

Wednesday October 22, 2014

## VIII The Spread of *Homo sapiens sapiens*

E. Colonization of  
the New World  
IX Broad Spectrum  
Hunting and  
Gathering



1-2 paragraph  
Summary  
On the Human  
Prehistory  
Part of the Film  
Due Nov. 3 in  
Class

CAL POLY  
SAN LUIS OBISPO

SPECIAL SCREENING

# BECOMING CALIFORNIA

Environmental Change on America's Western Edge

**OCT. 23, 2014** SPANOS THEATRE  
6:30-8:30 P.M.

Narrated by **Jane Fonda**

Original Music by **Pat Metheny**

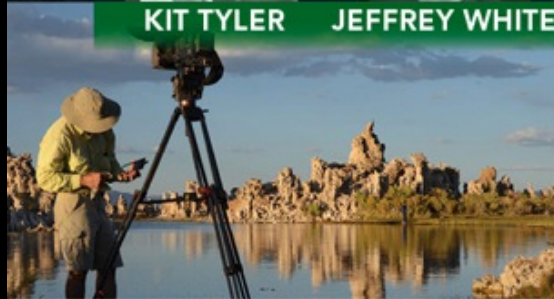
PLUS A LIVE Q&A SESSION WITH PRODUCERS:



KIT TYLER



JEFFREY WHITE



FREE AND OPEN TO THE PUBLIC.

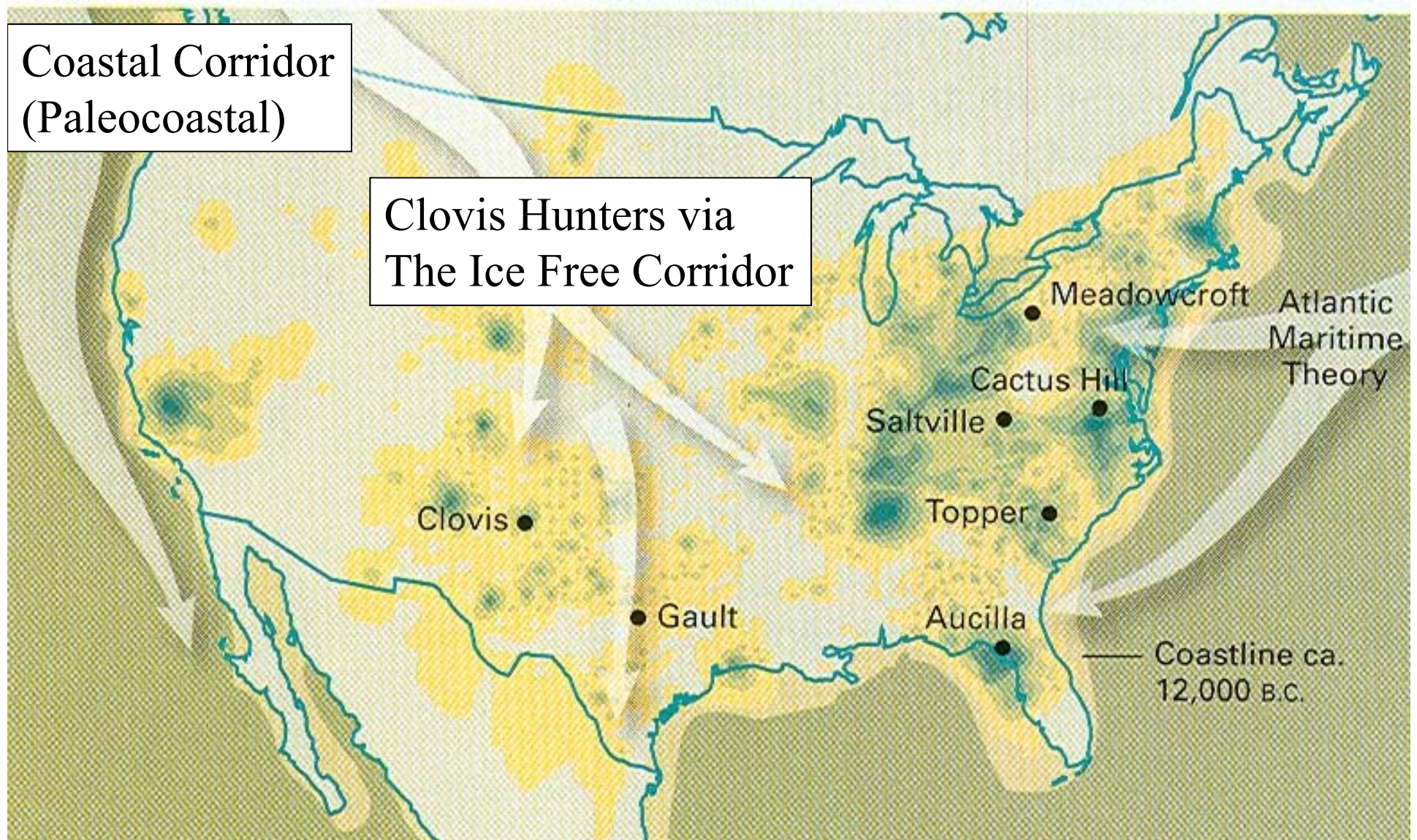
Funded by the College of Liberal Arts' Lottery Speakers Fund. Sponsored by Cal Poly's Social Sciences Department, Biological Sciences Department, and College of Liberal Arts. For more information, call 805-756-2752.

# Controversial Issues Related to Colonization of the New World





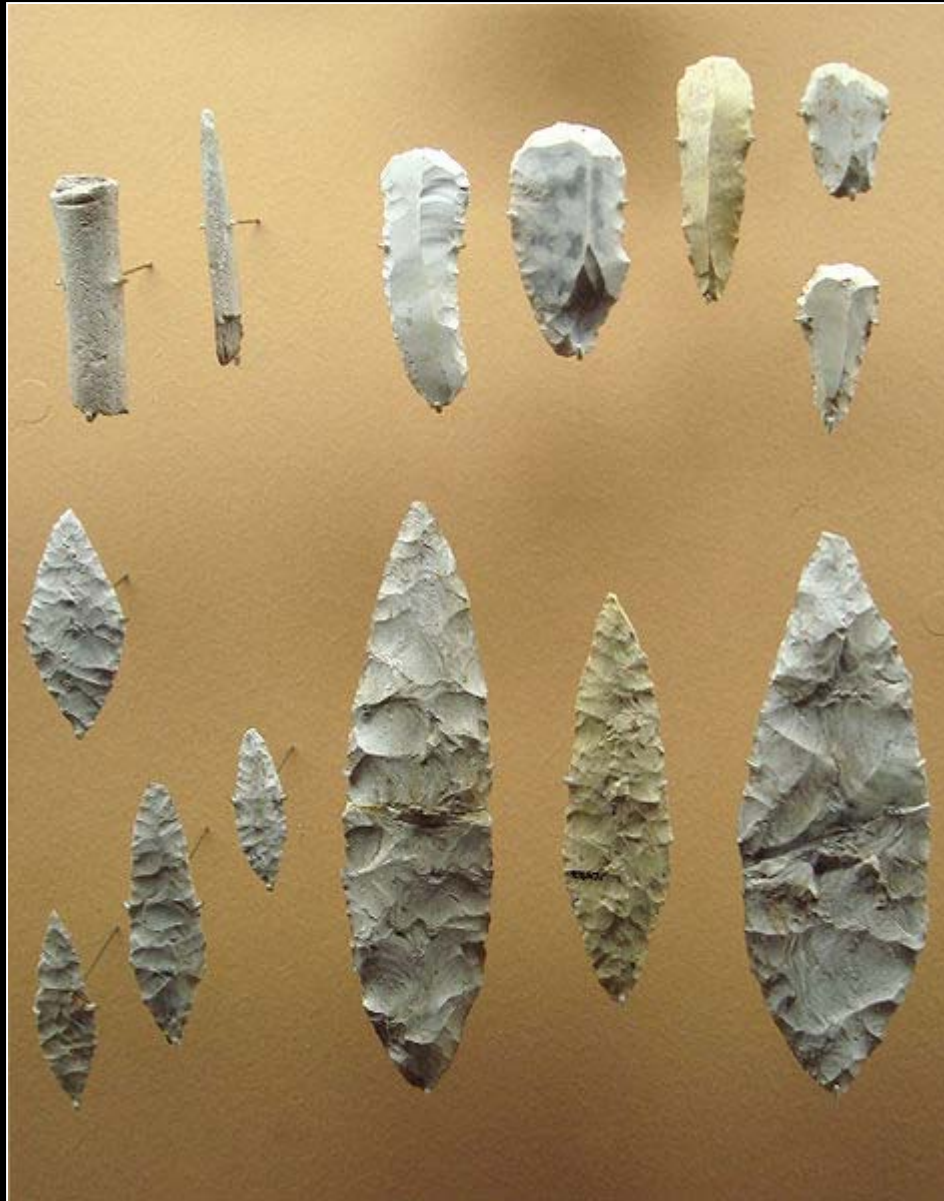
## Alternative Routes of Entry:



## Stanford and Bradley: Colonization from Europe?





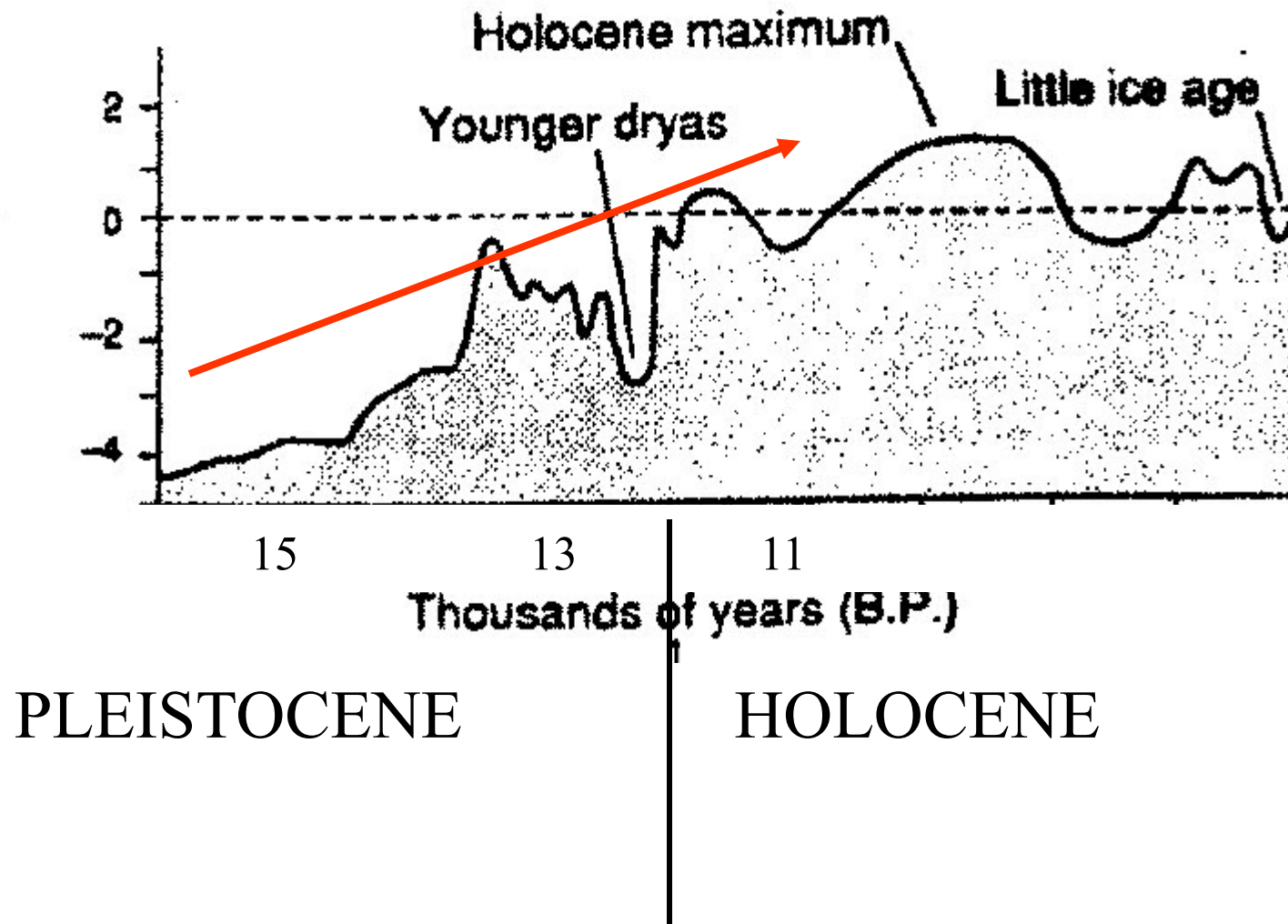


Solutrean  
Tools  
Europe  
17,000 BP

Paul S. Martin  
and the  
Pleistocene  
Overkill  
Hypothesis  
Or  
Blitzkreig



## Alternative: Terminal Pleistocene Climate Change (warming)





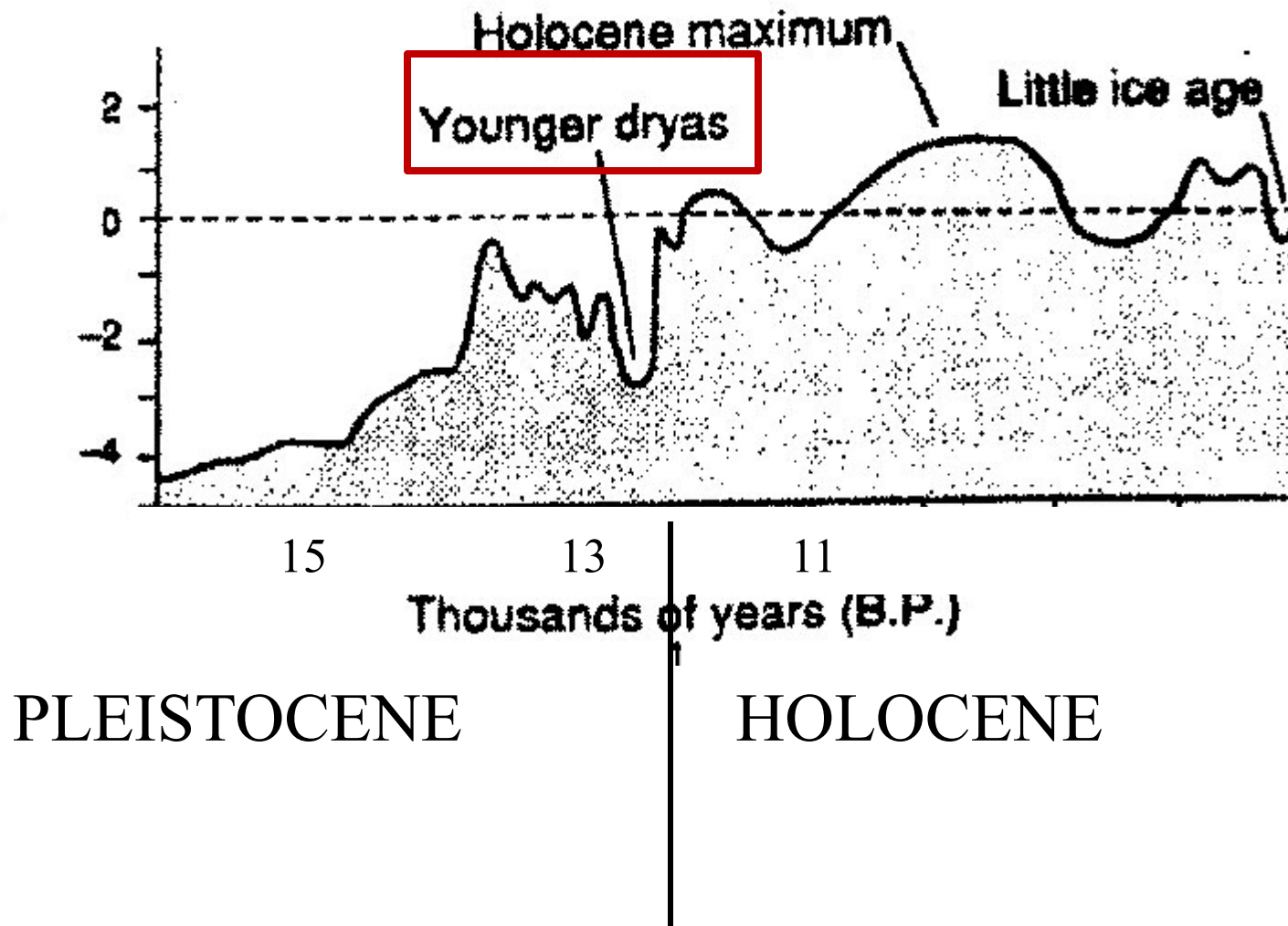
Also: Combined Overkill and Climate Warming

Extraterrestrial Impact in northern North America 12,900 years ago?  
Roy Firestone et al. 2007, Douglas and James Kennett



# Terminal Pleistocene Climate Change

Younger Dryas= 12,900-11,500 BP





## **Other Impact Events:**

### **Tunguska 1908 eastern Russia**



**An estimated 80 million trees over 830 square miles**



K-T Impact 65 million years ago  
(Cretaceous-Tertiary)  
Crater 110 miles across

