

# Alabama Archaeological Society

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## STONES & BONES NEWSLETTER

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Huntsville, Alabama 35803

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### THE EMERGENCE OF MAYA CIVILIZATION

How does a great civilization arise? Does it emerge full-blown in a single episode of cultural transformation, or is it the final flowering of a long process that entails the patient accumulation of many innovations?

It has long been clear that the Maya, who occupied the Yucatan peninsula along with parts of Belize, Guatemala, El Salvador and Honduras, developed one of the most sophisticated of all native American cultures. At its height in the Classic period (from about A.D. 300 to 900), Maya society was highly stratified, with a ruler at the apex of six or seven clearly defined social classes. A complex cosmology held places for gods, natural forces and ancestors. An elaborate calendar provided the framework for ritual and historical events. The rituals were enacted at ceremonial centers that formed the core of great cities. This cultural superstructure rested on the cultivation of maize, and techniques had been developed for making steep hill-sides and swamps cultivable.

A decade ago it was thought that Classic Maya civilization sprang into being quite suddenly during the third century A.D. The preceding period, called Preclassic or Formative, was believed to have been an age of humble village farming societies. Since 1975 many discoveries and reassessments of known evidence have radically changed the accepted picture of Preclassic culture.

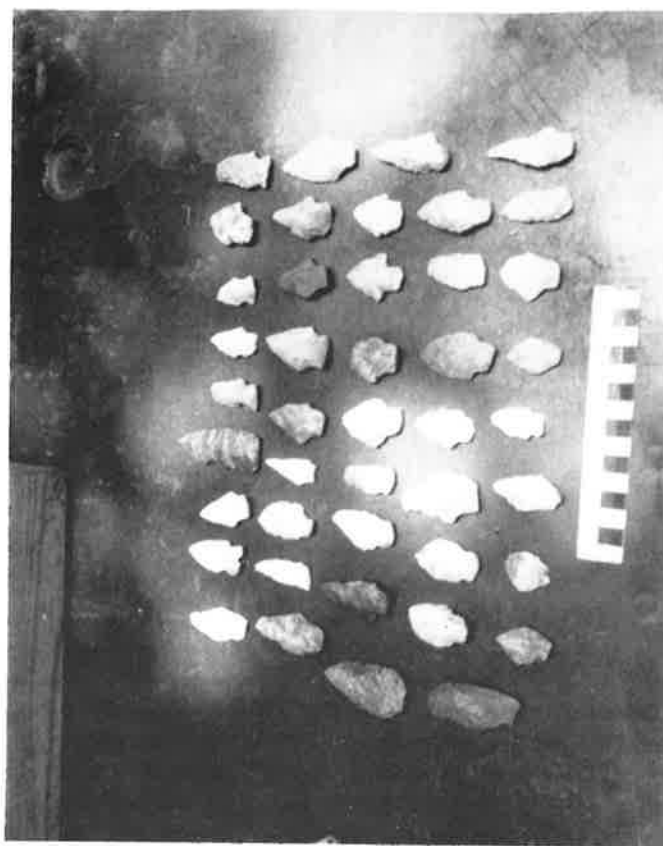
In 1975 the earliest confirmed date of occupation rested on a radio-carbon date corresponding to a calendar date of about 900 B.C. Since 1975 the span of occupation has been extended by a factor of five. It now seems likely that the forebears of the Maya and their descendants inhabited their territory continuously from around the end of the last ice age 10,000 years ago.

In Belize several stone projectile points have been found that bear a strong resemblance to those used by big-game hunters of the Clovis culture, who roamed the Great Plains of the U.S. between 12,000 and 10,000 years ago. The best-known of the Belize finds is the Ladyville Point.

In the highlands of Guatemala a site called Los Tapiales has yielded Clovis-type points in association with artifacts providing radiocarbon dates of about 10,000 years ago.

