



ILLINOIS STATE  
ARCHAEOLOGICAL SURVEY  
PRAIRIE RESEARCH INSTITUTE

# Full-time Bead Crafters at Greater Cahokia

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# THREE BEAD TYPES

## 1. Whole shell,



like  
marginella

## 3. Disk



## 2. Columella



# Shells were brought from the Eastern Gulf of Mexico Coast





# Whole shell beads: Marginella



**Marginella beads quickly made by grinding a hole on ventral side of shell**



# Whole shell beads: *Olivella*



***Olivella* beads made by removing shell apex**

# **Most beads were made from Lightning whelk shells**



**Fresh shells**

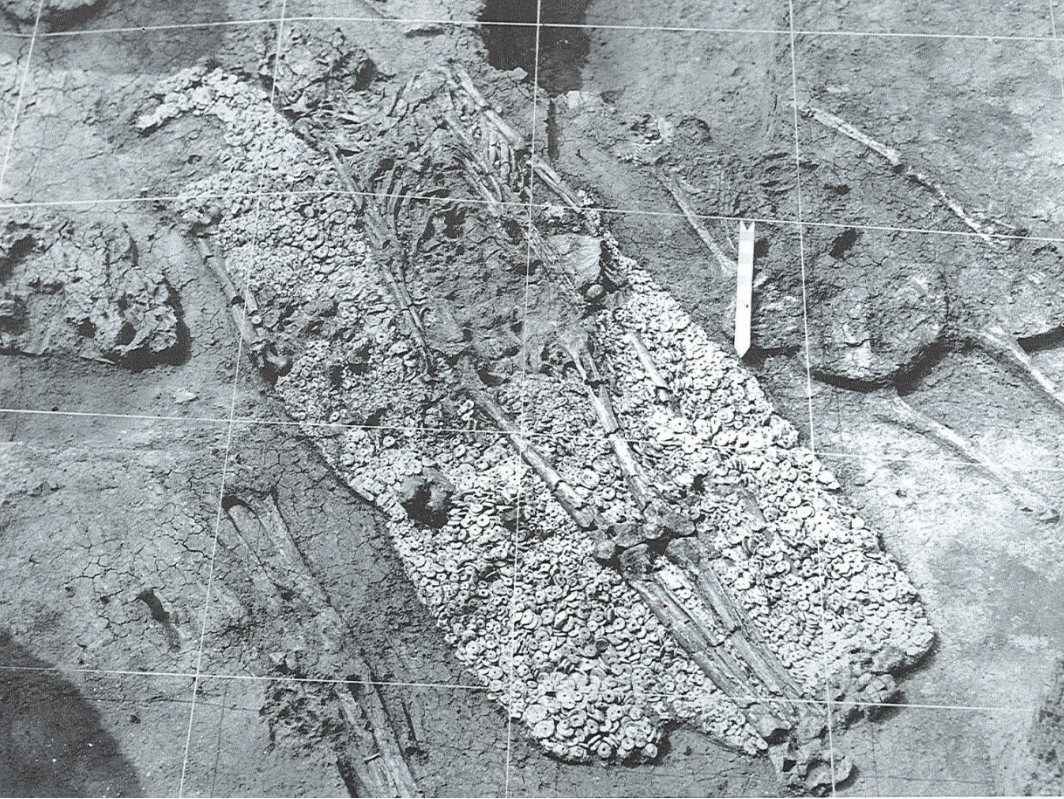


# Lightning Whelk Beads Were Important



“Beaded Burial,” Mound 72, Cahokia





**~20,000 Disk Beads,  
Beaded Burial**



**32,698 Columella  
Beads**

**Mound 72 Lightning Whelk Beads:  
The numbers are staggering!**

# Lightning Whelk Beads



**How were disk beads made?**

**How were columella beads made?**



***How long did it take to make beads?***



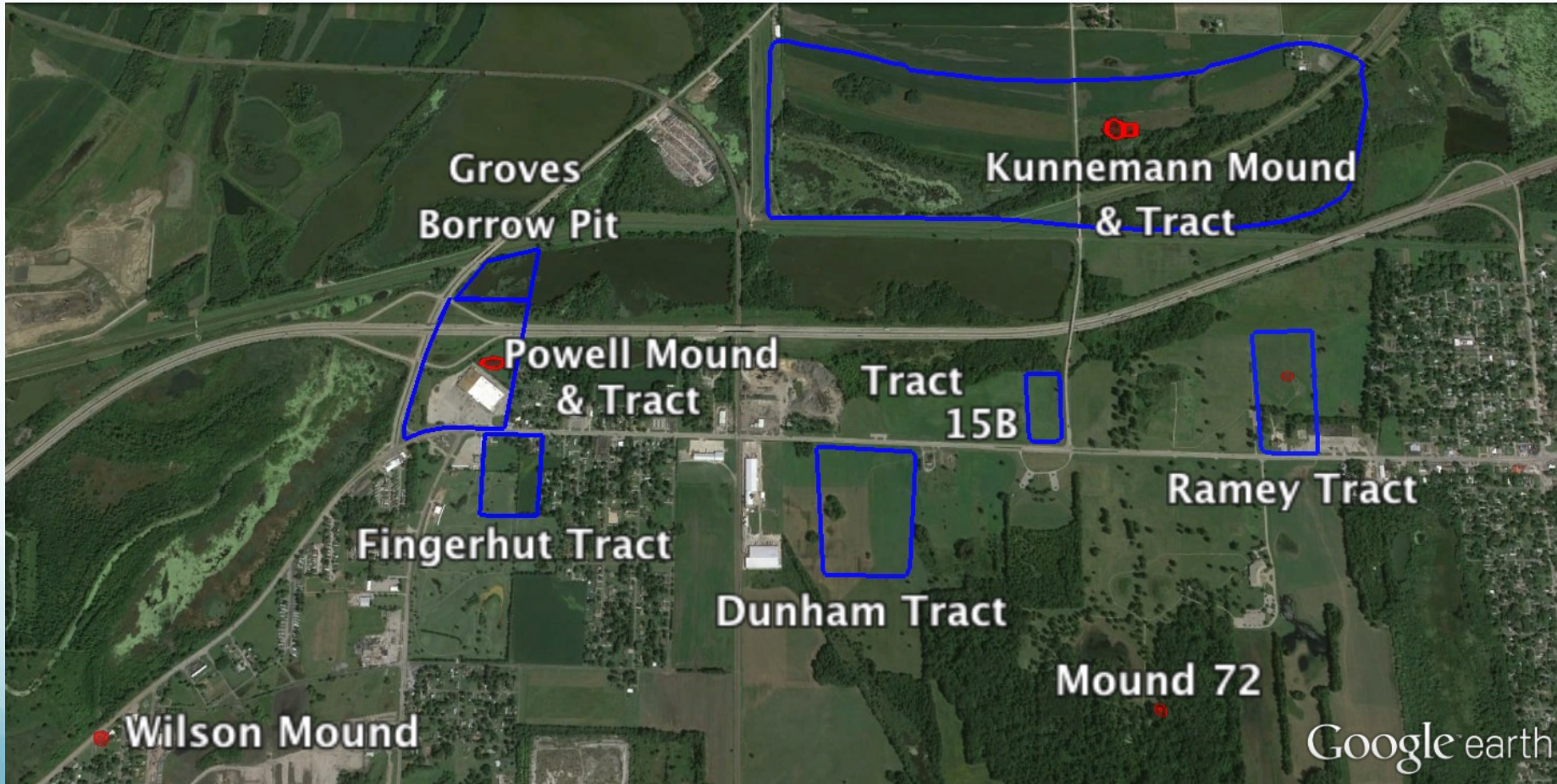
**Were only chert microdrills used to drill lightning whelk beads?**

