



Atlanta Antiquity

Newsletter of the Greater Atlanta Archaeological Society for
June 2009

Opinions expressed in this newsletter do not necessarily reflect those of the Greater Atlanta Archaeological Society or its board of directors. Articles, comments, and responses to items contained herein are invited

June Meeting

We meet every month at the Fernbank Museum of Natural History, but what do we really know about its history or that of the surrounding neighborhood? At the June 9th meeting, join Fernbank Museum's Kate Jackson as she begins to unravel the history of the museum and the land surrounding it. Be sure to bring comfortable and sensible shoes, as we'll be venturing into the Overlook Forrest behind the Museum for a quick walking tour of a little-known portion of the Museum's property. A cautious note: the trail behind the Museum can be tricky. It can be quite steep in some places, muddy in others, and is unpaved. It will not accommodate walkers, wheel chairs, strollers, etc., and it requires a moderate level of fitness to travel. Please Note: June's meeting will start at 7:00pm instead of the usual 7:30pm. If you're late, we'll be out in the woods, somewhere.

This project is in its beginning stages, so bring your local knowledge with you, and we'll see you on June 9th!

GAAS Information

Hot Line 770-452-0009

Get info about GAAS activities!

Flat Rock Cemetery—June 6th

(Kate Jackson)

It has been several months since we've braved the woods surrounding the Flat Rock Cemetery, and so it's time to announce our next volunteering trip! Throughout the winter, we were able to clear many fallen timbers and smaller vines, but as spring has sprung and summer is on the way, we need to continue our efforts, especially as new growth threatens to reverse the work we've already done.

Please join us if you can on June 6th, (Saturday) at 9:00 a. m. for our next Flat Rock

Cemetery clean-up session. We'll be meeting at the Flat Rock Archive and then carpooling to the cemetery. Remember to bring plenty of water, tools, and bug spray! As always, I am available for any questions that you might have about this project (Kate Jackson, archaeology@fernbankmuseum.org or 404.929.6414), and if you think you are available to help on June 6th, please let me know so we can watch for you that morning. Take care, see you soon, and thank you!

Spring SGA Meeting - Macon 2009

(Allen Vegotsky)

The Spring SGA (Society for Georgia Archaeology) meeting was held at Wesleyan University in Macon on May 16th. By any criterion, it was a bounding success. More than 100 attendees were counted in the audience. The theme was *Mounds in our Midst: Monuments of Prehistoric Culture in Georgia*. Our own Dennis Blanton assembled a talented cast of mound researchers who convinced us that there are more mounds in Georgia than many of imagined, that these mounds are still yielding new information and interpretations, that there are new ways and technologies to study these mounds, and that there is still much that we don't know about them. Hopefully, some of these fascinating talks will be published soon in *Early Georgia*. In addition, there were two talks outside of the mound theme that illustrated the wide range of work encompassed by the SGA mission. Jim D'Angelo gave an update on historic preservation efforts at the Fort Daniel site in Gwinnett County illustrating an outstanding Chapter activity. The final presentation of the day was given by Jeffrey Glover on the Flat Rock African-American Cemetery, crediting the role of the Fernbank Museum and GAAS in this undertaking and illustrating the research approaches of his students and himself in preserving and interpreting this important site. As an added treat, Rita Elliott and others introduced us to Abby, the affectionate nickname for the Archaeobus. Abby is a colorful reconditioned bus converted to a public education tool to bring archaeology to schools and public events with hands-on activities. Overall this was one of my favorite meetings of the last decade.

Keep Up-to-date with Fernbank Museum Archaeology!

(Kate Jackson)

There are several new ways with which you can keep up with the Archaeology programs at Fernbank Museum of Natural History! All of the links to these great online resources can be found below, and please let me know if you have any questions about them (Kate Jackson, archaeology@fernbankmuseum.org, 404.929.6414).

1. You can visit our new archaeology blog, the Fernbank Expedition Journal, in which Dennis Blanton keeps us up-to-date with his finding from the field.