(From an article by Norman Hammond in "Scientific American", 225(2):106, August 1986)

The Editors



Photographs: Upper Left - Don Coley, Boyce Driskell and Bob Atchison, artifacts collected on Bogue Chito Creek. Upper Right - Boyce Driskell and Bob Atchison at test pit near Cahaba River. Lower Left - Richard Smith, Perry County Agent, examines artifacts from O. D. Hartley collection. Lower Right - Artifacts collected by Don Coley on Bogue Chito Creek. Photographs courtesy of O. D. Hartley.

## ARCHAEOLOGICAL SURVEY OF THE LOWER CAHABA DRAINAGE

During June and July 1986, an archaeological survey of the lower Cahaba River drainage basin was conducted by Dr. Boyce N. Driskell, Staff Archaeologist of The University of Alabama Office of Archaeological Research, and student assistant Bob Atchison. Most of the survey area is in Bibb, Perry and Dallas Counties. The primary objective of this survey was to locate and catalogue prehistoric archaeological sites not previously known.

A number of residents of the survey area assisted the archaeologists by showing them archaeological sites and by making their artifact collections available for the archaeologists to examine and photograph.

O. D. Hartley  
Huntsville

## BOOK REVIEW

THE PRACTICAL ARCHAEOLOGIST - by Jane McIntosh. 1986. 192 pages. \$18.95. Facts on File, Inc., 460 Park Avenue South; New York, New York 10016.

This hardbound book, printed on high-grade paper, is filled with photos, illustrations and advice on the "hows" of archaeological techniques. It has three main sections - What is Archaeology, the Archaeologist at Work, and Understanding the Past. This is an interesting book that is very different. It combines archaeological history with the "where's and how's" of practical archaeology. The author has a doctorate in archaeology from the University of Cambridge. This is a book we recommend.

The Editors

## CHAPTER NEWS

### Cullman Chapter

The Cullman Chapter met on September 22 at the Cullman County Courthouse.

Howard King

### Huntsville Chapter

A. J. Wright was the speaker at the September 16 chapter meeting; his topic was the Alabama DeSoto Commission, of which he is a member. A. J. spoke about the findings of the 1939 U. S. DeSoto Commission and told how theories on DeSoto's route have evolved since then. He showed slides of several historical and modern maps and discussed how a lack of accurate period maps has

led to confusion as to the location of many of the sites visited by DeSoto. The Huntsville Chapter meets the third Tuesday of each month at 7 p.m. We have been meeting in the United Way Office on Traylor Island, but we have been pre-empted for a month or so by the United Way campaign. Watch for information in the chapter newsletter on the time and location of the next meeting.

Dorothy Luke

#### PUBLICATION

The Tennessee State Museum has recently published Art and Artisans of Prehistoric Middle Tennessee, a collective work interpreting and cataloging the prehistoric Indian collection of Gates P. Thruston. Vanderbilt University has agreed to allow the Thruston collection of antiquities to be incorporated into the Museum's permanent exhibits on Tennessee's native people. Thruston, a former Union General who came to Nashville with the occupation troops and settled here, acquired the materials within the collection principally from the Noel farm site within Nashville.

This volume comprises the first work on this collection since Thruston published Antiquities of Tennessee in 1890. Art and Artisans of Prehistoric Middle Tennessee can be purchased for \$10 at the Museum Store and at Bookworld stores throughout the Southeast.

The Editors

#### NEW MEMBERS

<u>NAME</u>	<u>TYPE</u>	<u>ADDRESS</u>	<u>ZIP</u>
Amos, Lynn L.	(I)	104 Renee Drive, Talladega, AL	35160
Atchison, Robert B.Jr.	(I)	3909 Lindsey Loop Road, Bessemer, AL	36701
Bushey, Dennis D.	(I)	113 Pine Forest Drive, Selma, AL	36701
Bevel, Rick E.	(I)	4142-D Memorial Parkway SW, Huntsville, AL	35802
Diehl, Richard D.	(I)	University of Alabama, Tuscaloosa, AL	35487
Dunn, Fred W.	(I)	Apt. 1C-5, 3131 Mtn. Creek Road, Chattanooga, TN	37415
Ebert, Charles J. Jr.	(S)	P. O. Box 1184, Foley, AL	36536
Flake, Mark	(I)	5002 Chancel Drive SE, Huntsville, AL	35802