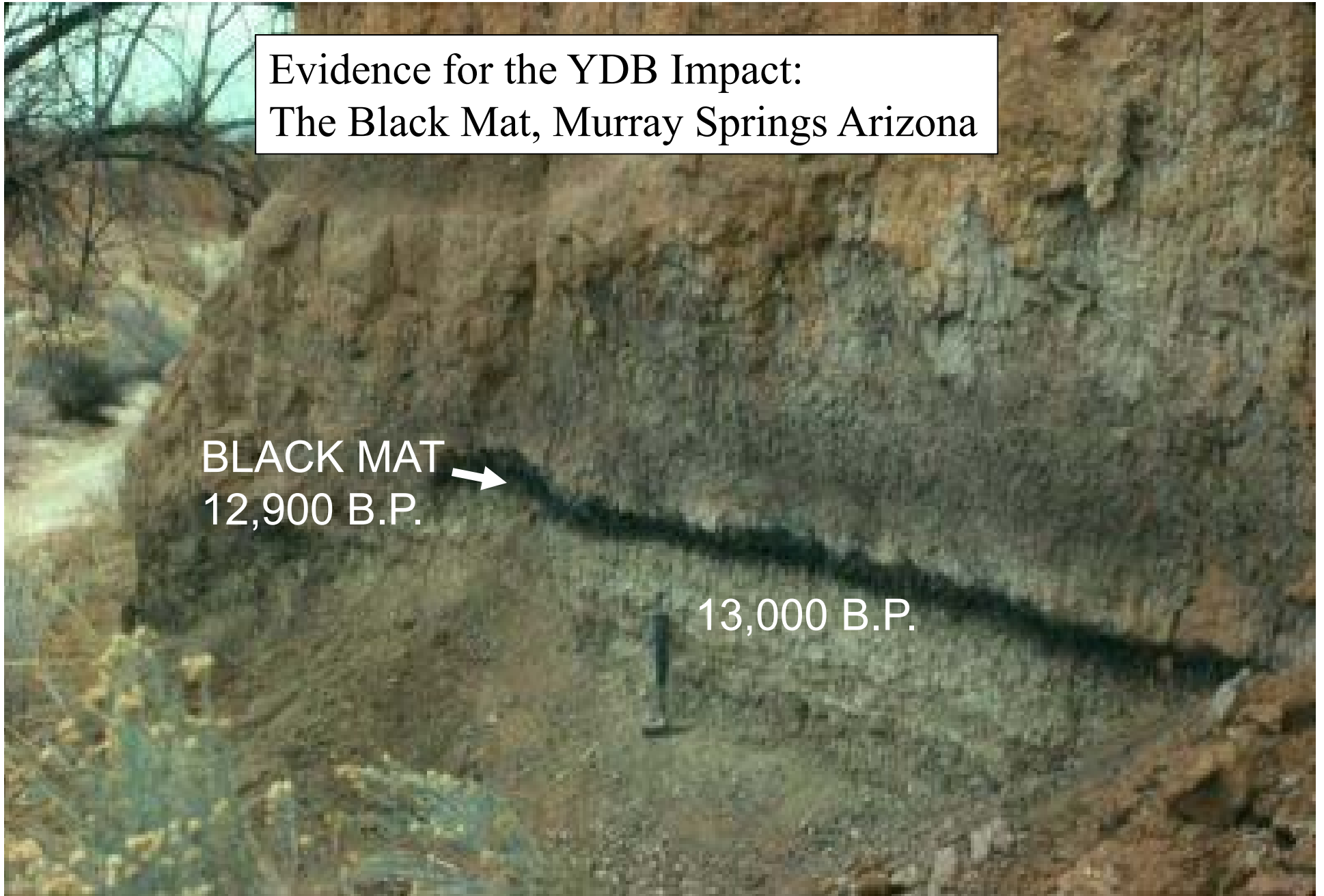




Evidence for the YDB Impact:  
The Black Mat, Murray Springs Arizona

BLACK MAT  
12,900 B.P.

13,000 B.P.





“The nanodiamonds that we found at all six locations exist only in sediments associated with the **Younger Dryas Boundary** layers, not above it or below it. These discoveries provide strong evidence for a cosmic impact event at approximately 12,900 years ago that would have had enormous environmental consequences for plants, animals and humans across North America.”

Douglas Kennett 2009



Nanodiamonds= Microscopic diamond produced  
By a detonation or explosion



Black Layer  
12,900 BP  
In  
Belgium

A dramatic illustration of a mammoth standing in a dark, stormy landscape. The mammoth is positioned in the center, facing slightly to the left. Its large, curved tusks are prominent. In the background, a bright comet streaks across a dark, cloudy sky. The ground is rocky and uneven.

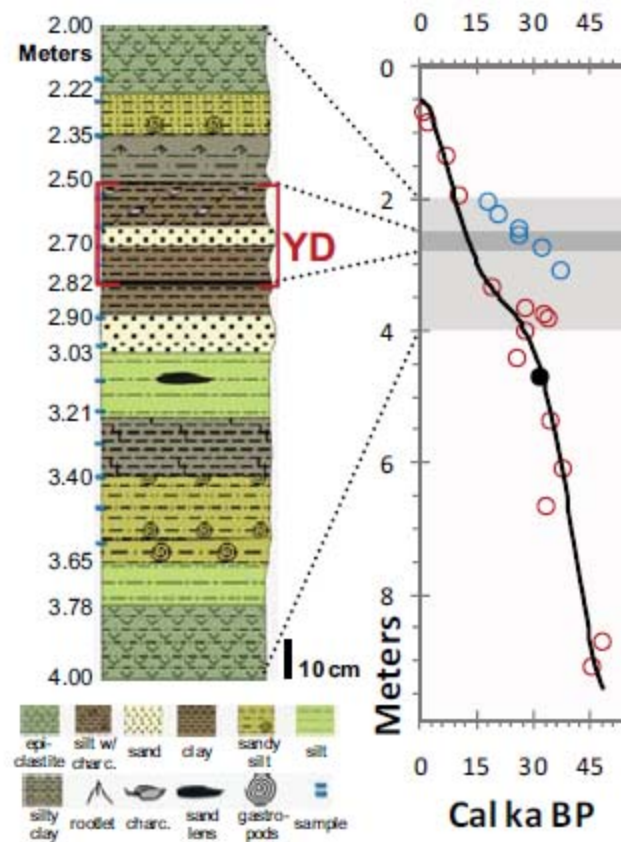
# Mammoth-Killer Impact Flunks Out

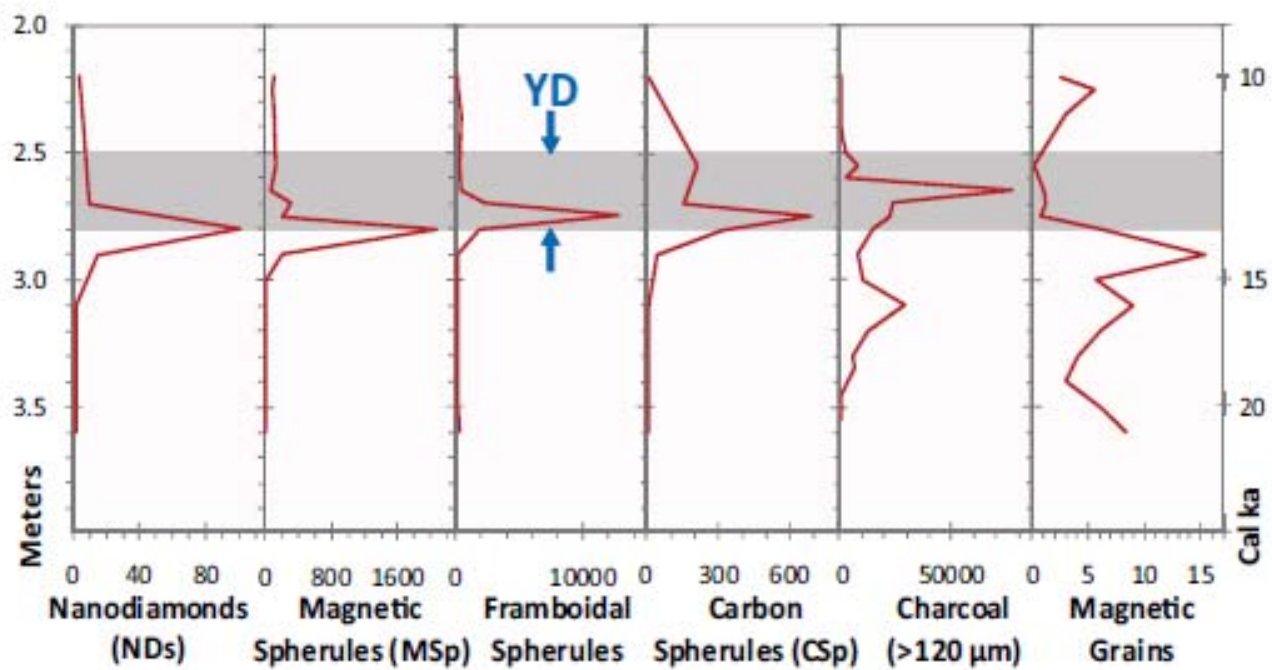
After a new study fails to find nanodiamonds, impact experts are flatly rejecting outsiders' claims that an impact 12,900 years ago devastated the megafauna



# New Evidence from Central Mexico supporting the Younger Dryas Extraterrestrial Impact Hypothesis

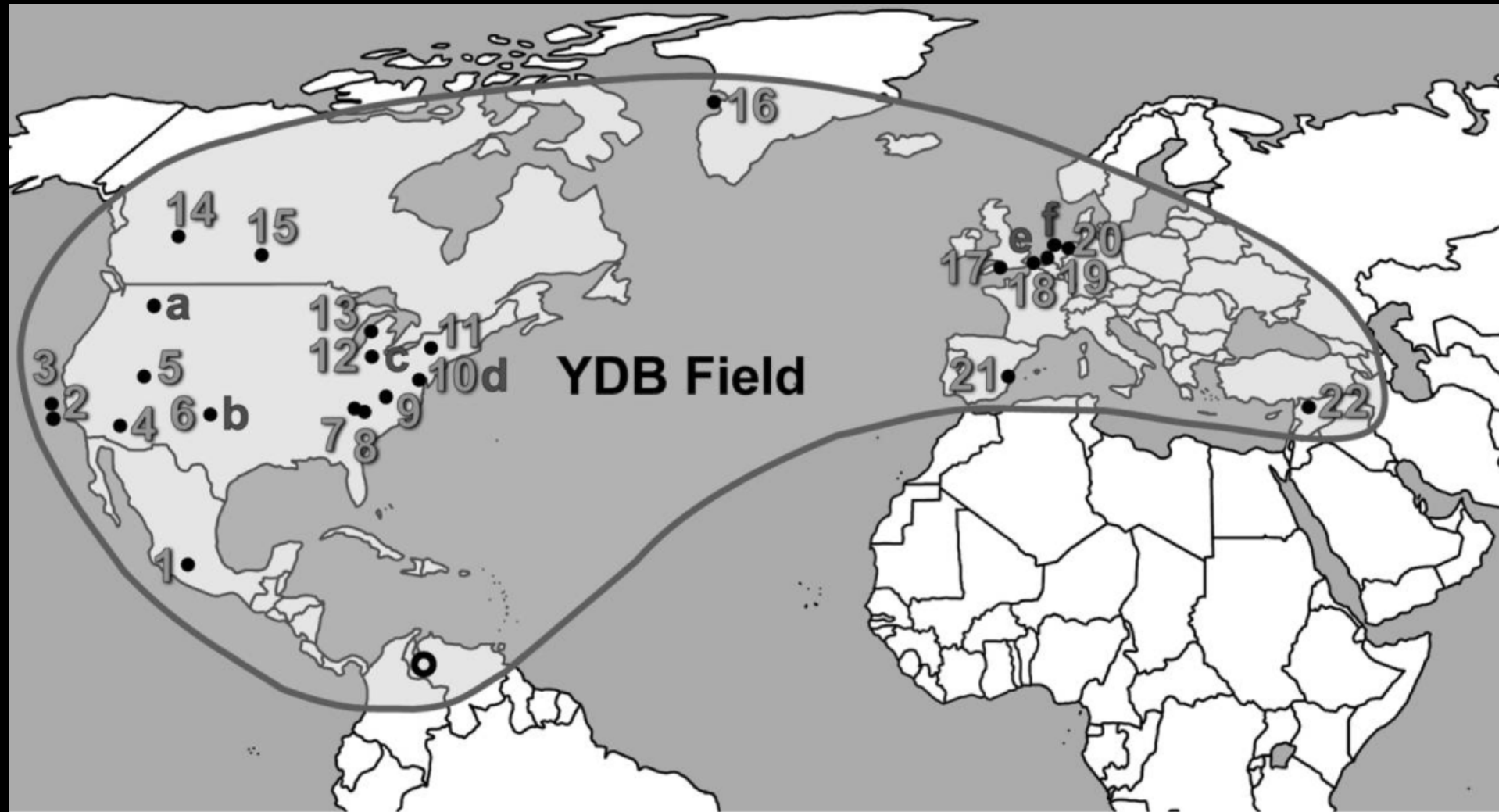
Isabel Alcantara and colleagues PNAS 2012










Kinzie et al. Journal Of Geology 2014



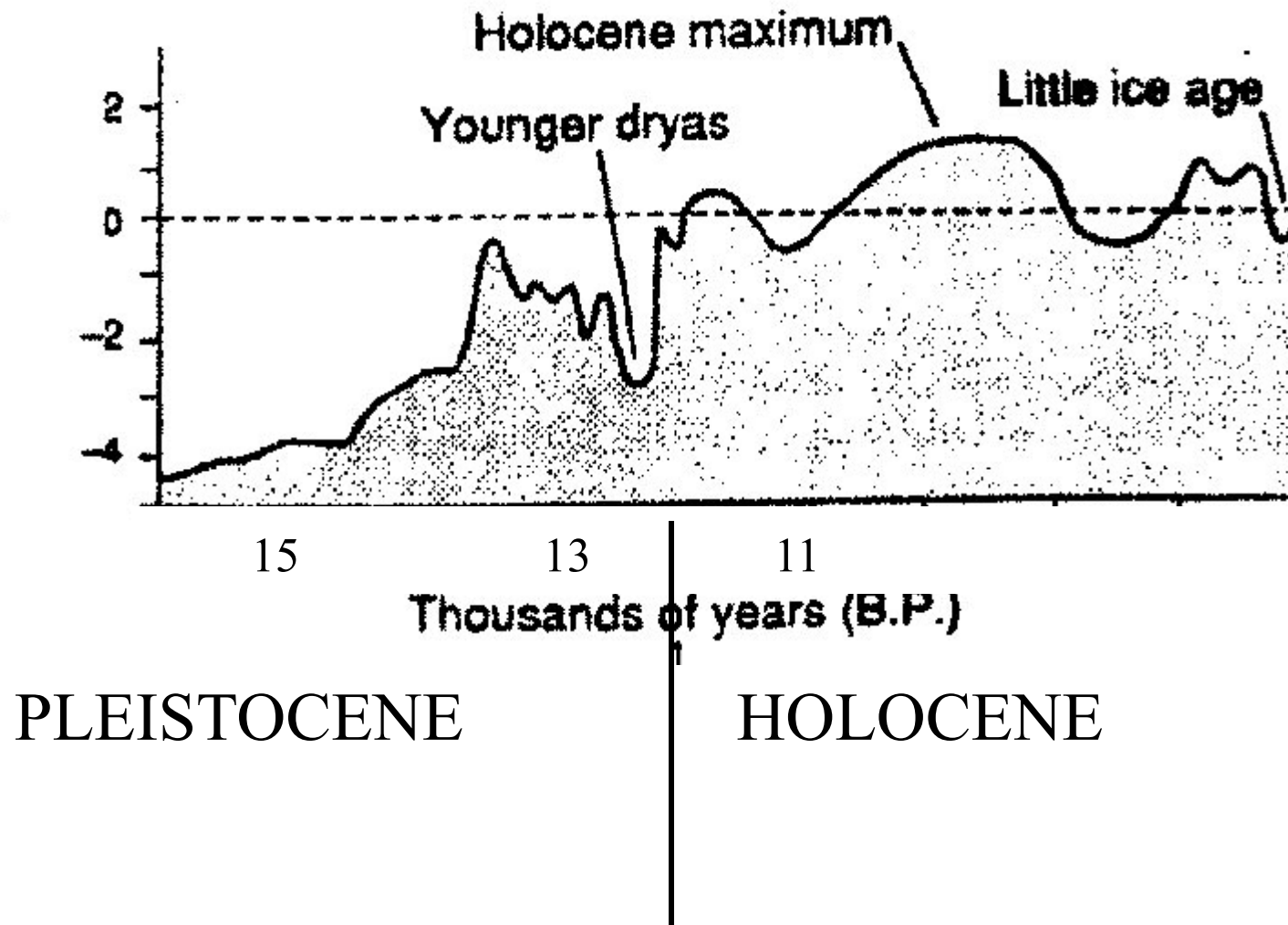
Overkill	Gradual Warming	Warming and Overkill	Extraterrestrial Impact
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# PROCESSES IN WORLD PREHISTORY

MYA	Biological Evolution	Colonization	Adaptation	Technology
	<b>AMHSS</b>  <b>HOMO</b>  <b>Australo-pithecus</b>  <b>Ardipithecus</b>	<b>OCEANIA NEW WORLD SIBERIA</b>  <b>EUROPE</b>  <b>ASIA</b>  <b>AFRICA</b>	<b>FARMING SPECIALIZED HUNTING</b>  <b>HUNTING/ GATHERING</b>  <b>SCAVENGING/ GATHERING</b>	<b>COMPOSITE WEAPONS ART</b>  <b>FIRE</b>  <b>STONE TOOLS</b>  <b>SIMPLE PERISHABLE TOOLS</b>
1.0				
2.0				
3.0				
4.0				