**Cahokia  
Artifacts**





# Bead Deposits & Crafting Areas



# **Evidence: Bead Crafting Debitage**

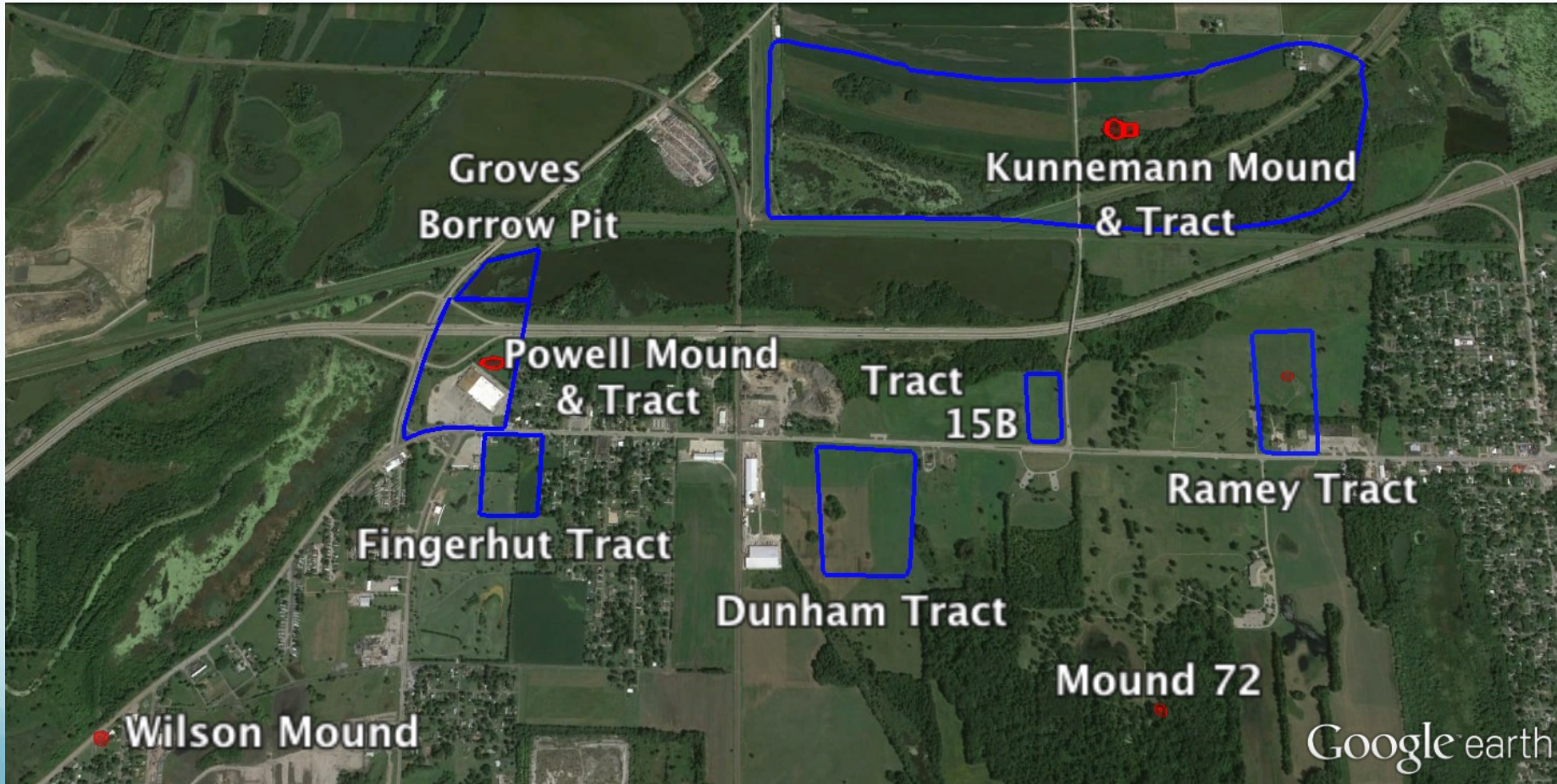
- Kunnemann Mound & Tract
- Ramey Tract & James Ramey Mound
- Groves Borrow Pit
- East St. Louis site, western Cahokia

# **Evidence: Bead Deposits**

- East St. Louis or western Cahokia
- Wilson Mound
- Mound 72
- Powell Mound



# Bead Deposits & Crafting Areas

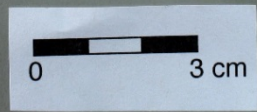
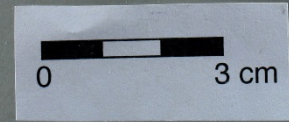
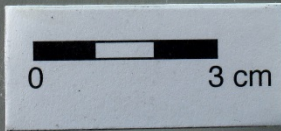






