Crafting Shell Beads at East St. Louis & Greater Cahokia

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Bead Types

**Whole shell**

**Disk**

Made from lightning whelk shells

**Columella**
Lightning Whelk Beads

How were disk beads made?

How were columella beads made?
Were only chert microdrills used to drill lightning whelk beads?
Greater Cahokia
Beads & Crafting Areas
Lightning Whelk Beads Were Important

“Beaded Burial,” Mound 72, Cahokia
~20,000 Disk Shell Beads, Beaded Burial

32,698 Columella Beads, Feature 236

Mound 72 Lightning Whelk Beads: The numbers are staggering!
The New Mississippi River Bridge
East St. Louis site excavated 2009 to 2012
377 & Blanks Disk Beads, East
St. Louis  Tract 5, Feat. 1906
East St. Louis Lightning Whelk Beads
East St. Louis Disk Bead Sizes (mm)

n = 190

Average = 17.0 mm

Standard Dev = 5 mm
Two Types of Lightning Whelk Beads:

- **Disk**
  - Hammers
  - Chert Drills
  - Sandstone Abraders

- **Columella**
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.

Wilson Md. rough & finished beads
Lightning Whelk Shell – Gulf of Mexico

- apex (posterior end)
- spire
- knob or spine
- shoulder
- body whorl
- aperture
- suture
- siphonal canal
- arc of constriction
- lip
- columella
- anterior end
Lightning Whelk debitage, 
After disk bead making
Incised Columella
Cahokia, James Ramey Mound
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 columella
Experimental Archaeology: Modern Chert Cutting Blades
After 10 minutes of cutting...

After 3 hours & 20 minutes, it finally snapped!
Columella Bead Crafting

1. Obtain whelk columellae usually after disk bead making
2. Cut columellae using groove & snap technique
Columella Bead Crafting

1. Cut columellas into sections with groove & snap technique

2. Use chert microdrill to start shallow drill hole

3. Use biological drill tip such as river cane, porcupine quills, or fish spine

4. Grind bead blanks using sandstone
Drilling Shell
To make shallow hole
Drilling Slate with Cane

The Process

Slate Drilled with Cane
Shell Bead Abrader
Cahokia, Ramey Field
Bead Crafting Kit

- Whelk shells
- Hammer
- Chert flakes
- Microdrills
- Sandstone
- River cane
- Grit
- 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>
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</thead>
<tbody>
<tr>
<td>Marginella ½ hr.</td>
<td>7,787</td>
<td>3,894</td>
</tr>
<tr>
<td>Disk 45 min.</td>
<td>26,890</td>
<td>20,168</td>
</tr>
<tr>
<td>Columella 5.8 hr.</td>
<td>32,843</td>
<td>190,489</td>
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<tr>
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<td>214,550</td>
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</tbody>
</table>
Greater Cahokia Bead Crafting Time Estimates

214,550 HOURS

Assumes 40 hour week, 52 weeks/year

OR one person for 103.1 years

Or 30 people – 3.4 years
Or 100 people – 1 year
Or 200 people – 6 months
Take-Home Points

- Hundreds of thousands of beads were made
- Chert used exclusively to drill disk beads
- Chert and river cane for columella beads
- Can’t detect wooden clamps, string, & grit
- 30 to 100 people = Full-time bead crafters
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