# IX Adaptations at the End of the Pleistocene

## A. Climatic Events

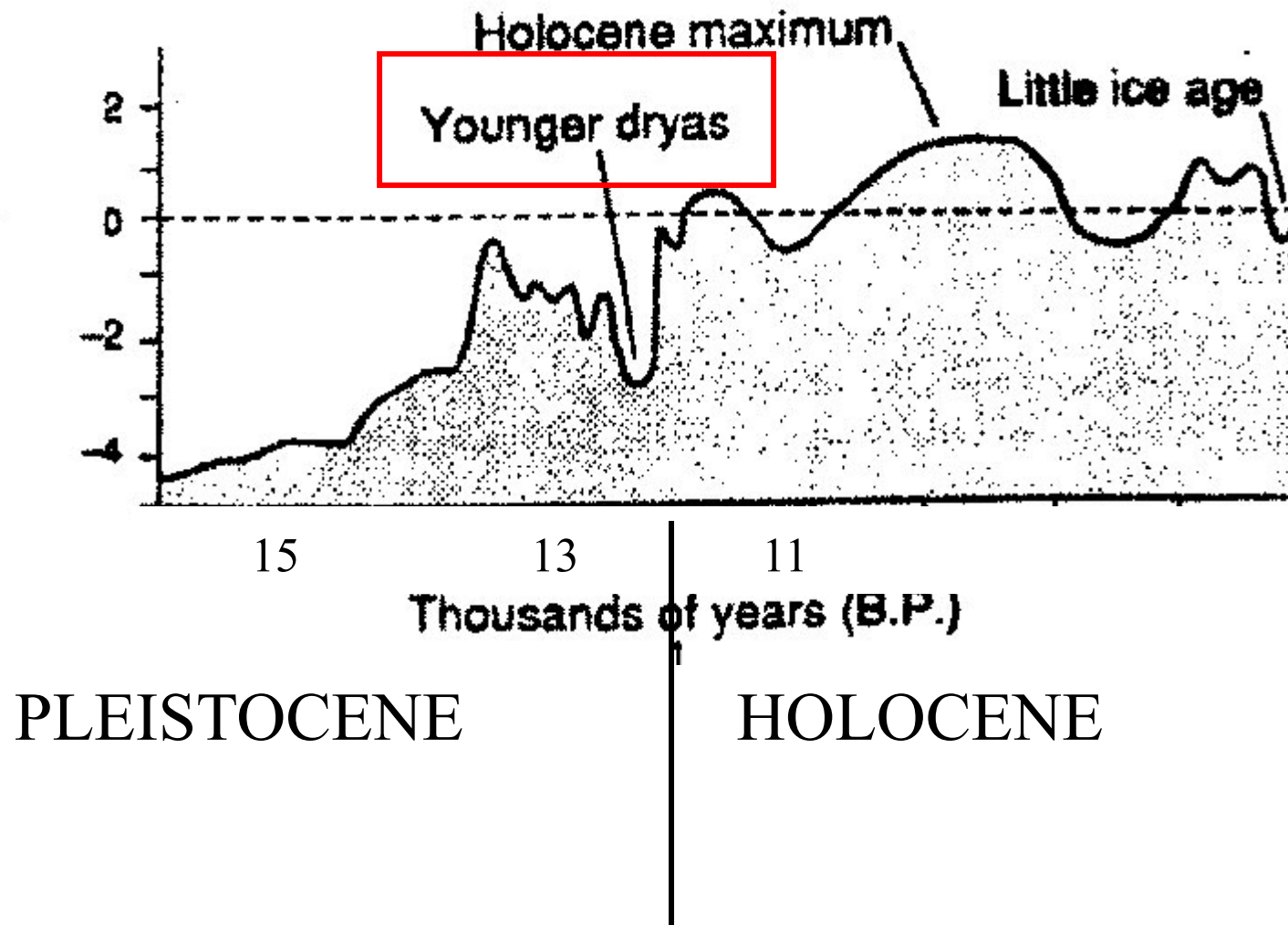


# Disappearance of Glaciers

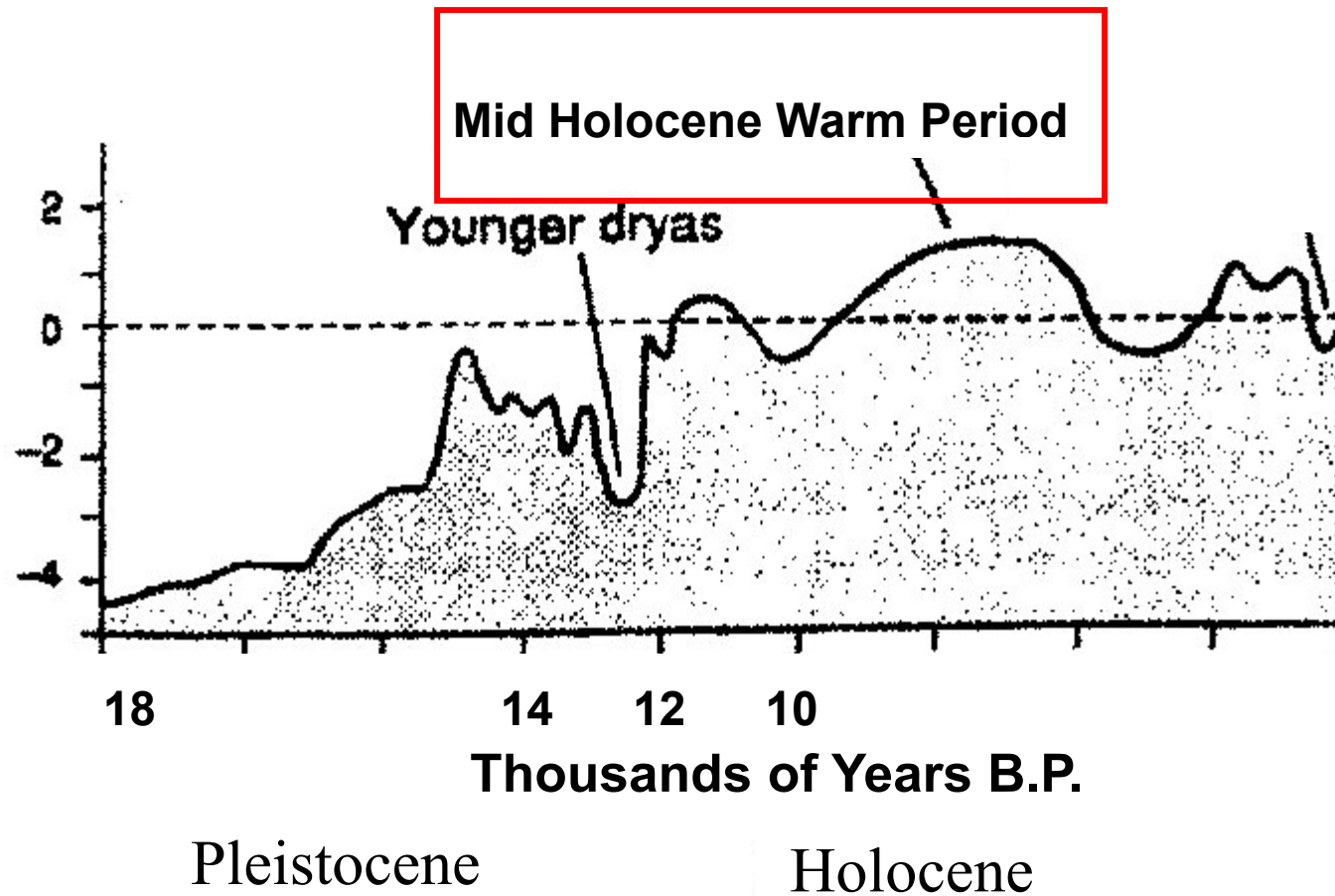




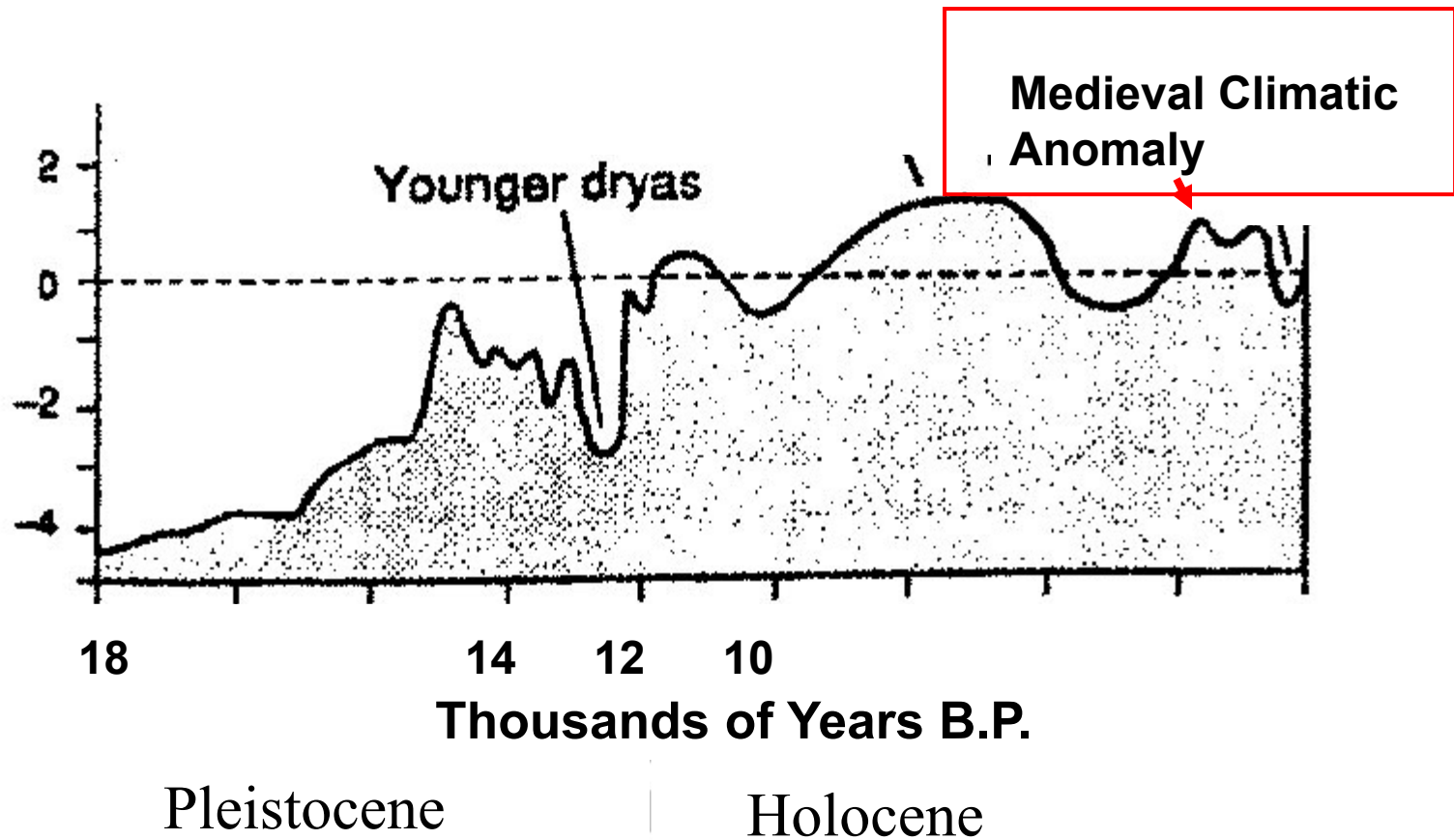
#### 4. Younger-Dryas (12,900-11,500 BP)



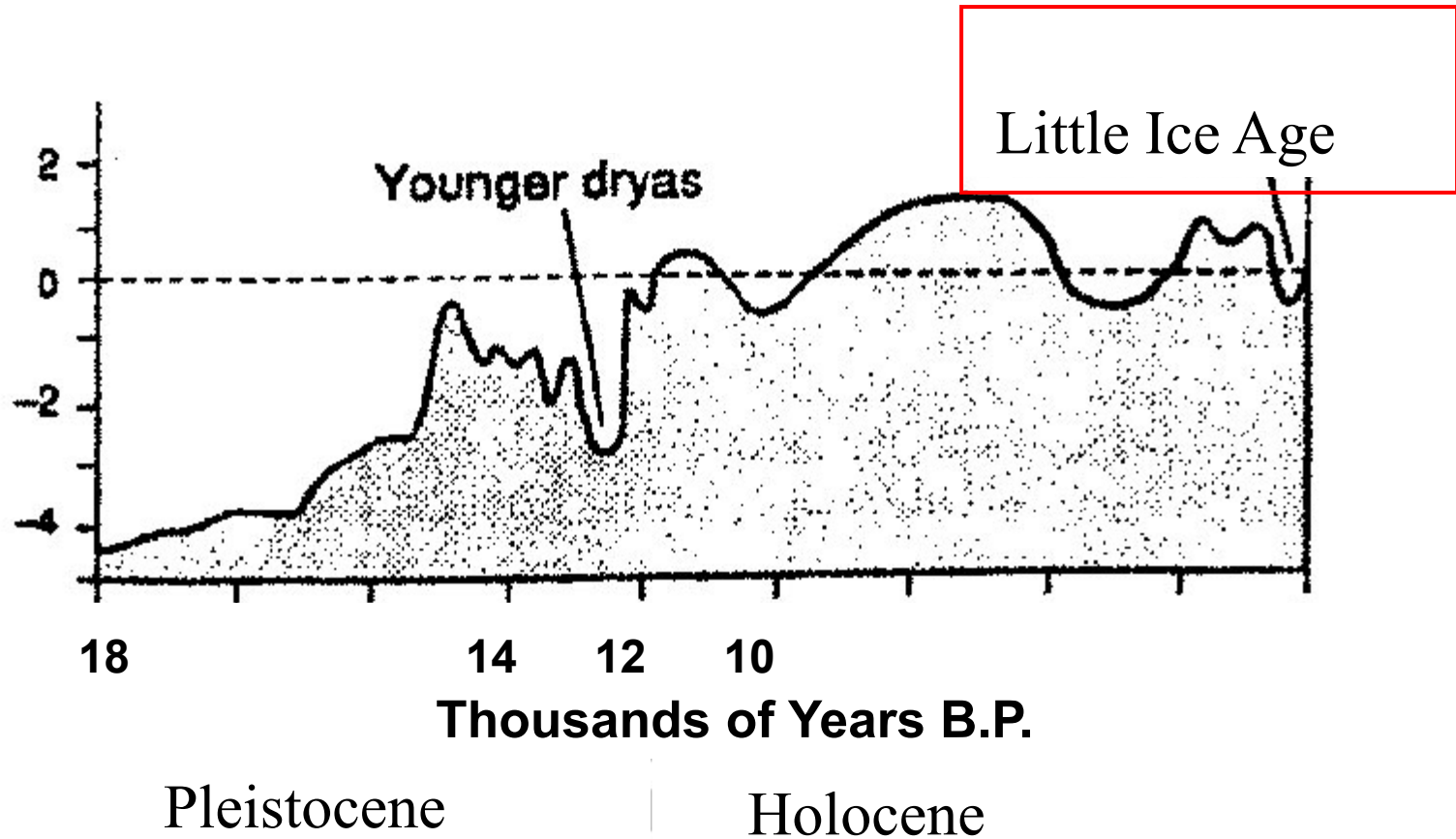
## 5. Mid-Holocene Warm Period



## 6. Medieval Climatic Anomaly (MCA) AD 800-1350



## 7. Little Ice Age AD 1400-1850

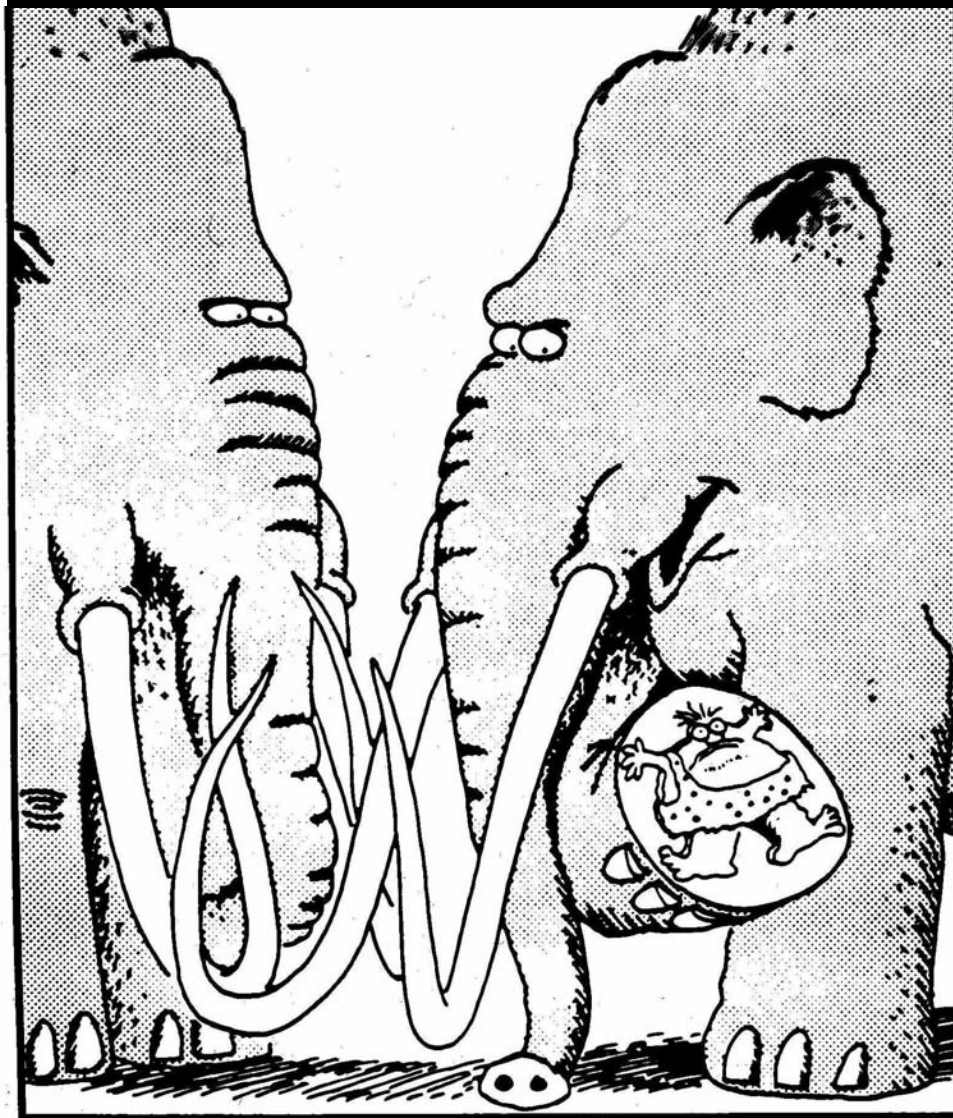


## B. Dating and Nomenclature:

Paleolithic=Old Stone Age--Stone tools, Narrow Spectrum hunting and gathering (Specialized)



## Upper Paleolithic Big Game Hunting (Narrow Spectrum)



Well What the .....! I thought I smelled something!

