins, towns, and mills; nearly 11,000 km of roads and trails; and other Euroamerican and Native American cultural features that GLO surveyors had depicted on the plats. The digitized features were displayed as inverted triangles, signifying a site with a known location but uncertain boundaries. Once Iowa site numbers were assigned to the sites, the master list was appended to the Iowa Site File database and updated with site type and affiliation.

When viewed in a GIS program, the cultural features can be zoomed to and examined in relation to the present day landscape. The "GLO Culture" data set will be an invaluable resource for scholars interested in the cultural landscape of Iowa at the beginning of Euroamerican settlement.

—COLLEEN ECK, JOHN HALL, MELANIE RILEY

OSA Submits Nominations to the National Register

On February 1, 2010, Lynn Alex (top) and Cynthia Peterson (bottom) will present four archaeological National Register (NR) documents to the State Nominations Review Committee of the Iowa State Historic Preservation Office for their consideration and potential forwarding to the National Park Service. The NR nominations follow a nearly two-year investigation aimed at identifying important cultural resources along the Loess Hills National Scenic Byway (briefly reported in the previous *IAS Newsletter*). Many researchers both within and outside the OSA contributed to the studies.



The nominations include a Multiple Property Document (MPD), *Archaeological Resources of Initial Variant of the Middle Missouri Tradition in Iowa*, which provides an archaeological context for two property types in the Mill Creek culture Big Sioux phase (A.D. 1100–1250)—villages and mortuary facilities.



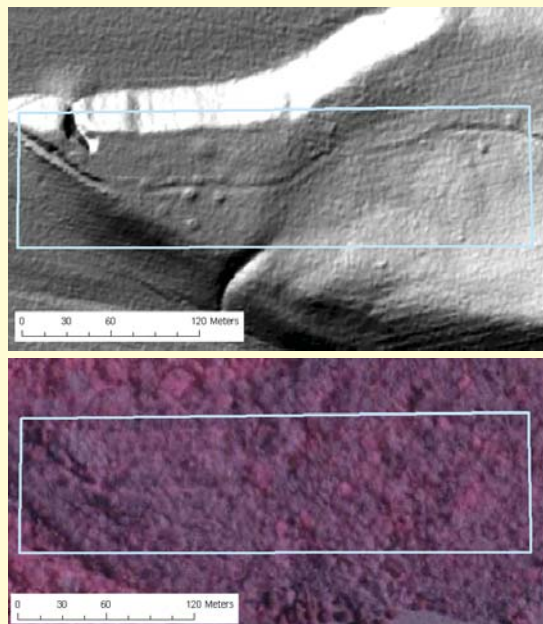
If the MPD is approved, the Kimball Village site (13PM4) in Plymouth County will be nominated for listing on the NR.

A second MPD, *Archaeological Resources of the Central Plains Tradition in the Loess Hills Region of Iowa*, features an archaeological context for Nebraska phase sites in the Loess Hills region (A.D. 1250–1400). Associated property types include earthlodge sites, mortuary facilities, and artifact scatters.



If that MPD is approved, the West Oak Forest Earthlodge site (13ML652) in Mills County will be nominated for listing on the NR.

—CARL A. MERRY



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Here's an easy way to support History through the Arts, the State Historical Society's signature education program. Next time you need to book a hotel room in the Des Moines area, reserve a room with any Heart of America properties and receive a 15% discount off the best available rate. History through the Arts will receive a rebate percentage from your reservation.

Whether you reserve a room online or by phone, make sure to mention History through the Arts. The more times History through the Arts is mentioned, the greater the rebate percentage will be. All rebate funds will go to covering tuition fees for students who attend History through the Arts programming. Help us raise enough money so all students can attend interactive fine arts and humanities programming like "Lets Celebrate Archeology" at the Iowa State Historical Museum for free!

For a listing of Des Moines Heart of America Hotels see www.heartofamerica-hotels.com/OurDestinations/Desmoines.html

—MAUREEN KORTE



Summer Teacher Institute Exploring the Past: Archaeology in the Upper Mississippi River Valley

Walking beside thousand-year-old burial mounds, flaking raw stone into tools, learning how potsherds tell us about human behavior, and understanding how humans adapt to complex, ever-changing environments—our 2010 Summer Institute features all this and more. The Mississippi Valley Archaeology Center at the University of Wisconsin—La Crosse will offer the three-week Institute, funded by the National Endowment for the Humanities, on July 12–30, 2010. This dynamic learning experience for K–12 teachers will explore how American Indians and Euroamericans have adapted to the Upper Mississippi Valley over the past 13,500 years, and how archaeology leads to an understanding of the ways in which human cultures change and adapt through time.

The Institute will feature a one-day excavation experience, field trips to archaeological sites; demonstrations; and hands-on laboratory, workshop, and classroom activities. Individual projects will help participants tailor the content to their own teaching areas. Participants receive a \$2,700 stipend to help offset their expenses.

Application and other information on the Institute are available online at <http://www.uwlax.edu/mvac/neh.htm>. The deadline for applications is March 2, 2010. For more information contact Bonnie L. Jancik, Director of Public Education, Mississippi Valley Archaeology Center, University of Wisconsin—La Crosse, 1725 State Street, La Crosse, Wisconsin, 54601; phone 608-785-6473, fax 608-785-6474, e-mail jancik.bonn@uwlax.edu.

—BONNIE L. JANCIK

Membership Information

Contact the IAS Membership Secretary, Alan Hawkins at The University of Iowa, Office of the State Archaeologist, 700 Clinton Street Building, Iowa City, Iowa 52242-1030.

Membership Dues

Voting	
Active	\$20
Household	\$25
Sustaining	\$30
Non-Voting	
Student (under 18)	\$9
Institution	\$30

Newsletter Information

The Iowa Archeological Society is a non-profit, scientific society legally organized under the corporate laws of Iowa. Members of the Society share a serious interest in the archaeology of Iowa and the Midwest. The *Newsletter* is published four times a year. All materials for publication should be sent to Acting Editor, William E. Whittaker, University of Iowa, Office of the State Archaeologist, 700 Clinton Street Building, Iowa City, Iowa 52242-1030. Email: william-whittaker@uiowa.edu. When submitting articles, please provide text, captions, tables, and figures separately. All digital photographs should be at least 300 dpi at full size. Graphics, if supplied digitally, should be high-resolution tiff or eps files. Paper versions of articles and photos are also acceptable.

IAS web site

<http://www.uiowa.edu/~osa/IAS/index.html>

Lynn and Steve appreciate the opportunity to have served as Newsletter editors.