Full-time Bead Crafters at Greater Cahokia
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THREE BEAD TYPES

1. Whole shell, like marginella

2. Columella

3. Disk
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)

- 8 to 11: 5%
- 11 to 14: 26%
- 14 to 17: 26%
- 17 to 20: 19%
- 20 to 23: 14%
- 23 to 26: 4%
- 26 to 29: 3%
- 29 to 32: 1%
- 32 to 35: 2%

n = 190
Average = 17.0 mm
Standard Dev = 5 mm
Tools for Disk Bead Crafting

- Stone Hammers
- Chert Drills
- Abraders
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

- Apex (posterior end)
- Spire
- Knob or spine
- Shoulder
- Body whorl
- Aperture
- Suture
- Siphonal canal
- Columella
- Arc of constriction
- Lip
Lightning Whelk debitage,
Ready for columella bead crafting
Columella Bead Crafting

1. Obtain whelk columelllas, usually after disk bead making
2. Cut columellas using groove & snap technique
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 columnella
Experimental Archaeology: Modern Chert Micro-Blades
After 3 hours & 20 minutes, it finally snapped!

After 10 mins. of cutting…
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
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

<table>
<thead>
<tr>
<th>Time Per Bead</th>
<th># Beads</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole shell</td>
<td>8,100</td>
<td>4,050</td>
</tr>
<tr>
<td>Disk</td>
<td>27,083</td>
<td>20,313</td>
</tr>
<tr>
<td>Columella</td>
<td>32,843</td>
<td>190,489</td>
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</tbody>
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Total hours: 214,852
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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