Nomenclature:

Paleolithic=Old Stone Age--Stone tools, Narrow Spectrum hunting  
and gathering (Pleistocene)

New Terms:

1. Neolithic= Farming (Holocene)

## Nomenclature:

1. Neolithic= Farming (Holocene)

2. Mesolithic= Broad-spectrum hunting and Gathering  
(In the Old World)

## Nomenclature:

1. Neolithic= Farming (Holocene)

2. Mesolithic= Broad-spectrum hunting and Gathering  
(In the Old World)

3. Archaic = Broad-spectrum hunting and Gathering  
(In the New World)

## Dating: Geological and Cultural Time Periods

<b>Geologic Time</b>	<b>Western Europe</b>	<b>SW Asia</b>	<b>North America</b>
<b>Late Holocene (5000 B.C.- present)</b>	<b>Neolithic</b>	<b>Neolithic</b>	<b>Varied</b>
<b>Early-Middle Holocene (8000-5000 B.C.)</b>	<b>Mesolithic</b>	<b>Neolithic</b>	<b>Archaic</b>
<b>Early Holocene (10,000-8000 B.C.)</b>	<b>Mesolithic</b>	<b>Neolithic</b>	<b>Paleoindian</b>
<b>Terminal Pleistocene (10,500–10, 000 B.C.)</b>		<b>Mesolithic</b>	<b>Paleoindian</b>



## Holocene Adaptations

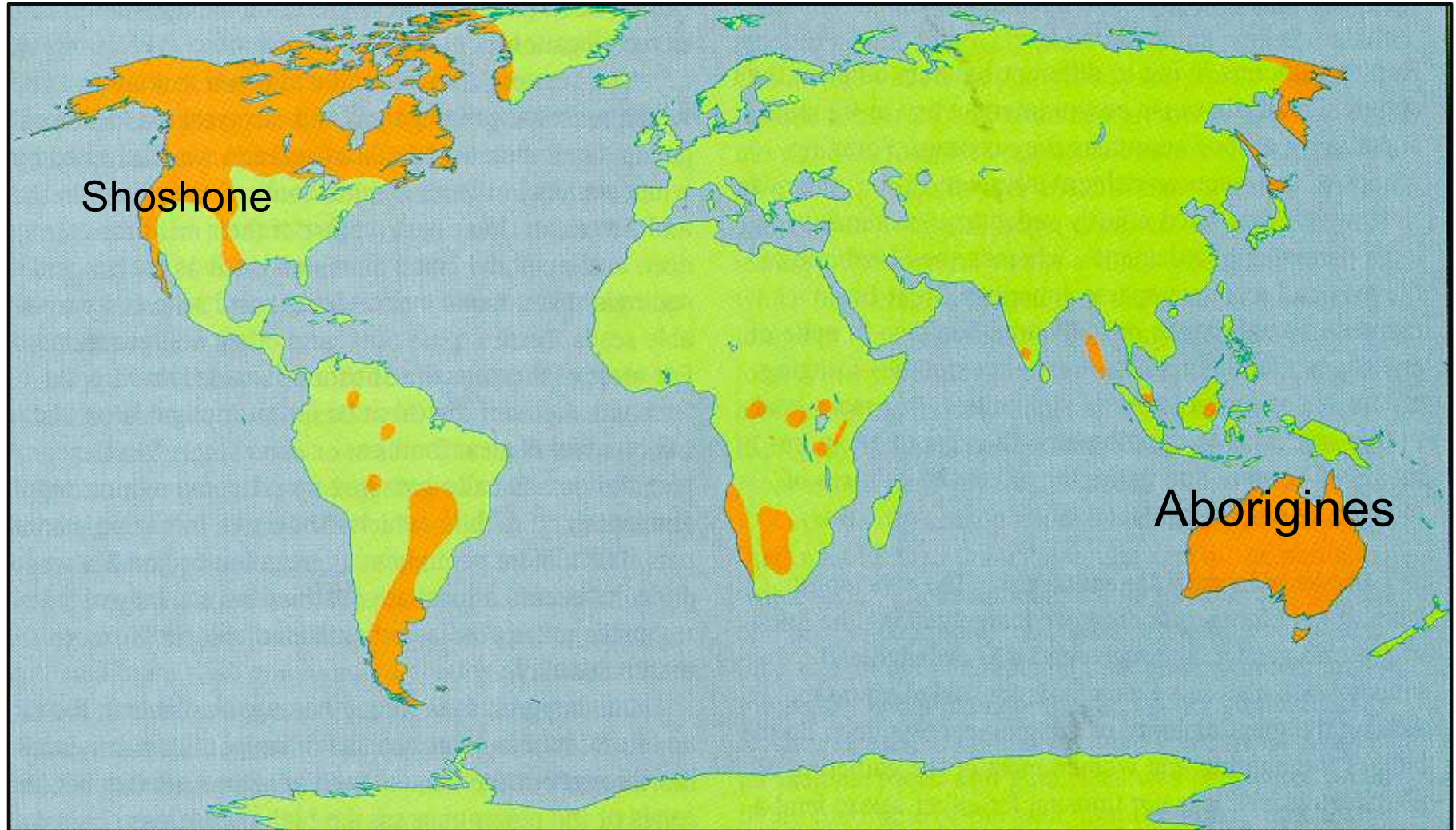
Broad Spectrum Hunting and Gathering

Highly mobile

Sedentary (Complex)