<http://fernbankexpeditionjournal.wordpress.com/>

You can also access the new archaeology blog from the Museum's home webpage www.fernbankmuseum.org.

2. Become a fan of the Fernbank Museum on Facebook. Here you'll find information on the latest news and programs at the Museum, including archaeology programs.

<http://www.facebook.com/pages/Atlanta-GA/Fernbank-Museum-of-Natural-History/48745465565>

3. Join our 'Fernbank Archaeology Group' on Facebook. Here you can keep in touch with other Fernbank Archaeology program participants, share photos, get blog updates, ask questions.

<http://www.facebook.com/pages/Atlanta-GA/Fernbank-Museum-of-Natural-History/48745465565#/group.php?gid=87940720107&ref=ts>

4. Follow us on Twitter—we update Twitter each time we update the archaeology blog.

<http://twitter.com/FernbankMuseum>

5. Join us on Flickr, where we post additional photographs from the field, and where you can post your own Fernbank images.

http://www.flickr.com/photos/fernbank_museum/sets/72157617777396588/ for "Field Work" photos

or

<http://www.flickr.com/groups/920203@N21/> to add in your own Fernbank pictures.

We're looking forward to keeping in touch—thank you for your continued interest in Fernbank Museum's Archaeology programs!

Website of the Month: Fernbank Expedition Journal *(Allen Vegotsky)*

The full name of this recommended website is Fernbank Expedition Journal: Archaeologist's report. The archaeologist is Dennis Blanton, Curator of Fernbank's Native American Archaeology collection and the website is a blog on exciting fieldwork. The website is: <http://fernbankexpeditionjournal.wordpress.com/> Click on to this address to enjoy vicariously ongoing fieldwork at a Spanish contact site in south Georgia where many of us have volunteered in the recent past. One click and you can share in the experience of the discovery of a Nueva Cadiz bead and find out what it implies and learn about the significance of a rusty iron fragment.

Note: Website of the month is an occasional ongoing feature introducing sites of special interest. Readers are encouraged to submit their favorite archaeology websites.

The Driftwood Beach Shipwreck

(Chris McCabe, Underwater Archaeologist)

In August 2008, Tropical Storm Fay caused significant beach erosion along the barrier islands of coastal Georgia revealing the partial remains of a wooden shipwreck. After the storm passed, DNR's underwater archaeologist Chris McCabe and Jekyll Island archaeologist Andrea Marroquin examined the newly exposed wreck. The amount of time spent onsite was limited by tidal surf and the resulting redeposit of sand over the remains. Nevertheless the two managed to get a reasonable picture of the vessel's skeletal structure before it was reclaimed by the shifting shoreline.



Archaeologists Andrea Marroquin (left) and Chris McCabe (right) examine the likely wreck of the 19th century steamboat *Magnolia*.

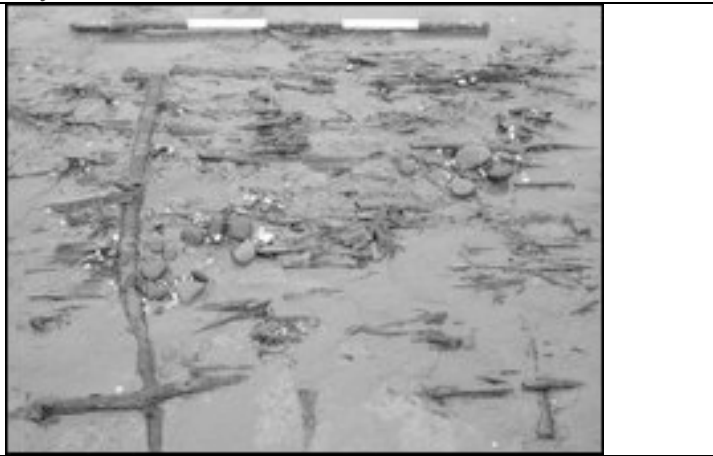
Follow-up investigations linked the design, construction, and damage of the remaining timbers with the historical and environmental records. Collectively they

point to a 19th century coastal steamboat named *Magnolia*, which exploded and sank in the Frederica River in 1852. Newspaper accounts of the day reported that a boiler explosion ripped the vessel in half, tragically killing fourteen passengers and crew. Several witnesses saw the steamboat's forward section floating downriver "nearly five miles distant from the place of the disaster." The partial remains uncovered by last summer's storm are very likely those of *Magnolia*'s bow. Wood sample analyses should reveal additional pieces of the puzzle and help determine if this is indeed the case.