Gray, Dr. Paul W. Jr.	(I)	3206 Westburg Court SW, Huntsville, AL	35801
Keel, Sydney H.	(I)	3809 Asbury Place, Birmingham, AL	35243
Mealer, Ms. Donna	(I)	Apt. 6, 4012 Newson Road SW, Huntsville, AL	35802
Pasquill, Robert G.Jr.	(I)	1006-A Ski Lodge, Montgomery, AL	36117
Powell, Robert	(I)	10114 Shades Drive SE, Huntsville, AL	35803
Reaves, Jim and Janice	(F)	Route Five, Box 684, Anniston, AL	36201
Stevenson, Ed	(I)	1007 Coronado Avenue SE, Huntsville, AL	35802
Stout, Charles B.	(I)	University of Illinois UC, Dept. Anthropology 109 Davenport Hall, 607 South Mathews Avenue Urbana, IL	61801
Thomas, Dr. Prentice M.	(I)	124 Shell Avenue, Fort Walton Beach, FL	32548

## LIFE MEMBERSHIPS

The Alabama Archaeological Society welcomes its newest life memberships:

Dr. Morgan D. Silvers, Anniston, Alabama

Mr. Timothy Stevens, Montgomery, Alabama

Bettye Henson  
Secretary-Treasurer  
Huntsville

### INCA STONEMASONRY (Continued)

The Inca masons apparently employed hammers of different sizes for the various phases of the shaping process. In my search of the quarry sites, I found three groups of hammers. The first group included hammers weighing from 8 to 10 kilograms, the second those weighing from 2 to 5 kilograms and the third those weighing less than a kilogram. I believe each group had a specific function.

It appears that the Inca technique of fitting the blocks together was based largely on trial and error. It is a laborious method, particularly if one considers the size of some of the huge stones. How were the blocks transported? Some preliminary evidence comes from blocks strewn about at Ollantaytambo.

If the blocks were dragged along the ramps, the Incas must have devoted considerable labor power to the task, particularly for the largest stones. The force required to drag any block depends on the coefficient of friction between the stone and the material of the ramp, the slope of the ramp and the weight of the block. I determined the coefficient of friction experimentally and measured the slope of the ramp at Ollantaytambo as being about 10 degrees. The largest block at Ollantaytambo weighs about 140,000 kilograms. I have calculated that it would take a force of some 120,400 kilograms to pull such a block up the ramp. If a man can pull consistently with a force of 50 kilograms (which may be an overestimate), it would have taken some 2,400 men to get the block to the top of the ramp. That figure agrees in order of magnitude with the account of the 16th century writer Cieza de Leon, who observed that of the 20,000 men assigned to the construction of Sawsaywaman, 6,000 were delegated to the transport detail.

The foregoing account seems reasonable, yet it raises significant questions that I have not been able to answer so far. The Inca ramps were only from six to eight meters wide, and I have not been able to propose plausible solutions for two problems posed by this narrowness. One is how 2,000 men or more could have been harnessed to the block so that each was contributing to the pull. The other is how the crowd of workers was arranged on the cramped road. These are only two of the unsolved problems concerning the transport of the blocks. Among the others are the techniques for tying the ropes to the blocks and the methods for maneuvering the huge stones.

Moreover, the stones from Rumiqolqa were probably not dragged at all. Unlike the blocks from Kacuiqhata, those from Rumiqolqa were finely dressed before they left the quarry. No drag marks are found on them, and it seems unreasonable to think that a finely dressed face would be dragged on a stone ramp. How then were the dressed blocks transported? This question and many others remain to be answered before the final account of Inca stonemasonry can be written.