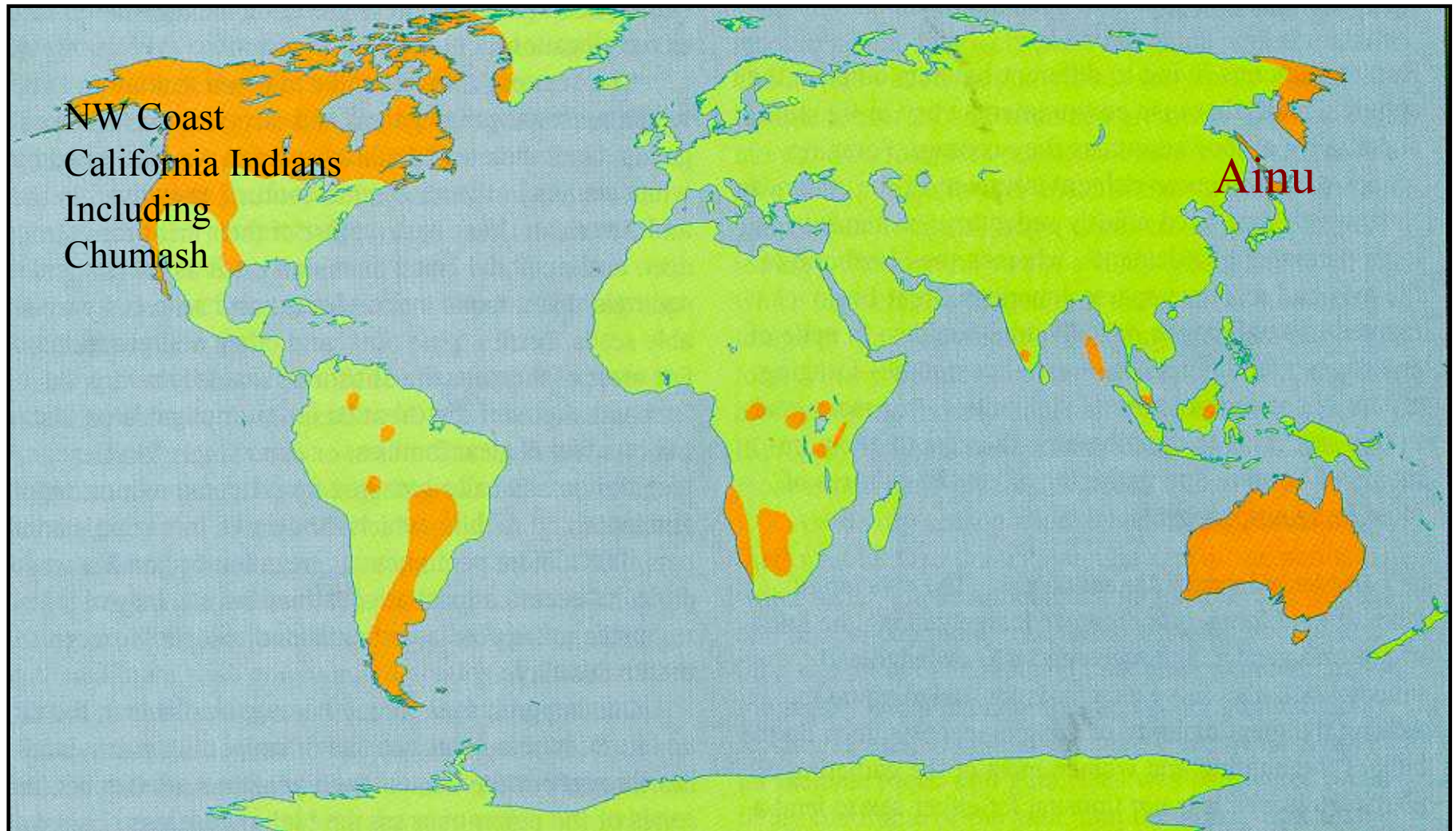
Farming

## Highly mobile hunting and gathering (Ethnographic)



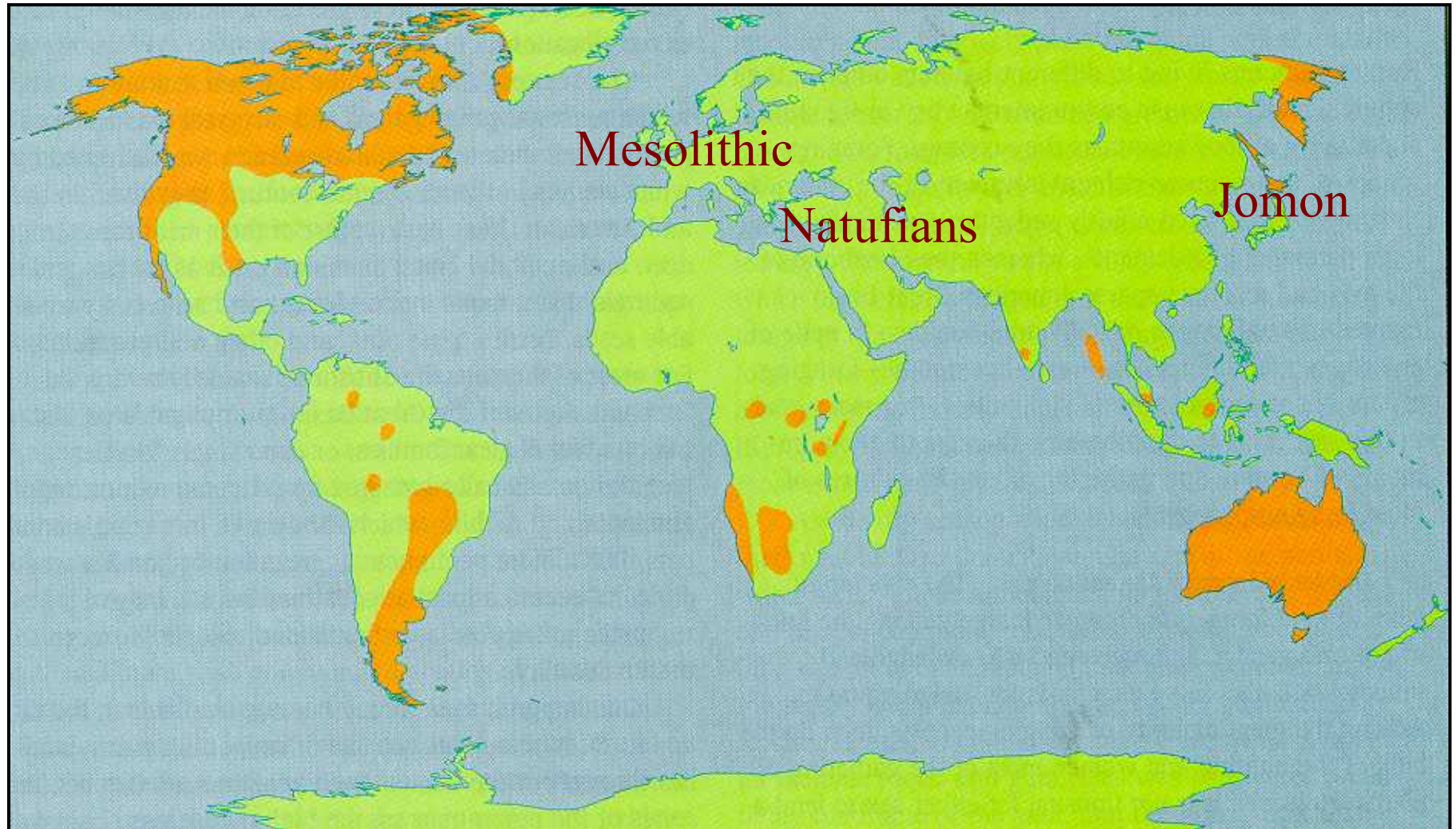


## Complex Hunter-Gatherers (Ethnographic)



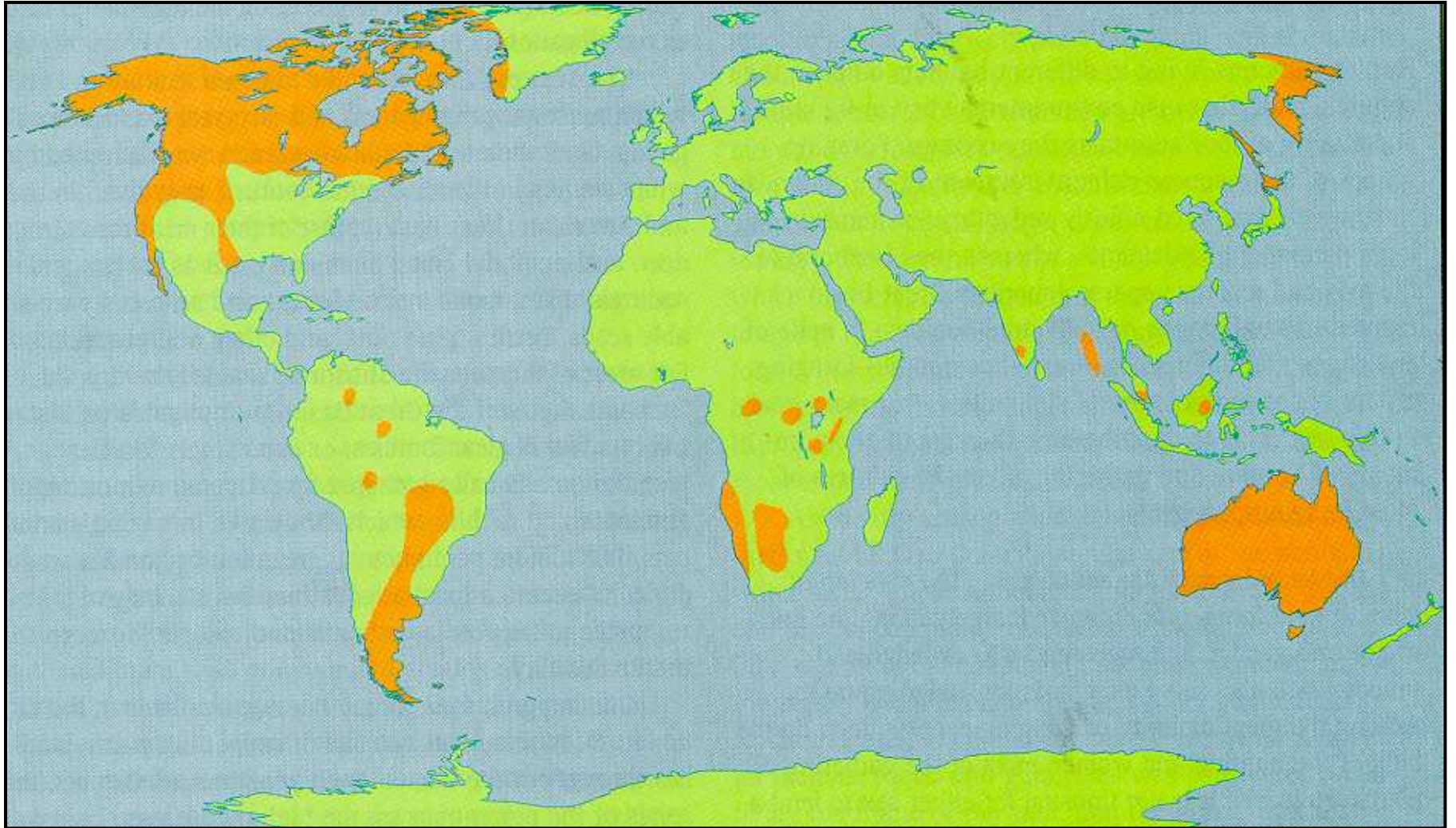


## Complex Hunter-Gatherers (Archaeological)



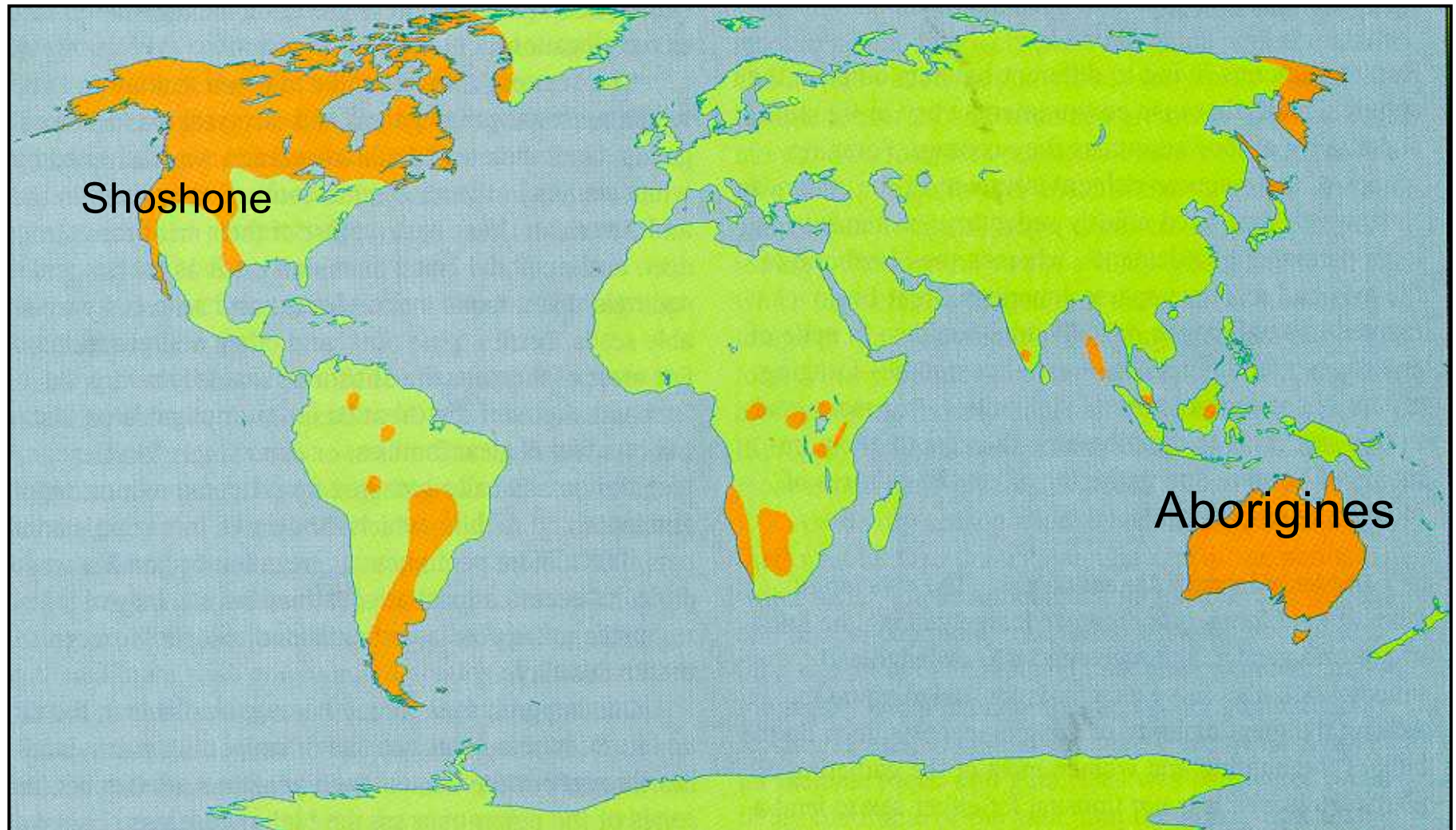


## Farming (Domestication) Adaptations A.D. 1500 (Shown in lime green)

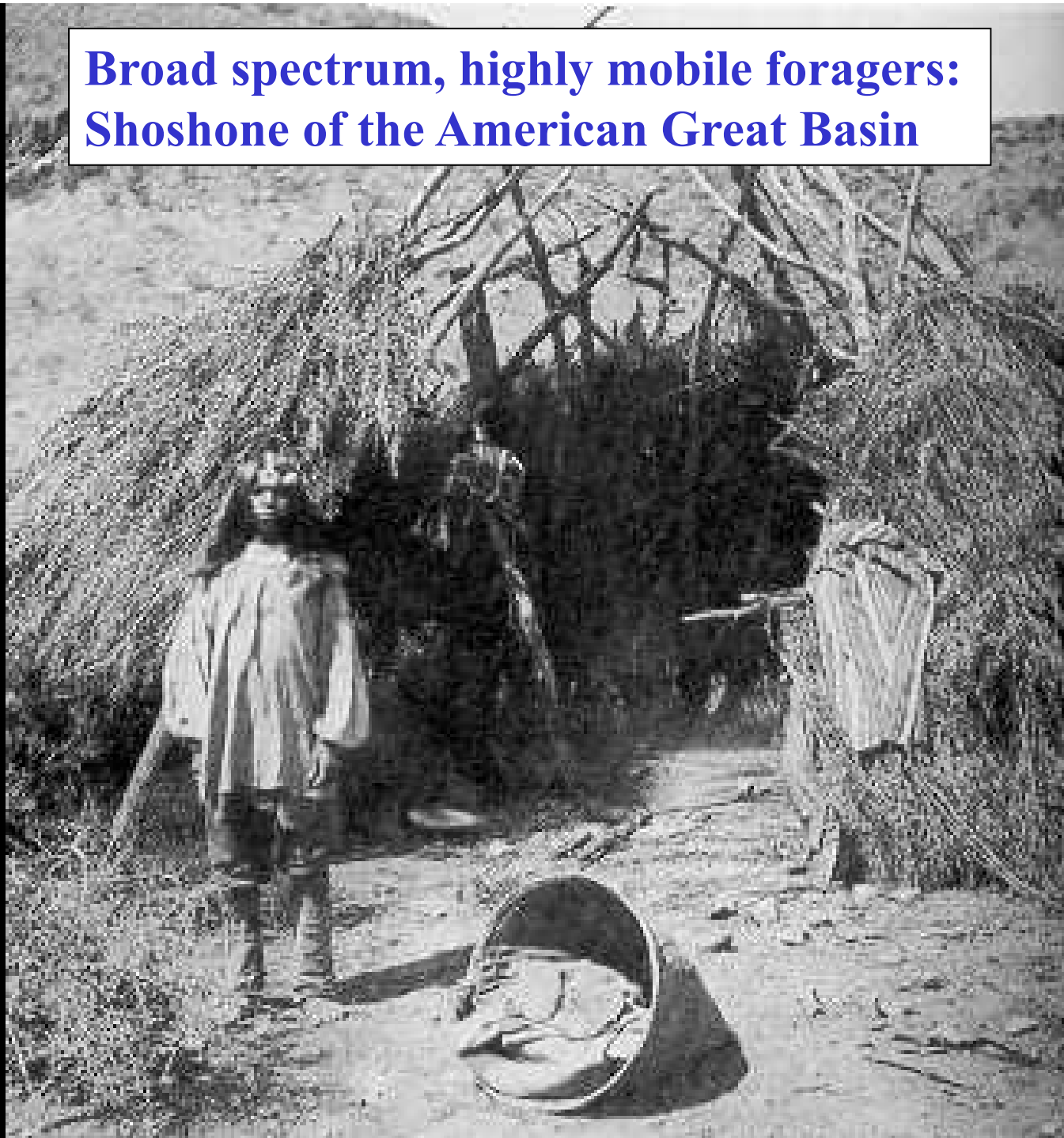




## Highly mobile hunting and gathering



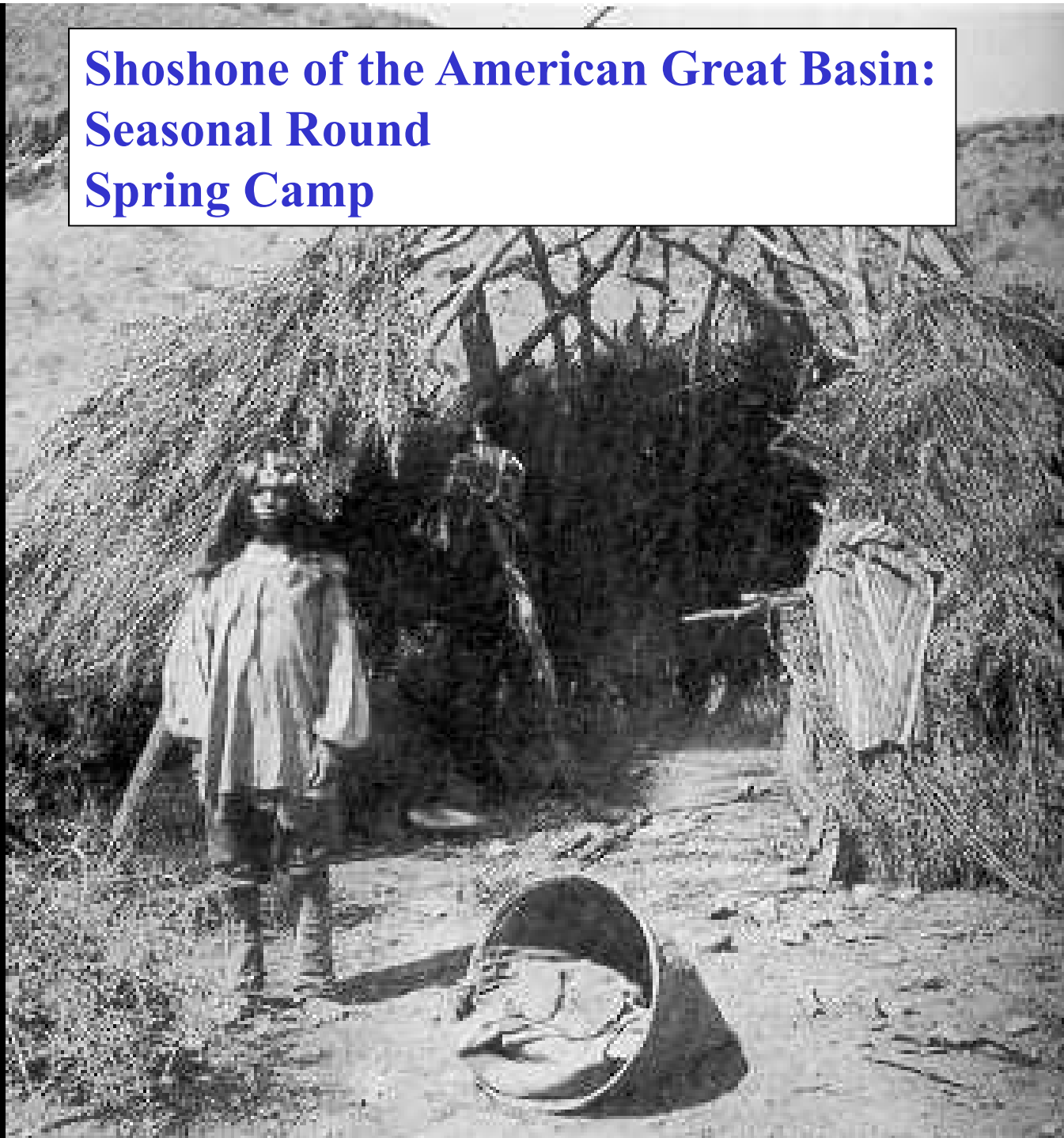
**Broad spectrum, highly mobile foragers:  
Shoshone of the American Great Basin**