For more information on our underwater archaeology program, visit www.gashpo.org/content/displaynavigation.asp?TopCategory=79.

A Bronze Age Road Found Below Swansea's Shifting Foreshore *(BBC News)*

The short section of track was discovered by a metal detector enthusiast and archaeologists have now dated it to around 4,000 years ago. Woven from narrow branches of oak and alder the structure was covered in a thin layer of brushwood to provide a level walking-surface. It was found in March when it was uncovered by storms but has since disappeared back under the marine clay.



Brian Price, a member of the Swansea Metal Detecting Club (UK), reported the discovery opposite the Brynmill area to the Glamorgan-Gwent Archaeological Trust. A sample was sent to the Beta Analytic Radiocarbon Laboratory in Florida for dating and was found to be from the early Bronze Age - sometime between 2140 and 1930BC. Andrew Sherman, assistant project officer, said: "During the early Bronze Age the climate was drier and warmer than today and the sea level was significantly lower. "The trackway was therefore probably built through a wet, marshy environment. "Because it has been eroded by the tide it is impossible to tell whether the entire trackway was composed of hurdles,

or whether occasional hurdles were laid to cross particularly wet patches of ground."

The trust said there was very little evidence of Early Bronze Age settlements in the area with lots of funeral and ritual sites such as barrows, cairns and standing stones, but no habitation structures. "The explanation for this may simply lie in the nature of a nomadic existence, which militates against the construction of substantial dwellings," added Mr Sherman.

Roman Era Reveals Expenses Claims

Ancient Roman writing tablets suggest public officials were involved in expenses scandals 2,000 years ago. Writing tablets uncovered near Hadrian's Wall detail hundreds of expenses claimed by Roman officials, Hadrian's Wall Heritage Ltd said. Five of the translated tablets contain 111 lines detailing entertainment claims at the Roman camp of Vindolanda. The items include ears of grain, hobnails for boots, bread, cereals, hides and pigs.

The wooden writing tablets - which date from the 2nd Century - were discovered at Vindolanda, the Roman encampment near Hadrian's Wall in 1973. Professor Tony Birley, who translated the tablets, said they detail hundreds of expense claims and "lavish parties" held for officers. He said: "Officers were paid very well - they could buy goods duty free so they would often fiddle expenses by buying items at a cut price then selling them at a profit."

The wooden tablets, which are held at the British Museum in London, depict a business letter written by an official or entrepreneur supplying goods to the Roman army. It reads: "As to the 100 pounds of sinew from Marinus - I will settle up. From when you wrote about this he has not even mentioned it to me. I have written to you several times that I have bought ears of grain, about 5000 modii, on account of which I need denarii - unless you send me something, I will lose what I have given as a down payment, and will be embarrassed, so I ask you: send me some denarii as soon as possible."



The Vindolanda tablets suggest Roman officials submitted expense claims

Professor Birley said it was thought the writer had been beaten by centurions for supplying "dodgy" goods. He said punishment against officials caught fiddling their expenses was a "matter of luck." "If you were ranked highly you might just get sent off to exile - but if you were poorer, or further down the ranks, you would get the chop," he said.

Tom Higgins, the director of communications at Hadrian's Wall Heritage, said: "The tablets show desperate pleas by officials so I think the Roman legions were quite tight with their money."

More than 400 tablets were discovered at the site and are some of the earliest examples of the written word in Britain.