(From an article by Jean-Pierre Protzen in "Scientific American", v. 254, No. 2, February 1986)

The Editors

A COMPARATIVE STUDY OF THE DENTITION  
OF THE SHELL MOUND INDIANS OF ALABAMA

The group of skulls under consideration is cataloged at Lu 25 according to the original site of their location (Webb 1942). These skulls form a part of the collection that was obtained from the Tennessee Valley prior to the flooding of the area by TVA.

The Shell Mound Indians of Alabama inhabited the Seven Mile Island in the Tennessee River in Lauderdale County of North Alabama.

According to carbon 14 studies, these skulls are 3,000 to 5,000 years old, and these people lived in the area for several hundred years. They learned to make pottery during a later period.

By and large they were a fairly homogeneous group of people who lived under uniform conditions for centuries without coming in contact with the European civilization. Evidence indicates that they did not change their mode of living or their diet appreciably. The proximity of their dwellings to the river and from the archaeological evidence available, it seems that these people collected a major portion of their diet from the river. Their diet probably consisted of fish, mussels and mollusks supplemented with small animals that they could kill with spears. They did not seem to possess bows and arrows.

Twenty-three pairs of dental casts, eleven male and twelve female, were used in this study. The casts were made of plaster of Paris from alginate impressions, following standard dental techniques. Close to 3,000 measurements and observations were made on 23 specimens having a total of 636 teeth.

Ten out of 23 skulls exhibited no crowding at all. Most of the remaining 13 showed only slight crowding. On the whole, 29 out of a total of 636 teeth (4.5%) were crowded in the arch. Of these only 3 were considered to have severe crowding. This includes a complete space loss for 2 lower incisors which were missing. Skulls exhibiting crowding had from 1 to 4 teeth slightly blocked out of arch. Only one cuspid was completely blocked out. The other forms of malocclusions of individual teeth included 2 first premolars. One maxillary first premolar was rotated by 90 degrees, but was still contained within the arch. A mandibular first bicuspid was in complete linguo-version and was rotated about 60 degrees.

Though no special attempt was made to evaluate the carious activity in these individuals, at least one gross carious lesion was found per every three skulls. However, only 1.3% of teeth were involved with extensive carious lesions. All skulls presented a nearly full complement of teeth. Restricting our computations up to the second molars, 27 teeth or 4.3% were found missing and 46 teeth or 7.1% additional teeth were presumed to be lost post mortem during processing and handling. Of the 23 specimens examined, 18 (78.2%) had an edge-to-edge anterior bite, 3(13%) had slight overbite with less than one-fourth of the lower incisors covered; one had moderate overbite.

This discussion is not complete without mentioning a few words about carious activity. It seems erroneous to blame the carious activity in modern man entirely or largely to our refined diet, because any casual observer can notice a large carious lesion on some of these skulls. These Indians never had a refined diet in the modern sense of the term. It is true that extensive wear and subsequent pulpal exposure in some instances can bring about infection which can contribute to carious lesions, but then several of the carious lesions in these skulls did not have enough cuspal wear to expose the pulp.

(From an article by Jimi D. Mehta in "Alabama Journal of Medical Science", Volume 6, No. 2, 1969.)

The Editors

## PUBLICATIONS AVAILABLE

Available issues of <i>Journal of Alabama Archaeology</i> Vol. 20-29 each issue . . . . .	(\$2.50 to Members) \$5.00 pp
<i>Stanfield-Worley Bluff Shelter Excavations</i> (Journal of Alabama Archaeology) Vol. VIII Nos. 1 & 2 - Reprint, each issue . . . .	\$5.00 pp
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Lively, Long, Josselyn - <i>Pebble Tool Paper</i> . . . . .	\$3.00 pp
<i>Investigations in Russell Cave</i> , published by the National Park Service . . . . .	\$7.50 pp
<i>Exploring Prehistoric Alabama through Archaeology</i> (Juvenile) . . . . .	\$7.00 pp

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