**Shoshone of the American Great Basin:  
Seasonal Round  
Spring Camp**









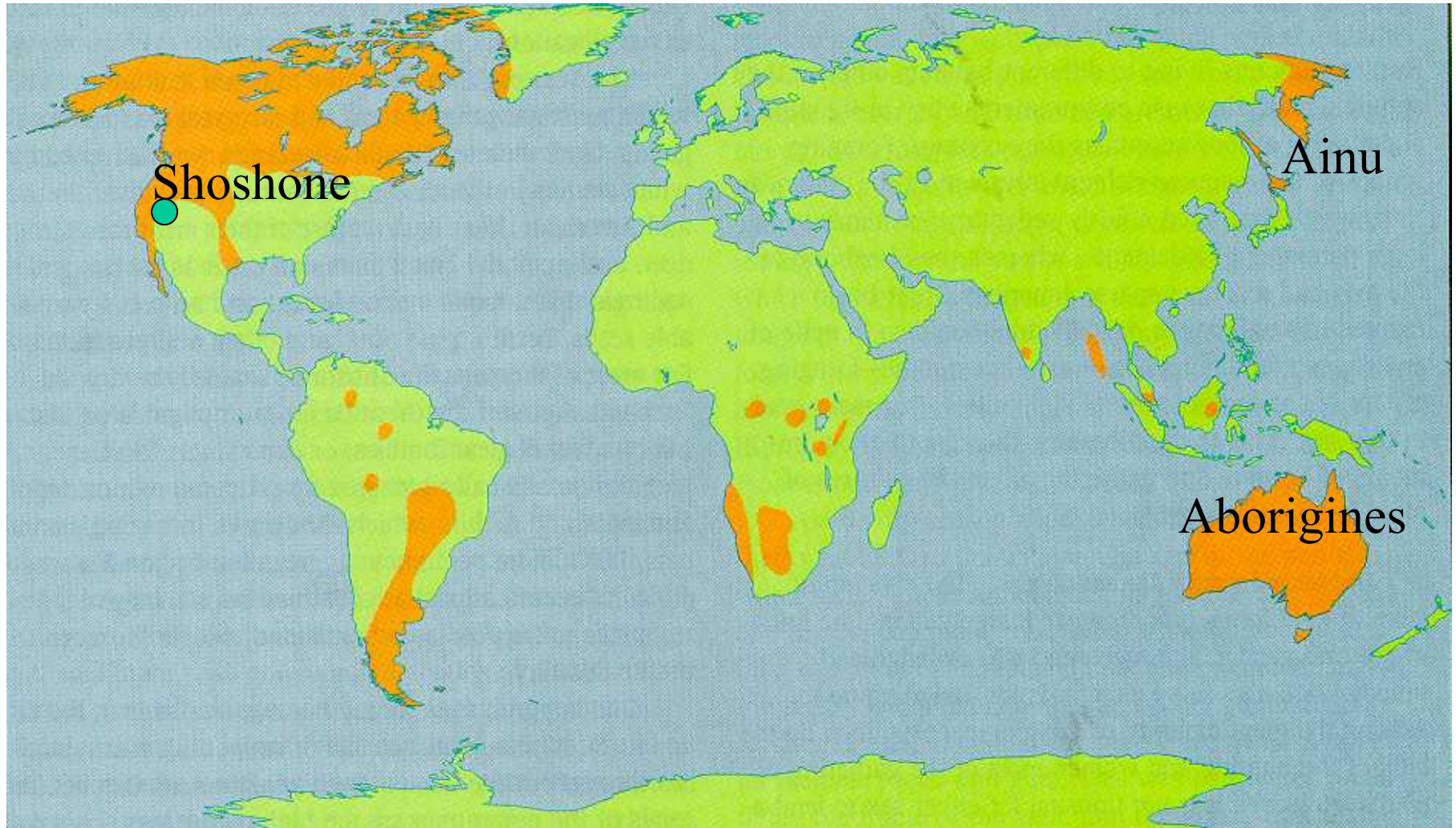


Bow and Arrow  
Used to  
Hunt  
Wide range  
Of  
Animals



Basketry:  
Important to  
Foraging  
Economies

## Hunter-Gatherer Societies ca. A.D. 1500





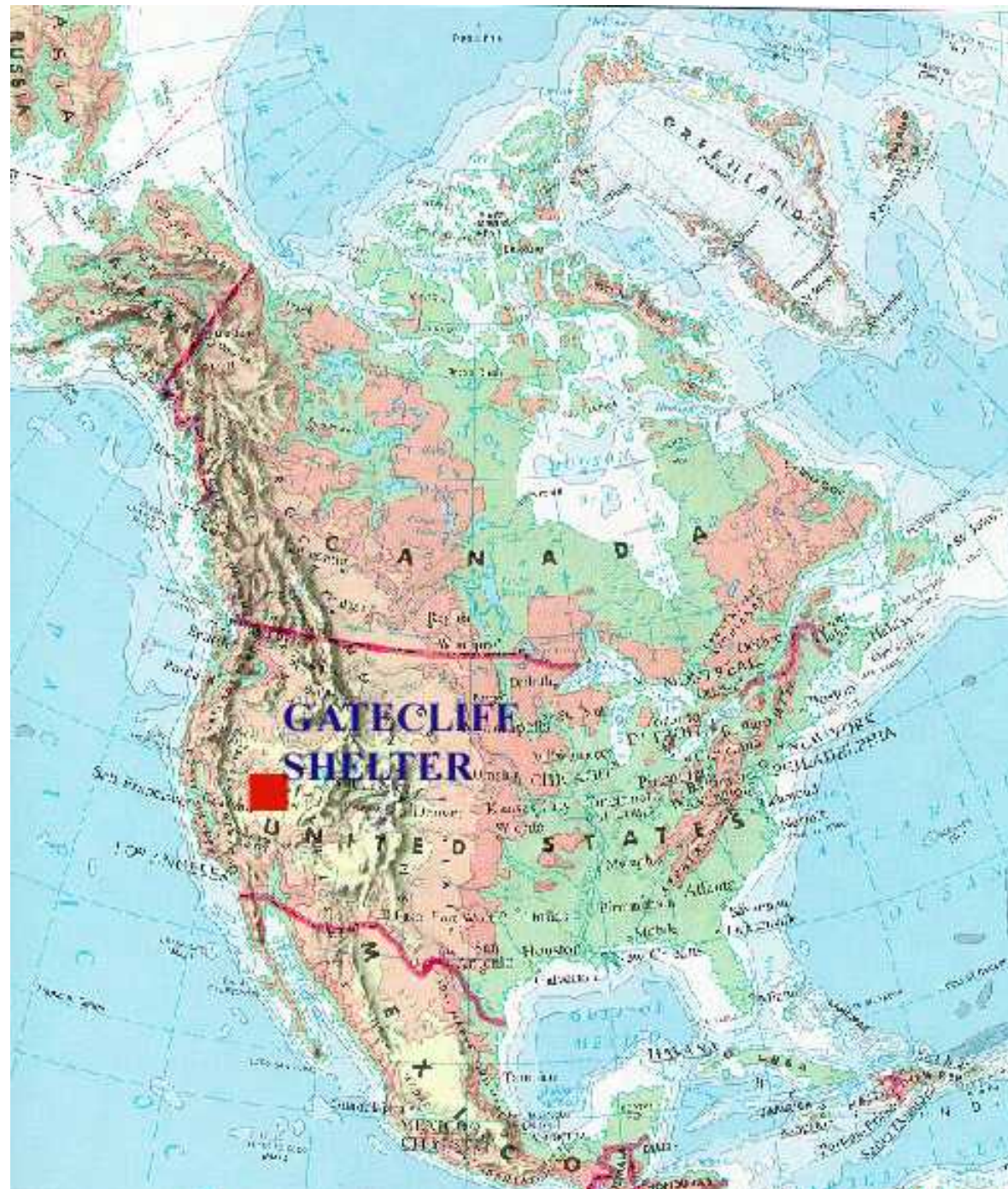


Ethnoarchaeological  
Research  
With  
Australian Aborigines

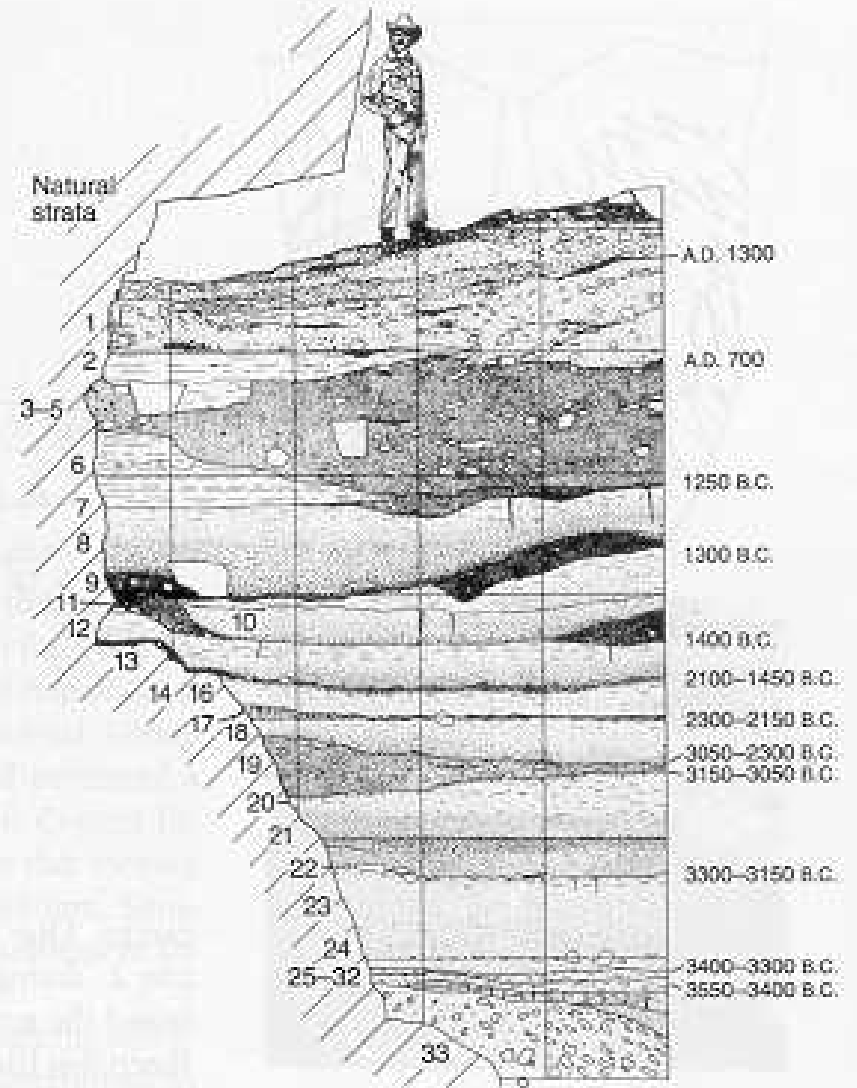
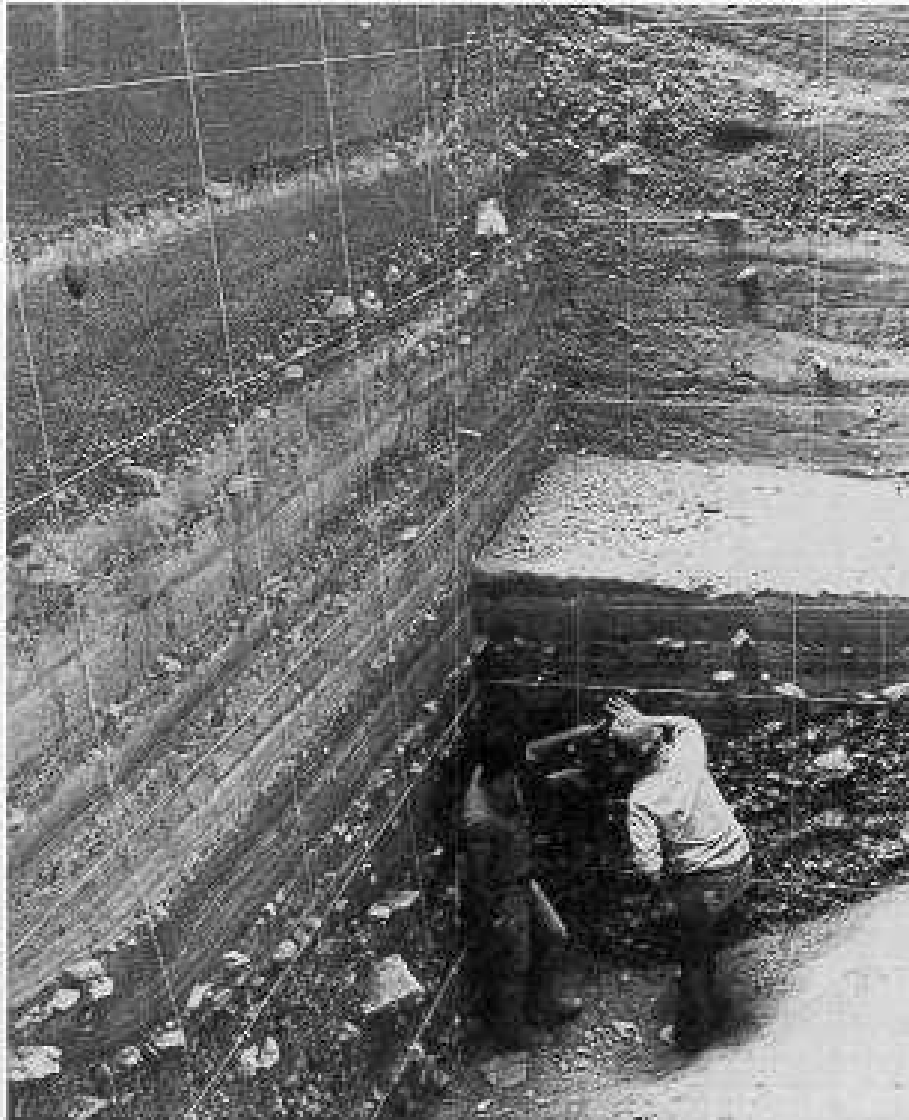