Anthropologist Advances 'kelp highway' Theory for Coast Settlement

(Larry Pynn, Vancouver Sun)

The Pacific Coast of the Americas was settled starting about 15,000 years ago during the last glacial retreat by seafaring peoples following a "kelp highway" rich in marine resources, a noted professor of anthropology theorized recently. Jon Erlandson, director of the Museum of Natural and Cultural History at the University of Oregon, suggested that especially productive "sweet spots," such as the estuaries of British Columbia's Fraser and Stikine rivers, served as corridors by which people settled the interior of the province. Erlandson said in an interview these migrating peoples were already sophisticated in harvesting from the sea and would have worked their way down the coast in search of new sites. "I think as much as anything it was an exploratory urge," he said at an international conference on the history of marine mammals at the University of B.C. "Populations were gradually growing and people kept moving. What's around the next bend? If there were no people there, it must have been a really powerful draw to keep exploring." The kelp highway theory runs up against the long-held belief that the first humans entered the Americas on a land bridge that spanned the Bering Strait.

Erlandson said the kelp highway represented a diverse ecosystem and would have extended from what is today Japan past Russia's Kamchatka Peninsula and Alaska's Aleutian Islands all the way down the west coast of North America to Mexico's Baja peninsula and then continuing again in the waters off Peru, Ecuador, and Chile in South America. "These kelp forests would have provided a migration corridor near shore with no major barriers," he said. "It would have been a very similar ecological zone to follow and a rich one."

It's hard to know what kind of vessels carried these early seafarers, although dugouts (perhaps carved from driftwood) and skin boats are possible, he said. The world's first evidence of human harvesting of marine life is found at Olduvai Gorge in Tanzania dated to about 2.3

million years ago. Simple shoreline ponds were likely employed to catch fish. The first evidence of sophisticated fishing technology dates back 90,000 years to the Democratic Republic of the Congo, formerly Zaire, where harpoons were crafted from stone points with bone barbs to catch Nile perch. Evidence of seaweed recovered from hearths at the Monte Verde II archeological site in southern Chile has been dated to about 14,000 years ago.

The first seafarers would have over-exploited resources initially amidst a windfall of marine life, but over time would have learned to live sustainably off the ocean, Erlandson said. "There is a general human tendency, when you come into great abundance, to waste it. In B.C., in California and other parts of the world there is evidence early they did impact resources. "But I think they learned lessons from it, just as we're trying to learn lessons from the over-fishing of recent decades."

Of aboriginal involvement in the elimination of sea otters from B.C.'s West Coast during the European fur trade starting in the late 1700s, he said: "That was part of a globalized economy, a cash economy that was fundamentally different." Migrating peoples were sophisticated in sea harvesting, Jon Erlandson says.

Climate Change Did Not Doom The Anasazi *(Media-Newswire.com)*

Eric Skopec demonstrates that global warming did not destroy the Ancestral Puebloan civilization. Although some authors bolster their warnings with historical references, many misrepresent the archeological record. According to Dr. Skopec, "much of what popular authors say about the Ancestral Pueblos is incomplete, misleading, and just plain wrong. They get away with it because the general public knows little more than the myth that the Ancestral Pueblos mysteriously disappeared."

In a compact book written for history buffs and vacationers, Dr. Skopec tackles two popular myths. First, he notes that the Ancestral Pueblos did not disappear. Their descendents are alive and well, and many welcome visitors to their villages and pueblos. Second, he argues that climate change had some effect on the Ancestral Pueblos but other factors were at least as important. The people had managed droughts much more severe than the early 12th century dry period and, Dr. Skopec adds, much of their land could have supported even larger populations. Their "abandonment" of Mesa Verde, Chaco Canyon, Canyon de Chelly and other sites was an extension of their normal pattern of migration.

Dr. Skopec builds his case in [The Ancestral Puebloan Primer](#) written with his son, Christopher, and published by Lulu.Com. In eight readable chapters, the Skopecs explain who the Ancestral Pueblos were and trace their lineage to earlier Basketmaker and subsequent Pueblo peoples. They describe the origins of massive stone cities and well as survival strategies that allowed the

people to prosper in the arid southwest. Important chapters summarize ways in which the Ancestral Puebloans defined communities as well as the stories told by pottery fragments, stone tools, and rock art. The final chapter explains why the Ancestral Puebloans abandoned the four corners region, how the move affected their society, and what the Spanish conquest did to newly established pueblos along the Rio Grande.