**377 Disk Beads, East St. Louis  
Tract 5, Feature 1906**

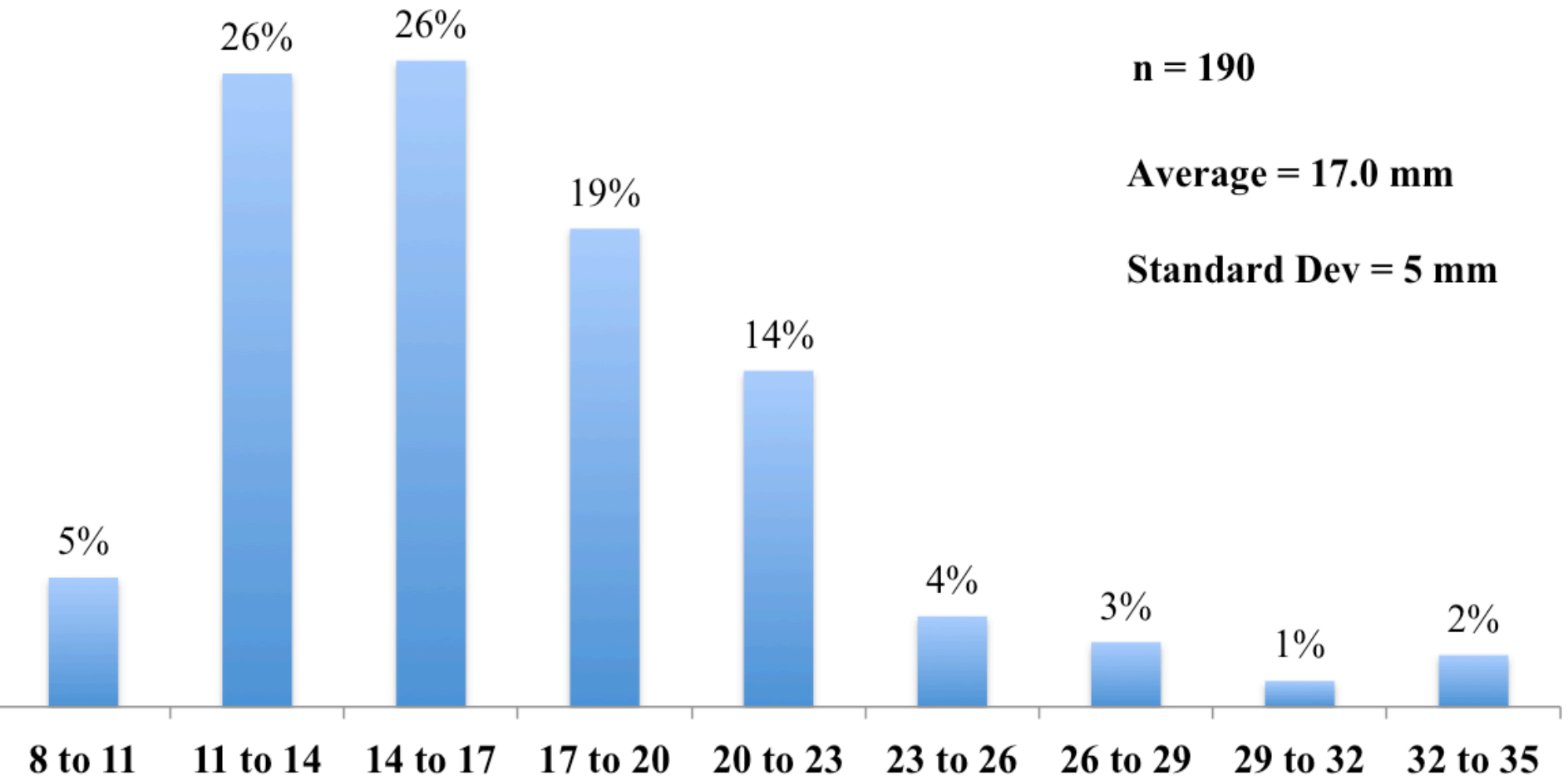




East St. Louis Lightning Whelk Beads



## East St. Louis Disk Bead Sizes (mm)



# Tools for Disk Bead Crafting

- Stone Hammers
- Chert Drills
- Abraders

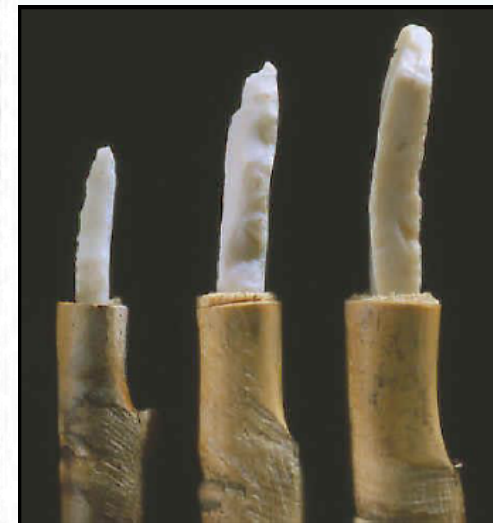




WORKING THE KALOMA SHELL (I)

The spondylus shell broken and made into roughly circular pieces by knocking all round ; this is done by men.

Ethnographic Analogy: From Malinowski's 1922  
"Argonauts of the Western Pacific"



### WORKING THE KALOMA SHELL (III.)

By means of a pump drill, a hole is bored in each disc. (See Div. III.)





WORKING THE KALOMA SHELL (IV.)