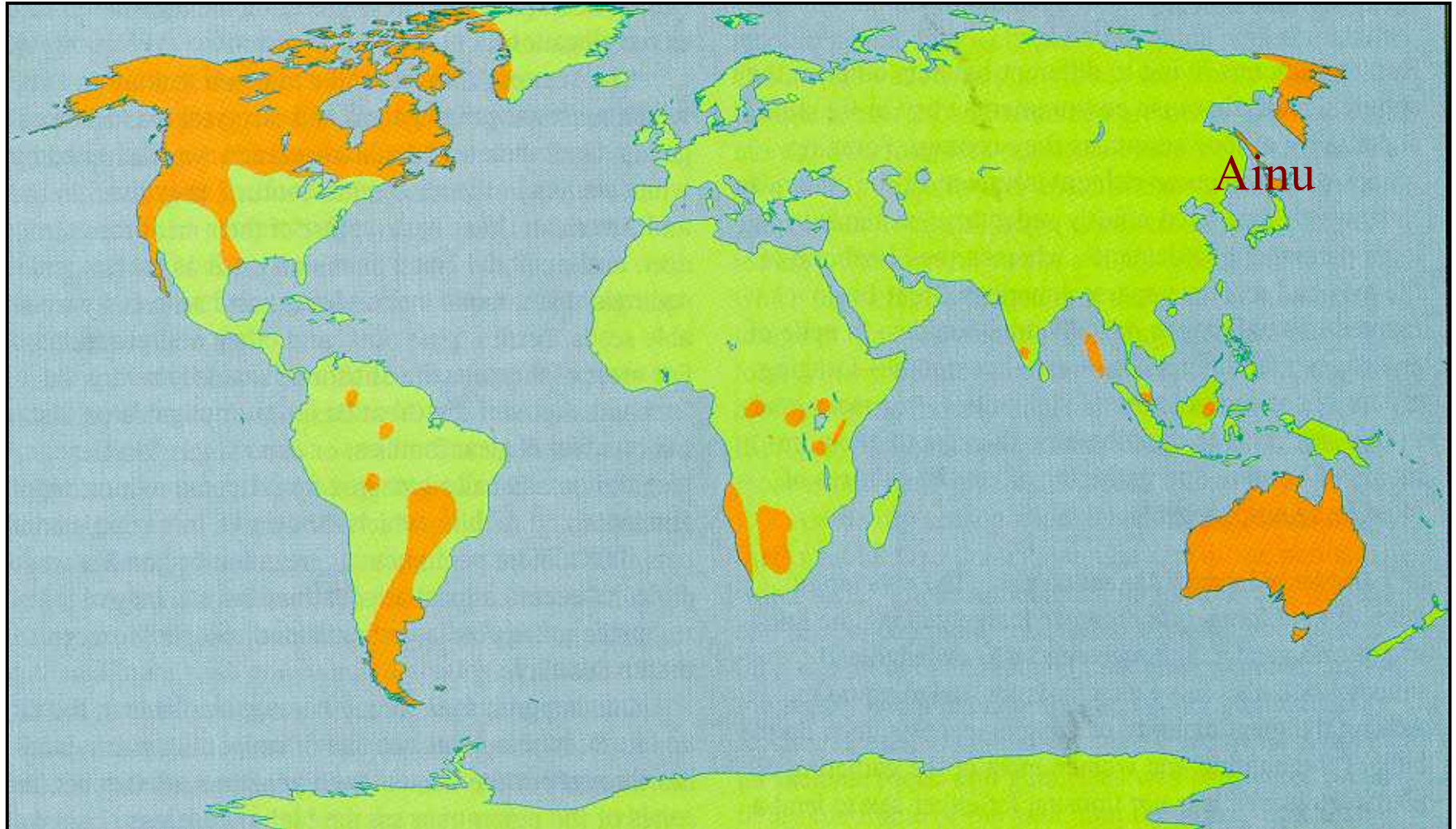


# Gatecliff Shelter : 5000 years of Mobile Foraging

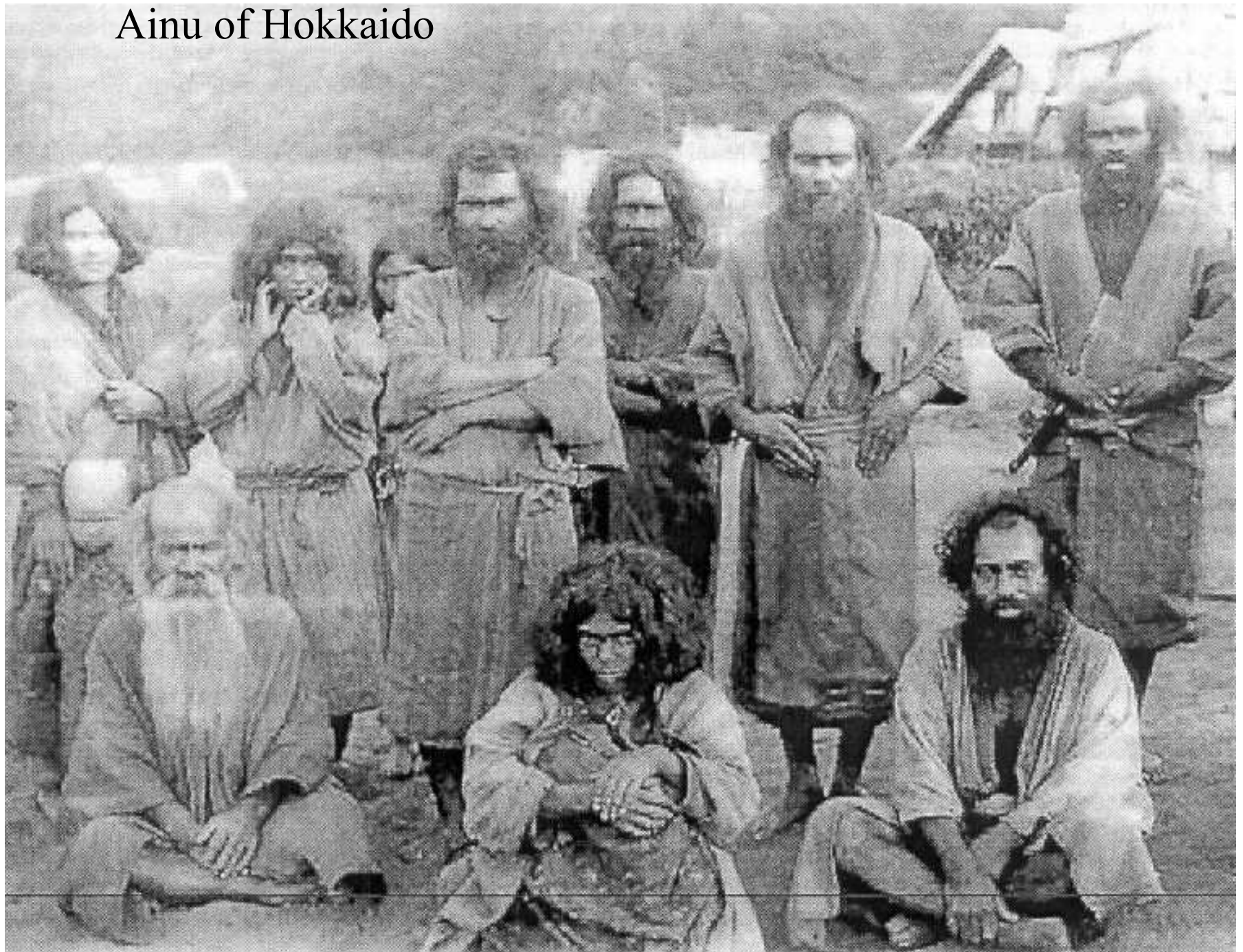




## Complex Hunter-Gatherers (Ethnographic and Prehistoric)

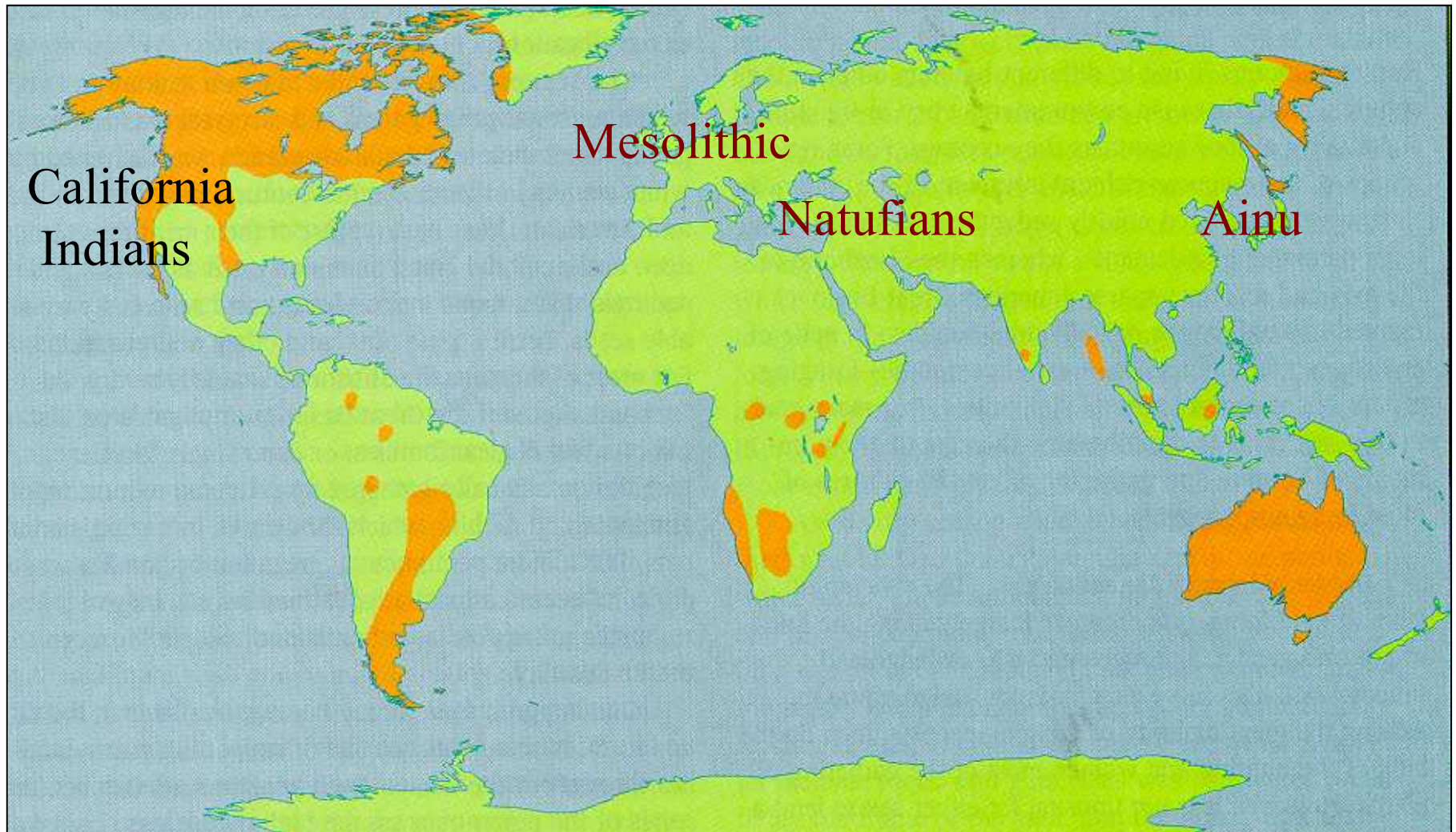


Ainu of Hokkaido





## Complex Hunter-Gatherers (Ethnographic and Prehistoric)



**D. Complex Foragers**  
**2. California Indians**  
**and California Prehistory**

**Sources:**  
**Early Diaries**  
**Salvage Ethnography**





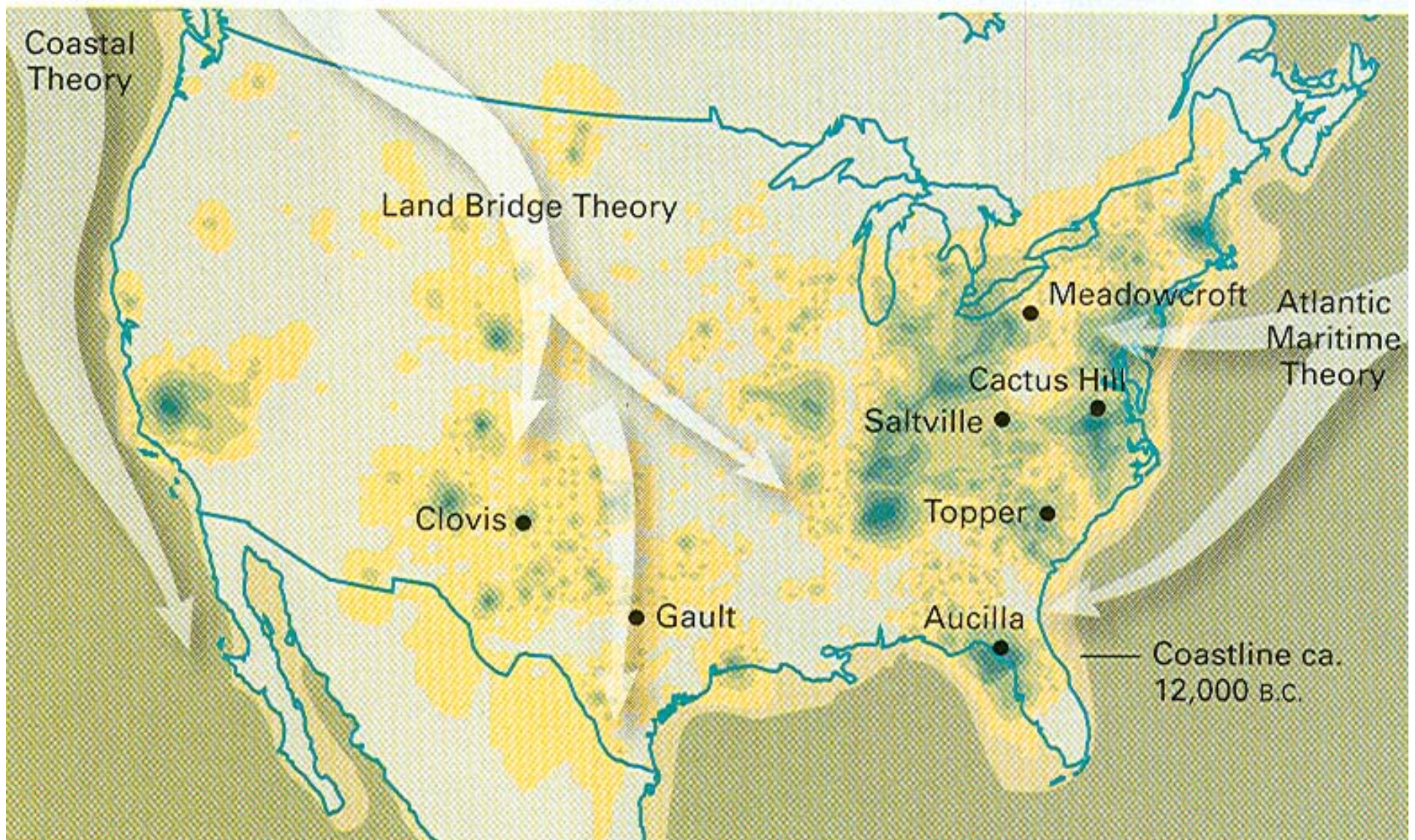
## Salvage Ethnography in the Western U.S. (Early 20<sup>th</sup> century)



**John P. Harrington and Rosario Cooper 1916,  
Arroyo Grande, California**

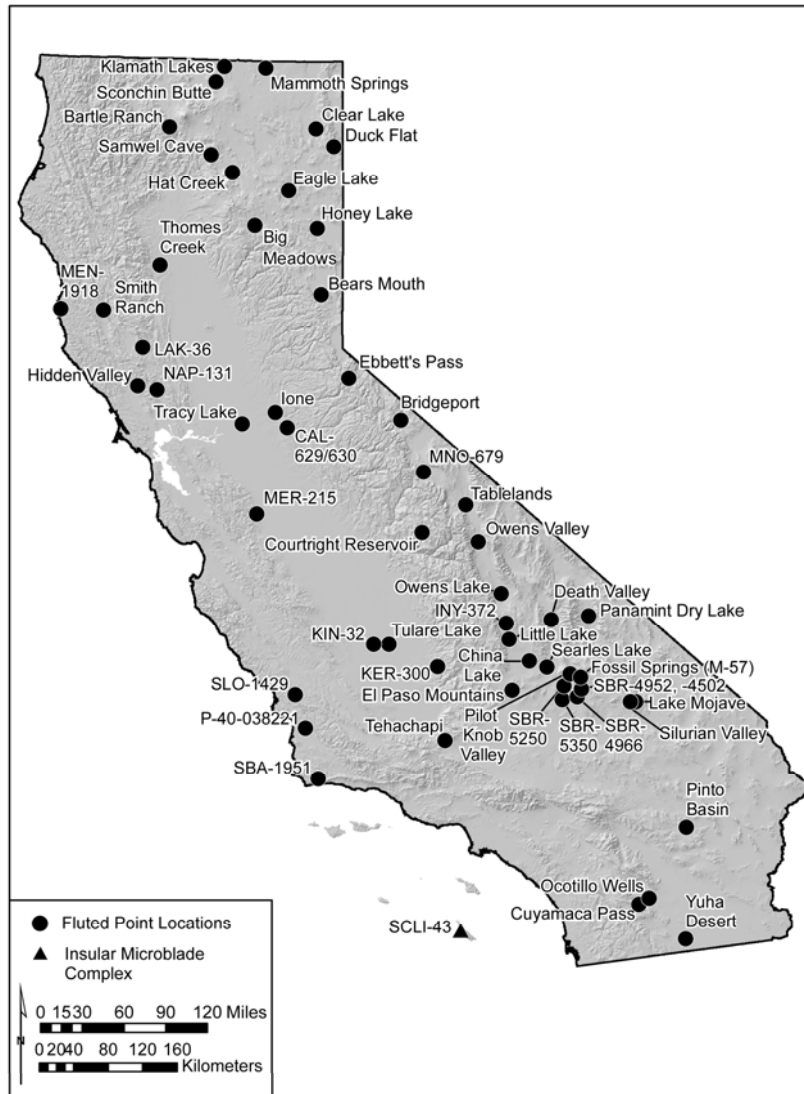


# The California Archaeological Record





# Clovis in California: 13,300-12,900 BP



## Clovis in SLO County



## The Coastal Route: Arlington Man 11,000 B.C., Santa Rosa Island



Daisy Cave,  
San Miguel Island  
12,000 BP







The California Milling Stone Culture

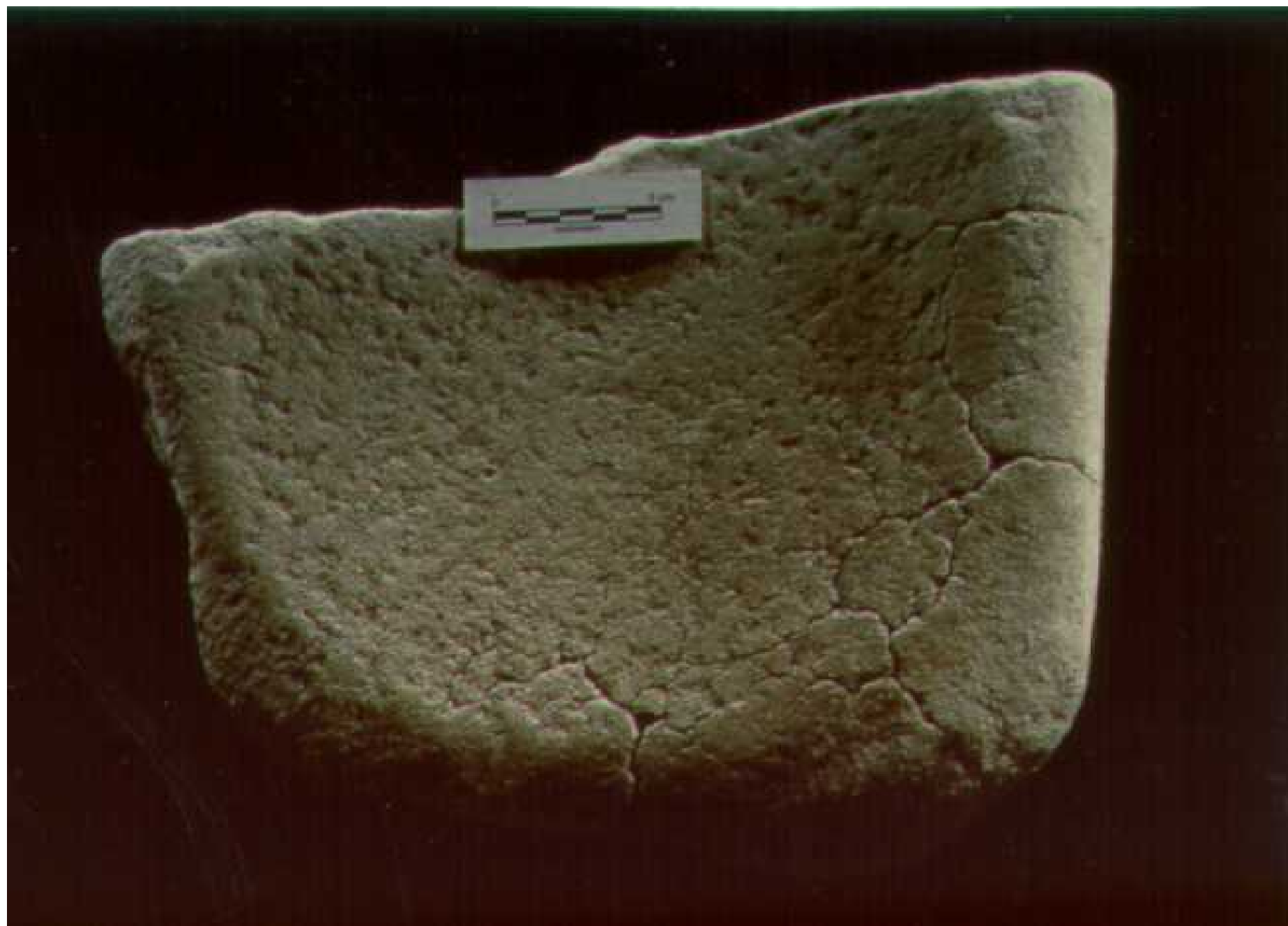
## Cross Creek, SLO County, 8000 B.C.