The Ancestral Puebloan Primer is a conveniently sized book that fits in camera bags, back packs and purses. It is just over 75 pages long but conveys an extraordinary amount of information. To control size and price, the Skopecs adopted two innovative strategies. First, they summarize their research in a "Note on Sources" rather than endless strings of footnotes. Second, they have placed the Note along with Acknowledgements listing experts who assisted on a dedicated web page (http://anasaziadventure.com/visitor_guides.html). Together, these strategies result in an engaging volume at least 40% smaller than might be expected with a retail price under \$10. Interested readers can order copies of The Ancestral Puebloan Primer and Dr. Skopec's other writings at <http://stores.lulu.com/store.php?fAcctID=775294>.

Native Americans Had Sophisticated Dentistry *(National Geographic)*

The glittering "grills" of some hip-hop stars aren't exactly unprecedented. Sophisticated dentistry allowed Native Americans to add bling to their teeth as far back as 2,500 years ago, a new study says.

Ancient peoples of southern North America went to "dentists"—among the earliest known—to beautify their chompers with notches, grooves, and semiprecious gems, according to a recent analysis of thousands of teeth examined from collections in Mexico's National Institute of Anthropology and History.



Skull found in Chiapas, Mexico

Scientists don't know the origin of most of the teeth in the collections, which belonged to people living throughout the region, called Mesoamerica, before the

Spanish conquests of the 1500s. But it's clear that people—mostly men—from nearly all walks of life opted for the look, noted José Concepción Jiménez, an anthropologist at the institute, which recently announced the findings. "They were not marks of social class" but instead meant for pure decoration, he commented in an e-mail interview conducted in Spanish. In fact, the royals of the day—such as the Red Queen, a Maya mummy found in a temple at Palenque in what is now Mexico—don't have teeth decorations, Jiménez said.

Other evidence of early Mesoamerican dentistry—including a person who had received a ceremonial denture—has also been found.

The early dentists used a drill-like device with a hard stone such as obsidian, which is capable of puncturing bone. "It's possible some type of [herb based] anesthetic was applied prior to drilling to blunt any pain," Jiménez said. The ornamental stones—including jade—were attached with an adhesive made out of natural resins, such as plant sap, which was mixed with other chemicals and crushed bones, Jiménez said.

The dentists likely had a sophisticated knowledge of tooth anatomy, Jiménez added. For example, they knew how to drill into teeth without hitting the pulp inside, he said. "They didn't want to generate an infection or provoke the loss of a tooth or break a tooth."

Fish Poisoning May Be Why Polynesians Left Paradise *(ScienceDaily)*

Ciguatera poisoning, the food-borne disease that can come from eating large, carnivorous reef fish, causes vomiting, headaches, and a burning sensation upon contact with cold surfaces. An early morning walk on cool beach sand can become a painful stroll on fiery coals to a ciguatera victim. But is this common toxin poisoning also the key to a larger mystery? That is, the storied migrations of the Polynesian natives who colonized New Zealand, Easter Island and, possibly, Hawaii in the 11th to 15th centuries? Could ciguatera be the reason masses of people left paradise?

Teina Rongo, a Cook Island Maori from Rarotonga and a Ph.D. student at the Florida Institute of Technology, and his faculty advisers Professors Robert van Woesik and Mark Bush, propose this intriguing theory in an upcoming issue of the *Journal of Biogeography*. Based on archeological evidence, paleoclimatic data and modern reports of ciguatera poisoning, they theorize that ciguatera outbreaks were linked to climate and that the consequent outbreaks prompted historical migrations of Polynesians.