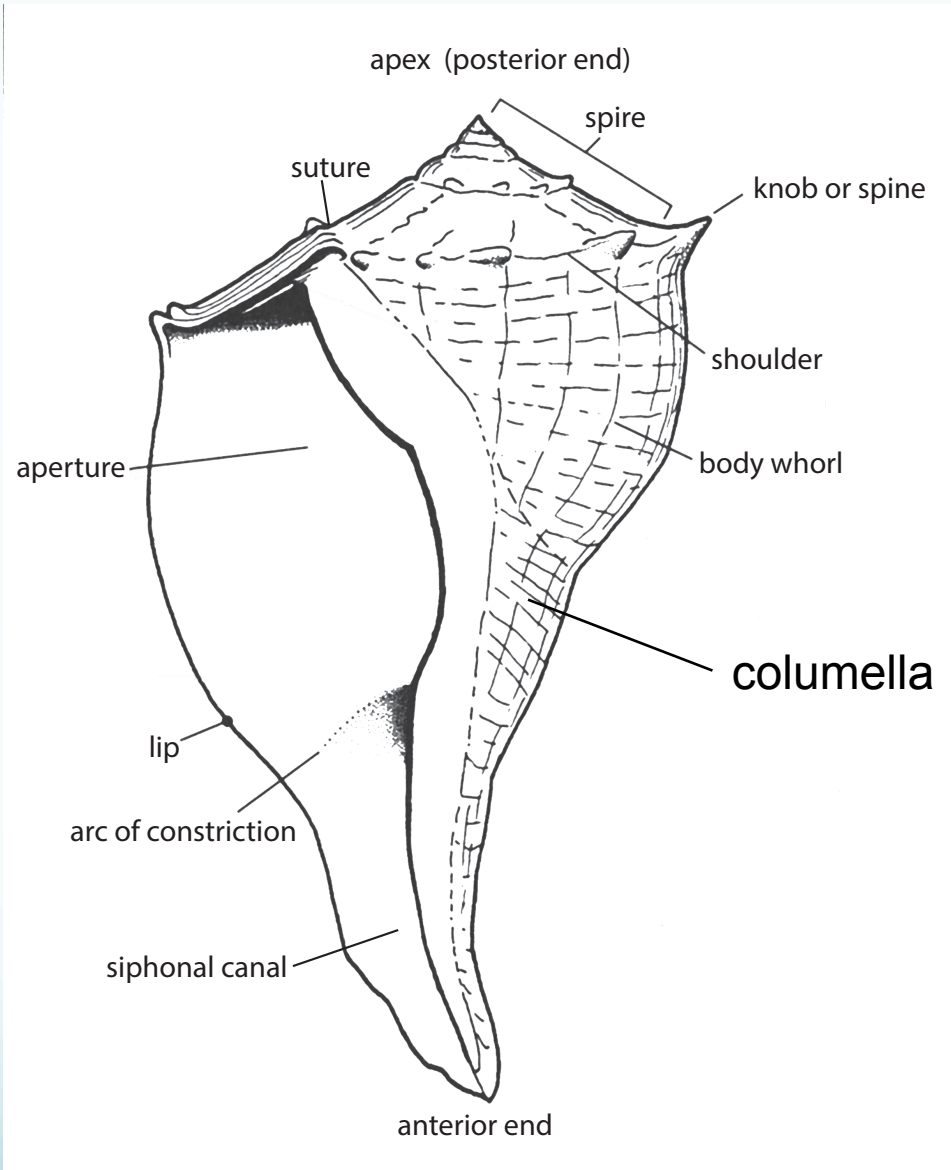
The shell discs, flat and perforated, but of irregular contour still, are now threaded on to a thin, tough stick, and in this form they are ground on a flat sand-stone till the roll is cylindrical, that is, each disc is a perfect circle. (See Div. III.)

# Disk Bead Crafting

1. Disk bead “blanks” are hammered from whole whelk shells.
2. Shells with outer whorls removed are set aside for later columella bead making