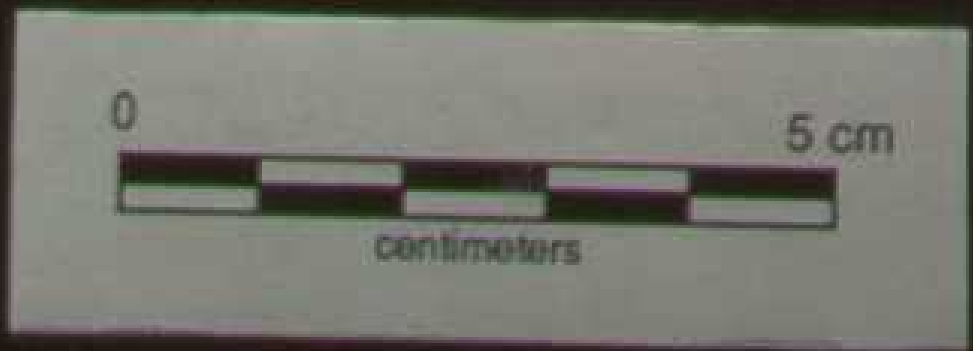




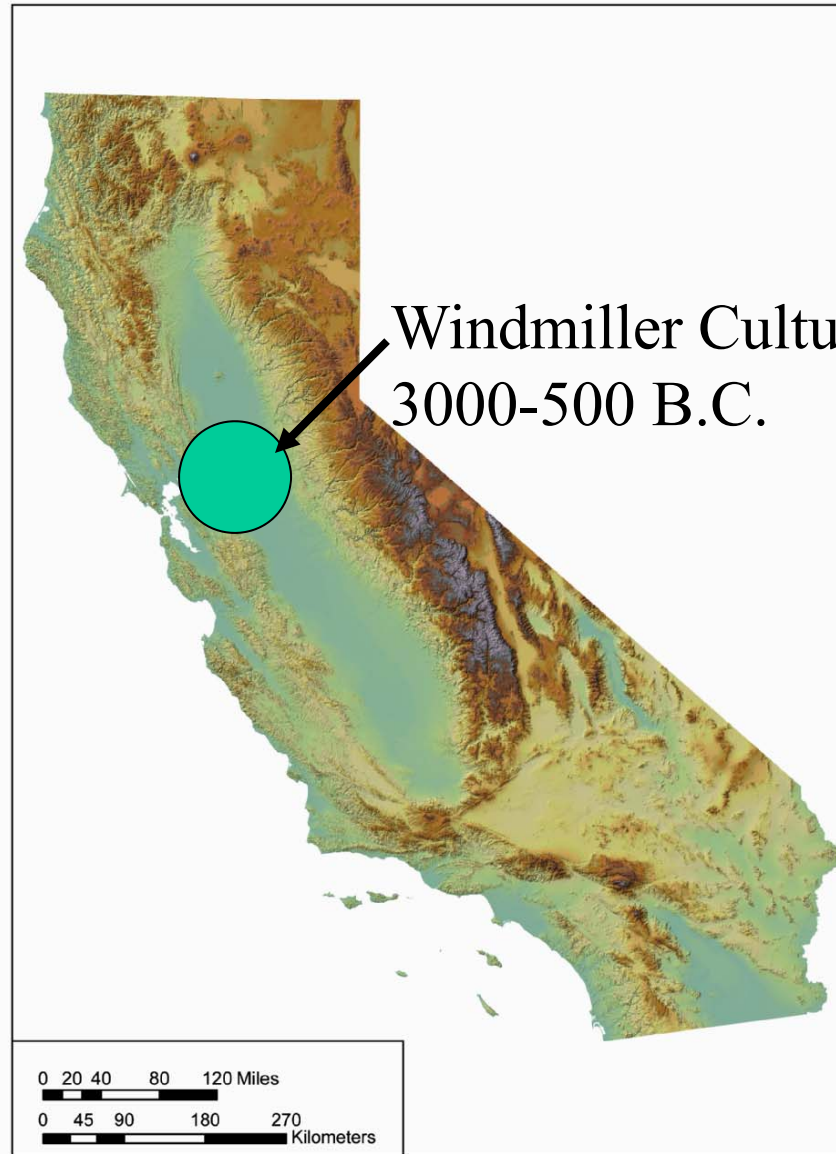








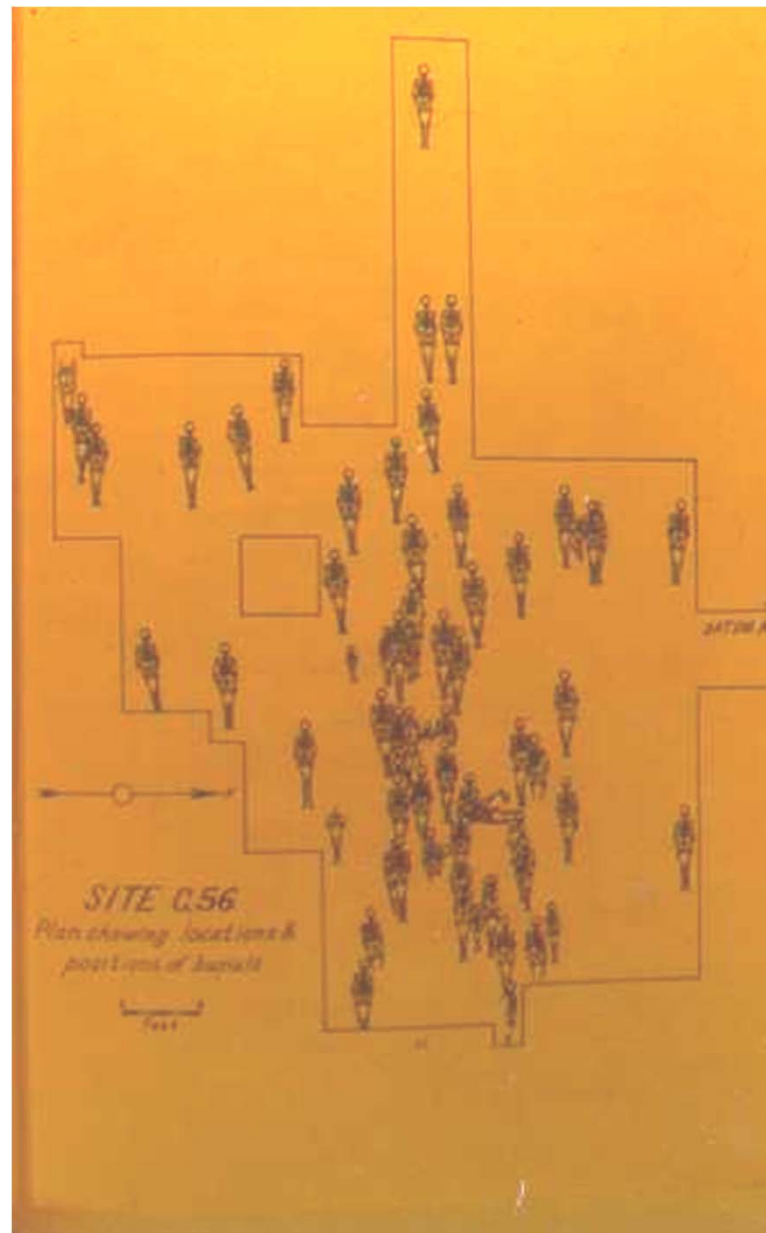




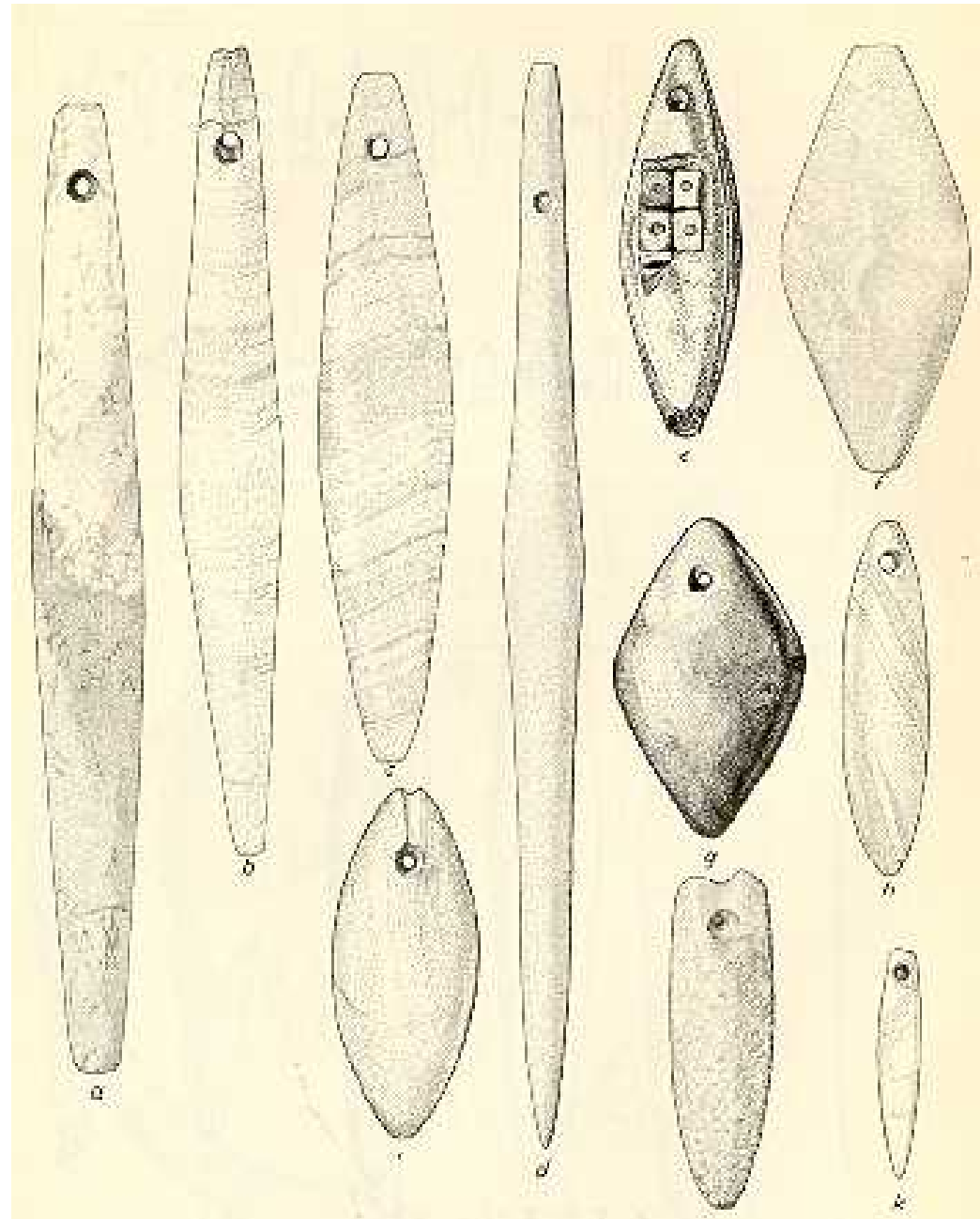
## Windmill Culture 3000- 500 B.C.



# Windmiller Culture Sacramento Valley

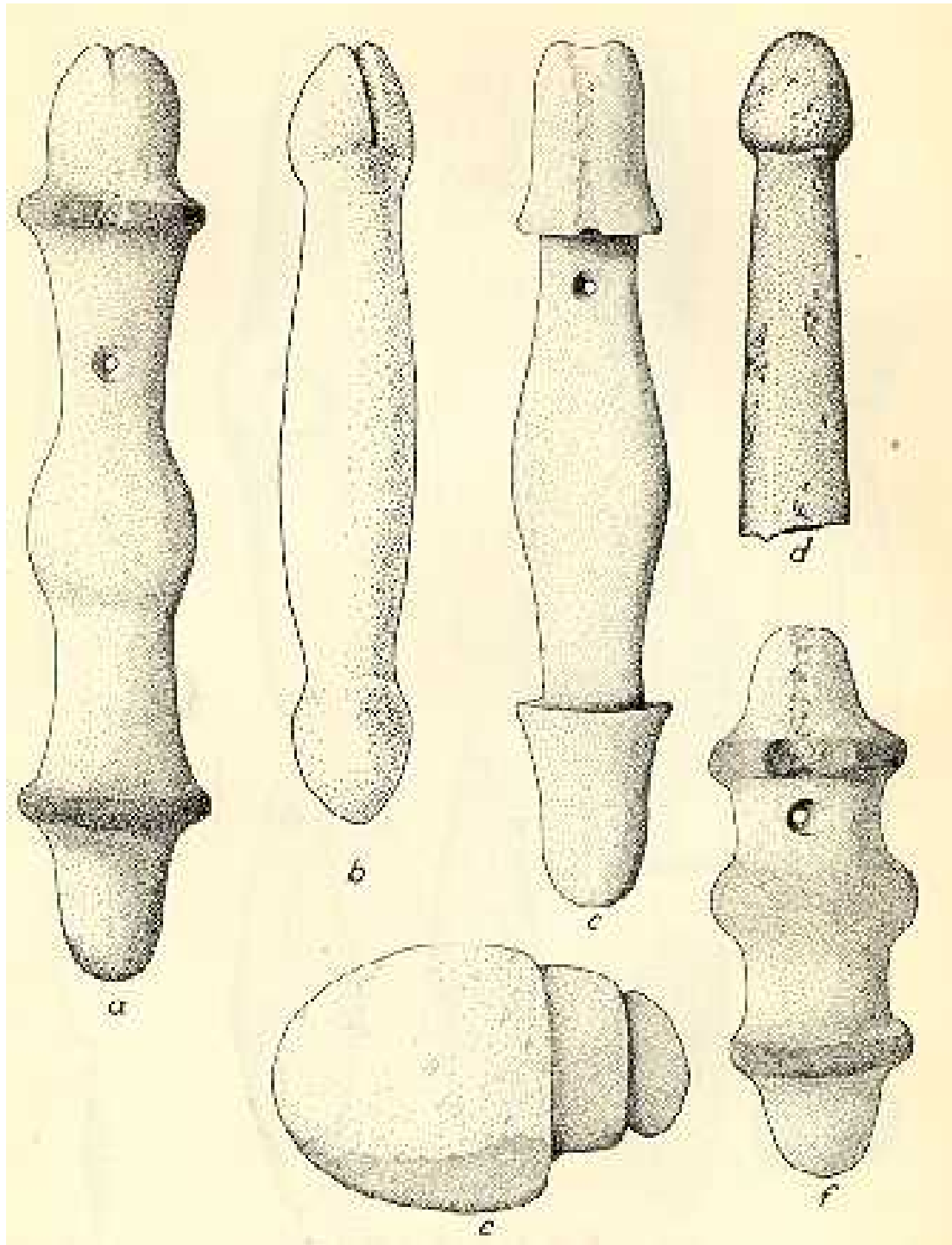


## Windmilller Charmstones : 3000-500 B.C.







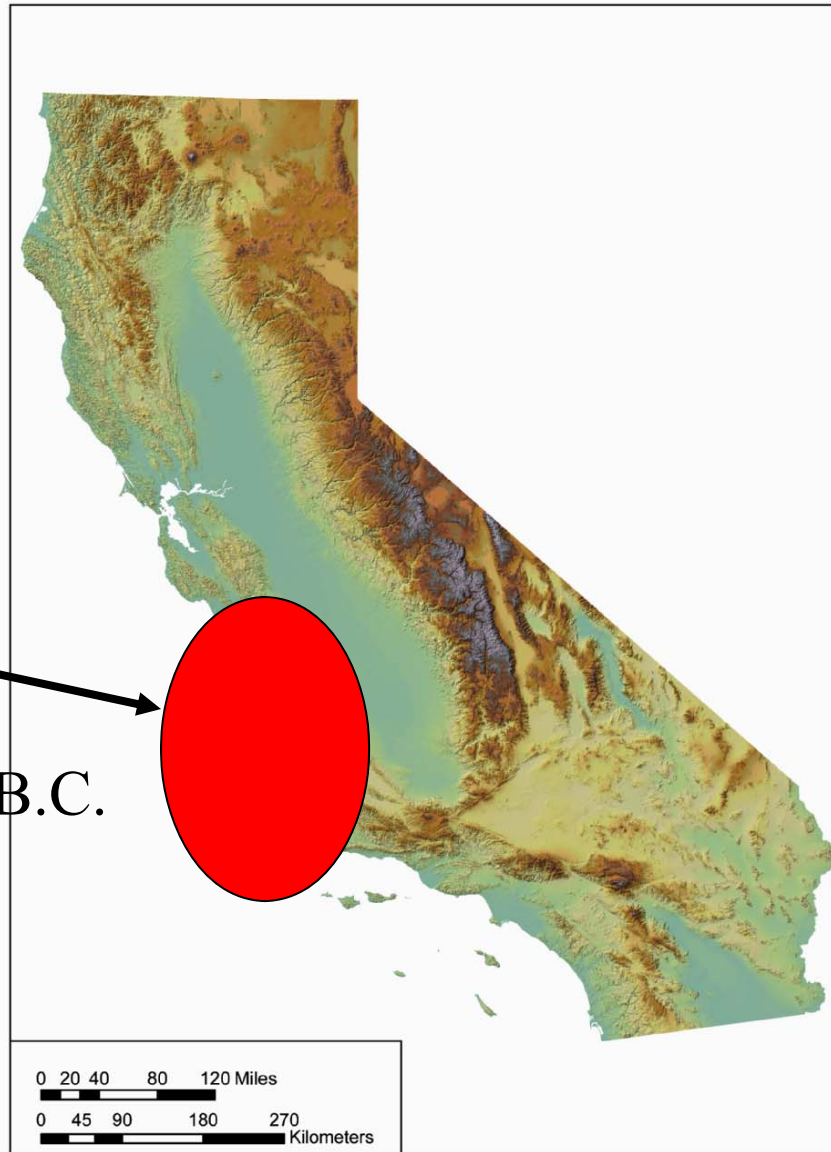




## Windmill Culture: Phallic Charmstones



Hunting  
Culture  
3000 -500 B.C.





CENTRAL COAST STEMMED SERIES



CONTRACTING-  
STEMMED



ROSSI SQUARE-  
STEMMED



ANO NUEVO LONG-STEMMED



LARGE SIDE-NOTCHED



LARGE SIDE-NOTCHED  
JALAMA VARIANT



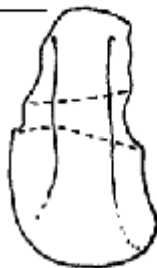
SCALE UNLESS OTHERWISE NOTED



OLIVELLA CLASS L  
BEADS



DRILLED  
STEATITE  
PEBBLE



BONE  
GORGE



MILLING SLAB



HAND STONE



PITTED STONE

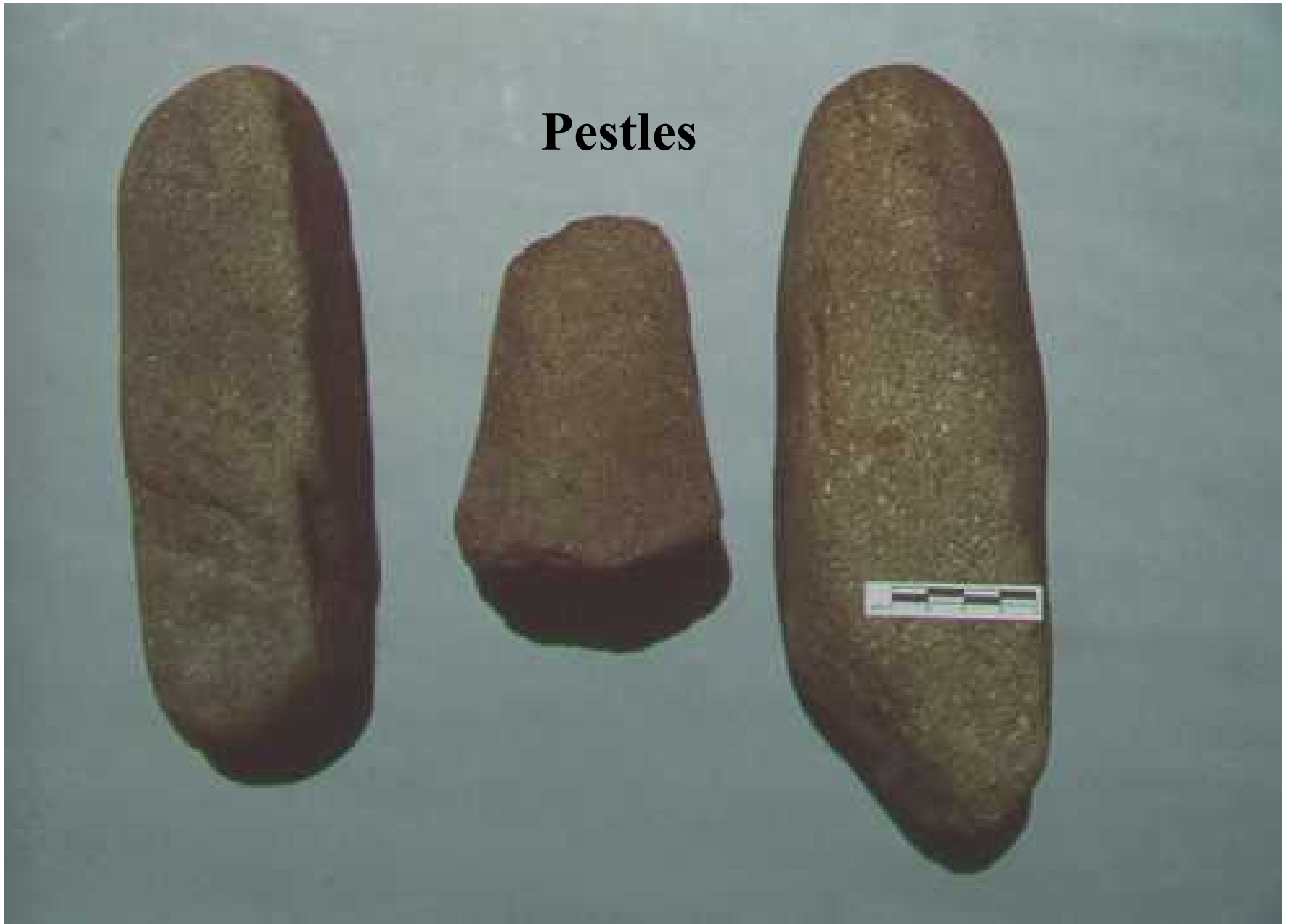


BOWL MORTAR

## Hunting Culture: Stone mortars



# Pestles



**ATLATL**