Why would historic populations of Cook Islanders take the chance of voyaging? A journey beyond the horizon was risky and favorable landfalls were uncertain. It is known that this population was heavily reliant on fish as a source of protein, and the scientists suggest that once

their fish resources became inedible, voyaging became a necessity. Modern Cook Islanders, though surrounded by an ocean teeming with fish, don't eat fish as a regular part of their diet but instead eat processed, imported foods. In the late 1990s, lower-income families who could not afford processed foods emigrated to New Zealand and Australia. The researchers suggest that past migrations had similar roots. The heightened voyaging from A.D. 1000 to 1450 in eastern Polynesia was likely prompted by ciguatera fish poisoning. There were few options but to leave once the staple diet of an island nation became poisonous. "Our approach brings us a step closer to solving the mysteries of ciguatera and the storied Polynesian native migrations. We hope it will lead to better forecasting and planning for ciguatera outbreaks" says van Woesik.

German Scientists Find Clues to Roman Mass Production *(The Earth Times)*

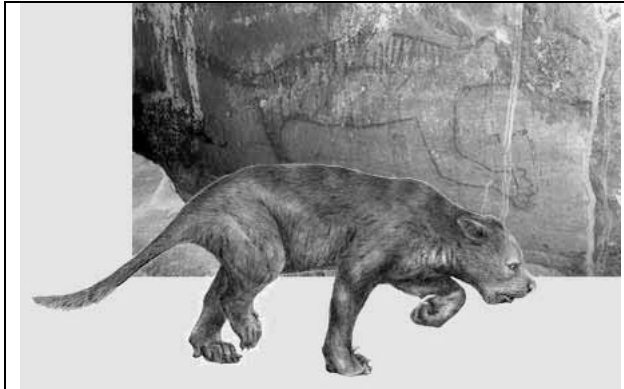
German scientists disclosed recently new evidence that the ancient Romans used mass-production methods to make metalwares at lesser cost, just like modern factories do. A close study of a 28-centimetre-tall bronze figure of the god Mercury made in the 2nd century AD showed it was hollow - an indication of cost cutting - and that its legs were made separately, indicating some kind of assembly line to exploit economies of scale.

Technical University of Munich scientists at the FRM-II research nuclear reactor in Garching near Munich blasted the statue with neutrons to reveal metal joints that are invisible to X-rays. Physicist Martin Mühlbauer said the neutron tomography study was done on a statue lent by Munich's Archaeological Museum. The scientists then realized the figure had been chiselled open after casting to remove the inner mould, a crumb of which was still left inside. The opening had then been covered with bronze sheeting and the joint smoothed over and made invisible.

Museum chief Rupert Gebhard said, "It does suggest mass production. Having it hollow saved copper, and the fitted-on legs were stronger than if the statue had been cast in one piece."

Cave Painting Depicts Extinct Marsupial Lion *(Natural History Magazine)*

Modern Australia lacks big land predators, but until about 30,000 years ago, the continent was ruled by *Thylacoleo carnifex*, the marsupial "lion." Several well-preserved skeletons of the leopard-size beast have been found. Now, a newly discovered cave painting offers a glimpse of the animal's external appearance.



Reconstruction of a marsupial "lion"; cave art suggests the animal had stripes.

In June 2008, Tim Willing, a naturalist and tour guide, photographed an ancient painting on a rockshelter wall near the shore of northwestern Australia. Kim Akerman, an independent anthropologist based in Tasmania, says the painting unmistakably depicts a marsupial lion. It shows the requisite catlike muzzle, large forelimbs, and heavily clawed front paws. And it portrays the animal with a striped back, a tufted tail, and pointed ears. Those last three features aren't preserved in skeletons, but Aborigines would have known them well. Australia's first people landed on the continent at least 40,000 years ago and were contemporaries of the big predator.

Previously known rock paintings hinted at marsupial lions, but were rudimentary and could have depicted the other striped marsupial predator, the dog-size Tasmanian "tiger." That species succumbed to competition from humans in 1936, much as the marsupial lion may have done millennia before.

"Hobbit" Foot Like No Other In Human Fossil Record *(NewsWise)*

An international team of paleoanthropologists, anatomists and archeologists have published the first scientific analysis of the foot of *Homo floresiensis*, the fossil found in Indonesia in 2003 and popularly referred to as the "Hobbit." Lead author William L. Jungers, Ph.D., of Stony Brook University, and colleagues documented the Hobbit's unusual combination of ape-like and human-like foot features, which clearly enabled bipedal walking, a hallmark of all humans and their extinct relatives (hominins), despite its surprisingly primitive design. Their findings, reported in the May 7 issue of *Nature*, provide further evidence that the ancestor of this species was perhaps not *Homo erectus* but instead another more primitive and remote hominin.