**Lightning Whelk Shell – Gulf of Mexico**

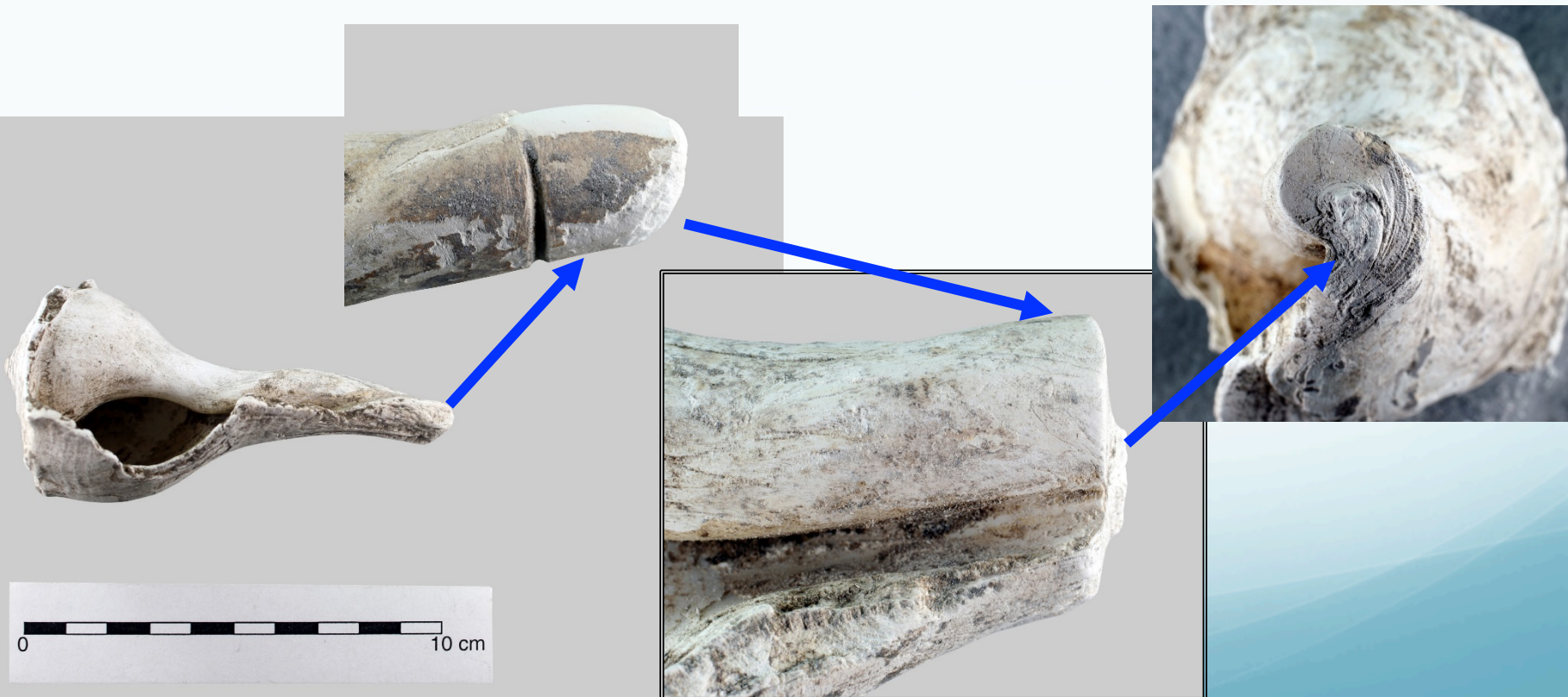


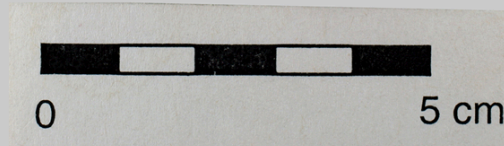
Lightning Whelk debitage,  
Ready for columella bead crafting



# Columella Bead Crafting

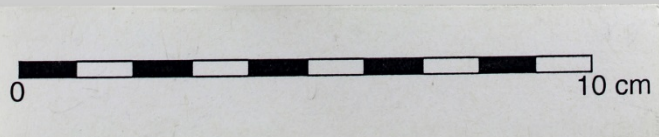
1. Obtain whelk columellas, usually after disk bead making
2. Cut columellas using groove & snap technique





**Incised Columella**  
**Cahokia, James Ramey Mound**



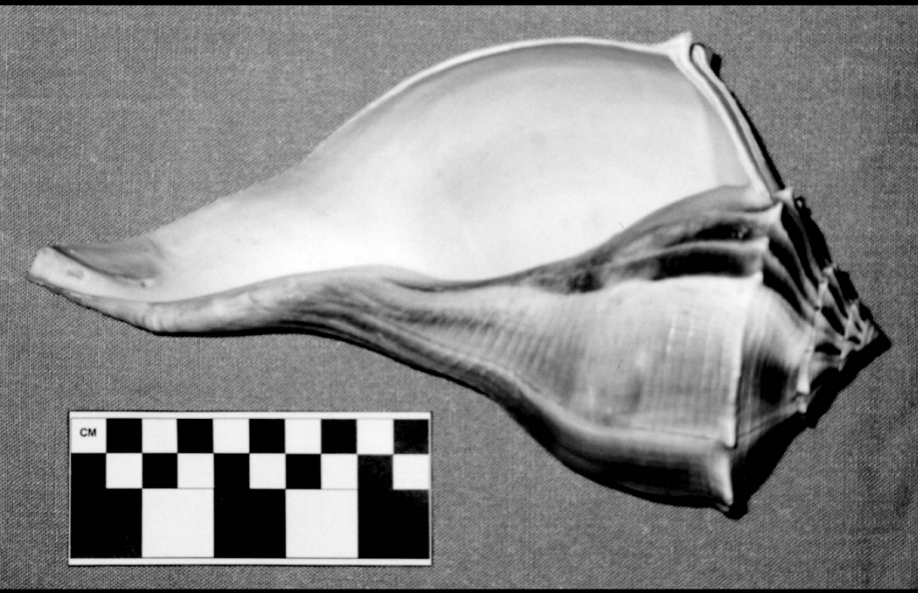


Close-Ups

Cut Columella, ESTL  
Tract 5, Feature 4447

Cahokia, Wilson Mound  
Columella Bead Blanks





Whole Lightning Whelk Shell



Outer Whorl Removed



**Using chert blade  
to cut, groove, &  
snap a columella**

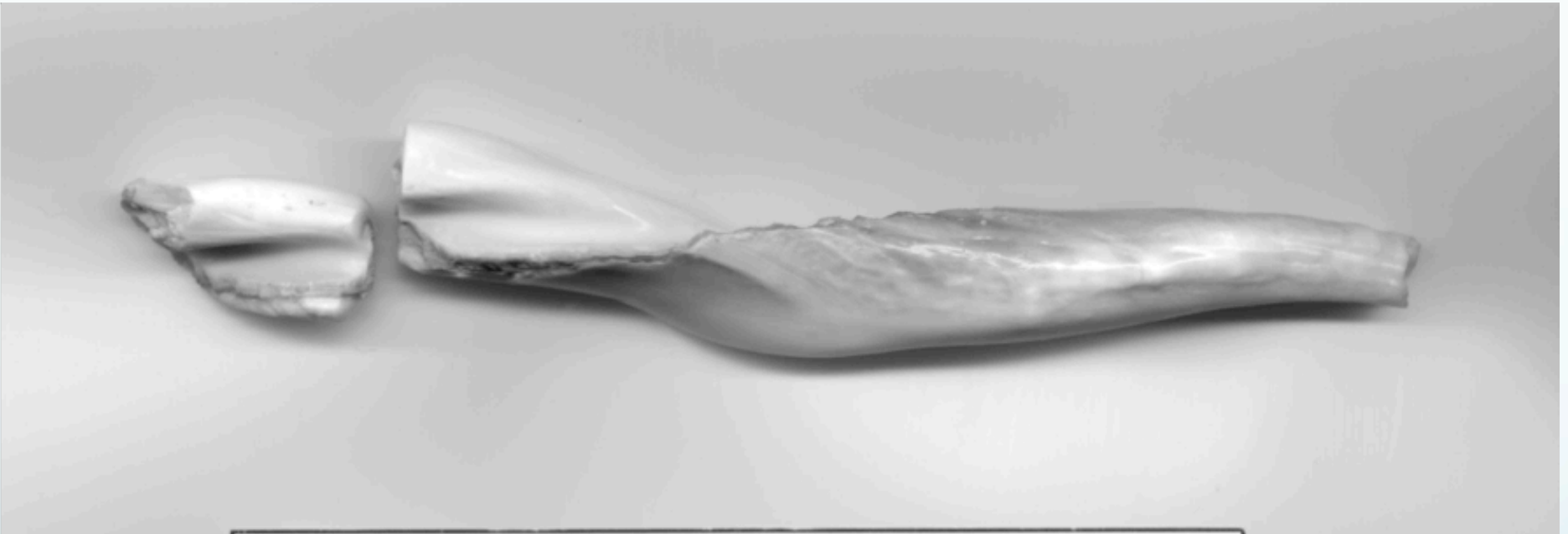




**Experimental Archaeology:  
Modern Chert Micro-Blades**



After 10 mins.  
of cutting...



**After 3 hours & 20 minutes,  
it finally snapped!**





Some finished columella beads from  
Mound 72, Feature 236

# Columella Bead Crafting

1. Cut columellas into sections with groove & snap technique
2. Use chert microdrill to start drill hole
3. Use biological drill tip such as porcupine quills or fish spine
4. Grind & shape bead blanks using sandstone



# Drilling Shell

## To make shallow hole





# Drilling Slate with Cane



The Process



Slate Drilled with Cane





**Shell Bead Sandstone Abrader  
Cahokia, Ramey Field**

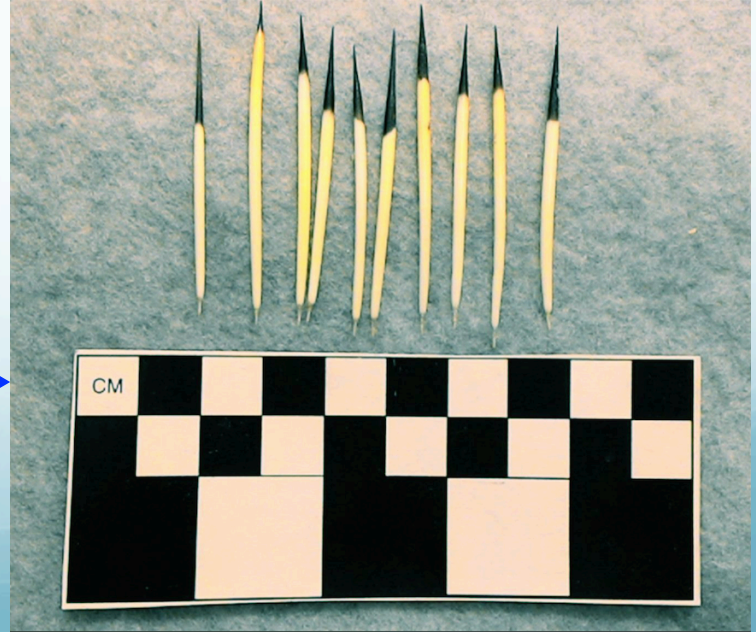
# Bead Crafting Kit



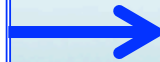
- Whelk shells
- Hammer
- Chert flakes
- Microdrills
- Sandstone
- River cane
- Grit
- Drill bit
- Wood Vise
- String



# Chumash Tribe used Sea Lion Whiskers to Drill Pismo Clam Beads



Did Cahokians Use  
Porcupine Quills?



# Full Kit

- Whelk shells
- Hammers
- Chert flakes
- Microdrills
- Sandstone
- River cane & grit
- Wood Vise
- String
- Porcupine quills?