Jakarta, may unearth an answer to the competing theories on the origins and nature of *Homo floresiensis*.



The authors point out that the Hobbit foot has a relative foot length that far exceeds the upper limits for modern humans either of average or short stature. The foot is similar in relative length to pygmy chimpanzees, with long and curved toes, but also sports a short big toe in line with the other toes. While the foot has an overall structure that signals bipedal walking, it appears to have been “flat-footed” and poorly designed for running, one of the critical pedal features believed to characterize human ancestors since the time of *Homo erectus*. “A foot like this one has never been seen before in the human fossil record,” says Dr. Jungers, Distinguished Teaching Professor and Chair of the Department of Anatomical Sciences at Stony Brook. “Our analysis offers the most complete glimpse to date of how a primitive bipedal foot was designed and differed from that of later hominins and modern humans.” “Arches are the hallmark of a modern human foot,” explains co-author Dr. William E. H. Harcourt-Smith of the American Museum of Natural History. “This is another strong piece of the evidence that the ‘hobbit’ was not like us.”

In “The foot of *Homo floresiensis*,” the authors also suggest that despite these feet being dated to the Late Pleistocene age (17,000 years ago), their features together with many other parts of the *Homo floresiensis* skeleton, might represent the primitive condition for our own genus *Homo*. This could imply a dispersal event out of Africa earlier than what paleoanthropologists have long thought. “These particular ‘hobbit’ feet may have never walked into Mordor, but they certainly remind us how little we know about which other hominin species walked out of Africa and the many possible places their feet helped take them,” adds co-author Dr. Matthew Tocheri, of the Smithsonian Institution.

Dr. Jungers points out that “if the feet and skeleton of the ‘hobbits’ are instead the result of ‘island dwarfing’ from the Southeast Asian *Homo erectus* as some scientists suspect, then an amazing number of evolutionary reversals to primitive conditions had to occur as an unexplained and unprecedented by-product.”

Continued excavations on Flores and other parts of Indonesia, to be led by co-author Dr. Mike Morwood, of the University of Wollongong in Australia, in collaboration with Indonesian scientists from the National Research and Development Centre for Archeology in

Oldest Evidence Of Leprosy Found In India *(ScienceDaily)*

A biological anthropologist from Appalachian State University working with an undergraduate student from Appalachian, an evolutionary biologist from UNC Greensboro, and a team of archaeologists from Deccan College (Pune, India) recently reported analysis of a 4000-year-old skeleton from India bearing evidence of leprosy. This skeleton represents both the earliest archaeological evidence for human infection with *Mycobacterium leprae* in the world and the first evidence for the disease in prehistoric India.

The study, published in the journal *PLoS One*, demonstrates that leprosy was present in human populations in India by the end of the mature phase of the Indus Civilization (2000 B.C.) and provides support for one hypothesis about prehistoric transmission routes for the disease. This finding also supports the hypothesis that the Sanskrit *Atharva Veda*, composed before the first millennium B.C., is the earliest written reference to the disease and that burial traditions in the second millennium B.C. in one northwestern Indian village bear some resemblance to practices in Hindu tradition today.

As infectious diseases go, leprosy is still one of the least well-understood, in part because the *Mycobacterium* is difficult to culture for research and it has only one other animal host, the nine banded armadillo. An Indian or African origin for the disease has often been assumed based on historical sources that support an initial spread of the disease from Asia to Europe with Alexander the Great's army after 400 B.C. Skeletal evidence for the disease was previously limited to 300-400 B.C. in Egypt and Thailand.

A report on genomics of *Mycobacterium* published in the magazine *Science* by Monot and colleagues in 2005, indicated the disease may have originated in Africa during the Late Pleistocene and that *M. leprae* spread out of Africa sometime after 40,000 years ago, when human population densities were small. A counter hypothesis was proposed in the same volume of *Science* by Pinhasi and colleagues suggesting that the same data could be interpreted as evidence for a Late Holocene migration of the disease out of India after the development of large urban centers.

Dr. Robbins and colleagues report on a case of leprosy in a skeleton buried around 2000 B.C. in Rajasthan, India, at the site of Balathal. From 3700-1800 B.C., Balathal was a large agrarian settlement at the margins of the Indus (or Harappan) Civilization. The mature phase of the Indus Civilization during the latter half of the third millennium B.C., was a period of social complexity characterized by urbanization, a system of writing, standardized weights and measures, monumental architecture, and trade networks that stretched to Mesopotamia and beyond.

The presence of leprosy in India toward the end of this period indicates that *M. leprae* existed in South Asia at least 4000 years ago. This suggests that there may be some validity to Pinhasi and colleagues hypothesis that the disease spread between Africa and Asia during a period of incipient urbanization, increasing population density, and regular inter-continental trade networks. Dr. Robbins is currently attempting

to recover ancient DNA from the skeleton to determine if the strain of *M. leprae* infecting the individual from Balathal is similar to strains common in Africa, Asia and Europe today. If it is successful, this work could shed additional light on the origin and transmission routes of this disease.

Understanding more about the disease can help clear up some of the many popular misconceptions about leprosy. It is generally associated with outcast and neglected people suffering their contagion on the margins of urban centers in late Biblical or Medieval times. In reality, leprosy is transmitted only through prolonged close contact with nasal droplets or infected regions of the body. It is not highly contagious and the infection can remain latent for decades. In fact, most people infected with *Mycobacterium leprae* have few or very mild symptoms. Because leprosy is not highly contagious and its survival is likely dependent upon dense populations, the association with urban environments is possibly the only accurate part of the popular perception.

The presence of leprosy at Balathal 4000 years ago also supports translations of the Eber's papyrus in Egypt and a Sanskrit text in India (the *Atharva Veda*) that refer to the disease as early as 1550 B.C. The *Atharva Veda* is a set of Sanskrit hymns devoted to describing health problems, their causes and treatments available in ancient India. Translations of leprosy have been questioned because it is difficult to perform a differential diagnosis on descriptions in such ancient texts particularly since diagnosis was not why the conditions were being described. The evidence from Balathal indicates that it is

possible that the authors were describing leprosy as the disease was present in the subcontinent in prehistoric times.

Furthermore, in contemporary Hindu tradition burial is uncommon unless an individual is a highly respected member of the community (like an ascetic) or is an individual seen as unfit to be sacrificed through cremation. These latter individuals are buried, including outcastes, pregnant women, children under 5, victims of magic or curses, and lepers. During the second millennium B.C., when there was disintegration of Indus settlements and new, smaller settlements sprang up all over the western half of peninsular India, adult burial becomes rare, children under 5 begin to predominate in the skeletal assemblages, and this early leper was one of only five individuals buried at the site of Balathal (the others were middle-aged women, an ascetic from the Early Historic period, and a fragmentary clavicle found with the leprosy skeleton). Thus there is a similarity in terms of the demography of the burial populations from the second millennium and Vedic tradition.

In addition, another feature of this burial that resembles Vedic symbolism is the burial site itself. The leper's skeleton was interred within a large stone enclosure that had been filled with vitrified ash from burned cow dung, the most sacred and purifying of substances in Vedic tradition. The presence of this skeleton at Balathal, the manner in which it was interred, and the preponderance of children in burial assemblages from this time period throughout western India suggest deep time for the origin of these practices still common in Vedic tradition today.

Announcements (Leslie Perry, Terry Hynes, & Allen Vegotsky)

August 26-29 - AASLH (American Association for State and Local History) Annual Meeting - Indianapolis, IN - <http://www.aaslh.org/2009-annual-meeting.htm>

Greater Atlanta Archaeological Society

Officers

				<u>Term Expires</u>
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Board of Directors

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