# Archaeological Remains

- Whelk shells
- Hammers
- Chert flakes
- Microdrills
- Sandstone
- River cane



# Greater Cahokia

## Bead Crafting Time Estimates

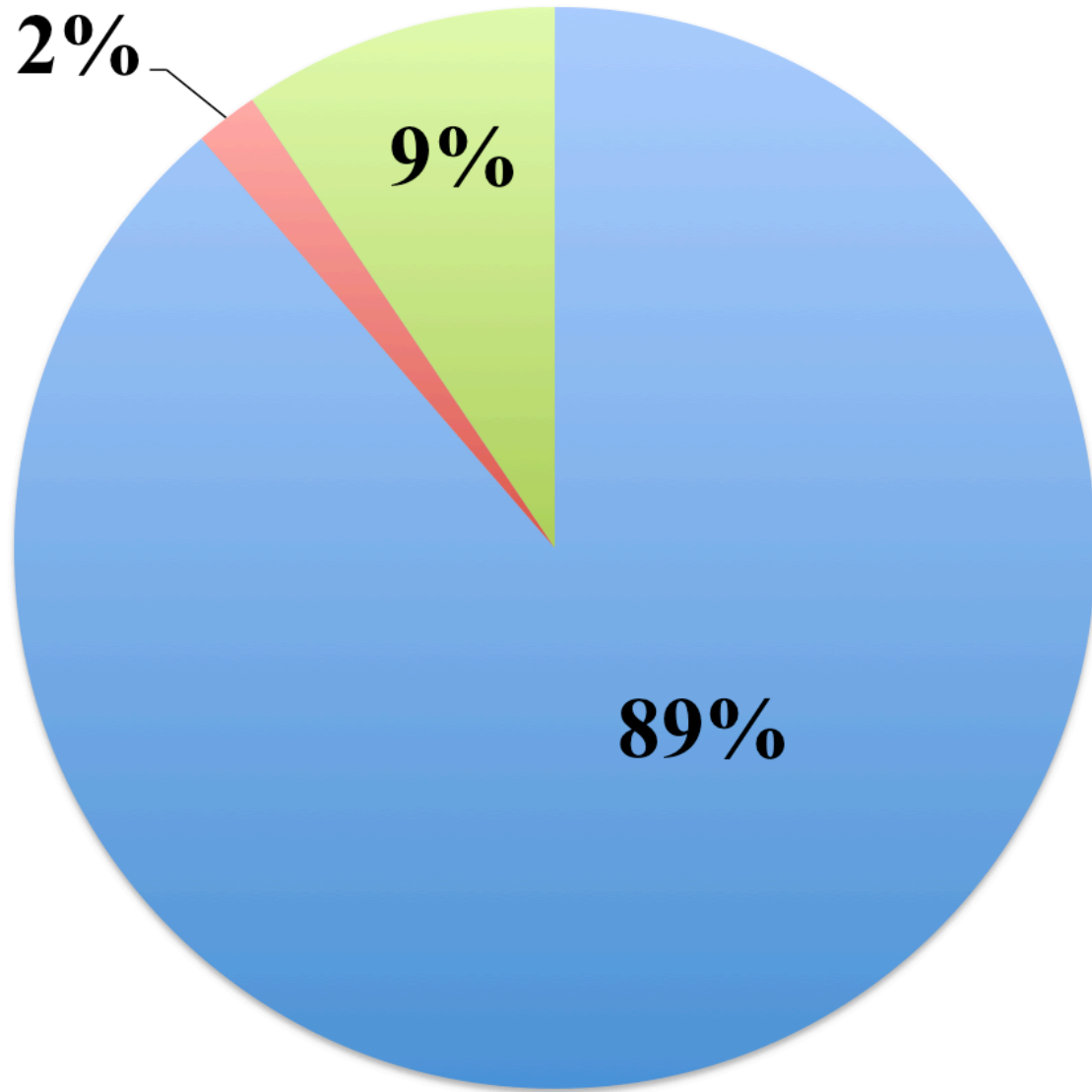
### Time Per Bead

**Whole shell**     $\frac{1}{2}$  hr.

**Disk**            45 min.

**Columella**    5.8 hr.

|                    | <u># Beads</u> | <u>Hours</u>   |
|--------------------|----------------|----------------|
| <b>Whole shell</b> | 8,100          | 4,050          |
| <b>Disk</b>        | 27,083         | 20,313         |
| <b>Columella</b>   | 32,843         | <u>190,489</u> |
|                    |                | <b>214,852</b> |



- Columella
- Whole shell
- Disk



# Greater Cahokia Bead Crafting Time Estimates

**214,852 HOURS**

**40 hours/week, 39 weeks/year**

**OR – One person for 138 years**

**Or 30 people – 4.6 years**

**Or 100 people – 1.4 years**

**Or 200 people – 9 months**

# Take-Home Points

- Tens of thousands of beads were made
- Only chert used to drill disk beads
- Chert and biological hard parts for columella beads
- Can't detect wooden clamps, string, & grit
- **30 to 100 people = Full-time bead crafters for 1.5 to 4.5 years**







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